

Inside: Stephanie Rose on Lavender

# WATER SHAPES

Design • Engineering • Construction

Volume 5  
Number 10  
October 2003  
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## Lending Perspective

Setting up a watershape as  
a showplace for sculptures

## Dry-Deck Details

Keys to making these  
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An inside look at  
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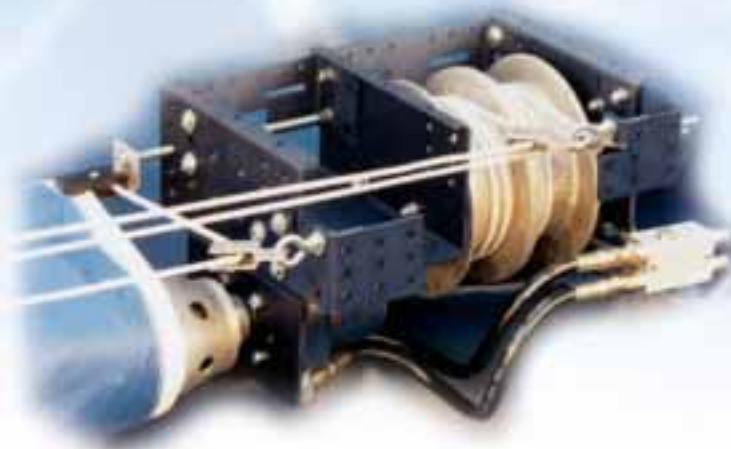
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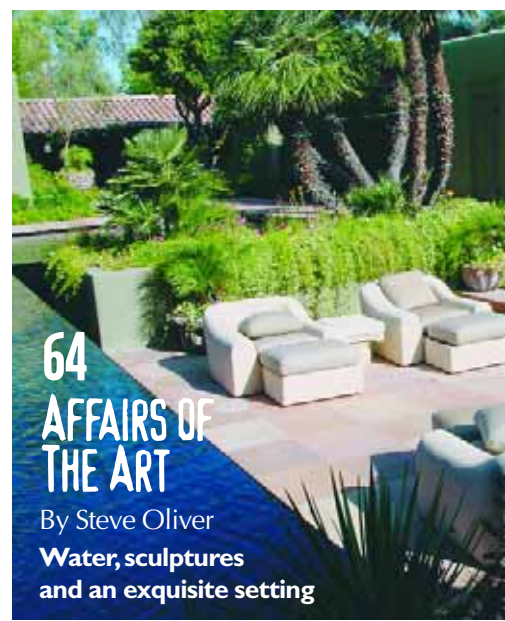
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**Photo courtesy Steve Oliver, Creative Water Concepts, Scottsdale, Ariz.**

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## Information Access

Coming up in New Orleans – first during the American Society of Landscape Architects' Expo (November 1-2) and later that same week at the International Pool & Spa Expo (November 5-6) – we'll be giving show attendees a special opportunity to meet some of *WaterShapes*' most distinguished contributors.

It's easy: They'll be right there in our booth for both events as part of what we're calling "Meet the Watershapers." As the name suggests, the program will give you a chance to stop by and chat with folks who've made this magazine the resource you've come to know and appreciate through the past five years.

Even a cursory glance at the program (seen on page 65 of this issue) shows that we've assembled a top-flight group of professionals – watershapers who represent the very best the trades have to offer. Each will be in our booth for an hour at a time, and they're all looking forward to speaking with anyone who cares to step up and say "hello."

So if you're planning on attending one or both events, check out the schedule and make a point to stop by: It's a great opportunity – and a sure way of helping us celebrate our Fifth Anniversary!

\*\*\*

We've added a new wrinkle to the way we offer you access to information from our growing ranks of advertisers: Starting with this issue on page 60, our Advertiser Index will include not only a Reader Service number, but also the phone numbers and web addresses for these key companies.

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Last but far from least: If you like controversy, you may want to check out "The Trouble with Liners" by Douglas Roth on page 48 of this issue. Roth is editor and publisher of *The Journal of Japanese Gardening* and, for years now, he has been arguing forcefully that rubber liners should not be used in high-quality naturalistic waterfeatures (including most Japanese-style gardens) because they are not designed to last indefinitely. Rather, he believes that these naturalistic watershapes should be made with gunite structures if they are to stand the test of time.

In publishing this piece, we know that many of you who use liners in streams and ponds may well disagree with Roth's position and wish to respond. Rest assured that all points of view will be aired in upcoming issues – and that we encourage your comments!



# WATERSHAPES

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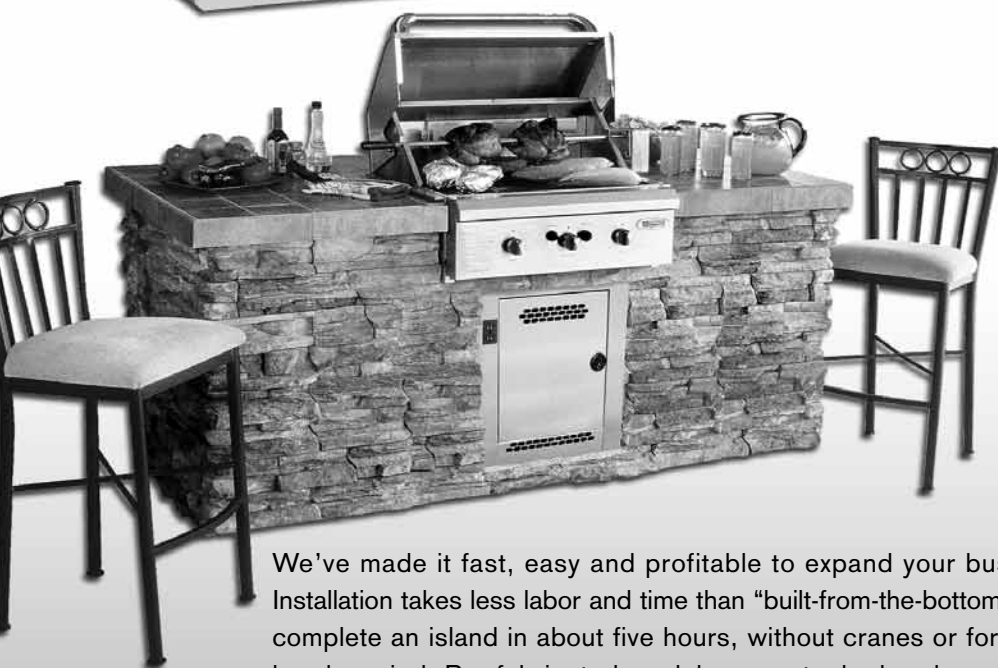
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**Jon Mitovich** is president and general manager of Roman Fountains, a designer and manufacturer of fountain-system packages and components based in Albuquerque, N.M. He graduated in 1976 from Southern Methodist University's Cox School of Business in Dallas and has participated in seminars on fountain and pool design at UCLA and Harvard's Graduate School of Design. Mitovich is a member of the American Society of Landscape Architects, the Construction Specifications Institute and the National Spa & Pool Institute. He has conducted classes and seminars on the fountain business and fountain design for various ASLA and NSPI chapters to help watershapers understand the origin, history and application of water in architectural environments. He also has written for a variety of trade publications, including *WaterShapes*.

**Douglas Roth** is publisher of *The Journal of Japanese Gardening*. Widely considered to be America's leading authority on Japanese pruning techniques, he is a graduate of the U.S. Naval Academy in Annapolis, Md., and served for six years as a naval officer in the Philippines, Hong Kong and Japan. He resigned his commission in 1988 and established *The Isshiki Zoo*, an English language school for children in Hayama, Japan. After passing the National Language test, he began a five-year gardening apprenticeship in Kamakura and became the first foreigner qualified to practice gardening in Japan. His company, Roth Tei-en, designs and maintains Japanese gardens throughout North America. He holds a degree in mechanical engineering and worked as an engineer while in the Navy. He is also a certified arborist and a member of



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the International Society of Arboriculture.

**John Marckx** is executive vice president of Oceanside Glasstile, a manufacturer based in Oceanside, Calif. A catalyst for growth since joining the firm in 1996, Marckx has responsibility for the company's manufacturing operations and sales/marketing programs as well as product development and new business ventures. Recipient of a bachelor's degree in literature and creative writing from the University of California at Santa Barbara, he also oversees the development of advanced glass-tile installation, testing and methods. **Scott Fleming** is director of technical services for Oceanside Glasstile. A licensed tile contractor in California and New Mexico for more than 20 years, he oversees the company's installation-training pro-

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**Steve Oliver** is owner of Creative Water Concepts, a Scottsdale, Ariz.-based firm that designs and builds ultra-high-end custom residential pools and spas. He started his career in the swimming pool business 32 years ago, working as a laborer in his hometown of Chicago. He steadily learned all aspects of pool and spa construction and eventually took to designing and overseeing his own projects from start to finish. Seeking a warmer climate, Oliver moved to the Phoenix area in the early 1980s and established his own firm there in 1986.

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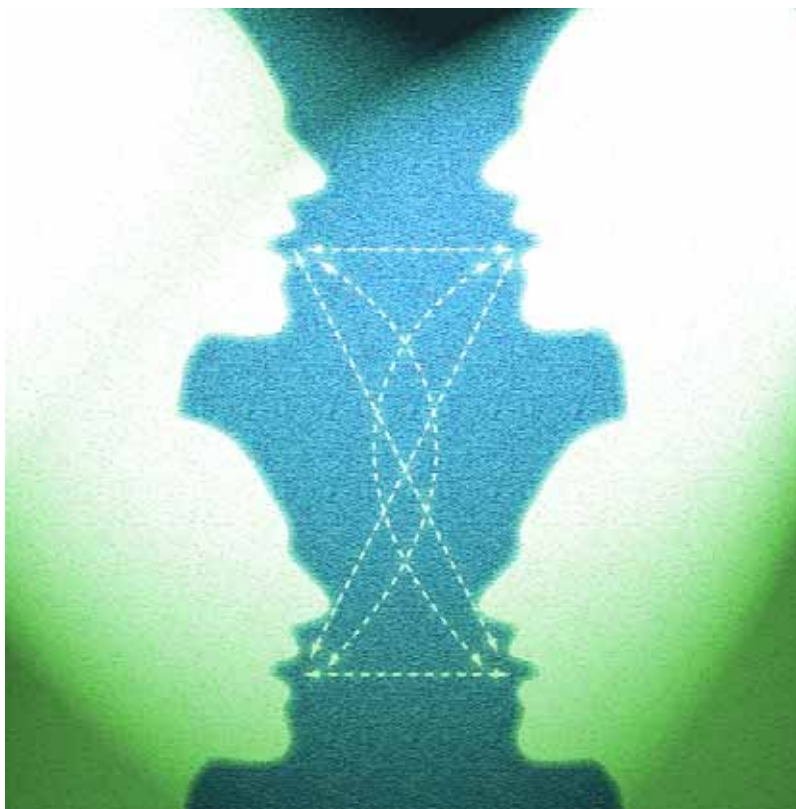
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## Fair Exchange

**D**uring the five years I've been writing this column for *WaterShapes*, I've been asked by a number of people how I manage to find the time to write this column, make presentations at trade shows, teach at Genesis 3 schools and conduct my own design/consulting business.

I get the distinct impression that these questions have much less to do with curiosity about the power of time management than with questions about why I'd even bother to extend my focus beyond my primary business of designing swimming pools. Whatever the intent, it's a valid question – and I'll do my best to answer it here.

The easy answer is that my desire to work in educational settings is not that different from my desire to act as a designer and consultant. The teaching gets me involved with a broader range of professional contacts than I'd have access to in any other way, and it also affords me the opportunity to learn from other people at the same time they learn something from me.

But the easy answer runs too quickly over the path that led me to operate the way I do, so let's dig a bit deeper.

### A PERSONAL ODYSSEY

As is the case with many people who get involved in the information-sharing business, it was someone else's interest in helping me along that first sent me down this path.

Back in 1984, I was running a pool retail/service business with a small con-

**IN MY OWN LITTLE CORNER OF THE WATERSHAPING UNIVERSE, COMMUNICATING AND SHARING ARE THE MEANS I USE TO HAVE A POSITIVE EFFECT ON AN INDUSTRY THAT HAS BEEN VERY GOOD TO ME.**

struction division. To keep my clients interested, I began publishing a newsletter, which was at that time the "latest thing" in building and maintaining customer loyalty.

One of my clients back then was Jack Gainey, who worked for WKAT, a Miami radio station. He told me how much he enjoyed the newsletter and asked me if I'd be interested in doing a radio show on swimming pools for his station. Not having the slightest clue what I might be getting myself into, I said, "Sure, why not?"

I saw Jack's offer as an opportunity to reach more people and share more information that would help me win and retain even more clients, so I went in for an interview at the station. (I recall thinking that I would be a guest on someone else's show in some sort of special segment about pools.) After a while, I did a brief audition tape. When I came back for a second meeting, the station's owner, Howard Premer, reviewed the tape and said, "It sounds good. Let's start this Saturday."

I asked what he meant by that exactly, at which point he informed me that they wanted me to host a weekly 30-minute radio show about swimming pools starting at 8:30 a.m. every Saturday. When I asked who was going to be on the show, he said, "You."

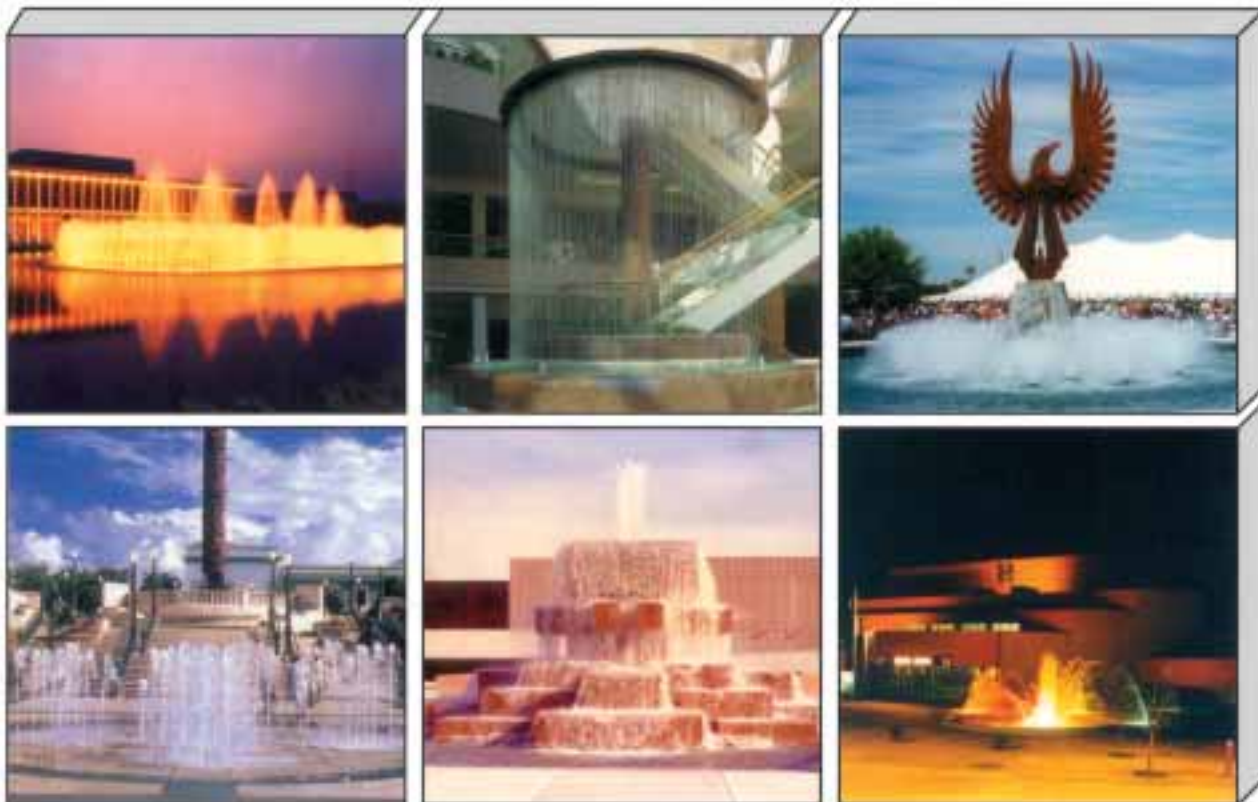
Once I got over my shock, I began preparing myself for "All About Pools and Spas with Brian Van Bower." To say that I was nervous when the "On Air" light was lit for the first time would be something of an understatement. I'd called everyone I knew and asked them call in, all the while wondering how I could possibly fill 30 minutes of airtime.

Needless to say, I made it through that first day and kept on hosting the show through the next four years. I worked with Premer, who became my mentor and eventually a friend, and with a producer, a former on-air personality who helped me through the mechanics and fine point of being on radio.

As I worked on the show, I soon started to ap-

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precipitate a wonderful and unexpected benefit: I had branched out of my regular, workaday life and had begun to research topics I wouldn't have dreamed of considering otherwise – such interesting pursuits as synchronized swimming, party planning around pools, competitive swimming and diving and the health benefits of aquatic activities.

## OPENING DOORS

One of these radio-show discussions led me to deeper study of water exercise and therapy, and for a time I worked seriously in the hydrotherapy business. And as I've mentioned in a couple of past columns, my experience also led me to co-host a radio show on food and wine with my brother, Guy Bower –

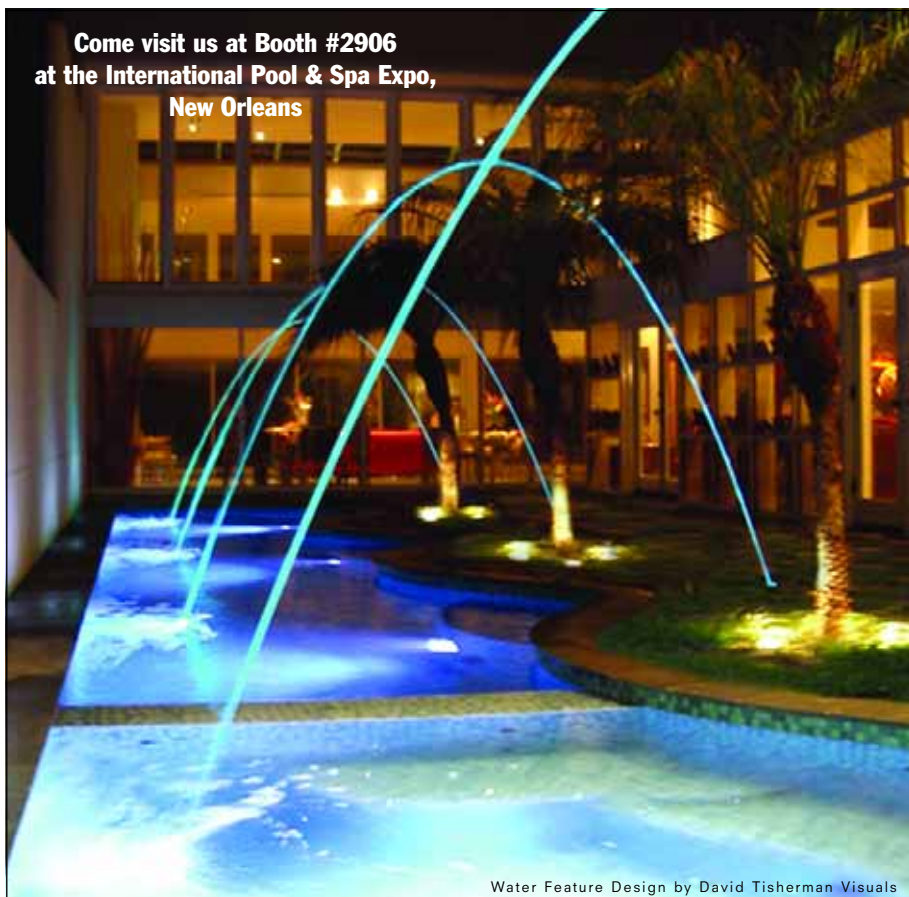
which led me in turn to my continuing involvement in the wonderful world of the culinary arts.

All of this started because someone perceived that I had ability and was willing to help me. In all my radio work, both Jack Gainey and Howard Premer coached me and taught me what communicating with people was really all about. More important, they helped me understand what it *really* meant to share what I know with other people.

A great byproduct of my work on both shows was meeting all sorts of interesting people. On the pool show, for example, I spoke with Olympic swimmers, fitness experts, authors, pool contractors and other industry professionals of all sorts, and we talked about everything from water ballet and flotation devices to more technical subjects such as hydraulics, materials, water chemistry, fountains and water features. With the food and wine show, my brother and I had the pleasure of working with a diverse and wonderful set of people, including many winemakers and famous chefs.

Continued on page 14

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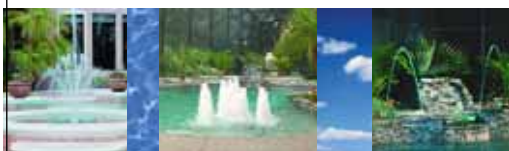
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## A PHRASE TO FORGET

When I ask someone how they're doing and the response is, "Oh, you know – same old same old," it really gets me down: If there is a more dreary, dreadful, dismal response possible in the English language, then I've yet to hear it!

Even said as a sort of vague and muttered jest, I can't imagine anything more depressing than the notion that each day might be exactly the same as the last. My heart goes out to those who actually feel that way, because it tells everyone that life is just passing them by without the benefit or reward of new experiences.

I don't mean to get too wrapped around the axle about such a cliché catch phrase, but if you find yourself honestly feeling that way, it's time to try something new!

–B.V.B.

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Doing that first radio show set me on a path that involves communicating what I know to others. That's important, but while the on-air work was great fun and often very exciting, what mattered most was that it took me beyond the confines of the life I had been leading. Had I simply stayed in my comfort zone, running a company with 20 em-

ployees, a vast realm of information and experiences would probably still be foreign to me.

I see my work on this column and all the teaching activities I pursue as extensions of a career-long exploration of sharing ideas and information and learning things as a result of that process. It's been rewarding in a great many ways, and now,

as a consultant, that process of give and take has come to define what most would describe as my primary business.

As I've thought about this, it strikes me as well that this process of teaching and learning goes on with a huge number of people in their daily professional and personal lives. It's a matter of how we approach what we do. In addition, it's a matter of how we define what our "primary" business is.

For me, in other words, everything has become integrated and seamless: Writing this column is the same as consulting is the same as teaching, and all of them are what I see collectively as my function, my "job," if that's how it should be described.

## WE'RE ALL LEARNING

In my own little corner of the water-shaping universe, communicating and sharing are the means I use to have a positive effect on an industry that has been very good to me. You hear that sentiment a lot from people who contribute their time to good causes, and in my case the desire to give something back is important for all sorts of reasons, most having to do with what I get in exchange.

The rewards I receive as I "give something back" are often small, and sometimes they're not readily apparent. Perhaps I'll share information with a contractor in such a way that, for example, he or she comes to appreciate the value of working with detailed hydraulic designs and see them as a way to increase the value and reliability of the work he or she does. In this case, I benefit from working in an industry where contractors perform to higher standards – and *that's* good for everyone in the industry.

The rewards I get from writing this column are similarly diverse and often quite subtle. The feedback I receive – including brief e-mails and phone messages – is never voluminous and infrequently profound, but it comes from real people who've taken the time to get in touch with me, and I always find it affirming and informative. I take it as confirmation that what I'm doing is meaningful and helpful to others; I also appreciate the fact that I learn something from

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everyone with whom I come in contact.

I'll go so far as to say that this process of exchange – in the context of projects, writing or teaching – proves over and over again to be very much its own reward. I act as a mentor to others in the way others have served (and still serve) as mine.

To be sure, the concept of mentoring suffers because of an antiquated image of the apprentice slaving away at the foot of the master. In using the term, I'm talking about mentoring as a positive, two-way exercise that has tremendous value for both participants. In this way, mentoring itself is woven through the fabric of our everyday lives, much more a function of attitude and approach than a formal program or policy.

As a consultant, I derive great satisfaction from knowing that clients hire me to help them do something they didn't think they could do on their own. When the process goes through its various steps and in fact results in a beautiful water-shape, a satisfied client and another contractor or two who have learned a little bit more about some aspect of their own work, then the rewards are such that money and commercial interest is only one among many reasons I get involved.

It's a fact of life: No matter who you are and where you are in your career, there are always going to be people who know more than you as well as those who know less than you. Yes, I enjoy mentoring and getting to share what I know with others and influencing the way they do things. Equal to that in my mind is the thought that, to be a good teacher, you must also be a good student.

### STRETCHING INTO THE AIR

We recently received a letter from a Genesis 3 student, a young pool builder from Port Charlotte, Fla., named Colin McTigue. After attending a Level 1 school last year, he felt encouraged to attempt his first-ever vanishing-edge design.

He sent a picture of the pool (which won two local awards), and it looked beautiful. He wrote that we'd given him the confidence to proceed, and I felt good about that because it helped me see that all the work we'd put into the vanishing-edge portion of our program was panning out the way we wanted. The men-

**IT'S A FACT OF LIFE: NO MATTER  
WHO YOU ARE AND WHERE YOU ARE IN  
YOUR CAREER, THERE ARE ALWAYS  
GOING TO BE PEOPLE WHO KNOW  
MORE THAN YOU AS WELL AS  
THOSE WHO KNOW LESS THAN YOU.**

toring had come full circle, with us being encouraged to carry on for future classes and students.

In other words, the exchange of technical information in an educational setting had benefited everyone involved, not just the student. I see that same two-way street in the other professional activities I pursue, from consulting to writing this column. The key in most any context is recognizing, whether you're the sender or receiver of information, that information has value, that more of it is always needed and that discovering new things is its own reward.

For me, these exchanges of information are now part and parcel of my business life and of every serious and not-so-serious avocation I pursue. The value of teaching and learning is so profound that I've come to believe that it really does extend into everyday life and that, no matter our role in society, we all have the opportunity to participate in the process. We do so with our employees, clients, friends, family and children.

So, to double back and answer the initial question about why I write this column, let me say that I do so because I know the process of learning and communicating will always lead me somewhere I've never been before. And I'm honored that you've helped me on my way. **WS**

**Brian Van Bower** runs Aquatic Consultants and is a partner in Van Bower & Wiren, a pool-construction firm in Miami. He is also a co-founder of Genesis 3, A 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](mailto:bvanbower@aol.com).

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## Lavender

Few plants have been written about, lingered over and so passionately associated with fragrance, healing and serenity as lavender. Beyond stunning beauty of the sort seen in the vast purple fields of Provence in France, lavender has spread worldwide, leaving a trail of exquisite aroma and touching everything from our imaginations to our health.

Some say lavender has pain-killing, antiseptic and skin-rejuvenating properties and that it's great for toning skin, fighting acne and soothing burns and cuts. This versatile plant is used as well to infuse perfumes, oils and soaps, and I know from my own experience that it makes a great marinade for lamb and adds a wonderful accent to ice cream. It's also considered to be one of the most calming of the essential oils and is used particularly in treating insomnia and anxiety.

Though I personally cannot vouch for these interesting qualities (beyond the culinary ones), I do know that lavender is among the most useful of all botanical entities we have at our disposal. There are so many different varieties that you can almost always find one that will fit into a landscape design.

### WORKING WITH LAVENDER

The great thing about lavender and watershapes is the fact that these plants typically have neat, clean growth habits that make most of the varieties an easy choice for planting near water.

The flowers mostly stay attached to the plant at the end of their long, slender stalks, then dry on the plant – so there's no debris to fall into the water. But an attentive homeowner won't let things go quite so far and will definitely harvest those flowers: This is the part of the plant that carries most of the fragrance, and cut stalks will hold their aroma for years. I have some, for instance, that I cut seven years ago, and there's still a distinctive fragrance when I crush the flowers between my fingers.

But urge your clients to pay attention to the rest of the plant, because I've found that most lavenders have fragrant leaves as well. Check it out for yourself: When searching through the nursery, you'll get an aromatic surprise when you rub lavender leaves and flowers between your fingers.

With their light grey-green to completely grey foliage, lavender plants are as good in the garden as they are in the medicine chest or kitchen. The varieties with which I have the most experience range from one-foot-diameter mounds (among dwarf selections) up to about four feet in diameter. They range in form from neat, compact, rounded mounds to soft, more free-form, irregular shapes. Some have a feathery appearance, while others are more upright. Most prefer full sun and moderate watering, but I've also had some success when planting them in partial shade.

All that variety means you can just about always find one that's right for most landscape styles. For example, I like to use French lavender (*lavandula dentata*) in natural designs, while English lavender (*lavandula angustifolia*) works better for me in contemporary or more formal planting palettes.

A word of caution when it comes to terminology: I was in Provence a few years ago and innocently referred to the plants I saw in the fields as "English" lavender, because that is what we call it in the United States. The French, of course, call it "French" lavender and chastised me for being so misguided. Ever since, I've done my diplomatic best to refer to both varieties using only botanical names!

### ONLY THE BEST

*Sunset Western Garden Book* lists about a dozen different species of lavender. Of those, I typically choose among four and see a fifth variety used extensively in southern California gardens that I refuse to select (more on that

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below). These are:

► **Lavandula angustifolia (English lavender)**. Many varieties are covered by this name, each with a different size, a slightly different fragrance (obvious only to the trained nose) and slightly different growth habits. Typically, they all have fragrant leaves and upright growth habits,



with flowers borne on longer stalks than is the case for other lavenders. My particular favorites: 'Hidcote' (Dwarf English Lavender) and the 'Munstead' varieties.



► **Lavandula dentata (French lavender)**. This plant is named "dentata" because of the tooth-edged shape of its fragrant leaves. It tends to be an irregular plant, and I've used it more than most other lavenders through the years because it makes a great filler in the middle of a border in addition to providing nice color contrasts against green foliage with its greyer tones. Maintenance can be an issue, because these plants require annual shaping and removal of dead wood to ensure long-term attractiveness.

► **Lavandula x intermedia**. These plants are hybrids of the angustifolias and latifolias and are most similar in appearance to the angustifolias, but they tend to be more fragrant and larger than the true angustifolias. I particularly like the "Grosso" variety.



► **Lavandula stoechas (Spanish lavender)**. I use these plants, but I must confess to having limited success with them. For reasons I can't pinpoint, many of the plants I've used have tended to stop flowering – and it's the unusual flowers that make them a client favorite. The plant itself falls somewhere between the feathery look of dentata and the upright appearance of angustifolia, and the flowers are indeed beautiful, with a deep-purple

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color and a capsule-like shape topped with tiny flower petals that look almost like wings – or like a purple bee on top of the stalk. Give it a try, but don't overbuy!

► **Lavandula multifida.** I may come across as a plant snob, but I refuse to plant this variety, which does well in my area and is a staple at most nurseries.

Personally, I think this variety gives lavender a bad name. Yes, it has beautiful, feathery leaves topped by vibrant, deep-purple flower stalks, but, in a word, it *stinks*.

My *Sunset* guide says it has a "strong, earthy, medicinal scent," but I beg to differ – and I simply don't believe in giving people lavender that doesn't smell sensational. I've also found that this va-

riety is generally short-lived and gets quite woody underneath. Frankly, I prefer other species, but I urge you to take the smell test – and to let me know if you don't agree!

## BACK TO THE KITCHEN

When I talk to my clients about lavender, I usually mention the fact that they can find lavender soaps, perfumes, essential oils and the like at most beauty-supply shops and places where essential oils are sold. I also mention that it's the key flavoring agent in wonderful honey from France – difficult to find here but much prized in my kitchen.

Then there's the fact that lavender can be used to make a most wonderful marinade for lamb. Just take a large Ziploc bag, add olive oil, as many lavender stalks as you want, salt, pepper, garlic, cayenne pepper and a little Dijon mustard, mixing well. Apply the marinade to a butterflied leg of lamb for at least one hour (or, better still, overnight). The result is a flavor like none you've ever tasted.

I find myself using this "informative" approach more and more often in discussing these plants with my clients, especially when I know they're into cooking or when a backyard watershaping project will be including a new outdoor kitchen. Sometimes these fun and interesting possibilities can nudge them in the right direction.

And don't let them forget that lavender can be added to a warm vanilla ice cream mixture before it's placed in an ice cream freezer. It adds a unique flavor that guests will be hard pressed to identify, but one that will surprise them pleasantly once the secret ingredient is divulged! **WS**

**Stephanie Rose** runs Stephanie Rose Landscape Design in Encino, Calif. A specialist in residential garden design, her projects often include collaboration with custom pool builders. If you have a specific question about landscaping (or simply want to exchange ideas), e-mail her at [sroseld@earthlink.net](mailto:sroseld@earthlink.net). She also can be seen this season in six new episodes of "The Surprise Gardener," airing Tuesday evenings on HGTV.



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(mounted on the  
Filter Pump riser  
Discharge Pipe).  
Facing rearward.  
Filter Pump *behind*  
*and perpendicular*  
*to front of Pad.*  
**Sand Tan=====**  
**FilterBackwash (Brown+White)**  
**Warm Brown=====**  
**Dirty Water**  
Pure White=====  
Filtered Water

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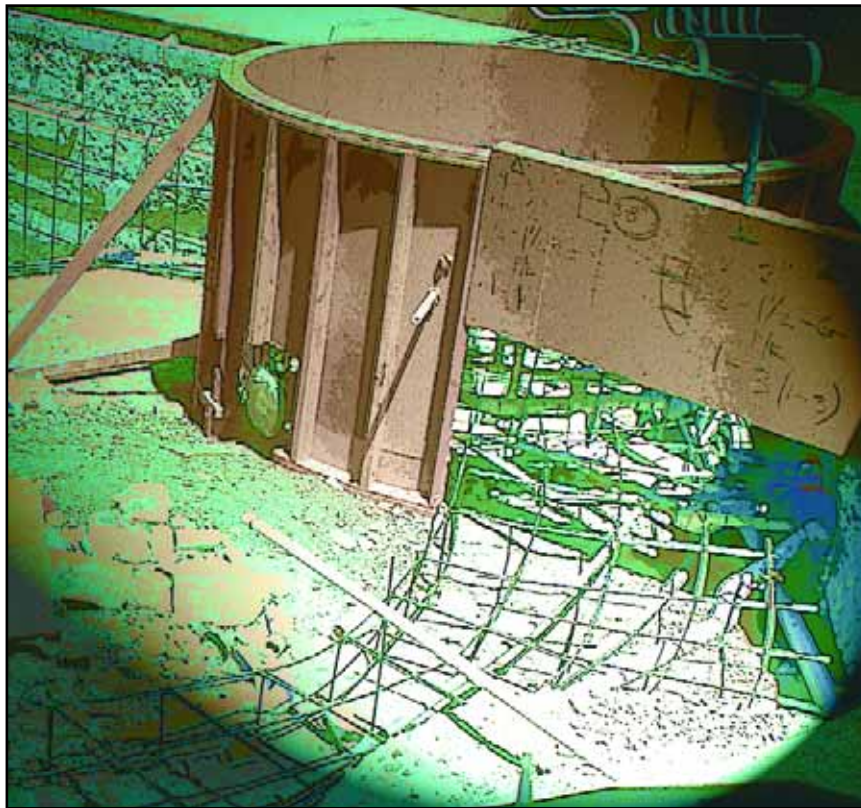


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## Out, Back and Under

It's not too unusual to replace all of the plumbing, equipment and electrical lines as part of a swimming pool renovation project. It's quite another story, however, when you need to make sure all of it happens without disrupting the deck surrounding the vessel.

As mentioned in my last two "Details," that's precisely what we've been asked to do in renovating a 70-year-old pool in the historic Los Feliz neighborhood of Los Angeles. The presence of a beautiful, valuable, imported limestone deck means that we've had to do all of our work from inside the pool, working our way to daylight and equipment vaults by cutting cores in the diamond-hard shell.

Burrowing beneath the deck involved some risks, because we had no idea what we might run into along some of the vectors we'd chosen. But we proved to be lucky, and the holes we cut to the existing equipment vault and to a nearby planter have enabled us to run new lines for all of the spa systems, new returns and drains for the pool, electrical runs for a new set of lights in the pool and lines for a low-voltage remote control system.

At this writing, the conduits through the cores have all been set, a smaller spa has been formed – and we're now working out all of the details of setting up the new plumbing and electrical systems for both pool and spa.

BURROWING BENEATH THE DECK INVOLVED SOME RISKS, BECAUSE WE HAD NO IDEA WHAT WE MIGHT RUN INTO ALONG SOME OF THE VECTORS WE'D CHOSEN.

### THREE THE HARD WAY

The basic game plan encompasses three equipment locations outside the pool.

The first is the existing equipment room just mentioned. It's located adjacent to the deep end of the pool – a sub-grade room that shares a wall with the shell and gives us a good amount of space in which to maneuver. The second is in a small planter about ten feet away from the spa – the only patch of open space anywhere on the pool deck. The third is in a small, subgrade utility space about 15 feet from the shallow end of the pool.

What will make this all work is the fact that the renovation involves adding new features to the inside of the pool – not just the spa, but also a bench that runs the length of the side of the pool next to the spa, revised steps in the shallow end and a floor raised 12 inches above the existing deep end – that will enable us to hide all of the conduits and lines we're setting up to drive the new pool/spa systems. These new features were developed and planned with detailed drawings and discussed in an extensive series of design meetings.

The first equipment area is the existing subgrade vault where the pool's old pump, heater and filter were located. As luck would have it, the floor of the equipment room is roughly even with the bottom of the pool. This meant that we could core the concrete – specifically, three slightly overlapping eight-inch holes – at the deepest available spot in the shell and directly reach the equipment room with new plumbing and electrical lines.

This room will still be used for all the pri-





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mary pool systems – a new pump, filter and heater made by Jandy – along with Jandy's One-Touch remote-control unit. All lines will enter the space through the cores and will be buried under the new floor we'll put in the pool's deep end. Some of the spa's lines will be carried within the steel and gunite of the new bench we'll run along the wall of the pool. The bench also will house two of the four lights we'll put in to provide as even illumination as possible along the length of the pool. (A third light will be placed in the dam wall, with the fourth inside the spa.)

The planter near the spa – equipment



The new spa will be smaller than the one we'd originally framed, but it will be tucked into the same corner in the shallow end of the pool. The bench that will now run along the side of the pool beyond the new spa is there for practical as well as functional reasons: It carries key plumbing lines from the main equipment vault as well as lines for the remote-control system.

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area #2 – will hold the spa's booster pump, the electrical J-boxes for the lights and the loop for the blower, which needed to be elevated above the level of the spa. The cores we cut near the base of the spa will handle the traffic in suction and return lines. The blower loop runs from the spa, through the core, under the deck, to the planter, back under the deck, through the core then out of the pool through a line and another core that will be hidden by the new shallow-end steps.

To set up the third equipment area in the subgrade utility room, we cut a core through a nearby retaining wall and ran



The main equipment space (shown here with old equipment but new plumbing), is adjacent to the pool and was reached by coring through the common wall. The cores and associated lines will be hidden in the pool's newly raised floor.

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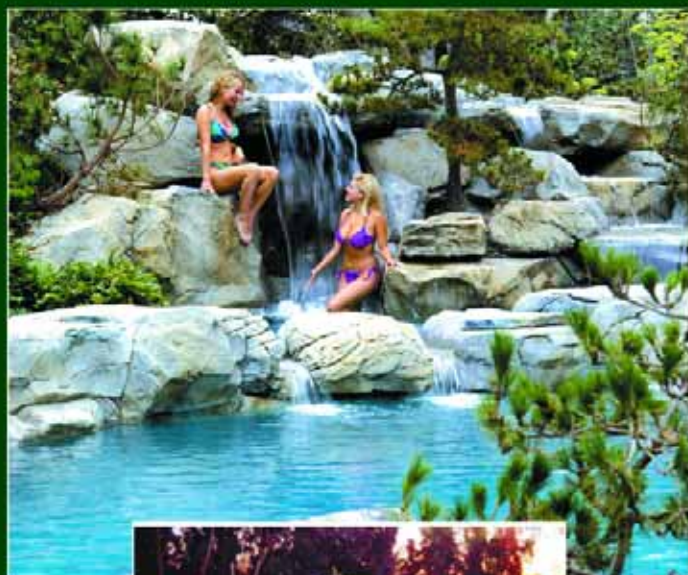
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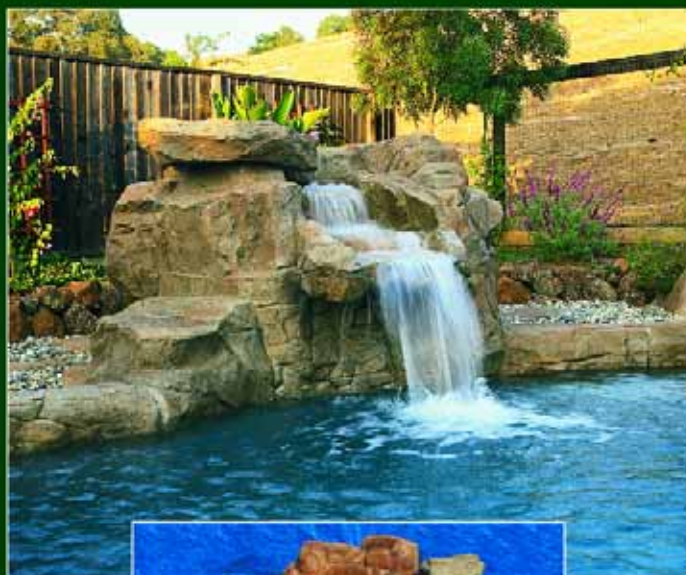
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it to meet the core in the pool's shallow end. We'll box in the cored area, tie its appearance into a wall adjacent to the utility room, and set up the blowers in a space where they'll never be heard. Lines will run through the hole in the wall, under the deck, over to the pool, through the shallow-end steps and into the spa.

## NOT SO TOUGH

There's a lot going on here, but once access was set up by cutting the cores and inserting the sleeves for our lines, the fact is that it became a reasonably straightforward matter of following a schematic we'd worked out for the plumbing and conduits.

What made this come together is the

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fact that I am a designer who knows how to build and can communicate to sub-contractors about what needs to be done. Perhaps someday, the watershaping industry will be filled with designers who know about construction and builders who know about design. In the meantime, it's tough enough to find people who can read and follow plans.

The key to all of this, not surprisingly, was having thought everything through ahead of time – all of the system needs and all of the physical issues of the layout in addition to setting up some extra sleeves for contingencies – and having worked out all of the details for the plumbing and electrical subcontractors.

The main task was sensibly laying out all of the new lines and conduits within the available space created by the raised floor and bench and the new spa, specifying the right locations for the lighting niches and, most important of all, figuring out plumbing runs that would avoid hydraulically costly 90-degree turns.

That last point is major: Just because we're running plumbing and setting up the equipment in unconventional ways because of site constraints offers no relief from the need to create hydraulic and heating systems that are reliable and as energy-efficient as possible.

Likewise, adding structures and new gunite to the inside of an existing pool leaves us no wiggle room at all when it comes to constructing a monolithic vessel that will continue to endure the test of time. This is why we doweled in new structural steel to support the additional gunite in every area of the pool, including the new steps in the shallow end.

The new concrete is inevitably going

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to do what *all* concrete always does, expanding and contracting over time. Without structural mats to support it, the added concrete would display all sorts of problems where new work butts up against old. With support and adequate preparation of the old surface for a good mechanical bond, we set up a renovated shell that will be as stable as it can possibly be.

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This leads me to another issue that bears mentioning: It blows my mind when I see elements such as benches and steps being set up without any steel in them. Steel itself is cheap, and setting it up isn't a big-ticket item. The way I see it, steel is absolutely essential – and cheap insurance against failure!

And don't even get me started on contractors who use or permit the use of "rebound" in setting up steps and other pool contours. It's worthless garbage and should be thrown away!

Misinformation about concrete



A second equipment space is in a planter a few feet from the spa – the only open space in the whole limestone deck. This will host the spa's booster pump as well as J-boxes for the lights and is a pass-through and looping point for the blower system.

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The third equipment area is below the deck near the shallow end of the pool. We cored through the wall and aligned the hole with a corresponding shallow-end core. The piping will be boxed in and will run to a blower in the small utility room.

abounds these days. And unfortunately, it seems that some gunite contractors are part of the problem rather than the solution when it comes to helping pool contractors understand the material. I've actually spoken with a gunite contractor who told me, point blank, that rebound was perfectly acceptable not only in steps and benches, but also in floors and walls. He also informed me that there is no need to wet gunite as it cures, no need to use steel in steps or benches and that the material doesn't shrink or expand – steel or no steel.

I'm sorry, but that's mind-boggling nonsense from someone who should know better. In this project, we've headed in the opposite direction and made certain everything is up to snuff by providing an engineered steel cage, reforming the benches around reinforcing steel and shooting everything to the highest standards.

After that, we'll hydrate the pool and let it cure for 14 days before doing anything more – in this case, before lining the surface with all of the new tile and gorgeous materials that will follow.

Next, we'll talk about waterproofing, re-sealing the cores and, finally, applying the tile. **WS**

*David Tisherman is the principal in two design/construction firms: David Tisherman's Visuals of Manhattan Beach, Calif., and Liquid Design of Cherry Hill, N.J. He is also co-founder and principal instructor for Genesis 3, A Design Group, which offers education aimed at top-of-the-line performance in aquatic design and construction.*

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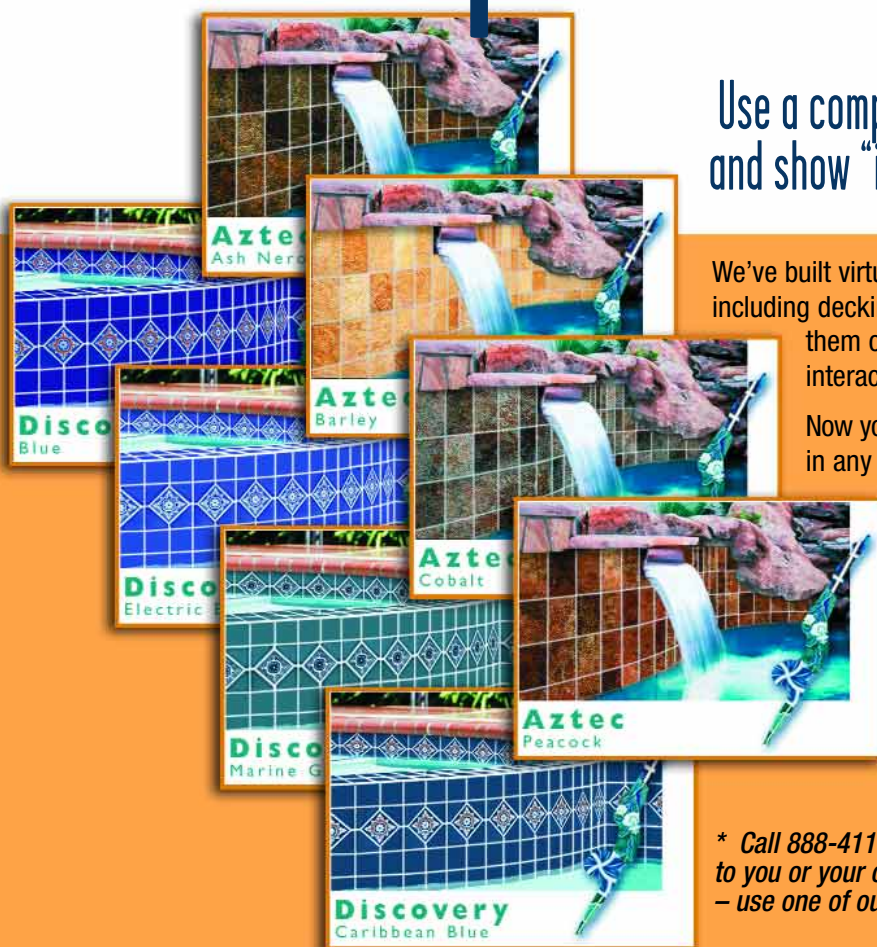
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Saturday, November 1

11 am-12 noon

**Brian Van Bower**

*WaterShapes columnist ("Aqua Culture"); swimming pool design consultant based in south Florida; co-founder, Genesis 3 Design Group*

1:30-2:30 pm

**Skip Phillips**

*Author of five WaterShapes articles, including an expert's guide to managing water in transit; designer/builder in southern California; Genesis 3 co-founder*

Sunday, November 2

10:15-11:15 am

**Paul Benedetti**

*Author of three WaterShapes articles, including "Strands of Light" and "Kitchens of Distinction"; pool designer/builder based in northern California*

11:30 am-12:30 pm

**David Tisherman**

*WaterShapes columnist ("Details"); author of ten articles on his projects; designer/builder with offices in California and New Jersey; co-founder of Genesis 3*

1:30-2:30 pm

**Randy & Martha Beard**

*Authors of two WaterShapes articles on the relationship between expert builders and top designers; watershape builders in southern California*

## ... and during the International Pool & Spa Expo

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11 am-12 noon

**Mike Farley**

*WaterShapes columnist ("Book Notes"); co-author of an article on spa edges; landscape architect/pool designer in Texas*

1-2 pm

**Brian Van Bower**

*WaterShapes columnist ("Aqua Culture"); swimming pool design consultant based in south Florida; co-founder, Genesis 3 Design Group*

3-4 pm

**Skip Phillips**

*Author of five WaterShapes articles, including an expert's guide to managing water in transit; designer/builder in southern California; Genesis 3 co-founder*

Thursday, November 6

11 am-12 noon

**Mike Farley**

*WaterShapes columnist ("Book Notes"); co-author of an article on spa edges; landscape architect/pool designer in Texas*

1:30-2:30 pm

**Paul Benedetti**

*Author of three WaterShapes articles, including "Strands of Light" and "Kitchens of Distinction"; pool designer/builder based in northern California*

3-4 pm

**Randy & Martha Beard**

*Authors of two WaterShapes articles on the relationship between expert builders and top designers; watershape builders in southern California*



Of all watershapes now being installed in public settings, dry-deck fountains are among the most popular – and for good reason, says fountain expert Jon Mitovich. Their simplicity of appearance, dynamic interactive quality, compelling accessibility and basic safety have all increased the demand for these displays, he says, noting that they've quickly gone from novelty status to become a dominant strain in the evolution of contemporary waterfeatures.







# Curbless Appeal

By Jon Mitovich

WATERSHAPES • OCTOBER 2003

Just as with species in the animal kingdom, architectural construction styles and techniques evolve over time, adapting to changes in the environment.

In the case of fountains, these evolutionary transitions have been both complex and indicative of broader trends. Ancient wellsprings, for example, eventually gave way to decorative fountains with intricately carved stone sculptures. More recently, monolithic block, walled and stepped fountain forms have held sway.

It's not much of a stretch to say that the latest significant "mutation" in this remarkable lineage is the dry-deck fountain: At a time when open space is at a premium and the public is being invited as never before to interact and participate in the architectural landscape, dry-deck fountains may well be the ultimate utilitarian medium and expression of the fountain designer's art.

These watershapes allow for efficient use of space (a dry-deck fountain by day, for example, can be a multi-use space by night), minimize tripping hazards and open sight lines – and thereby put surrounding landscape forms and features on display. And the technology and mechanisms that make them work are hidden, which takes what might be an eyesore and turns it into a vandal- and theft-resistant aesthetic plus.

This is also a multi-use, multi-function watershape that transcends "attractive nuisance" liability issues, addresses requirements of the Americans with Disabilities Act (ADA) and offers rich aesthetic possibilities with more than a few advantages. It is, it seems, perfectly adapted to modern spaces and modern needs.

## Modern Forms

Of course, we talk about curbless, programmable, dry-deck fountains as novelties, but as is true of so many modern watershaping wonders, they actually follow in the footsteps of a much older precedent.

In the early 1600s, a designer by the name of Santino Solari set up an interactive fountain using what can only be seen as the curbless dry-deck principle for Marcus Sitticus von Hohenems at the prince-archbishop's country retreat in Salzburg, Austria. Spray nozzles were positioned under the floor





**The first known dry-deck fountain was developed in the early 1600s by Santino Solari for the delight and entertainment of the mealtime guests of an Austrian aristocrat. Once everyone was seated for an *al fresco* repast, jets of water rose from behind the seats.**

surrounding the archbishop's dining table. Once guests were seated and dinner was under way, the fountain would be activated by the host to liven up the party – and this was 400 years ago!

Today's dry-deck fountains are driven by pumps rather than gravity, and the programming technology now being applied lends them far greater variety and more compelling aesthetics, so it is unlikely that today's dry-deck fountains will be the evolutionary dead end Solari's original turned out to be. In fact, dry-deck waterfeatures are becoming ever more common and are being designed and installed in a broadening range of settings that would make Maestro Solari very proud indeed.

Things have developed so quickly, in

fact, that there are now two distinct technological subspecies under the heading of dry-deck fountains:

- The first subspecies uses a sunken reservoir or a vessel covered by decking material that is supported from below using a series of stanchions or supports – pylons of concrete or stainless steel, adjustable supports, fiberglass structural beams and gratings or a combination of these supportive elements (Figure 1).

Traditional fountain nozzles and lighting apparatus are generally applied when this approach is used. The reservoir below the pavers holds the mechanical and electrical devices that operate the fountain, while nozzles, valves, overflow drains, level controls, suction/return fittings, filtration

equipment, lighting fixtures and junction boxes are all located below the decking and are accessed by removing whatever paving system is supported above the reservoir.

- The other subspecies uses a surge/ storage-tank system. Typically, the tank is set somewhere between the fountain area and the equipment room or vault area, but sometimes it's centered beneath the fountain (Figure 2). Here, the spray nozzles (and lighting system, if used) are specialized to the extent that they're designed for direct burial and are set flush into the hard deck.

The sprayed water is captured by a drainage system – either a central drain or a perimeter system – and then returned by gravity to the surge/storage tank. The pump system draws water from the tank





and recirculates it once it has been filtered and treated.

Each of these systems has its distinct place in the world, but they can still be discussed generally (as below) as variants on the same set of design, engineering and construction principles. Basically, however, dry-deck fountains equipped with surge tanks and remote equipment sets have a number of advantages over their sunken-reservoir cousins, as indicated in the sidebar on page 44.

### Common Rules

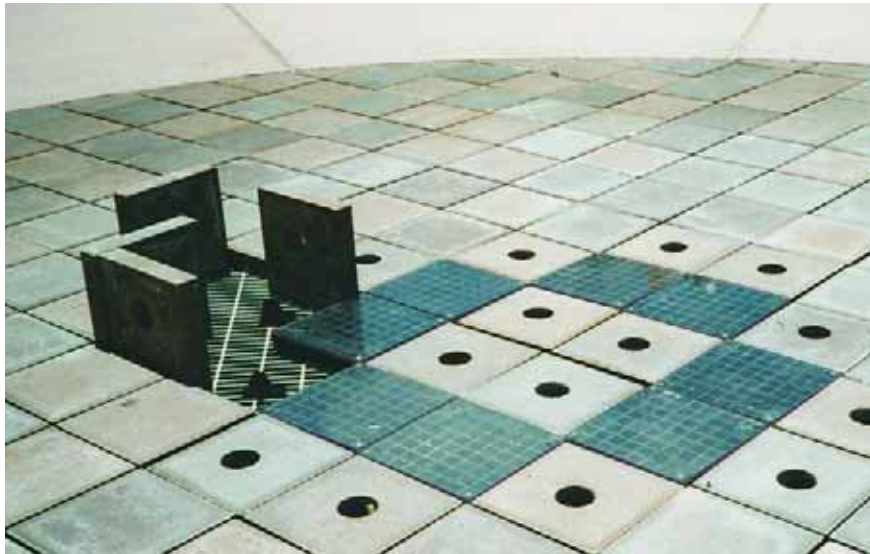
The discussion of advantages one approach has over the other has been set apart from the main text because, regardless of driving structure, all dry-deck fountains feature basic elements that must be managed to ensure successful results:

► **Fountain footprint area:** All nozzles splash and are susceptible to wind drift, so as a rule you can expect to wet a radius around each nozzle roughly equal to its spray height. Thus, a center nozzle spraying to a height of 25 feet can be expected to have a “fountain footprint” of 50 feet.

Nozzles on the perimeter of the footprint need to be accounted for in the same way, meaning a perimeter nozzle that sprays to six feet high needs an additional six-foot footprint moving outward from the fountain’s center to handle the splash. This rule applies in both calm and windy conditions, with the added proviso that, in windy areas, a sensor should be incorporated into the system to lower the fountain’s spray heights or shut the system down completely until wind conditions permit operation within acceptable splash parameters.

► **Drainage and pitch:** The fountain designer’s best intentions can be dashed without proper planning of drainage slopes. Nozzle spray must be captured, managed and re-routed in accordance with the fountain footprint mentioned above.

With dry-deck systems, gaps in the paver materials return most of the nozzle discharge to the pool below. But that area is seldom as extensive as the fountain footprint, which means that the area beyond the paver area should be pitched slightly back toward the fountain footprint or, alternatively, that a perimeter trench drain that fully encompasses the fountain footprint must be incorporated



Here’s an example of concrete landscape pavers set over stainless support grating.



In this case, a colored-concrete deck has been used in a system using storage/surge tank construction.



Here, poured-in-place concrete bands have been set up around a central return grate.





**This project, shown dry and in operation, used a sandstone veneer material around a central storage/surge tank.**







For this fountain, custom cast-stone pavers have been installed atop stainless steel supports.



In this project, custom brick pavers were affixed to fiberglass supports.

to intercept stray water.

Gravity is a wonderful ally here and will cause water to seek the lowest elevation. All you need to do is design the site to manage the run-off and return it to the fountain basin or storage tank.

► **Surface Gapping:** Dictated by practical and safety concerns under the ADA (Title 27), surface gapping is also a key design feature in dry-deck fountains that is

related to the amount of water that must be returned to the recirculating system. Gaps in the surface material should not be any wider than a half inch in any location – a width calculated to keep pedestrians from wedging a wheel, heel, toe or finger in the gap – and are in fact usually held to a maximum of 3/8 of an inch.

It is important in overall system design to determine the total amount of “open

gap area” that will be needed for the system to handle the operating return volume while avoiding any deck flooding. It doesn’t take much to understand how dysfunctional a fountain discharging 1000 gallons of water per minute would be with a deck system that lacks the drainage capacity (that is, adequate spacing between pavers) to transfer that flow.

► **Support and access of surface material:** Understand the requirements and limitations of your material. Granite pavers three inches thick and 24 inches square, for example, will weigh in at 300 pounds each and will require a different support-engineering approach than will lightweight rubberized decking. You’ll also need to distinguish your design approach if the deck will be expected to support periodic vehicular weight rather than that of the occasional adventurous pedestrian.

As a rule, there simply are no short cuts in these calculations for any dry-deck system, and the services of a qualified structural engineer should be engaged early in the process.

In addition, access/service issues must be addressed up front. Certain equipment items, for example, should be located below easily removable pavers for quick access, which means that lifting eyes and handles should be designed in at key paver locations. The trick is to

## A Curbless Edge

As suggested in the accompanying text, dry-deck fountains designed with surge-tank systems have a number of advantages over those with sunken-reservoir systems.

First, the holding vessel in a surge-tank system is usually smaller than is the case with a supported-deck system. Maintenance is also easier with the surge-tank approach because most operating equipment is in an accessible remote location, so there’s a less-frequent need to close off the fountain area for maintenance and only a limited need to pull up pavers to access any equipment hidden below the surface.

Maintenance of nozzles and lighting fixtures in systems with surge tanks and remote equipment sets is also simplified because the nozzles and lights are built into niches or canisters that can easily be removed for servicing, re-lamping or routine maintenance.

There are also construction advantages with surge-tank systems in that coordinating nozzle positions in sunken-reservoir systems with holes in the surface materials can be quite difficult. At this writing, we’re working on a sunken-reservoir system in Seattle for which the granite pavers are being cut and cored in Italy. The precise fixing of 63 nozzle positions in a field made up of 63 pieces of granite would be daunting and nerve-wracking even if the work weren’t being done half a world away!

– J.M.

identify all possible applications and uses of the deck area before materials and support systems are selected.

► **Water treatment and basic system maintenance:** Fountain systems are like cars: They require periodic maintenance and service in order to operate properly. By analogy, a genuine commitment to fountain-system maintenance by any owner or operator is critical before the decision is made to incorporate any architectural fountain.

Moreover, dry-deck fountains are by nature accessible to the public. Without the curb barrier found in traditional fountain designs, it is inevitable that people will come in contact with (and possibly ingest) the water, which means that all such fountains should be properly designed with filtration and treatment systems in the plans.

For all practical and public-safety purposes, the water in a dry-deck fountain should be treated in the same manner as swimming pool water – and the up-front and ongoing costs of that treatment should be planned for in budget and personnel allocations.

Continued on page 47



Here, mosaic tile inlays with a Rosetta pattern have been set over a system using a remote storage tank.

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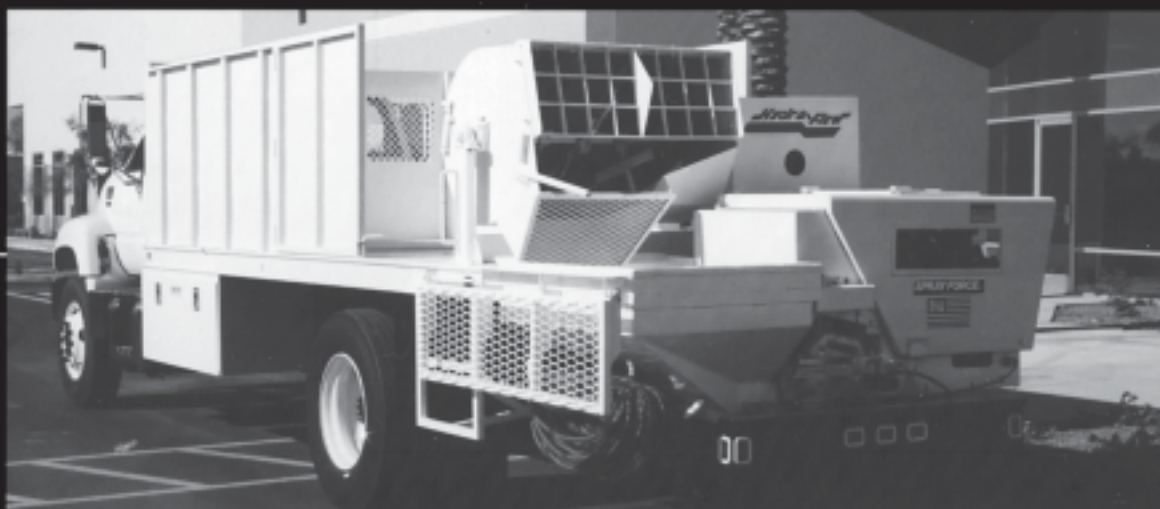
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Granite pavers can be used over a concrete pylon support system using Pav-El leveling and spacing blocks (A). With the pavers in place, the supports disappear (B).



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Here's a project in which a resilient, troweled-in-place rubberized deck material was set up over a fiberglass support grating.



Multi-colored terrazzo pavers have been used in this project – a popular dry-deck interactive fountain in Florida.



This custom, compass-point layout uses a combination of poured-in-place concrete and brick pavers over a reservoir system.



This poured-in-place concrete deck is pitched toward a center nozzle set up in a storage tank. This arrangement features a customized perimeter drain; you can see other nozzles in the foreground.

### Natural Selections

Once the basic disciplines of dry-deck fountains are mastered, the physical characteristics of dry-deck fountain systems themselves are limited only by the designers' imaginations.

My discussion of those basics has been technical and fairly clinical, but the fountains governed by those principles are about as exciting and engaging as any watershape can be. Indeed, fountains that were once protected marvels to be viewed from a safe distance are now seamlessly integrated into the architectural landscape and invite public participation and interaction.

It's our task as fountain designers to take these basic structural and engineering requirements, incorporate them into any dry-deck design to ensure its structural integrity and safety and integrate surface decking into the overall site plan. If we do so, we will continue to drive fountain evolution along and turn what was once a single-function, decorative architectural element into a functional, utilitarian, multi-use amenity that is, in a word, *fun*.

### A Landscape Assist

Landscape architects are a creative group, and we at Roman Fountains in Albuquerque, N.M., have been privileged to participate with them in development of many strikingly original ideas in the realm of curbless, programmable dry-deck fountains through the years. The methods they suggest for deck support and surface materials, textures and styles, spray forms and lighting are prolific and unique and range from the simple to the elaborate.

When I consider the evolutionary path of fountains from ancient wellheads to modern pedestrian water amenities, it's my view that landscape architects have driven the latest stages and have pushed the technology to a higher level. It's a great upwelling of creativity, and it's been a pleasure both to witness it and jump into the process.

– J.M.







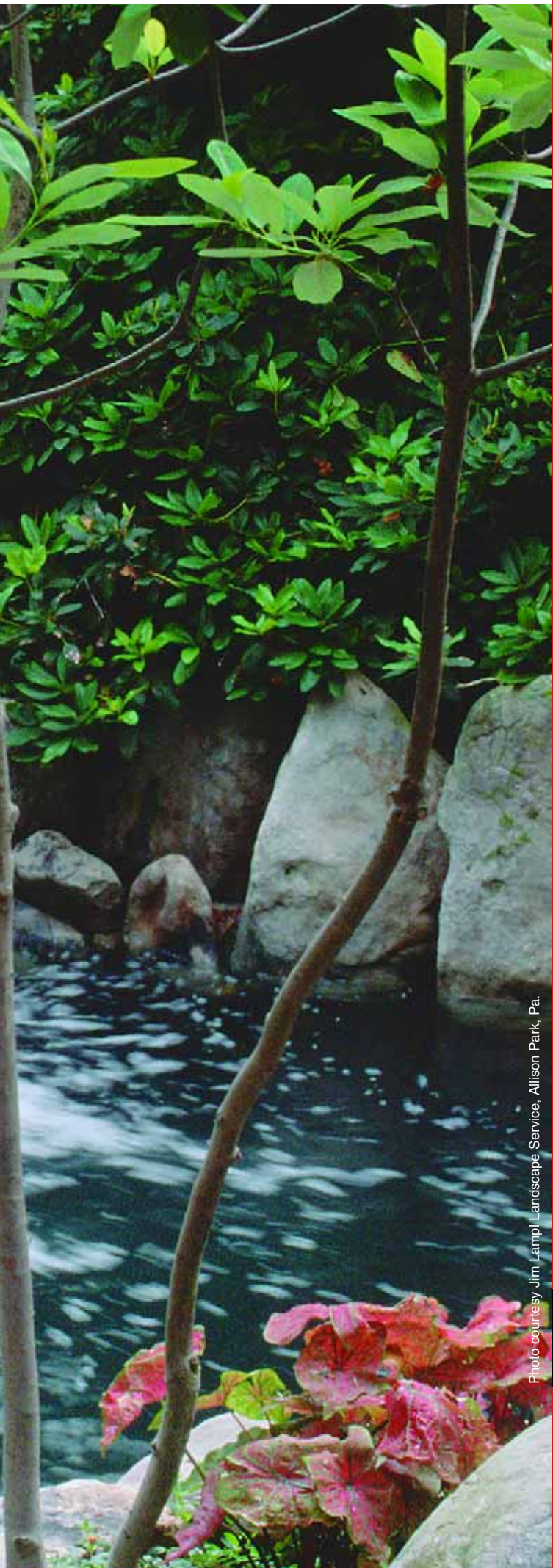


Photo courtesy Jim Lampl Landscape Service, Allison Park, Pa.

# The Trouble

Pool builders mostly use some form of reinforced concrete in setting up their watershapes. By contrast, the majority of landscapers and pond builders rely on liners to create their bodies of water. Rubber liners may suit certain low-budget situations, observes Douglas Roth, an expert in the art of Japanese gardening, but when it comes to creating high-quality naturalistic waterfeatures, he says, rubber liners come up short.

As modern building materials have been developed, we humans have been remarkably proficient at applying them in ways that go well beyond the vision of their inventors. Such is the case with roofing membranes, which now are widely used as liners for backyard streams and ponds.

It's understandable that landscape designers and contractors have taken to these rubber liners. After all, they make pond and stream construction inexpensive and easy. But from the perspective of the Japanese gardener or quality watershaper, convenience and affordability alone do not qualify a material for use. Instead, standards of durability and enduring beauty must be applied.

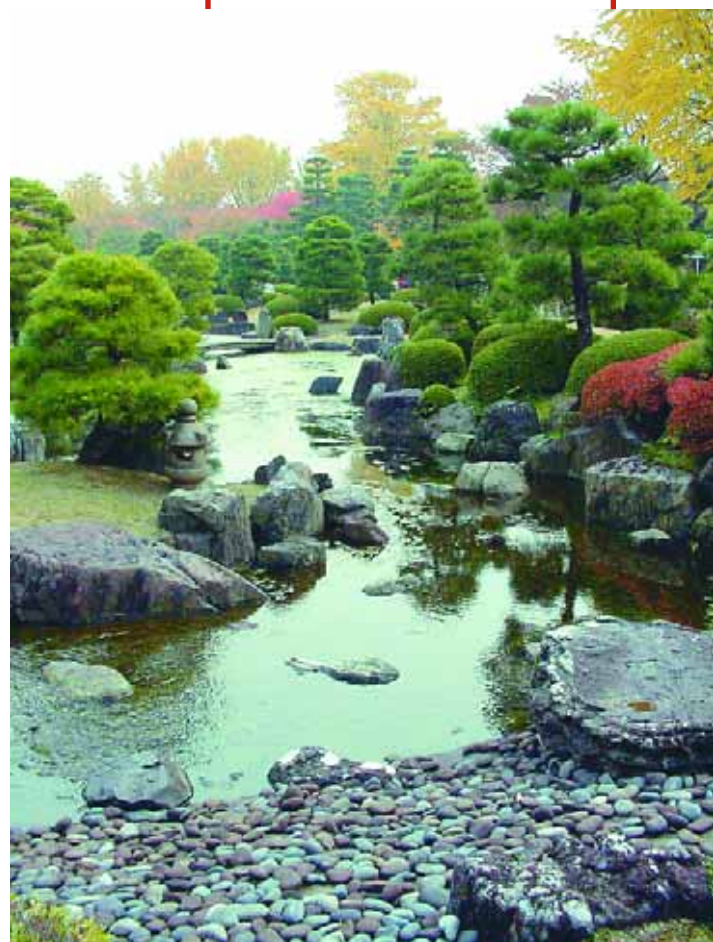
In that light, it quickly becomes apparent that rubber liners have numerous drawbacks when it comes to creating quality ponds and what are known to Japanese gardeners as *yarimizu*, or winding streams. Most of these problems emerge only with time, and because they are not always immediately apparent, many quality-minded people have been lulled into a sense of security and comfort with liners that ultimately proves detrimental to the environments they've created.

It's my contention that when you strive to create enduring works of art – which is pre-

## with Liners

By Douglas Roth





Photos courtesy Journal of Japanese Gardening.



One of the key problems with using a liner is that repair of any serious leak would involve huge disruptions to (and perhaps the complete destruction of) settings such as these. Some of the boulders seen here are quite large and have been placed, adjusted and tuned to their surroundings with painstaking care – so much so that it seems irresponsible to place them over a material that at best will need to be replaced in a matter of decades.



sumably what quality watershaping is all about – then using a material that is impermanent, subject to punctures, difficult to repair, and completely lacking in structural support is ultimately self-defeating. In the long haul, rubber liners don't get the job done. Concrete, I'd argue, is a far better choice.

## Basic Nature

Obviously, there are going to be those among you who will disagree with my position. Even the advocates of liners, however, are familiar with the shortcomings of the material. For starters, liners are thin and pliable and don't offer much by way of resistance to punctures. Yes, they perform well in holding water when handled and installed with care, but it doesn't take

such as a Japanese garden, 30 years is a mere "blink of an eye." In Japan, for instance, are hundreds of gardens more than 300 years old – and some that are 800 years old. From that perspective, it's not the waterfeature's lifespan that matters, but rather the fact that it has a defined lifespan at all!

Boulders don't have lifespans, nor do earthen berms or streambeds. In an art form that should be (and very often is) meant to last for centuries, some materials – stone, rock, water, trees and earth – are well-suited to go along for the ride. Rubber liners, I'd say, are simply not up to the task.

Creations that are beautiful, that stand in defense of quality, that represent doing what's right and performing a task

Speaking specifically of Japanese gardens, the design and construction phases are just the first steps in a long journey. The rest of the journey – say, 299 of the next 300 years – consists of guiding, grooming, enhancing and improving the garden.

Such gardens are art forms created and unfolded over decades, generations and even centuries. Much of the work that's done consists of carefully pruning trees and other plants, making small adjustments to stonework and performing regular maintenance by weeding and sweeping. It is *this* effort, which takes place long after the "construction" has been completed, that ultimately determines the success or failure of a Japanese garden.

Imagine being the owner of a beauti-

In Japan, for instance, there are hundreds of gardens more than 300 years old – and some that are 800 years old. From that perspective, it's not the waterfeature's lifespan that matters, but rather the fact that it has a defined lifespan at all!

much experience to know that leaks are a very real possibility, not only during installation but also in the weeks, months and years that follow.

To be sure, there are several different liner types and grades and mil thicknesses out there, and some are more durable than others. Many have projected life spans that exceed 30 years – a significant improvement over products that were offered not too many years ago. But if you think about it, three decades isn't long at all. Consider our common worlds of art, architecture, and landscape gardening. How old is that painting on the museum wall? How old is the house you live in? More to the point, how old are the noteworthy gardens in your region?

I'd argue that 30 years, in the case of something such as a painting, a house, or a garden, is laughably far from permanent. Compared to a quality watershape

well, are artifacts that transcend age or life expectancy. If you care about the permanence of your work, why would you ever settle for using a material that is, by nature, so flimsy and impermanent?

## Don't Destroy the Art

Among the several bones I have to pick with liners, the most important is the fact that replacing a damaged liner almost always involves ruining the environment the liner was meant to sustain.

Liner replacement is a horrible process: It means ripping out everything set within or atop the liner as well as plant and stone material immediately around the liner. That may not be a big problem for a low-end backyard pond that was built from a kit in a few hours, but it should be completely unacceptable in a high-quality garden – or any other quality watershape environment, for that matter.

ful garden and Koi pond: For 30 years, you've poured heart and soul into pruning trees so they cascade down over the water, tuned the waterfall so it sounds just right, and carefully swept and weeded the moss beds. Now, just as your garden reaches a state of near-perfection, the liner starts springing leaks. Some minor patches can be made if the leaks happen to be in accessible places, but inevitably, the *first* leak is just that, and more of them develop to the ugly point where ripping apart huge portions or even the entirety of the garden is the only option.

To replace that liner, you'll have to lift up the multi-ton boulders along the edge. And to do that, you'll likely need to bring in heavy equipment, which means the disruption won't be limited to the watershape's footprint. There'll be a pathway for the machinery, a place to store rocks and working room around the vessel to al-





Photos courtesy Journal of Japanese Gardening.

It's odious enough that pulling up a leaking liner to replace it will compromise the water environment and its tailored edges, but the fact is that the planted areas *around* the water will also be upset by earth-moving equipment, the need to store displaced rocks and a likely lapse in care. For watershapers with an open-ended sense of the future of their work, the choice should always be for more permanent underpinnings.







low for installation of the new liner. In other words, to replace the liner, you're going to completely destroy the pond and much of the rest of the garden in the process. The wrong-headedness of this should be self evident: The *pond* is the artwork, not the liner. Why destroy the art only to replace a rubber membrane?

If someone *does* decide to destroy the art just to replace the liner, he or she ought to be forewarned that re-installing those plants and boulders is no snap. In the art of Japanese gardening, for example, setting edge stones is a real art, and there aren't many people who know how to do it correctly. If the garden was created using traditional edge-setting methods, you'd need to bring in a specialist to rebuild the space. All in all, replacing the liner in this way is analogous to tearing down an entire house just to replace leaky copper pipes in the basement.

### Concrete and Clay

It's my view that there are far better materials for waterproofing ponds, streams and cascades.

The famous, centuries-old ponds of Japan, for example, are all lined with clay – malleable, waterproof, self-sealing (to a certain extent), inexpensive and repairable without the need to tear everything apart. Of course, leakage isn't a huge concern in those venerable bodies of water because they are typically fed by nearby streams or rivers, and a certain amount of leakage is expected. The water is free, and it flows over the waterfall, through the garden pond and then merrily on its way downstream.

In a way, traditional stream-fed gardens were much easier to execute than today's systems, where water needs to be purchased, retained, filtered and then re-circulated. Most of these modern waterfeatures are what I call "self-contained," which makes them more difficult to execute and more expensive.

Clay still might play a useful role in larger modern waterfeatures, but for backyard ponds and swimming pools I recommend steel-reinforced concrete – gunite, shotcrete, poured in place or hand-packed – as the best way to create permanent high-quality pond and stream structures. When properly engineered and installed, these structures can last centuries without disintegrating the way liners inevitably will.

Proper engineering and installation are obviously important if one of the goals is permanence. After all, substandard concrete vessels will break apart and fail just as miserably as any rubber liner will. But for the most part, properly-engineered concrete will hold up, and it can be repaired without disrupting the en-



tire environment if minor leaks occur.

This is why I believe that most landscapers and pond builders can learn a great deal from swimming pool builders. The way I see it, the pool industry has been working for decades with technologies and techniques that can prove useful in containing, treating and re-circulating water in our naturalistic environments.

Swimming pool builders work every day with hydraulics, structural issues and geotechnical challenges that come with all man-made bodies of water. I'll go so far as to say that combining the technical knowledge of the swimming pool industry with the aesthetic sensibilities and craftsmanship of Japanese gardening is the key to a future filled with naturalistic watershapes of breathtaking quality – and ponds or streams that are beautiful to look at while being structurally sound below grade.

## Engineering Angles

In dismissing liners, I'm not saying that rubber liners leak while concrete structures do not. Guniting and shotcrete structures do indeed develop leaks under a variety of circumstances, but as was just mentioned, they generally can be repaired in place. In addition to this important trait, concrete offers a number of other advantages.

For example, reinforced-concrete vessels can be engineered to provide a level of structural support for the large multi-ton boulders placed along their edges. It's the same load-bearing idea as building a house on a foundation or placing a bridge on concrete piers. Homes and bridges built on proper foundations have lasted for centuries. By contrast, without proper engineering support, any serious structure is doomed.

Multi-ton boulders of the sort used in naturalistic watershapes require adequate support if they are to remain in place for the long haul. The fact is that soil moves, heaves, compacts, slides and expands, and any boulder set on a liner supported only by the soil is certain to move. That can



As a Japanese gardener and watershaper, I'd like to think that these people, should they be fortunate enough to live so long, could return to this space in 40 or 50 years and recapture the emotions and romance of the moments they spent together on this graceful bridge. To me, to offer them anything less than that opportunity seems inadequate – and a betrayal of all the work that goes into establishing such a setting.

be a huge problem if you've gone to the effort of sculpting a garden. By contrast, concrete substructures can be engineered and built to support a boulder of any size – with little or no movement at all – for generations to come.

To be sure, watershapes made with reinforced concrete are typically far more expensive than are those made with unsupported liners. For those who aim to provide customers with cheap ponds and streams that are not meant to last forever, rubber liners might be the option of choice.

But for those of you who are concerned instead with creating works of art among your gardens and watershapes, I encourage you to think beyond the standard lines

of demarcation within the trade, embrace the materials and technologies used by quality-minded swimming pool builders and insist on using reinforced concrete as your watershaping structure of choice.

The two structures – a natural-looking fish pond and a concrete swimming pool – might look a little different and might serve slightly different purposes, but they both need to contain water reliably and support the necessary engineering load. So below the water's surface and beneath the edges, the two structures should be much the same.

I'll even go so far as to say that a high-quality garden pond or stream should be constructed of nothing less than the same materials used in a quality backyard swimming pool. In fact, natural ponds and streams might even need to be *more* sturdily constructed because of the vertical waterfalls and multi-ton boulders.

## Convergent Paths

Culturally speaking, Japanese gardeners and high-end landscape designers live in a world that is indeed far removed from the one occupied by swimming pool contractors. The former have been trained to create beautiful, highly aesthetic works of art in ultra-naturalistic settings, while the latter most often make vessels that have an architectural or industrial look and make only lagoonish gestures toward the natural.

In that distance is opportunity, and I see both sides of the watershaping industry benefiting from finding a workable middle ground. Pool people, for example, stand to benefit from becoming familiar with the refined design sensibilities of landscape artists, while landscape people can gain much by embracing the hard realities of inground concrete structures.

Watershaping is the bridge that brings us together in ways that neither group probably ever considered possible. This notion of using concrete instead of liners to create more permanent structures is a prime example of where the convergence could and should begin.



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# Beads



# On Glass

*By John Marckx & Scott Fleming*



*Once a rarity in pools and spas, glass tile is now finding its way into more and more high-end projects, for two very good reasons. First, observe glass-tile suppliers John Marckx and Scott Fleming of Oceanside Glasstile, upscale clients are familiar with the material from other applications and are asking for it. Second, watershapers are learning that glass tile is both beautiful and durable – provided, of course, it's selected and installed with due care.*

It's right up there for longevity in the history of building materials with marble and concrete: The use of glass tile, in fact, dates to the Roman Empire and traces its path through widespread use in Byzantine art in the eastern Mediterranean before finding its way back to a primary role in the art and architecture of Renaissance Italy.

From ancient times forward, glass tile has always been associated with beautiful and enduring works of art. Now enhanced by some modern-day manufacturing practices that serve to bring out its incredible gem-like features, the material still holds faith with all those centuries of tradition while reaching into many more markets – for example, residential and commercial indoor and outdoor applications – than ever before.

What was once the labor of specialists has now reached well beyond those artisanal limits as user-friendly materials and systems have been developed and proved successful in the field. But where proper installation methods have been an essential catalyst in the growth and acceptance of glass-tile applications in a much broader market, this can be a mixed blessing if those who are specifying the material in their projects don't fully understand it and aren't finding installers who know what they're doing.

To bring more designers, specifiers and installers up to speed, let's examine the way glass tile is produced and how

it is used – and, in a step-by-step sidebar – take a close look at specific recommendations of tile-industry trade groups that have weighed in on how best to apply this beautiful material.

### **Molten Magic**

The key to quality glass tile is working with quality raw materials.

It may seem odd, but our starting place at Oceanside Glasstile is with recycled glass bottles. The fact of the matter is that American bottle glass is of amazingly high quality as a raw material.

That glass is broken down and then fully melted so that it is bubble-free and all contaminants have been eliminated. That base material is mixed with other ingredients, including silica sand and colorants (mostly metal oxides such as copper, chrome and cobalt, among many others). Up to 85% of the molten mix is recycled bottle glass, but the exact proportions will vary a bit depending on a variety of factors.

The materials are melted in a furnace under closely controlled conditions and cast in a variety of forms, from basic one-inch tiles up to modules that can range from two-by-two inches up to eight-by-eight inches. The molds can also be set up with a variety of relief designs, and irregular-shaped pieces are made for use in decorative applications.

After it's formed, properly cooling the glass is tremendously important. There's considerable debate about whether glass





is actually a solid or is instead a super-cooled liquid, but whatever the case may be, the transition from the molten state to the “frozen” state – a process known as *annealing* – must be conducted slowly and evenly. When that doesn’t happen, the glass is left with internal stress points and inconsistencies that weaken the material.

A resurgence in the popularity of art glass has resulted in highly innovative products emerging from studio manufacturers, particularly in the United States. Following that trend, glass tile is now being made in places all around the world with varying degrees of quality and consistency. It’s been made in Italy for centuries, of course, and Venetian glass tile has long been the standard.

In recent years, a number of U.S. producers, including Oceanside Glasstile, have developed a range of hand-made and often iridescent products that stand apart from machine-processed tiles made overseas to meet the needs of the global glass-tile market. This increase in sources (both hand- and machine-made) has fueled tremendous growth in both the availability and popularity of the material, particularly in the past ten years.

Applications in watershapes – particularly high-end pools and spas, but also in some fountains – have be-

come far more common in recent years, and it has a lot to do with the fact that the material is beautiful as well as being perfectly suited to use in water applications. With the advent of paper-faced tile sheets in particular, glass tile is now much easier to install than it once was, and working with it is no longer such a rarified skill.

### *Making Sense*

When the upswing of interest in glass tile hit the global design community in the early 1990s, the material was not particularly well understood, nor was it widely recognized by consumers.

At that time, installation was seen as being quite difficult, and relatively few contractors felt comfortable in specifying or applying it. Year by year, however, glass tile has gathered momentum and is now familiar to a large population of designers and consumers who know how it can be used to great effect in a variety of interior and exterior settings.

We now see it used extensively in kitchens and bathrooms as well as outside cook areas, and it’s also used to decorate surfaces or to trim out major structures. It has proved to be a fantastic surface in pools, spas and other watershapes. You only need to consider the pro-



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lification of glass-tile suppliers in recent years to see evidence of how demand for the material has grown in a very short time.

What all suppliers to the worldwide market for our products particularly enjoy is the fact that designers, be they architects, watershapers, landscape architects or interior designers, have been pushing the envelope and coming up with more and more creative applications of our products.

This level of acceptance among designers has fueled another level of interest among consumers, who are seeing glass tile in more and more places including the resorts where they take their vacations, on the design-oriented cable-television shows they watch and in the upscale home-design magazines they read. Indeed, we have a generation of homeowners and commercial clients who are far more educated and interested in considering a broader range of materials than ever before.

The glass-tile industry has responded to this interest by working to make the material as accessible as possible. A combination of advancements in setting material and installation techniques has helped: Now the materials are easily set over a cured-mortar bed in a simple direct-bond method, where in the past installers had to use a "wet set" method that required a far higher level of skill.

For all that, we still have problems these days when non-recommended setting materials are used or recommendations for cure times for the tile's substrates are not followed.

### *Keys to Quality*

Everyone in the glass-tile business – and let's include suppliers as well as distributors, specifiers, installers and consumers under that umbrella of common interest – wants to meet with success in applying this beautiful and relatively expensive material.

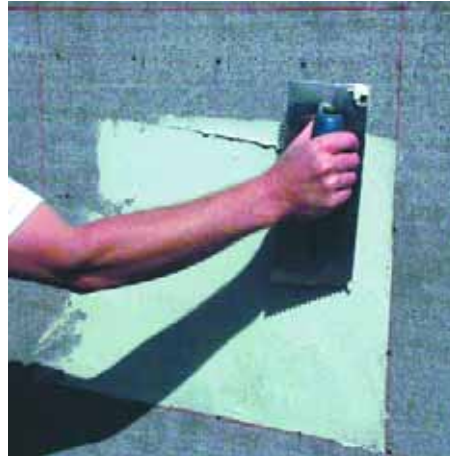
To ensure that success, glass-tile and setting-material manufacturers have worked together to develop very specific recommendations for the proper application of these materials and have seen them accepted and published by the Tile Council of America (TCA) and the Ceramic Tile

## *Easy Does It*

Installing glass tile is not difficult, but the applicator needs to take care in following a few key steps and recommendations – as seen here in the use of paper-faced tile sheets.

– J.M. & S.F.

### *Step One: Applying the Setting Material*



The setting material is applied to the substrate using the flat side of a 3/16-by-1/4 inch V-notched trowel.



Next, using extra setting material as needed and the notched side of the trowel, the material is "combed" to establish the proper depth for the setting bed.



Again using the flat side of the trowel, the notches are flattened to achieve a smooth, consistent setting bed approximately 1/8 of an inch thick.



## Step Two: Applying the Tile Sheet



The mosaic is applied to the setting bed, paper side toward you, using a light even pressure to establish contact and eliminate voids. (Before setting each section, check for “skinning” – that is, the slight drying of the thinset surface. If you detect skinning, repeat Step One.)



To achieve a uniform, flat surface, lightly tap the surface with a wooden beating block and hammer.



Apply subsequent sheets so the grout lines match.



To unify the tile surface from one sheet to the next, use a wooden beating block to tap the newly applied sheet snugly against the previous sheet.

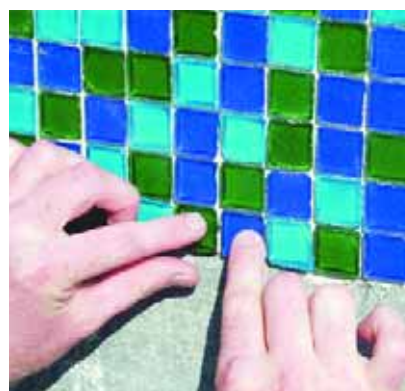
## Step 3: Removing the Paper Backing



After 15 to 30 minutes pass, lightly wet the paper several times over a five to ten minute period. When the paper turns dark – meaning it's saturated with water and has released the glue that holds it to the tile – it's ready to remove.



Peel the paper starting at the corner of the sheets. Removing the paper at this time – that is, while the setting material is still wet – allows for necessary adjustments of alignment and allows you to check for color consistency.



Straighten individual tiles to create a consistent field of tile and pay particular attention to the joints between sheets to eliminate obvious “sheet patterns.”



Let the surface cure a minimum of 48 hours before cleaning with a nylon brush and water to scrub away residual paper and glue from the tile. Follow this by cleaning with a damp sponge, then allow the tile to dry.

See Step 4 on page 62

## Step 4: Applying the Grout



Once the tile is completely dry, use a standard-grade, sanded grout mix and apply the grout with a rubber float, forcing the material into the joints until they are full.



Because glass is impervious to air and moisture, the grout will take longer to set than is the case when porous materials are applied. Once it sets, use dry cheesecloth for an initial cleaning. This will wick excess moisture from the grout and help in washing out the grout joints.



Allow the grout to set for the time recommended by the manufacturer, then smooth the finish with a damp sponge.



Use a clean, soft cloth to clear away any remaining grout haze and complete the final polishing.

Institute of America (CTIOA). It might have been easier if building authorities had set and maintained standards, but we in the trades saw the need and stepped in.

The recommendations are very specific – minimum cure times for substrates in swimming pools of seven days for the mortar bed, for example, and 21 days after grouting before the tiled surface should be submerged. This is all in accordance with TCA and CTIOA recommendations we at Oceanside Glasstile helped to develop and fully endorse.

CTIOA has published this information in the form of field reports (available on their web site, [www.CTIOA.org](http://www.CTIOA.org)). These documents offer product-specific guidance by manufacturer, product name and number for thin-set mortar systems, membrane products, grout materials, expansion joints and sealer materials across a variety of interior and exterior applications.

Glass-tile suppliers urge compliance with these recommendations because they go a long way toward ensuring a maximum life span for our products. When you talk about a reinforced-concrete structure, you usually talk in terms of a 100-year service life, and that's the kind of longevity we target for our products. With most watershapes, in other words, our aim is to have the surface last as long as the vessel itself.

These recommendations are also intended to ensure that the product is set up to have the best possible appearance. Many glass tiles are translucent, for example, so suppliers strongly suggest using white bonding mortar to enhance that quality. It is this brilliant appearance, after all, that has led designers and consumers to consider glass in such a wide range of potential applications.

A brilliant appearance is, ultimately, what capably installed glass tile is all about. When you look at the depth of color and reflective nature of surface, if you are captivated by its often-iridescent look, it's not much of a stretch to see that these materials work particularly well with water. The interplay of sunlight in water with these surfaces can be truly spectacular, literally gem-like: Light refracts and creates an intriguing optical quality.

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8:15 a.m. — 9:30 a.m.  
The Projects and Philosophies  
of Genesis 3 -  
Skip Phillips, David Tisherman  
and Brian Van Bower  
9:45 a.m. — 11:15 a.m.  
Job Costing for Profit vs.  
Existence - Brian Van Bower

**Wednesday, Jan. 7**  
8:15 a.m. — 9:30 a.m.  
You Are What You Think - Brian  
Van Bower  
9:45 a.m. — 11:00 a.m.  
The Art of Conquering Difficult  
and Unusual Projects - David  
Tisherman

11:15 a.m. — 12:30 p.m.  
Genesis Edge Program - Skip  
Phillips and Brian Van Bower

**Thursday, Jan. 8**  
8:15 a.m. — 9:30 a.m.  
Structural Engineering -  
Ron Lacher  
9:45 a.m. — 11:00 a.m.  
Basic Understanding Of Soil  
Conditions - Ron Lacher

**Thursday, Jan. 8**  
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**AQUA EXTRA!** Hydraulics  
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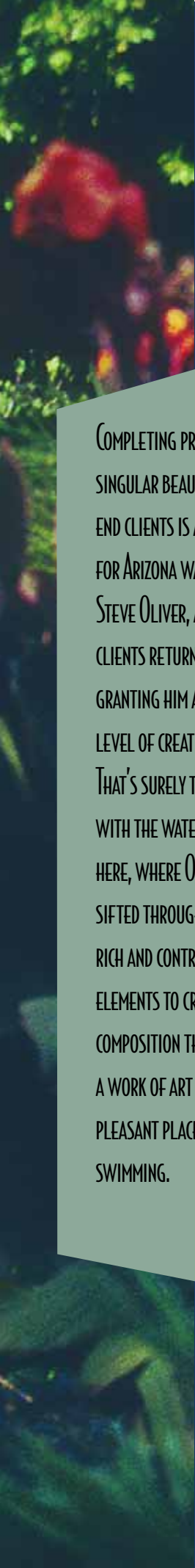




# AFFAIRS OF THE ART

By STEVE OLIVER





COMPLETING PROJECTS OF SINGULAR BEAUTY FOR HIGH-END CLIENTS IS A PASSION FOR ARIZONA WATERSHAPER STEVE OLIVER, AND THOSE CLIENTS RETURN THE FAVOR BY GRANTING HIM A TREMENDOUS LEVEL OF CREATIVE FREEDOM. THAT'S SURELY THE SITUATION WITH THE WATERSHAPE SEEN HERE, WHERE OLIVER HAS SIFTED THROUGH A RANGE OF RICH AND CONTRASTING ELEMENTS TO CREATE A COMPOSITION THAT'S AS MUCH A WORK OF ART AS IT IS A PLEASANT PLACE TO GO SWIMMING.

This project is an example of what can happen when you work under ideal conditions.

Set in an affluent enclave in Paradise Valley, Ariz., on a spectacular five-acre estate, the home is a model of Old West styling, with the exposed wooden supports and smooth plaster exterior you'd expect to see in a house built in the Arizona Territory in the 19th Century. It's also graced with all the comforts of a modern estate home.

The homeowners are repeat clients of mine – and good friends as well. They've owned other properties in the area, and I've had the pleasure of working with them on three other watershaping projects in addition to the one shown here – perhaps our finest collaboration so far. They love art of all sorts, and when it comes to a home's exteriors and especially to its water elements, they view the work as pure creative expression.

Typically, their tastes run to the modern, which meant this home was something of a departure for them. It came with beautiful grounds, a winding driveway, gorgeous trees, a man-made brook and pond, all sorts of beautiful views – spacious, yet secluded, an oasis in the midst of crusty, arid and mountainous terrain.

The place also had a small, courtyard pool. Typical of work done 20 or 30 years ago, it was something the clients knew they wanted to change – so they called me in with a request that I come with an unspecified something that would “pop” visually.

#### EXPANDING VIEWS

There's no creative outlet quite like working with clients whose main desire seems to be giving me a free

hand to work with available spaces to the best of my ability.

I opened my mind, spent time walking the property and took my time in weighing the possibilities. It was a free-wheeling process, given that they don't place much by way of budget restrictions on what I do. They're also enthusiastic when it's time to discuss ideas, and I've always considered them to be thoughtful, helpful collaborators in the projects we've worked on together.

But mostly they give me an almost unlimited level of creative freedom, and I can't think of a better way to encourage the preparation of quality watershapes.

The portion of the property with the old pool had been enclosed with a wall and always stood apart. There wasn't much of anything going on within the space, and it felt lifeless and claustrophobic. In the new program, however, the wall is gone, elevations have been changed, and the views of the space from inside the house now expand across the water's broad, reflective surfaces. In addition, the area beyond the old wall – once home to little more than shrubs, weeds and dirt – is now incorporated into the design as a verdant expanse that draws the eye up and away from the water.

In this “new” space, we placed a large, L-shaped swimming pool that, by intention, works visually more as an art object than as a traditional pool. The long side of the vessel stretches away from an existing patio area and the large set of windows that open from a space used alternately for entertaining guests or relaxing. At the far end of the pool, about 50 feet from the windows, a large sculpture rises above the dark, reflective surface.

The short side of the pool is about 30 feet long, which works proportionally with the 18-foot width along both axes. The depth ranges from three feet in the shallow end to six and a half feet in the deep end, and the vessel holds roughly 40,000 gal-

lons of water.

The simplicity of the shape makes it easier to lead the eye beyond the pool, whether to the lushly planted yard or to the sculpture. For its part, the sculpture has two vertical elements covered by a delicate flow of water over a textured metal surface. When lit at night, the sculpture rises in front of a stand of Ficus trees – the perfect shimmering backdrop for a shimmering waterfeature.

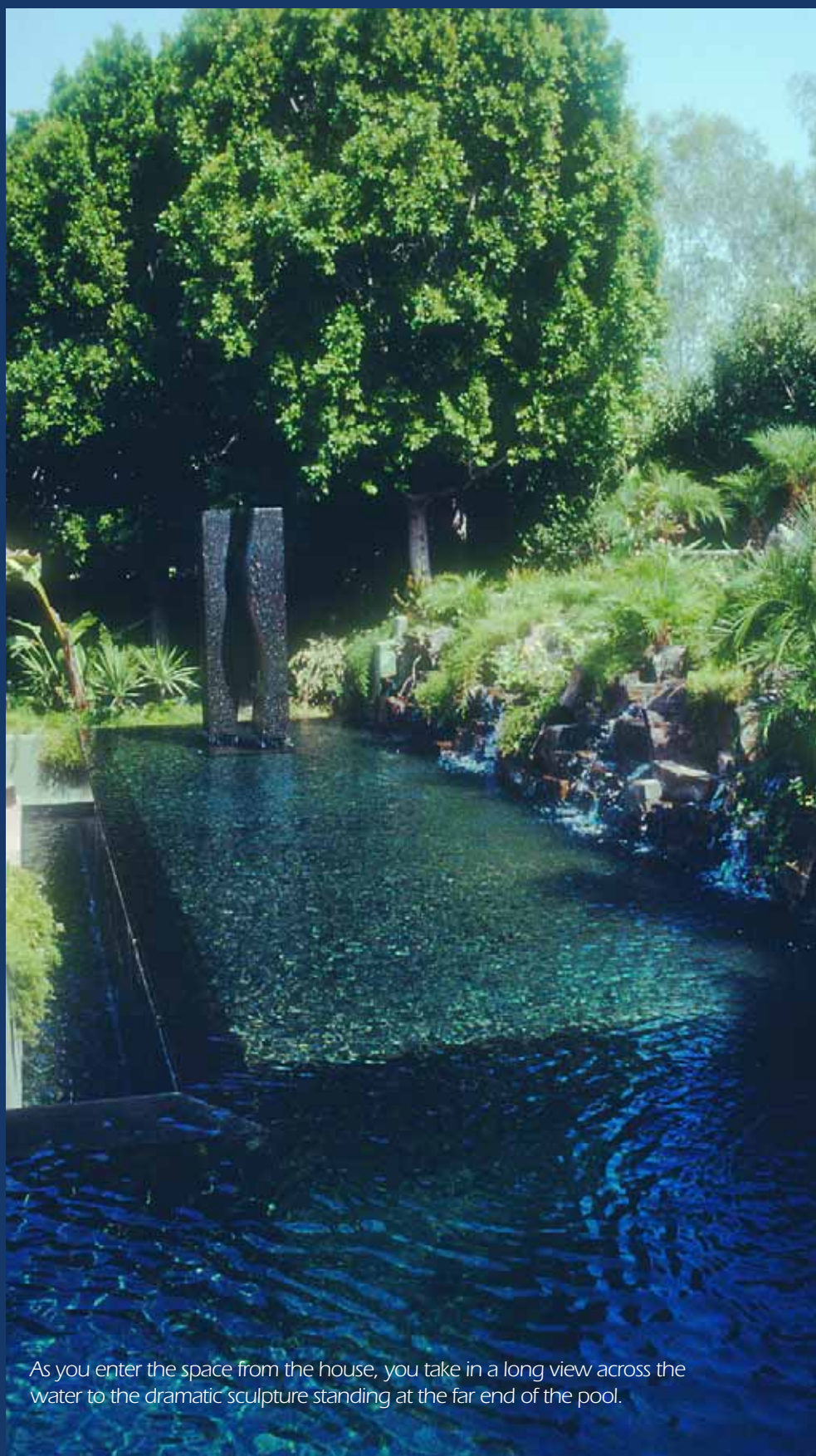
The long side of the pool is flanked on the right side by a wall of quarried stone interrupted by plantings. Jagged cascades flow down the wall at a variety of flow rates. On the left side, the water flows over a vanishing edge and down a sheer dam wall surfaced in glossy black granite. Placed in this sequence, the ragged stone cascades resemble a ruin you might find in a Mesoamerican jungle juxtaposed with the smooth, granite linearity of modern architecture.

## KEY TRANSITIONS

It is a testimonial to the trusting nature of these clients that they accepted without much question my idea of creating the stone ruins and cascades as a backdrop for a cool, pebble-finished, modernist pool and its sleek, modern sculpture. I saw it as a way to highlight contradictions and draw attention to the tension of the transitions.

Entry to the pool comes via a series of stepping-stone pads in the shallow area. The pads are lit from below by fiberoptic lights – an interesting nighttime effect as the squares dance on the water's surface and one that works well with the large Buddha set near the entry area.

There's a large conversation area set near a section of the vanishing edge. When you're seated there, your eyes are right at the vanishing point,



As you enter the space from the house, you take in a long view across the water to the dramatic sculpture standing at the far end of the pool.





From the initial vantage point outside the home, visitors see a wall of 'quarried' stone interrupted with dense plantings – a slice of Mesoamerican jungle brought to new life.



The water from the rough falls push ripples across the water that eventually settle into an even flow over a polished granite edge.



which has the effect of making the space surprisingly intimate. The cascades beyond seem to loom raucously in the distance, but up close, you can touch far calmer water as it sheets off the edge and falls over the polished granite wall.

My clients and their friends all seem to love this particular seating area, but none of them has been able to put into words exactly what happens. The views across the dark water are very inviting, however, and I've been told that the experience inclines people to jump in the water and move toward the cascades – about as nice a compliment as I'll ever get as a watershaper.

The softly colored flagstone decking lends another layer of con-



The water sheeting over the black granite offers a smooth contrast to the rough falls above – a key transition from the wild environment to a controlled architectural space.

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## FIRE AND STONE

The raised fire pit adjacent to the sunken patio area is made from the same stone that was used to create the cascades above the pool's surface. All of the stone was quarried in an area that produces large slabs of richly veined and textured material. This particular piece is about three feet by seven feet, two feet thick.

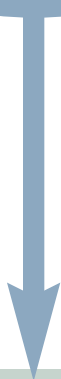
We core-drilled a six-inch indentation before chiseling the channel, then raised the stone off the ground on steel bars recessed far enough from the edges that it looks as though the stone is floating on air. When in use, flame fills the channel to interesting effect.

The stone is an imported product known as Farmer Beam. That may be a peculiar name, but the material has lots of rusts and browns on the surface and crisp gray tones when you break it open. It also has the virtue of coming out of the ground in the roughly square chunks we used to create a tumbled, rock-pile effect in the cascade structure.

—S.O.



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A large, recumbent Buddha statue is the central focus of the image. It is carved from a light-colored stone and lies on its side on a raised platform made of large, light-colored rectangular tiles. The Buddha's head is turned towards the left, resting on its right arm. Its left arm is bent, with the hand resting near its head. The statue is set in a lush garden with various plants, including a large, dark green tree on the left and a smaller, spiky plant to the right. In the background, a waterfall cascades over a dark, textured wall. The scene is bathed in bright sunlight, creating strong shadows and highlighting the textures of the stone and foliage.

trast to the design. Imported from India, the material features all sorts of subtle variations among pinks, creams, browns and grays. It's cut in 24-inch squares, creating an understated checkerboard pattern and adding subtle visual textures.

Even the patio furniture is part of the program. It's made of concrete covered with soft pads. Together, the furnishings offer a nice sculptural touch to the area and stand out starkly against the black-granite backdrop of the dam wall. There's also playfulness in the fact that, although they look like soft indoor furniture, the furnishings weigh a ton and sit outside year 'round.

As mentioned earlier, the cascade wall can be set up with any of four different flow rates driven by a pair of two-speed pumps that let the homeowners tune the cascade to the mood or occasion. The pool was finished just in time for a huge New Year's Eve party, for which we programmed the Jandy One-Touch system to cycle through different flow settings to show off the variable effects created by the different flow rates.

Continued on page 72

The contemplative nature of the setting once you turn the corner from the waterfall is reinforced by this recumbent Buddha.



## A CERTAIN SOMETHING

Entitled "Marriage," the stainless steel and bronze sculpture at the end of the pool's long side is by Archie Held, an artist in Point Richman, Calif. I first saw this piece in a smaller version in a landscape shop in Sausalito, Calif. When this project came up, I suggested that the homeowners contact Held directly – which they did and subsequently commissioned the work.

The metal surface of the sculpture is textured with small ridges that create interesting effects when a small flow of water is introduced. The sculpture's striking form harmonizes with the modernist elements of the watershape and, like so much else going on in this backyard, works with the overall environment for reasons that are not entirely definable in words.

—S.O.





Covered in soft pads, the concrete furnishings offer a fluid and playful contrast to the rigid appearance of the black-granite dam wall.



### AS GOOD AS IT GETS

To be honest, I'm not exactly sure why I've been fortunate enough to work on not one, but *four* major projects with clients such as these. The trust they place in me is both affirming and inspiring, and I've found that it makes me work all the harder to rise to their expectations.

When you couple that level of confidence with no real budgetary constraints, you have a situation that is as close to ideal as one could ever hope to find.

For this project, I was allowed to use el-

ements that some might not think to combine, but with my clients' confidence I was free to build to my vision and, in effect, test my ideas. It's been three years since we completed our work on this backyard, and it's gratifying to see how much my clients continue to enjoy the pool and landscape—and to watch the area become even more beautiful as the greenery grows in a space maintained to near perfection.



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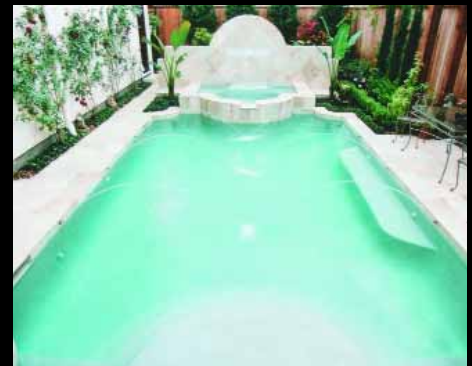
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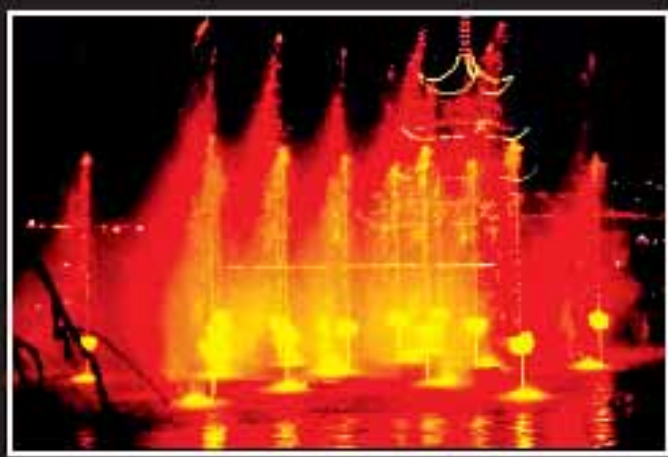
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POND SWEEP MFG. CO. offers the Pond-CPR system. Designed to raise a pond's overall efficiency, the system features an integrated skimmer box, bellows and dual pumps that lower flow rates while reducing evaporation, cutting energy use and minimizing heat loss in fall/winter weather. The bottom-drain system also reduces sludge accumulation and simplifies pond maintenance. **PondSweep Mfg. Co.**, Yorkville, IL.



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## INTERACTIVE WATERPLAY

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VORTEX manufactures Splashpads – integrated, ADA-compliant waterplay areas designed with structural integrity, durability, quality and safety in mind. The layouts avoid protrusion and trip hazards, pinch points and head entrapments. All ground sprays are flush with the surface, there are no climbing devices or elevated platforms, and all hardware is designed to be tamper-resistant. **Vortex**, Montreal, Quebec, Canada.

## ARTIFICIAL LANDSCAPE

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CEMROCK LANDSCAPES builds environments designed to replicate natural forms and details by artificial means. Using simple materials to construct rock formations, waterfall complexes, trees, coral reefs and other landscapes, the company's designs

are used for erosion control, exhibits, animal habitats, interactive waterfeatures and more in both commercial and residential settings.

**Cemrock Landscapes**, Tucson, AZ.

Continued on page 78

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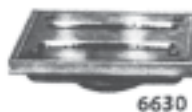
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6633

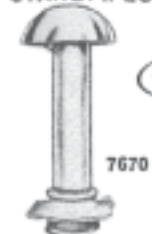


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## TREE GRATES

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NEENAH FOUNDRY CO. has published a 20-page, full-color catalog on its line of cast-iron tree grates and fabricated-steel tree guards. Designed to protect and complement trees in high-traffic environments, the grates' tree openings can be enlarged in increments to accommodate growing trunks and are available in numerous patterns and with a variety of finishes. **Neenah Foundry Co.**, Neenah, WI.

## DIAMOND SAW BLADE

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FELKER offers the narrow-width TM-7 diamond saw blade. Designed for use on porcelain tile, granite, quarry tile, glass and other hard materials, the blade's thin rim (just 60 mm) allows for quicker cutting with less risk of chipping out material at the end of the cut – all at a lower cost per cut because the blade remains sharp for longer periods. The blade is available in 7-, 8- and 10-inch diameters. **Felker**, Olathe, KS.

## BRONZE LIGHTING FIXTURE

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BRONZELITE offers the G3000, a bronze lighting fixture designed for durability and quality along with stylish looks. The product has the superb weatherability that comes with bronze and its ability to maintain its luster while withstanding harsh environments. The fixture, which is easy to maintain and requires no painting, works for inground, accent, recessed-step, walkway or underwater applications. **Bronzelite**, Littlestown, PA.

## AUTOMATIC POOL CLEANER

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PENTAIR POOL PRODUCTS makes the Legend II automatic pressure-side pool cleaner. The device features dual thrust jets for superior pool coverage and a four-jetted Venturi for superior cleaning action – all without the need for a booster pump. The four-wheeled, front-wheel drive cleaner picks up large debris, has a large-capacity bag and cleans most pools in just one to three hours. **Pentair Pool Products**, Sanford, NC.

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## STONE DETAILS AND PRODUCTS

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**SIENA MARBLE & MOSAIC** produces mosaics, waterline borders and solid stone coping for pools and spas. The custom mosaics are available in marble or glass and can be accompanied by small decorative inserts; the waterline borders are available in more than 30 standard patterns from the classic to the contemporary; and the thick coping offers the perfect complement to materials used in the pool. **Siena Marble & Mosaic**, Naples, FL.

## POOL SLIDES

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**INTER-FAB** offers four pool slides in a variety of configurations with platforms between three- and six-and-a-half-feet tall. All are equipped with the Zoom-flume water-supply system and feature deep flumes for user comfort. The Wild Ride, White Water and Zoomerang models feature openwork support systems and ladders; the Slide Rock model is wrapped in simulated rock for a natural look. **Inter-Fab**, Tucson, AZ.

## OUTDOOR FIREPLACES

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**EMPIRE COMFORT SYSTEMS** makes chimeneas, compact fireplaces designed for outdoor use. Available in cast aluminum with a decorative grape-leaf tracery or in cast iron with a plain, stucco-style finish, the units operate with either natural gas or propane. With adjustable flame heights, the aluminum unit delivers between 27,000 and 32,000 Btus, while the cast iron unit delivers up to 35,000 Btus. **Empire Comfort Systems**, Belleville, IL.

## POOL LIFT

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**AQUA-CREEK PRODUCTS** makes the Pro Pool Lift. Fully automatic, lightweight, easy to use and ADA-compliant, the unit is rated to lift 300 pounds at 55 psi, takes up minimal deck space and does not intrude over the pool except when in use. It also has chair-mounted controls, an adjustable footrest, a flip-up inner arm to simplify lateral transfers and an optional headrest. **Aqua-Creek Products**, Missoula, MT.

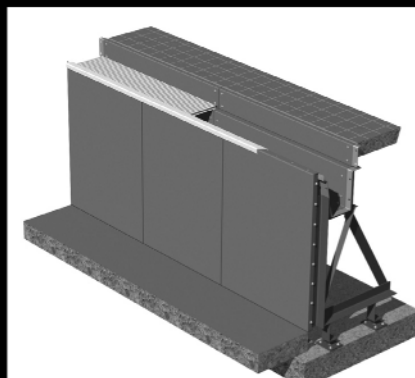
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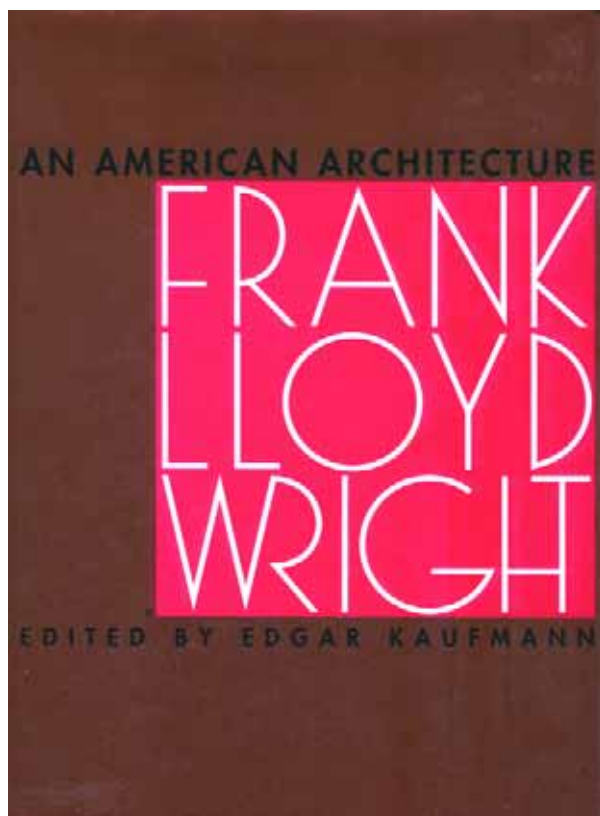


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## Toward an American Architecture

*"True form is always organic in character."*

— Frank Lloyd Wright

I never studied Frank Lloyd Wright in school, but I've been intrigued by his work and design philosophy for years and had long intended to fill this gap in my education on my own. But that's proved to be easier said than done because of the huge number of books about him: There are simply so many of them that I never knew where or how to start.

This quandry came to an abrupt end when I ran across a book written in Wright's own hand. That book, *An American Architecture*, was first published in 1955 by Horizon Press and was reissued by Barnes & Noble in 1998. Edited by Edgar Kaufmann, the text is a compilation of Wright's notes, speeches and lectures spanning the period from before 1900 up until the 1950s.

The text is organized into three main sections: organic architecture, materials and case studies. Scattered over the 270 pages is a generous assortment of black-and-white photographs interspersed with a handful of colored-pencil illustrations. And as one might expect from

such a towering and self-determined intellect, Wright is not particularly easy to read or understand.

The discussions are dense, often intensely philosophical and even self-aggrandizing, but they're invariably rich and thought-provoking. Still, this is *not* the kind of book you read once and walk away feeling as though you've absorbed everything. In fact, I've read it twice already and know for a fact that I'll be returning to it for a third and probably a fourth cover-to-cover session: Many of his ideas require careful consideration and re-consideration before it's possible to perceive them at anything approaching full depth.

He discourses at length, for example, about organic forms and the "inward sense" that drives true design, challenging designers to work out their ideas in their heads to the greatest extent possible before placing them on paper. When you consider the formal state of the design and architecture professions in the early days of Wright's career, it's startling to think about how incendiary his ideas must have seemed to his contemporaries. And it's no less amazing when you consider how challenging and revolutionary they remain to this day.

There are also extensive discussions about materials and his love of glass, stone, wood, sheet metal and concrete. He discusses in detail the importance of working with settings and the value of designing the complete environment, including furnishings, interiors and landscapes. He writes about simplicity of form and the value of space and light and offers wonderful reports on the advent of "open" architecture and the traditions of Europe and Japan and how they influenced his designs and approaches.

There's so much covered in these pages that simply highlighting the big points would far exceed the space I have available here. But perhaps his grandest and most empowering idea for watershapers is that architecture is "the mother of all art forms." Time and again, he makes it clear that he saw his buildings as works of art and understood the breathtaking potential to be found in treating the human environment as the ultimate artistic canvas.

To be sure, there are dozens of books that might offer simpler approaches to understanding Frank Lloyd Wright, his art and his contributions to 20th-century design, but after reading this book, I'd think that there's no better place to start than with the architect himself. **WS**

*Mike Farley is a landscape architect with 20 years of experience and is currently a design/project manager working in Texas. 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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