

Inside: Brian Van Bower on Taking Risks

# WATER SHAPES

Design • Engineering • Construction

Volume 3  
Number 8  
October 2001  
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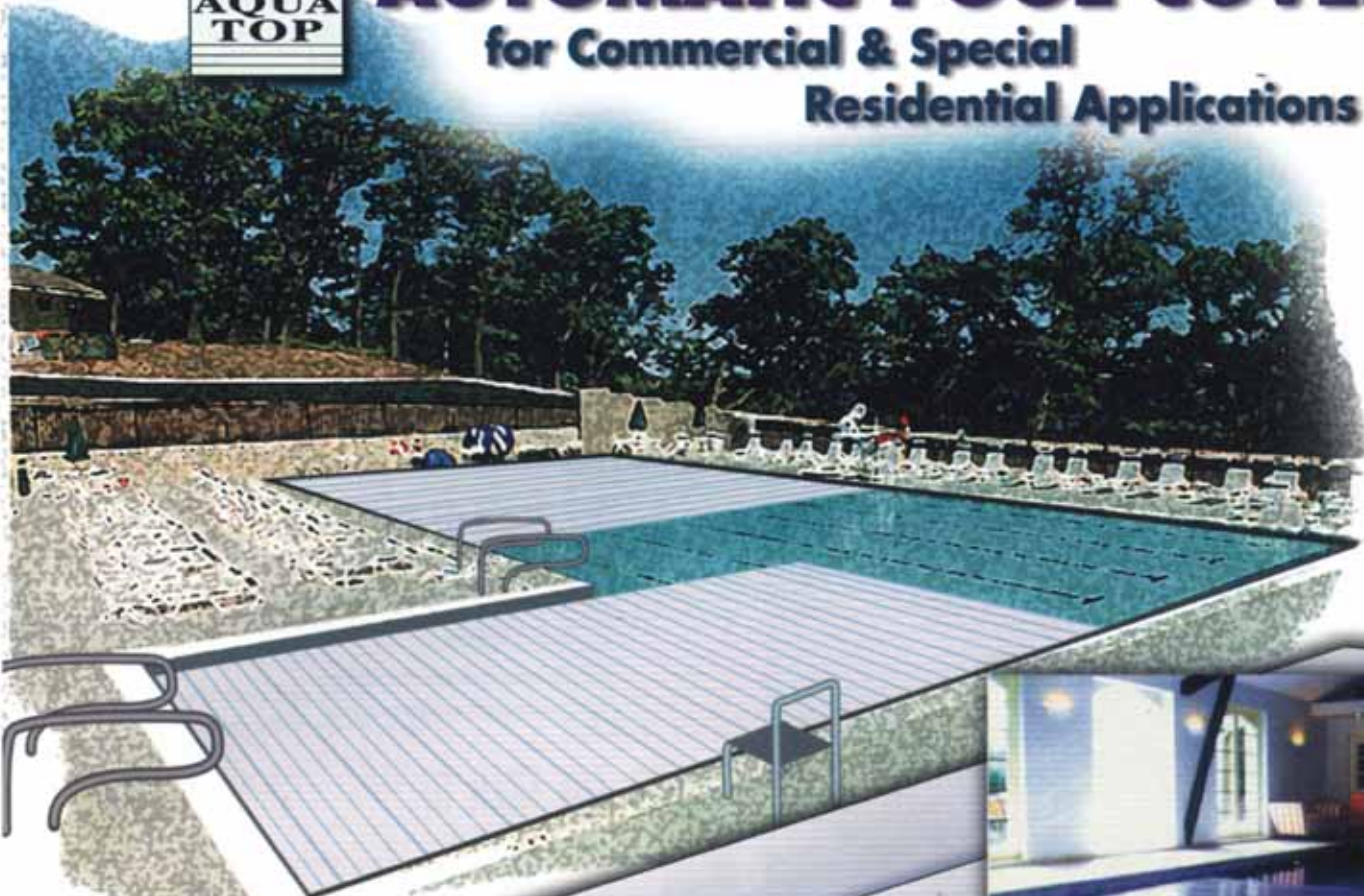




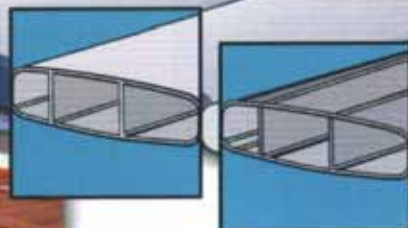


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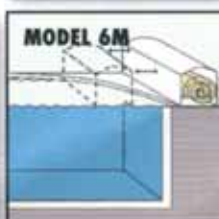
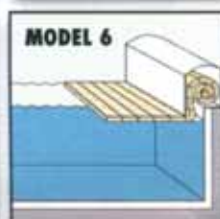
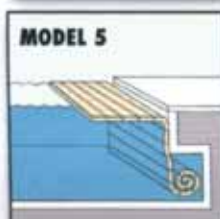
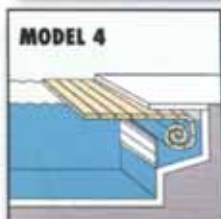
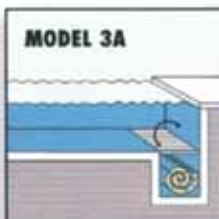
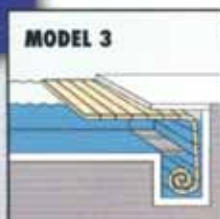
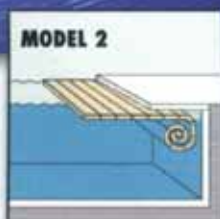


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26



36



## FEATURES

### 26 LASTING IMPRESSIONS

By Bobbie Schwartz

**Making full use of the timeless qualities of stone**

### 36 AT PLAY IN THE FOUNTAIN OF LIFE

By Eric Dobbs

**A whimsical watershape for a desert community**

### 42 THE SOUL OF THE RIVER

By Hal Hagen

**Borrowing nature's ways to restore life to watercourses**

### 50 WOVEN BEAUTY

By David Tisherman

**Pulling details together for a hilltop masterpiece**



42

## COLUMNS

### 6 STRUCTURES

By Eric Herman

**Working in  
natural terms**

### 10 AQUA CULTURE

By Brian Van Bower

**Paying the  
front-runner's fee**

### 18 NATURAL COMPANIONS

By Stephanie Rose

**Accenting your  
work with containers**

### 22 DETAIL #11

By David Tisherman

**Knocking the edge  
off concrete spas**

### 70 BOOK NOTES

By Mike Farley

**Drawn to drawing  
for greater success**



10

18



22

## DEPARTMENTS

8 IN THIS ISSUE

56 OF INTEREST

60 ADVERTISER INDEX

60 OF INTEREST INDEX

On the cover:

Photo by David Tisherman,  
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## Watching Rivers Run

There's a fascinating conceptual relationship between man-made bodies of water and those created by nature.

On the one hand, the most accomplished watershapers in the world know that it's not possible to completely replicate the beauty of nature, no matter how effective or sensitive the mimicry. On the other, by using nature as model and inspiration, they know it's possible to work with specific features of natural bodies of water and enhance the appeal of the human environment.

When you look at the relationship, it's pretty easy to stop right there and roll with the fact that what's natural is natural and what isn't never will be – but I think there's a much deeper set of connections here that more closely intertwine natural bodies of water with those created by human beings.

Several years ago, I wrote a long feature article for another magazine in which I interviewed all sorts of people and asked them where and when their passion for water had begun. Some were watershapers, some were famous aquatic athletes, and others were consumers who had spent large dollars on recreational or decorative water.

To a person, each one told me that their passion for water had been engendered by youthful experiences in lakes, river, streams and oceans – natural water – and I was later accused of expending more than 4,000 words to explain the 20-word idea that man-made water exists because our relationship to natural water can never be severed by geography, climate or distance.

When a family camps by a river or spends the day at the beach or goes fishing in a lake, the desire for water is first established, then reinforced. In this way, natural bodies of water stoke the demand for watershapes. Likewise, watershapes remind us and celebrate the fact that water in natural forms delights and inspires almost everyone on the planet.

That's about 250 words to explain why, from time to time, we run features about natural bodies of water. Whether you're drawing design ideas directly from Mother Nature or simply allowing her to inspire you in more subtle ways, the influence of natural water is invariably there on some level. And I would argue the truth of that statement even with designs that are distinctly architectural or geometric in nature.

In this issue, you'll find "The Soul of the River" (page 42). It's by Hal Hagen, a specialist in the art of natural river and stream restoration, and explains the methods his firm uses to restore aquatic ecosystems that have been depleted for any of a number of reasons. He also relates how the lessons he's learned in natural rivers have informed his work in built environments.

Hagen's work is unique in the way it thoroughly blurs the lines between the natural and the artificial. To be sure, there are practical lessons to be pulled from his discussion – particularly having to do with the way he artfully and deliberately speeds and slows the flow of water to create habitats for fish and other aquatic life forms. But there's also a distinctly emotional and even spiritual component to the work.

In recognizing the value of natural waters and devising ways to enhance them, Hagen and others who work to save or restore natural environments demonstrate how humankind can apply its considerable ingenuity to the task of preserving natural waters for others to enjoy. In the process, these professionals ensure that future generations will have the chance to fall in love with water, just as we all have.



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**Bobbie Schwartz, APLD**, is a landscape designer, consultant, lecturer and writer – professions that have made her well traveled in pursuit of excellence in garden and watershape design. She founded her full-service design business, Bobbie's Green Thumb, in 1977, and her residential, institutional and commercial designs have been recognized by awards from the Perennial Plant Association, the Ohio Nursery & Landscape Association, the Ohio Landscapers Association and the Cleveland Botanical Garden/ASLA. Schwartz participates in several trade associations on the national, state and local levels and currently chairs the Certification Committee for the Association of Professional Landscape Designers.

**Eric Dobbs** is founder and president of Casa de Cantera, a supplier and installer of custom carved stone products based in Oxnard, Calif. Dobbs has been in business for more than 19 years, providing beautiful custom stone products to contractors and designers working on a broad range of commercial and residential projects, including elaborate fountains that feature large sculptural figures as well as bowls and basins. The company operates a manufacturing facility near Guadalajara, Mexico, near where the stone is mined.

**Hal Hagen** is founder and president of Aquatic Alternatives, a Buena Vista, Colo., firm dedicated to

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designing and creating natural environments suitable for large populations of fish. Hagen has more than 20 years' experience in the fishery industry and has owned and operated fisheries in Montana and Colorado. He founded Aquatic Alternative in 1990 to develop alternative methods for creating and controlling "wild-like" populations of trout and other fish. He has served on the board of directors for the Colorado Trout Growers Association and has presented several papers at meetings of the American Fishery Society as well as at conferences held by Environmental Conservation Engineers.

**David Tisherman** owns and operates David Tisherman's Visuals in Manhattan Beach, Calif.

A designer and builder of high-end custom swimming pools since 1979, he is widely known in the pool and spa industry as an advocate for the highest possible standards of design, engineering and construction. He has degrees and credentials in industrial design, scientific illustration and architectural drawing from Harvard University and Art Center School of Design and has taught architectural rendering and presentation at UCLA. An award-winning designer, he serves as an industry expert for California's Contractor State License Board and has been a member of NSPI's Builders Council since 1994. Tisherman is a co-founder of and principal instructor for the Genesis 3 Design Group.



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## Paying the Front-Runner's Fee

I've always been excited by innovation. I place creativity high on my list of aspirations and priorities in my own business, and I think my life gets most interesting when I'm involved with people who are similarly attuned to this desire to do and try new and interesting things.

Fortunately, I've had the benefit in my career of associating with highly innovative people who've shared their creative processes with me, taught me a lot and made the ride extremely enjoyable – and fruitful. These experiences have filled me with my own desire to be out front with innovative and creative ideas.

I often wonder where we would all be if some of us weren't willing to take the chances that go hand-in-hand with forging ahead into uncharted aesthetic and technical territory. I'm certain the world of watershaping, for example, would be far less interesting – and much less profitable as well.

But for all the high-minded talk that you hear these days about creativity and "thinking outside the box," the truth is that many potentially creative people and companies won't go very far out on a limb for one simple

I often wonder where we would all be if some of us weren't willing to take the chances that go hand-in-hand with forging ahead into uncharted aesthetic and technical territory. I'm certain the world of watershaping, for example, would be far less interesting – and much less profitable as well.

reason: Being a front-runner comes with a fee – a fee known as *risk*.

### On the Edge

To be creative in any walk of life, you must be willing to take chances, and that means you're almost guaranteeing that at some point along the way you're going to miss the mark. But that doesn't much matter, because it's these people who define the future not only for themselves, but for everyone else as well.

One of the most innovative people I've ever met anywhere is my Genesis 3 partner, Skip Phillips – and I'd say this about him even if we didn't have that working relationship to go on. He's somebody I've *always* pictured blazing a trail, way out ahead of the pack, wearing a safari hat while whacking at gnarled stalks of PVC pipe with a length of rebar.

Through the years, Skip has become an acknowledged authority on vanishing-edge pools, and he's called on to design, teach and consult about them across the United States and around the world. His experience with these impressive structures is a perfect example of what I'm talking about.

These days, vanishing-edge pools are everywhere, and most contractors are pretty confident they can carry one off – although there's a wide and often-obvious gulf between those who really know what they're doing and those who don't. There was a time not so long ago, however, when vanishing edges were on the furthest cutting edge of swimming-pool design and only a handful of designers and contractors were will-



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ing to take the risk of building what was perceived to be a difficult design.

Skip was at the forefront of that group and worked for years at developing and perfecting the vanishing edge. Although he has always worked as conscientiously as possible to avoid problems with his installations, he's the first to admit that he had problems with this particular learning curve. In fact, Skip also will be the

first to admit he's *still* learning and working to perfect this effect that is now so familiar to us all.

He recommends some things that just couldn't have occurred to anyone without direct experience, such as redundant check valves and vacuum breaks to prevent any chance of equalizing that might cause flooding. He's also a big proponent of oversized surge tanks as an insurance policy

against catastrophic system failure and as a means of maximizing hydraulic efficiency. Just these basic observations are *golden* to other designers and builders, and what they mean to the industry and those following in his footsteps cannot be calculated in terms of either dollars or prestige.

It's all about his willingness to experiment and take risks, and it's been a bonanza for all of us who watch what he does.

### Sharing Alike

Another common characteristic of front-runners is a willingness, even a perceived necessity, to share what they know.

Not all innovators take this approach, believing that sharing is tantamount to giving away the store and squandering a competitive edge. Front-runners, however, see things the opposite way, operating from the perspective that when they share what they know with others, the entire trade benefits and begins to elevate. Just as a rising tide lifts all boats, so, too, designers and contractors all benefit from the increasing sophistication of the industry at large.

Picking on Skip again, I wonder where the industry would be today if this one individual had decided to keep secret everything he'd learned about vanishing edges.

There's no way to know how many of these striking pools would never have been built if Skip had declined to participate in article after article and stand up in seminar after seminar to share his knowledge. I'm certain that fewer contractors would have tried vanishing-edge construction – and that many of those attempts would have failed as a result of one miscalculation or another.

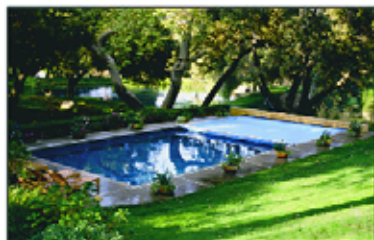
The result would have been fewer potential customers interested in vanishing edges. Odds are, pools would be much different today had Skip adhered to a policy of secrecy. Yes, other people have contributed to the process, and suppliers in particular have responded with technology that makes the vanishing-edge designer's life easier. But I know I'm not alone in crediting Skip as I've done here.

I have another Genesis partner, too, but again my isolating him as a front-runner has nothing to do with that relationship. David Tisherman's contributions have been and are so varied and interesting on so many levels with so many details that

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this magazine has him isolate one distinctive touch or another for coverage in every issue.

It would be far easier for him to save the effort and keep all that wealth of information to himself, but he has front-runner's syndrome and an uncontrollable desire to let the rest of us benefit from what he knows and from the hard work and experimentation that have gone into creating a detail he can publish proudly. When you have a reputation like his, what you do has to be bulletproof. Remarkably, a huge amount of what David does is just that – and he's happy to share.

He shares because he wants other designers and builders to raise their levels of performance and get more creative. He's driven by ideas and knows that great things result when increasing numbers of like-minded people engage in creative competition and keep kicking things up to new and higher levels.

### My Trials

So what about me? I strive to be a front-runner in my own way, and I know that a big part of it is a willingness to move into the unknown, knowing that there will be times when experiments and explorations won't always work out as hoped. If one learns from those situations, then every moment spent, even in failure, is a worthy investment.

In that spirit, let me share some of my own recent forays into the unknown by way of showing how you, too, can reach out in sometimes modest ways to make your work different and more fun.

As I mentioned in a recent column, I've begun exploring living waterfeatures and have actually installed a few ponds intended as homes for fish. On one of my early fish ponds, we were immediately concerned about clarity and wanting to keep the water clear and clean so these creatures could be seen, I looked into various techniques for keeping murkiness at bay.

Given my background in pools and spas, I wanted to find out if a living pond could be safely treated with ozone. I spoke with authorities on watergardening as well as some ozone-system manufacturers – and

received completely contradictory information. Some told me that ozone use on any level in any way would be absolutely deadly to fish and plants alike, while others said that as long as the ozone was removed from the water before it reached the fish and plants, all would be well.

This left me in something of a quandary, but with a great deal of research and an unusual amount of soul

searching, I decided to give it a try, knowing that if anything went wrong I'd be on the hook for replacing the fish I'd killed and for repairing any other damage that might have resulted from the ozone experiment.

So I installed an ozonator on the pond and ran the water over a series of cascades, allowing the ozone to do its work and disappear into the air before the clarified wa-

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ter reached the fish. At this writing the ozone-treated pond has been up and running for many months – and, so far, both the pond and all of its residents are doing just fine in beautifully clear water.

On another current project, I stepped out of my comfort zone to experiment with ways to combine water and fire. The yard in this case had an existing brick barbecue with a tall chimney. In designing the project, I decided to make use of this existing structure by raising the decking around it by 18 inches, in effect turning the old barbecue into a modernized outdoor fireplace.

My idea was to install a sheet waterfall in the face of the chimney *above* the fireplace and have the water fall in front of the fire into a trapezoidal catch basin. The water would then flow by gravity through pipes beneath the Saturnia decking, around a spa and into the pool. It was a neat idea and the client loved it – but I still had to figure out a way to make it work.

### Gathering Resources

The first challenge in making this effect work involved the fire system. After much research with barbecue and fire-place manufacturers, I landed on a gas-fired unit with artificial logs. (I tried to work out a way to incorporate an electronic ignition system in the set-up so the customer could ignite the system from inside the house, but the manufacturer nixed the idea because the installation was too exposed outdoors.)

Also, and again because the fire was in an outdoor setting, the top of the chimney needed a cover to protect the fire from rain. The fixture the manufacturer recommended was hideous and would have disrupted the entire Art Deco design concept, so I designed a flat one for them to fabricate that provides protection from rain while projecting a low visual profile.

The next challenge was placing the waterfall fixture inside the chimney, which was approximately 50 years old. Knowing

that a PVC weir wouldn't hold up in the heat, we selected a stainless steel fixture. That was the easy part.

As my partner, Lars Wiren, notched the chimney to accept the weir, he began to get worried that placing the fixture in the chimney might cause the structure to collapse. Then there was the simple fact that we hadn't yet settled on a way to run plumbing into the back of the fixture to supply it with water.

This is where the risk came into play: Lars and I knew that if the chimney structure failed, we would be on the hook to build our clients a new one. As it turned out, we were lucky and the chimney was both substantial and strong enough to accept the waterfall fixture we hid in its decorative façade. As for the plumbing, we core-drilled the back of the chimney and ran heat-resistant copper plumbing up the back of the structure and across the flue.

Seems simple now, but we had no models and couldn't even get good advice from suppliers. It was brand-new at the time: We moved ahead just the same.

I should mention at this point that experimentation on this level requires working with clients who have adventurous spirits. In this case, we've developed a great rapport and they trust that, whatever happens, we'll take care of them. Although these scenarios involve a bit more on-site improvisation than I'm used to, well – so far, so good.

And none of us can wait to see the fire effect at night – something we'll all get to do when the project wraps up shortly.

### A Work in Progress

I have another project in the works right now that is filled with these kinds of risks – and at this point I'm still not certain what the outcome will be. The project is in Latrobe, Pa. – a 9-by-9-foot, stainless steel spa surfaced in beautiful deep blue/gray granite with an edge detail of the sort discussed by David Tisherman in this issue's "Detail" (see page 22).

The spa is raised 16 inches above the deck – and therein hangs a tale.

The customer wanted something special by way of moving water, so I suggested using four laminar-flow nozzles mounted outside the spa that would send con-

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verging arcs of water into the spa's center. These perfect ropes of water are also lit fiberoptically, creating a spectacular nighttime effect.

The clients loved the idea, but as I dug into the hydraulics, I hit something of a speed bump: The laminar jets (as well as all of the spa's equipment) are installed below the water level – the jets at about 20 inches below the water level. What

this means, of course, is that when the spa is off, there's no way to keep the jets from flooding. Regular check valves won't do because the water has to flow toward the jets when they work.

The effect we all wanted to see was too great to discard, so we went back to the drawing board. At first I thought about using valve actuators that would open automatically when the jets came

on. This would work, but we realized there would be a few seconds of low flow to the jets that would make them start up with a dribble. While not a terrible solution, it would definitely have sapped some of the dramatic appeal of the laminar nozzles.

So now we're looking at spring-loaded bypass valves that will be strong enough to hold back the weight generated by approximately 20 inches of water standing in the spa when the system is off, but will open when water starts flowing from the system's pump. The valve manufacturer I'm working with says it can be done, but that I'll probably have to increase the flow from the pump to the jets to make sure they have adequate flow.

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## FORGING AHEAD

In most cases, the ideas that fuel real innovations come from someplace else – and often from places close at hand. Using Skip Phillips and his vanishing edges as an example, he's quick to point out that he didn't invent the effect. Architect John Lautner probably did that in the 1950s, and by the time Skip embraced the idea, they were also being used for high-end pools in France, for example.

Nonetheless, I would argue that by applying the design concept in new and creative ways – and by working tirelessly to iron out the bugs and get the hydraulics down to a science – he *did* effectively create something new and cut paths we've all been able to follow and apply to the specific needs of our own customers.

To be front-runners with vanishing-edges pool designs, Skip and a few others like him had to see what was going on with the look and the technologies behind it and then cast up a vision of where the trends were leading. In Skip's case, he called the trend, dead on.

So what's hot now? What's the vanishing edge of the new century?

That's an interesting pair of questions, and, when asked, I respond with other questions: In what respect? Are we looking at what's new aesthetically?



This shouldn't be a problem, but now I'm having fun coordinating different sets of vendors and juggling their ideas. We all seem to agree that if I set up the pump on a plumbing manifold with a valve that I can use to adjust the flow, things should work well – and that in the worst case all I'll have to do is increase the horsepower of the pump by a fraction. Fortunately, the hydraulic design is more than capable of handling the change.

### Into the Breach

While we've worked all this through as an intellectual and practical exercise, there's an uncertainty among all parties about what will happen when we turn the system on in the real world.

Stylistically? Functionally? All three?

There's so much going on now that has to do with ways of integrating watershapes with their surroundings. There are lots of innovations surrounding the emerging sense watershapers have borrowed from landscape designers of creating outdoor "rooms."

I also give high marks to built structures such as tanning or thermal ledges, lighting effects of all sorts and, above all for me, effects created with moving water – everything from deck-level overflow systems to pool and spa applications of high-tech laminar jets that originated among front-runners in the fountain business.

There's also an explosion in interest in ponds, streams and the whole genre of living waterfeatures. And there's a rise in indoor watershapes – and in designs that use water to link interior and exterior spaces. We've seen significant developments in fiber optics, remote controls and chemical treatment. All of these elements and many others challenge us to move forward to apply them in our work in new and creative ways.

Will any of them catch on the way vanishing edges have in recent years? Only time will tell – but it's an interesting set of possibilities just the same.

–B.V.B.

But that's *not* the issue, nor is the fact that I may end up having to absorb the cost of the jets and their plumbing if I can't make things work. What's important to me, now that I know and appreciate the value of front-running, is that I have to take chances like this to grow creatively and technically as a watershaper.

It's a risk I'm willing to take – my investment in staying on the cutting edge. **MS**

**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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## Contain Yourself

**W**e've spent a lot of time in these columns talking about ways of adding dimension and interest to gardens by using different planting styles and arrangements and by varying color, texture, size, quantity and other planted features of the design. As yet, however, we haven't spent any time at all on one of the easiest and potentially most interesting ways of giving a design a unique character – one that virtually *forces* visitors to remember your garden.

It's all about containers and accessories.

As simple as it seems, adding containers and other accessories – anything from simple terra cotta pots or stone benches to elaborately custom-built planter boxes or beautifully detailed garden statuary – can add marks of distinction to a garden composition. These can be planned from the start or added at any point after a design is completed. Either way, they serve to draw the visitor's eyes or become something to be discovered as he or she wanders through the space.

**As simple as it seems, adding containers and other accessories – anything from simple terra cotta pots or stone benches to elaborately custom-built planter boxes or beautifully detailed garden statuary – can add marks of distinction to a garden composition.**

It's surprising, but many people don't want to bother with containers or accessories because they don't think they're worth the cost or effort. But I look at "accessorizing" this way: Would a remodeled bathroom be complete without towels and towel racks and soap dishes? I think the underlying concept easily translates to a garden space.

### What's the Use?

I don't see containers and accessories as random events: Any of them I place in a garden must be there with some sense of purpose. Covering a bare spot, for example, or adding height to a low planting or highlighting an art object that is the focal point of the design – these are all good reasons to include containers or accessories.

As with any other design element, the items you use should fit well with the garden's style and work well for the intended purpose.

A "container," by the way, is any type of vessel that can house soil and plants. This includes wooden planter boxes, ceramic pots, metal flasks, glass bowls – anything your clients like that fits well into a design. For a cottage garden, for instance, old ceramic plates or pottery that is slightly broken and can't be used indoors can add a unique and unexpected accent that becomes just the right finishing touch.

There is, of course, a typical error that comes in using containers around swimming pools in particular: All too often, people will place a terra cotta planter next to a pool and plant it with colorful plants – and that's the end of it, just something colorful near the pool. Little thought is given to the long-term appearance of the arrangement, and even less to how it will survive.

What happens next is that the heat that typically radiates from a pool and its concrete decking will burn the often-underwatered plants in the container. Try though they might to save the plants, your clients inevitably will lose interest in the struggle and end up with a container with dry soil and dead plants. It's too heavy to relocate,



so it just sits next to the pool, and they look at it every day while reminding themselves that they need to call their landscape professional or go to the nursery and get plants to replace the dead ones.

All of this is a cycle that will keep repeating itself until the container loses all claim to the role it was supposed to have in balancing or accenting the garden composition.

### Thinking Ahead

With that in mind, I strongly recommend that you and your clients consider these questions before you get into containers or accessories – especially when plants are involved.

❑ **What is the function of the container or accessory?** Do you need it to add height and dimension to an otherwise flat design? Do you need it to direct traffic to a particular location? Does the garden simply scream out for something that has more than what the existing planting beds can give? Or is there some other reason the design needs a little something extra?

The motivation behind these questions is simple: You need to be very clear on *why* you are adding the container or accessory to the design. And no matter what you decide to use, always go back and make sure the choices fit when it comes to suiting the intended function.

❑ **What is the style of the garden?** You need to determine whether or not the containers or accessories you're considering really fit into that style. For example, terra cotta naturally goes well with cottage gardens, especially after it weathers, while metal planters or containers with crisp, straight lines go well with contemporary designs.

These are, of course, huge generalizations: Each garden and each situation is different and should be considered as such.

As you evaluate possibilities, however, you can't go too far wrong by picking up a design element from the garden, the house or some other structure in the yard that can be mimicked. If you have a long, rectangular, contemporary

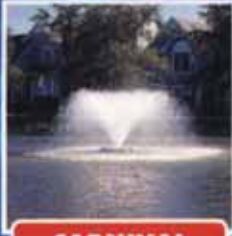
lap pool, for instance, you might look for low, rectangular planter boxes. In doing so, you've kept with the contemporary styling and borrowed the shape directly from the pool. Or you might add pool tiles to the sides of the planters to tie diverse design components more closely together.

Whatever path you take, your goal


You need to be very clear on *why* you are adding the container or accessory to the design. And no matter what you decide to use, always go back and make sure the choices fit when it comes to suiting the intended function.

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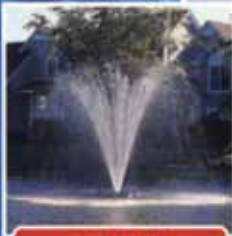
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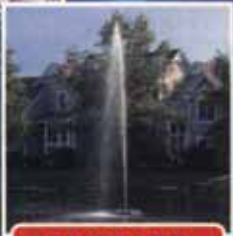
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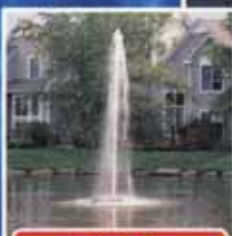
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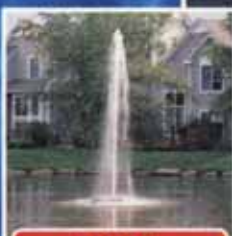
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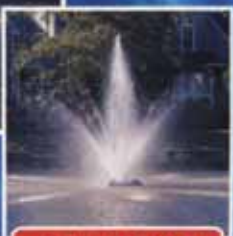
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should be to make it look as if the planters were *meant* to be there.

## ❑ What's an appropriate location?

Placing containers or accessories directly next to a watershape can add a lot of dimension to the design of the pool or pond and look great. Be sure to consider the watershapes' function, however, before committing to setting something right up against it.

Near pools, for instance, many container plants will not fare well if they are doused regularly with chlorinated water. You might ask the kids not to play or splash in that particular area, but that's a bit futile. About all you can do is set up barriers that will encourage them to do their cannonballs in another part of the pool.

Note as well that containers or accessories don't need to be situated right on top of concrete or other decking: Pots look great, for example, when strategically scattered inside planting beds and

can add height and interest especially in an area where you're stuck with shallow planter beds that can only accommodate one-gallon (or smaller) plants.

❑ **What size is right?** Remember the basic rules of design and consider the proportions of what you are using. Unless you're creating a design that plays with ideas of proportion (and with the visitors' heads), make sure the containers and accessories you choose fit visually.

A single 8-inch pot next to a 50-foot-long pool will most likely look lonely and out of place. By the same token, a 5-ton, 14-foot-tall garden sculpture might completely overwhelm a 16-by-30-foot pool visually.

If you're uncertain and have some time, try things on by purchasing pots or whatever you're evaluating in a range of sizes and seeing what looks best on site. (Obviously, it'd be a good idea to buy from places to which you can return items if they're the wrong size.) It's also

**Unless you're creating a design that plays with ideas of proportion (and with the visitors' heads), make sure the containers and accessories you choose fit visually.**

helpful to take a piece of cardboard or other sturdy material and cut it out in the shape and size of the container you're considering – then stand back and look at it from various angles. This will save you the hassle of having to cart heavy objects back to the vendor at the risk of breaking them.

One other easy way to evaluate the possibilities is to use computer technology: Take a picture of the watershape's setting using a digital camera, then use a program like Photoshop to superimpose containers or accessories. This process also helps



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your clients more clearly visualize what's going on and makes them more likely to buy into the concept.

❑ **How many containers or accessories should you incorporate?** When using small containers or accessories, it's often desirable to use more than one. Personally, I like using objects in odd numbers because it tends to lend a more natural look to the design, but if you're after symmetry, even numbers are the ticket.

With larger objects, however, one may be enough—depending upon the intended purpose. You can always “underplant” a big feature with smaller containers to soften the base of the container or accessory and blend it more gently into the landscape. But if you've chosen an unusual container or accessory that you want to use as a focal point, don't even consider covering it up or distracting from its unique appearance with any smaller objects.

❑ **Who's going to water the plants?** This is my personal favorite question, and I find that it's almost invariably answered with, “Oh, we can hand-water them. There are only a few pots.”

Hand watering, in my experience, is the easiest way to ensure that a client's wallet will run as dry as their plants will. Your clients' vacations, for example, will almost certainly coincide with the death of their container plantings, and it's easy for them to forget even when they're around that heat can dry out planters and pots almost as soon as they're watered.

It's not always practical, but drip irrigation may be the best solution. These systems assure a steady, slow feeding and can be placed on a schedule to water several times each day.

❑ **What types of plants should you put into a container?** I could go on for pages about great container plants and potting combinations, but I will save that discussion for the next issue.

In general, however, there's an important consideration in selecting plants for this purpose: Most will not reach their full potential in a container. The sides and base impose barriers to the natural root growth that would occur if the plant were

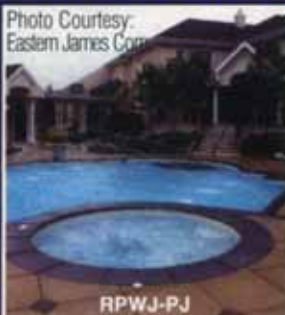
placed in the ground with unlimited potential for underground expansion.

This doesn't mean you should avoid using containers. It simply means that you need to know your plants, make your clients aware of this potential downside, prepare them for the responsibility they'll be assuming and let them know that you're thinking ahead for their benefit. **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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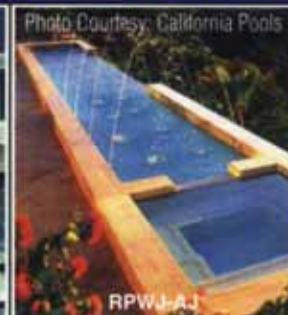
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## Necks, Heads and Shoulders

I'm amazed at how few watershapers keep the size and shape of the average body in mind or consider the science of ergonomics when they design projects for their clients. Just think about how much more we can do to increase their comfort and enjoyment by doing so, particularly when it comes to custom concrete spas.

Take a look at the average spa attached to the typical pool: On a great many of them, you'll see a cantilevered deck around the edges.

From the perspective of someone who isn't conscious of what he or she is doing, this arrangement makes perfect sense. After all, a cantilever here looks just like the cantilever that works so well as a grab rail around the swimming pool – and besides, this little “detail” can conceal a variety of imperfections at the critical interface between the watershape's deck and shell.

Last time I looked, however, human beings aren't built with a notch in their backs to match the intrusion of the cantilevered material. Rare indeed is the person who could lean back and be comfortable in such a spa! Not only is this lousy design and quite often a mask for sub-par construction: In the context of a spa intended purely for comfort or hydrotherapy, it's also *painfully* ironic.

### Consider the Tub

When you look at the way a bathtub is built, you can't help noticing the rolled edge. This feature gives the shell of the tub a measure of structural strength at the edge – and, more important by far from the bather's point of view, it's a com-

**Last time I looked, human beings aren't built with a notch in their backs to match the intrusion of a cantilevered edging material. Rare indeed is the person who could lean back and be comfortable in such a spa!**

fortable contour for leaning against.

I suggest that watershapers should do something similar in designing and building spas. It's definitely not a new idea: Manufacturers of self-contained plastic spas have embraced this tub-like detail for years. And so should those of us who build spas out of concrete and masonry materials.

It's a simple idea, but it's actually a complex detail when done correctly. To get it right, you have to work to precise physical dimensions and plan for the detail from the start of the project. You must know the thickness and size of the tile, the width and number of grout joints, the dimensions of the trim pieces, the precise width of the beam: All these measurements come into play as you specify the size of the vessel.

You also have to pay attention to coping size and thickness, and everything gets trickier when you use imported tile: It will be made using the metric system, so you have to make the conversion to inches and feet as you go. In other words, this approach takes precision and planning.

### BODY WORKS

To learn more about the science of ergonomics, I suggest reading *The Measure of Man* by Henry Dreyfus. It's a brilliant book that defines the science of sizing common objects for the needs of the human body.

—D.T.





The spa on the left looks great, but the cantilevered edge will make for reduced comfort and relaxation for *anyone* trying to lean back and enjoy the spa experience. Why not roll the edge of the spa like the rim of a bathtub, as was done in the spa on the right? Not only does it look great, but it dramatically increases bather comfort.

If you don't get all of the dimensions dead on, you'll almost certainly end up having to use odd trim pieces that will give the detail an uneven look.

In preparation, I'll push the coping back anywhere from an inch to a foot to cre-

ate a beautiful and comfortable tile shelf. Not only is it a dream for backs and necks, but it's also a great visual transition that accentuates the presence of the tile and visually connects the interior of the spa to the surrounding space.

Try it – you'll like it. It's not a terribly complex detail, and it adds only a little cost because all you need to do is add some concrete to the bond beam and set up your steel stirrups to accommodate the added mass of concrete.

Continued on page 25

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## A KILLER DETAIL

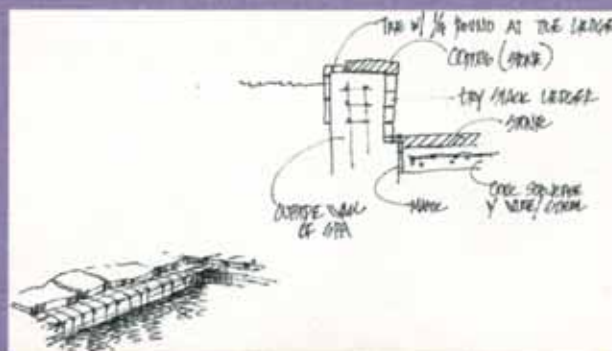
This spa-edge detail is a sweet one to pull out as a portfolio detail, as shown in the photograph. It's also relatively easy to draw. The one shown here took a few seconds and was used to explain what I wanted to do to a client who was having trouble visualizing how the detail worked.

This ability to illustrate and explain details is one of the many value-added touches I use to set myself apart from other designers and builders. If you want to learn more about how drawing can be used to advantage and improve your own drawing skills to a level that truly will help your clients get a clearer picture of what you have in mind in your projects, please note that I'll be teaching a week-long, intensive drawing school as part of the Genesis 3 curriculum in March 2002 at Arizona State University.

The classes will be taught at a college level, similar to the drawing classes I've taught at UCLA—but it's all geared to the watershaping industry. We'll start with the basics and proceed to teach you how to present a three-dimensional drawing to the client.

Watch future issues of this magazine for more information.

—D.T.



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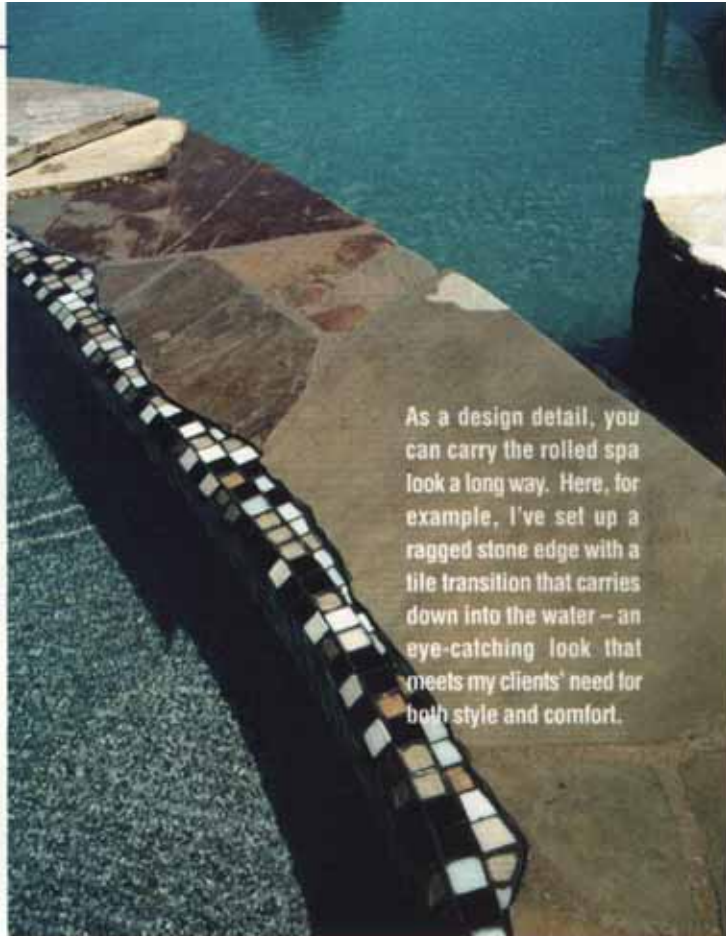
There's also lots of design flexibility when it comes to materials. I've done this using marble, granite or glass, ceramic or glazed tile. I've used quarter-rounds to make the vertical-to-horizontal transition, while other times I've use a surface bullnose.

I've also used the 45-degree intersection from vertical to horizontal that's popular in Europe: If trim pieces are not available, this offers a beautiful and comfortable transition and adds a subtle visual detail to the overall composition.

As with so many other fine details, of course, you need to pay attention to what you're doing and know and understand the materials and joinery you're using: There's no way to cheat with imprecise dimensions or levels the way you can when you're using a cantilevered deck.

There's also no denying that this is a feature your clients will appreciate each and every time they set themselves down in the water for a much-welcomed bit of relaxation. **MS**

**David Tisherman** operates David Tisherman's Visuals, a design and construction firm based in Manhattan Beach, Calif., with offices in Marlton, N.J. He is co-founder and principle instructor for Genesis 3, A Design Group, which offers education aimed at top-of-the-line performance in aquatic design and construction.



As a design detail, you can carry the rolled spa look a long way. Here, for example, I've set up a ragged stone edge with a tile transition that carries down into the water – an eye-catching look that meets my clients' need for both style and comfort.

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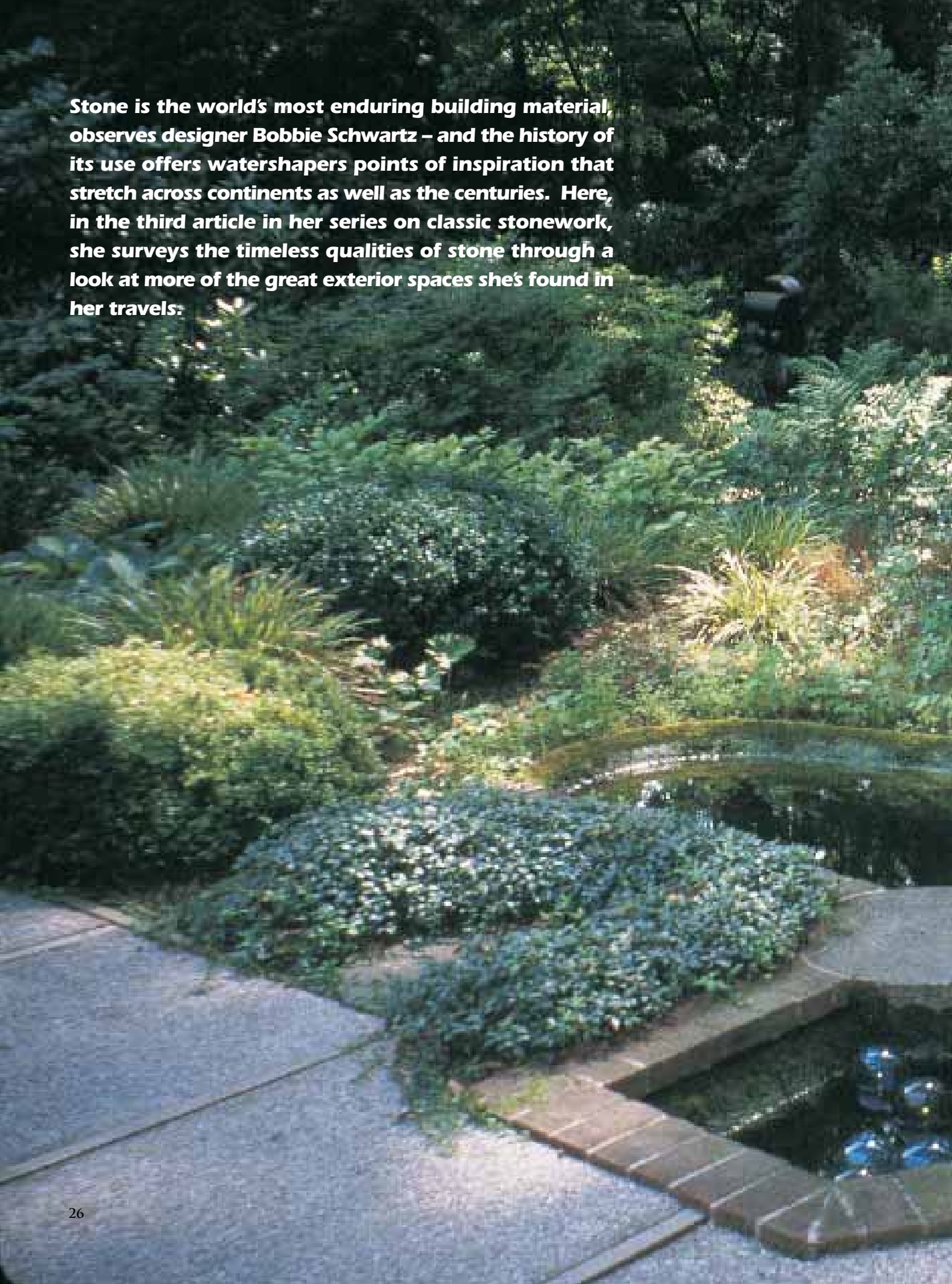
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**Stone is the world's most enduring building material, observes designer Bobbie Schwartz – and the history of its use offers watershapers points of inspiration that stretch across continents as well as the centuries. Here, in the third article in her series on classic stonework, she surveys the timeless qualities of stone through a look at more of the great exterior spaces she's found in her travels:**





A photograph of a garden featuring a pond with stone steps, surrounded by dense foliage and flowers.

# Lasting Impressions

By Bobbie Schwartz





**Figure 1:** An appearance of great age is lent to this rock garden through the designer's selection of stones with the hallmarks of antiquity, including signs of exposure and encrustations of lichens and moss.



**Figure 2:** This raised stonework bed serves as a focal point for the garden, but it ties into its surroundings because the stone here is the same as the stone used in the surrounding walls.

Whether you choose to replicate old stone structures or borrow ideas and transplant them into contemporary designs, there is certainly a treasure trove of design concepts to be found in the masterworks of those who've gone before us. Indeed, stone has been the raw material of choice for many of the world's greatest architects, landscapers and watershapers, each of whom has relied on stone and its timelessness in fashioning works of beauty.

In the first two articles in this series, we toured gardens across Europe and North America and paused to examine walls, footpaths, stairways, stone structures and more – our objective being to develop an appreciation for common materials used in very special ways to add distinction and a meditative sense of antiquity to garden spaces.

This time, we'll continue our travels, stopping by spaces both famous and not so well known to look at their rock gardens, bridges and, finally, stone cascades before wrapping things up. These fresh examples will round out the set of details that can be added to any watershaper's design work – touches that will leave lasting impressions in the minds of those who venture into the spaces you create in the here and now.

## Garden Varieties

I've always found it surprising that designers, particularly those who live in areas with very little rainfall, so rarely take advantage of an opportunity to do something different and unexpected by creating rock gardens or xeriscapes near their swimming pools or other watershapes.

Much more so than a green garden, these areas become extensions of indoor space – "outdoor rooms" in a truer-than-usual sense of the term. Just as interior spaces are decorated, we need to consider ways to decorate these outdoor spaces. And stone lends itself beautifully to this inventive process.

To be sure, rock gardens are a popular option in new gardens, but as I've repeated several times in these articles, the most appealing among them are those that look old and well established. And of course, this can only happen when the stone itself looks old.

Paul Zammit and Uli Havermann have designed a new residential garden in Toronto that takes on the mantle of age by using old rock to retain the soil and create paths and steps through the garden (Figure 1). Remarkably, their garden was only two years old at the time I visited it, and the front half was just about a year old.

The stone, extracted from the nearby countryside, was hand-selected, piece by piece, for





**Figure 3: Simple and effective, a hollowed out stone serves as the perfect foil for a classically inspired fountain statue.**

shape and color. Havermann specifically sought out rock that showed obvious signs of long-term exposure and those encrusted with mosses, lichens and bits of twigs, and then laid them so that they would mirror one another, always keeping the stress lines consistent.

This rock garden happens to be in the front yard of this property, but it could just as well be adjacent to a swimming pool or pond. The marvel is that it looks

as though the stone had been there for eons and that someone just came along and built a house. The designers also selected plant material with care, particularly for the front half of the garden, selecting species that would survive on no more than natural rainfall.

A very different twist on a rock garden is the two-level raised bed at Upton Grey in England (Figure 2). The bed is the focal point of a space surrounded

by flower beds, and the fact that the stone used here is the same as the stone used in the walls beyond is a nice unifying touch.

In a sense, the Upton Grey rock garden is no more than a glorified planter of the sort found in gardens all over the map. Often, structures of this kind look like the one I saw in a Boston garden, where a large piece of stone had been hollowed out to serve as a pool and fountain base (Figure 3). The selection of a classically themed fountain statue completes the impression of age conveyed through the stonework.

## Bridge Building

By no means does stonework have to be small scale or modest to be effective. Bridges are a case in point where grand can be wonderful – and they are indeed among the most striking of all the stone structures I’ve seen. Where rock gardens provide something of a sculptural dance, bridges slow down the impressions to a more deliberate and contemplative pace.

Even small bridges can make a huge impression, as is certainly the case with the beautiful bridges at Stourhead, a former English estate that is now a National Trust garden (Figure 4). Such bridges



**Figure 4: Spanning the water that divides and organizes a large garden space, this artful stone bridge serves a practical purpose while lending a dash of romance.**





**Figure 5:** The offset is the key to the impression made by this simple stone bridge. The walker must slow down and pay attention to negotiate the crossing.

would be difficult to duplicate today because of the cost; just the same, they suggest ways of organizing and connecting settings in both space and time that can be applied in different ways today.

Even minimalist approaches work well in garden spaces, as can be seen in the monolithic stone bridge I crossed while following a stone path at Iford House

(Figure 5). What impressed me most about this bridge treatment was its placement: Instead of being a direct extension of the path, the bridge stone was offset, forcing the walker to contemplate the scene and not just forge straight ahead.

In this way, the designer at Iford House used a small and subtle bridge to create a distinctive focal point. On yet another

terrace, crossing the same body of water was a different experience: Here, the stone path was more direct, but the walker still had to slow down because this time the stones across the water were uneven.

A contemporary version of this type of bridge is seen in the cantilevered stone slabs set over a koi pond (Figure 6). This has the effect of virtually immersing the

**Figure 6:** This graceful, contemporary-looking span over a koi pond puts the walker right in the middle of the aqueous environment.







**Figure 7:** A monolithic, polished stone slab offers walkers a stylish short-cut across the corner of this watershape.

adventurer within an aqueous environment. (Although the garden is relatively new and the stone shows little evidence of antiquity, the combination of shade and moisture should quickly help it show some age.)

Even simpler in concept are a pair of projects designed by Oehme/van Sweden in the Baltimore area: One uses

a polished stone slab to traverse a sculpted corner of a watergarden (Figure 7), while another features round platforms that offer a shortcut through the watery space (Figure 8). Both of these looks are sculptural and architectural; I can see making them take on a more natural cast by using submerged rocks with flat tops as a substitute.

To be sure, bridges aren't for every space, but when the opportunity presents itself, they can be wonderfully effective and intriguing.

## Stone and Water

Another effective and intriguing use of stone is in the form of cascades – something that is probably nearer and dearer



**Figure 8:** Like so many lily pads, round stepping stones carry visitors across this carefully sculpted watershape.



**Figure 9: Harkening back to Italian Renaissance models, the water chain seen here is in a section of a modern botanical garden designed with children in mind.**

to watershape designers than any of the other stonework forms we've encountered so far.

We're all more or less familiar with concepts of stream-building and waterfall design and are aware of the use of stone to create naturalistic water effects both large and small. What interests me in the context of this article, however, is a different approach – more sculptural and architectural – to the use of cascading water in built spaces.

Stone cascades have been with us since antiquity, probably contemporaneous with early irrigation systems and certainly they were in wide use by the time aqueducts served as a means of water distribution. But artistic usage of moving water really hit its stride in Europe during the Italian Renaissance, when places such as the Villa d'Este took the decorative potential of water to totally new levels of grandeur and inspiration.

From that creative source have come cascades such as the curvilinear water chain installed in the children's section of the Royal Botanical Garden in Hamilton, Ontario, Canada (Figure 9). A more formal, architectural (and less evocative) impression is made at the Garden's visitor center, where water from arching fountains falls into a pool before overflowing as two cascades into a lower pool (Figure 10).



**Figure 10: The botanical garden also offers observers this stonework cascade – an interesting and formal (but far less engaging) water effect.**





**Figure 11: The combination of stone, words and water in Washington's Franklin Delano Roosevelt Memorial shows the potential of cascading water to make strong visual and even emotional statements.**

Ingenious minds, however, have created cascades with much more commanding presences – the distinctive quality that makes viewers take second and third looks. One of these is the polished stone cascades that are part of the Franklin Delano Roosevelt Memorial in Washington (Figure 11). These cascades are an integral part of the memorial, which features stone monoliths engraved with FDR's most powerful words. Here, stone, words and water work together to evoke powerful emotions.

The Parc Andre-Citroen, a public garden in Paris that opened in 1992, has a similarly distinguished and distinctive cascade: Tiered on a slant (Figure 12), it faces another cascade that is a simpler sheet of water – and both work together to invite eyes and ears to move across the enclosing berm to the bustling sights and sounds of the River Seine.



**Figure 12: This stonework cascade in Paris is designed to draw observers in – and then transfer their attention from the immediate space to views of the River Seine beyond.**





Figure 13: All by itself, this large rock serves as a focal point in this garden space – an achievement enhanced by the fact that the stone shows signs of age and character.

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## Senstations and Antiquity

If you asked me to capsule my thoughts on all of the stonework features we've seen in this series of articles, I'd have to boil everything down to two points.

First, new work in stone benefits dramatically when the designer does all he or she can to secure old-looking stones or figures out ways to "age" them. The advantage of using stone is that it offers you a way to make new work look as though it has been around forever and has stood the tests of time and the elements. Plants and trees and even water will come and go, but rock is eternal.

Second, stone is much more than a construction material, and we should all find artful, decorative, attention-guiding ways to use it in landscapes. Even all by itself, a well-placed rock – one with real character – can ornament and serve as a focal point (Figure 13). So, too, can a beautifully carved pedestal placed upon a simple stone base or a single column carved in one of the classical Greek forms (Figure 14).

As designers of exterior spaces, we gardeners and watershapers are charged with finding creative ways to express and capture our clients' desires. I've found repeatedly that studying the approaches of the masters of the craft offers a rich vein of guidance and inspiration – the keys to creativity. **MS**

Figure 14: An air of both antiquity and mystery attaches itself to this simple classical column, placed like a marker of ancient space in a contemporary Boston garden.

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# At Play

## in the Fountain

By Eric Dobbs

Extraordinary scope and a high level of patient logistical coordination: That's what 'The Fountain of Life' project was all about in its design, engineering and construction phases – but that's only part of the story. The other, says stone mason and watershaper Eric Dobbs, has to do with playfulness and whimsy and providing passing children with the opportunity to find relief from the blistering desert sun.

# of Life

From the start, this project was meant to be something truly special – a monument symbolizing the ambition of an entire community as well as a fun gathering place for citizens of Cathedral City, Calif., a growing community located in the desert near Palm Springs.

"The Fountain of Life," as the project is titled, features a central structure of three highly decorated stone bowls set atop columns rising into the desert sky. Water tumbles, sprays and cascades from these bowls and other jets on the center structure, spilling onto a soft surface surrounding the fountain. All around this vertical structure are sculpted animal figures – a whimsical counterbalance that lends a light touch to the composition and opens the whole setting to children at play.

I've been building stone fountains for 18 years, and I've never come across anything even close to this project with respect to either size or sheer creativity. Making it all happen took an unusually high degree of collaboration on the part of the city, the artist, the architects and a variety of contractors.

### SETTING UP THE TEAM

Our firm, Casa de Cantera of Oxnard, Calif., was hired to provide the carved stone elements. That seemed a large-enough assignment, but we soon became involved in the installation as

well in coordination with the general contractor (who also happens to be my brother), Glen Dobbs of Fountain & Landscape Enhancements of Bakersfield, Calif.

The project was the brainchild of Jennifer Johnson, a designer with the Palm Springs firm Cock-a-Doodle-Do Arts. Johnson and the city worked with the architect, Roe Young & Associates, also of Palm Springs. By the time we became involved in 1998, the design team already had developed detailed drawings and mock-ups.

Everyone involved knew that turning this grand-scale design into reality would require a tremendous investment of time and effort in coordination and negotiation of all the details. In all, there was a stretch of about eight months from the time the team was assembled until we were actually given the contract and the green light to proceed.

As its name implies, the basic idea is that the fountain represents the interconnectedness of life in nature. The central structure includes three main bowl fountains at different heights, each level with various jets and cascades, and portions were to be decorated in colorful mosaic tile and other materials. Other parts were to be left bare, allowing the pale, beige stone to contrast with the brilliantly colored decorations.

Surrounding this structure are various animals – ram, turtle, fish, iguana, rooster and rab-





**Setting a Base:** When we arrived on site (A), our first task (among many) involved setting up the substructure to support the massive watershape. We used a template to get the positions of plumbing and supporting columns to within tolerances (B and C) for the sub-base. With that sub-base in and ready, we set up the metal columns that would support the fountain's towers (D) and then poured another layer on concrete to complete the main pad. Setting one of the columns up at a slight (but structurally dramatic) angle was quite a challenge for crane and crew.

bit – all partially decorated in tile and many including water jets. The idea is that all of the animals are drawn to the central stone structure, which represents the earth or the water-giving center of life.

In basic, down-to-earth terms, however, what the various figures and water-features *really* offer is a clarion call inviting children of all ages to play and get wet.

### TAKING SHAPES

All of the stonework – the central structure as well as the animal sculptures – is carved of limestone mined in the vicinity of our factory near Guadalajara, Mexico. The specific material we used is known as a *light pinion*.

After we received the order for the stone elements, we carefully sized up the pieces we'd need and went into the mountains to find the raw material. In all, the quarrying crew from our factory spent three weeks in the mountains, extracting pieces we thought could be carved into the various fountain elements. The center element alone, we estimated, would take 59 custom-carved pieces.

Believe me, removing pieces of this size is extremely labor-intensive and is achieved mostly with hand tools, leverage and gravity. In all, we carted approximately one hundred pieces of various sizes back to our shop.

We started our work using the design-

er's scale model and the architects' drawings, and the carving alone took more than five months to complete. Our very best sculptors, all local craftspeople, focused almost exclusively on this project for the duration, and even I was amazed at their efficiency as the various elements gradually took shape.

All through this process, we were in constant communication with Johnson, the architects at Roe Young & Associates and representatives of the city. Johnson was particularly helpful, making suggestions that helped us understand her vision and keeping us on track. Of particular importance was the information she gave us on where to provide "relief" in the stone



surfaces where she intended to place mosaic details: We all wanted the end products to be as smooth as they could be.

Eventually, we were able to pre-assemble everything at the factory, making certain of the fits of connected components and also making doubly certain that the actual work reflected the model and plans. Once we made the final adjustments, we labeled all the pieces with care, packed them in crates and set up a truck convoy to cross hundreds of miles of Mexican highway.

### ON LOCATION

By the time we arrived, a holding yard had been set up near the installation site, giving us enough room to unload and organize the pieces of stone. Nearby, a tent was set up in which Johnson and her tiling crew began applying the mosaics to the stone.

While this big job was under way, we

pre-assembled the center element over a grid of railroad ties. This enabled us to slide sheets of plywood beneath the stone pieces and create an accurate template of the structure's footprint. In turn, this template would enable us to fix the position of the element on the construction pad – a critical need in locating the plumbing runs as well as the conduits for lighting.

As assembled, the center element weighs in at nearly 100 tons, which called for a significant foundation. Structural engineer Paul Singer, also from Oxnard, specified a 12-by-14-foot pad, 4 feet thick. Given its sheer mass, we knew there'd be no chance to go back: *Everything* had to be perfectly positioned beneath the fountain structure.

Working with great care and observing the old carpenter's rule, "measure twice, cut once," we established a center point in the template and cut holes in the plywood sheets to pinpoint exact loca-

tions of standpipes that would carry the plumbing and electrical conduits.

The pad was then set down in two pours, the first being the most critical in terms of placement of the conduits, which were routed through large iron standpipes ranging in diameter from 6 to 14 inches. Once the lower pad was set and we'd double-checked the standpipe positions, we poured the second tier to complete the base.

I'm making this seem like a linear process, but the truth is that a whole lot was going on simultaneously. As we built the pad, we were also digging out the equipment vault and assembling the structure while the tile was being applied to individual components. In addition, we were doing preliminary work on the pads and plumbing for the animal sculptures and preparing the deck for application of the soft surface material.

Around this whole area, we also set up for drainage via an encircling gutter sys-



**Layer Upon Layer:** Once the foundation was set, we took full advantage of the fact that the fountain had been completely assembled in Mexico and had been clearly marked to simplify re-assembly on site (E). It went up like a layer cake, one level at a time, and came back together according to plan (F). At the same time we were active in building up the central structure, we were also working on the perimeter drain system and in preparing the area around the central structure to receive a spongy decking material (G).





**Marks of Distinction:** As we were working away at the structural elements of the watershape, a crew of tile artisans worked on decorating various components with elaborate, colorful tile mosaics (H). Once these components were ready (mostly animal forms, but also some key parts of the central structure), we moved them to their final spots in the fountain assembly or on the surrounding deck (I).



tilted, an effect that took some careful structural planning – and tricky maneuvering with the crane.)

Much of the tile had already been added as we assembled the center element – and now we all began to see just how striking the whole composition would be. We all watched with growing pride and excitement as finishing touches were added, including the hammered-brass palm leaves on the middle column.

The positioning of the animals around the fountain was not as critical, but by this time we weren't leaving anything to chance. We made templates of the bottoms of each animal and used those to establish the exact locations in a meeting with the city, the architects and the designer. Once we'd staked down those locations, we finished the plumbing runs and set up supporting foundations for the animals.

Now it was time to install the surface material, which is made of a combination of reprocessed automobile tires and epoxy resins. The surface is four inches thick at the center, sloping very gently to three inches on the perimeter. Water flows outward over and through the spongy material, eventually finding its way to the encircling gutter.

In the vault, Glen's crew set two 5-horsepower pumps that drive all of the waterfeatures as well as the control panels and plumbing configurations, which were handled with the help of Fountain Supply Co. of Valencia, Calif. In all, there are 35 different water elements with a variety of nozzles and spray effects in a system that holds approximately 2,000 gallons of water drawn from a sub-grade surge tank. Given the desert climate and large surface area, we set up an auto-fill

tem with a diameter of 60 feet. In effect, water from the fountains flows freely over and through the permeable, non-skid rubbery surface and is directed outward into the perimeter's sub-grade gutter.

### A LAYERED APPROACH

At last, it was time to install the stonework.

The center fountain structure was built as three levels. The first row was laid on the pad around the standpipes in a location precisely established by the template. Next, slots were cut into the bottom of the base stones. Here we tied in loops of rebar, cemented into place using a special epoxy/mortar mixture. Now holes were cut in the tops and sides of the stones for more rebar that would be used to tie everything together and provide stubs for the

loops we would use to "stitch" this level together with the one above.

In the first two levels, we'd left a large void in the center of the stones. Once all the pieces were positioned and tied together, we filled the void with poured concrete, flush to the top. The second tier was placed in much the same fashion, all tied together with rebar and the special mortar and then filled before we moved on to the third level that crowned the structure. There's also a fourth structural section at the back of the second level from which a series of interactive spray jets emerge and drench passersby.

Once it was all put together, the central structure was really one solid piece. At that point, we began adding the columns for the bowls, lowering each over its standpipe. (Note that one of the columns is





**Emerging Forms:** As all of the various components we'd worked on through a period of months began to come together in final form (J) – complete with the tile decorations that we'd so painstakingly made allowance for in our shop in Mexico – we witnessed the arrival of a monument to the power of water to shape arid spaces (K) and found satisfaction that comes only in working at the highest levels of creativity, collaboration and attention to detail.



system to compensate for the expected rapid evaporation.

## LOCAL FLAVOR

Unlike other portions of California that depend on aqueducts for their water supplies, all of the Coachella Valley's water is drawn from local wells that tap a massive underground aquifer.

Despite the growth in the area, local geologists assure city leaders that water in the aquifer will continue to be available in great abundance, constantly fed by the watershed in local mountain ranges. As a result, the communities in this area are famous for their swimming pools, water-hungry golf courses and fog-misters that cool sidewalk cafes and outdoor pedestrian areas – and this fountain fits right in.

Dedication ceremonies were held in July 2000, a gala affair widely covered by local media. It was great to receive praise and recognition from the city's leaders, but the greatest satisfaction has and will always come from watching kids frolic and play. As intended, the fountain has become a symbol for the community as well as a popular gathering and play area.

For all of us who participated in this magnificent project, it will always be a point of pride. **WS**

## A Community Vision

The project seen in the accompanying article grew out of conversations between our firm, Cock-A-Doodle-Do Arts of Palm Springs, Calif., and representatives of Cathedral City, a desert community right near us.

From the outset, the fountain was intended to depict various aspects of the community's life. Indeed, it's a metaphorical town square in which, instead of a city hall, court house and library all facing each other and surrounded by shops, restaurants and homes, one finds symbols of the collective human experience and the forces that lead us to form our communities.

The base of the fountain is very raw looking. Gradually, as the structure rises, it becomes more and more structured and ornate, representing the refinement of society as it grows and develops its ability to make use of the materials that surround us. On another level, one of the pillars is twisted and is decorated with palm leaves. This is a variant on Corinthian styling that dates to ancient Greece. We modernized things, however, by unfurling the leaves to suggest the more relaxed social climate of today's world.

The animals that surround the structure are symbolic as well, representing individuals existing in a shared environment. The chickens, for example, represent the tenderness of the family: The rooster cares for the hen and the hen cares for the chicks. It's lighthearted and humorous on one level, but poignant and meaningful on another.

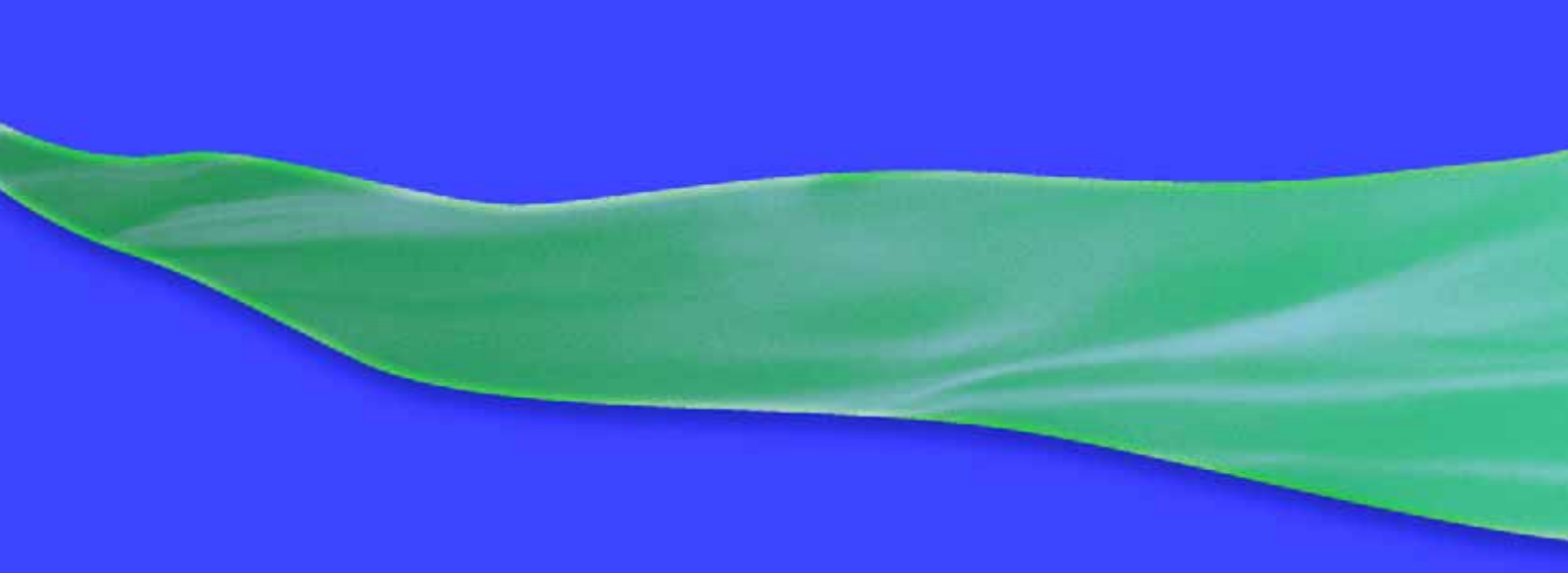
The fact that the fountain is interactive also has significance. We wanted to show that people of all ages could play freely here with no negative repercussions. In providing a stage for this social experiment, the fountain makes a strong statement about the role individuals play in society and how they perceive themselves as part of a community.

And so far, the experiment has worked. In the 18 months since the dedication ceremonies, there have been no accidents or vandalism of any kind.

It's a joyful and pleasant place to be, and to my mind that makes an extremely significant statement about community and family. So whether you're open to the broad symbolism or simply want to splash in the water or watch children get wet, the fountain serves its basic purpose by making you happy!

– Jennifer Johnson







# The Soul of the River

By Hal Hagen



The **tale** of a river is often told by the **life** within it, observes Hal Hagen, the one-time owner and operator of a fish hatchery who has since become a specialist in **restoring** natural waterways. Here, he explains his unique approach to a highly **specialized** form of watershaping – and discusses how understanding the way **nature** works in the wild can inform, enable and empower those seeking to **replicate** it in their man-made streams.

I live in the Rocky Mountains of Colorado on the banks of the Arkansas River – a beautiful place and a beautiful river. Within easy reach of my home, the Arkansas flows swiftly in certain spaces, cascading over rugged terrain, then slows down in others to form deep pools that reflect brilliant skies and create a diversity of aquatic habitats.

As I watch the river flow, sometimes I can't help thinking back to my days at a trout hatchery and recognizing that if we'd had such a volume of moving water available to us in our operation, we could have produced millions more pounds of healthy fish. I'm simply amazed by the power and complexity of the water I watch, and especially by its ability to generate *life*.

At the most basic level, all rivers do is direct a volume of water down a grade of some kind, creating a tremendous amount of energy in the process. Where that volume of water is great enough and swift enough, humankind has learned to turn this abundance of energy into hydroelectric power. Nature also uses that energy to its own purposes – and in awe-inspiring ways, as a glance at the sculptural qualities of a place like the Grand Canyon demonstrates or as any trout-fishing enthusiast can tell you.

Despite all that power (or perhaps because of it), the life cycles of rivers can be delicate and their capacity to generate life can, for various reasons, be diminished. What I do in my work is give the generative processes a hand by figuring out ways to unleash the energy carried by the water's flow and turn it into fish.





## *Green Transitions*

As I mentioned above, I took my first steps along this path while I was in the hatchery business.

Traditionally, hatcheries have relied on concrete construction to provide artificial environments in which the fish are reared. Years ago, however, it occurred to me that this was probably not the most efficient or effective approach to growing a “wild-like” fish, so we started tearing out the concrete and replacing it with natural earthen structures.

After a period of years, we were designing passive methods for changing energy into fish. We figured out simple ways to harness the head pressure in a river (its available energy) to trap free nutrients in protected habitats that developed forage for fish.

That seems pretty straightforward on a conceptual level, but the truth is that this is complex stuff that requires an understanding of hydrology, forage management and the life cycles and spawning behaviors of trout. Different-size organisms feed different sizes of fish, and every body of water has different environmental conditions that affect the relationships among nutrients in the water, bacteria, invertebrate populations and, ultimately, the fish.

These days, I use many of the techniques I learned in the hatchery business to restore

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**WORKING IN THE WILD:** In our work on a long stretch of the Williams Fork River in Colorado, our aim was to slow the river down enough to encourage fish to stay around long enough that kids at a camp for terminally ill children could drop their lines and catch some fish. We added tons of rock and a variety of subsurface features and widened the river in places to slow the flow and build up nutrient levels.



Varying speed of **flow** in a stream will give the work a more **natural** appearance, because that's the **way** that nature does **things**, at the same time it will **enhance** the function of the **entire** system.

and beautify natural rivers. Ours are big jobs that take months or even years to complete. In the past decade, our firm has tackled perhaps a dozen projects – each one different and rewarding, and each one requiring patience and a willingness to observe and study the natural environment.

In one project, for example, the challenge may be to find ways to capture leaf material that's fallen into the water so it can decompose and feed the various invertebrate groups that in turn feed different species of fish. In another, there might be *too* much nutrient material in the water, and the challenge is figuring out how to remove or use it.

In yet another type of project, the challenge may be to decrease the negative influence of localized insect control on the water by finding a means of reducing insecticide runoff into the flow path.

I've also worked on multi-phase projects in which we've installed large gravel-filtration systems on ponds associated with rivers to remove abundant organic material – and put the diverted water to use in irrigating and restoring nearby fields that needed re-vegetation. In a situation such as that one, nutrients in the water are used to fertilize plants that provide habitats for terrestrial invertebrates, amphibians and birds instead of limiting fish populations.

### *Repair and Rebuild*

The repair and rehabilitation of streams encompasses many specific tasks, but the work generally can be broken down into two broad categories: First, we create habitats where indigenous species of aquatic life can flourish. Second, we make the work look “natural,” both in the water and beyond.

This division of functions is important from the standpoint of understanding what we're doing, but it's not always so clear-cut: Quite often, things we do on jobs fall into both categories. If there is one underlying rule it is that form almost always follows function: A boulder habitat structure in a stream is functional by providing protected habitats for trout, but the form or aesthetic appeal is directly related to what it does. It creates a diversity of stream velocities or breaks up the monotonous nature of a stream.

Consider the issue of the speed of the water. One of the things you see in natural streams is variation in speeds. As a

result, we spend a lot of time managing the rate of flow: There will be areas where the flow may need to be sped up a bit by clearing debris or rock structures, while in other areas, we may want to build rock structures or augment existing structures in order to slow things down and create pools in which fish can rest, for example.

In so doing, we're working toward habitat creation and naturalistic appearance, simultaneously and inextricably.

In other words, varying speed of flow in a stream will give the work a more natural appearance, because that's the way that nature does things, at the same time it will enhance the function of the entire system. Another example might be plantings along the banks: These additions enhance the natural appearance of the stream, and at the same time might be necessary to stabilize the slope of the bank or provide a source of nutrients by virtue of plant material falling into the water.

When you get down to it, many of the key variables we're handling tend to relate either to the level of nutrients in the water (too much or too little) and the speed of the water (too fast or too slow). But we also address issues of human interaction with the water, temperature stabilization and the interaction the river has with associated aquifers and other bodies of water.

Again, these are extremely interrelated outcomes, and how you achieve the desired effects on a specific project will always be different, often in stimulating ways.

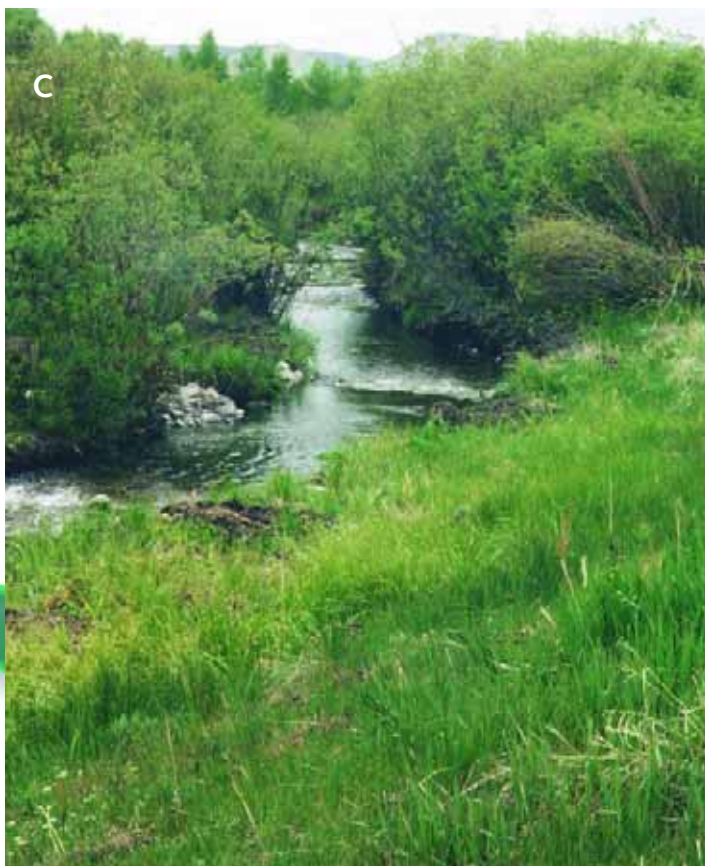
### *Care and Feeding*

Our approach to stream restoration involves a great deal of site assessment and planning.

Before we even begin “planning” in specific terms, we'll spend time on site studying the stream and the surrounding environment. We'll look at the fall of the stream in terms of drop versus distance; we'll quantify width and depth and flow rates; we'll track existing fish populations, nutrient levels and any man-made structures that may be influencing the health of the stream. All these components are examined over time and taken into careful consideration as we develop our restoration strategy.

Once we determine what should happen within the system





to achieve the desired outcome, we can go about making specific plans. In doing so, we have a number of tools at our disposal that can be used in a variety of ways.

For example, we can grade a portion of the stream- or riverbank to slow down or speed up the flow. This can involve widening the streambed in places – or changing its depth. On some projects, we'll look for ways that we can redirect the flow by adding wooded material such as a "fallen" log, or enhancing or reducing rock structures. In many cases, these structures again serve the purposes of managing rate of flow, providing locations where nutrients can accumulate *and* enhancing the aesthetics.

In terms of creating nutrient resources, one of the most useful tools we have at our disposal is a *gabion basket*. These wire-mesh baskets come in various shapes and sizes and can contain different materials. At times, we'll use rocks of differing particle sizes to increase surface areas that bacteria and small aquatic animals can colonize. Or we'll use formed diatomaceous earth or vermiculite, depending on the type of habitat we want to encourage. Without the structure provided by the baskets, most of these materials would wash down the stream, and there would be no opportunity for habitat development.

Gabion baskets are typically used in situations where you want to add or trap nutrients, but they can also be used to *remove* certain organisms. Barley straw, for example, is a wonderful natural algaecide: In situations where we want to control large algal blooms in an area, we may submerge several baskets filled with the material to get the job done.

With or without baskets, understanding what kind of material will remain stationary in the water's path at a particular flow rate is very important. If an improvement structure is to remain stream-stable, it has to be able to withstand high water and also remain functional during low flows. Equally important is consideration of how a structure affects stream banks down-

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**ON APPROPRIATE SCALES:** Not all of the work is on big waterways. In some cases, we're called in to make adjustments to small streams – as in the two projects seen here, where in one case we created a pond along a stretch of a natural stream to create a fishing hole for a handicapped angler (A and B), and in another, where we transformed what had once been a drainage ditch into an environment suitable for trout (C).

---



stream or on the opposite bank. Placement of spawning gravels in an area with too much or too little stream velocity, for example, will render the structure useless.

### Case by Case

As I hope the above suggests, each of our projects is entirely specific to the situation – so let's take a look at a couple of projects by way of illustrating the sorts of things that can be accomplished in our restoration projects.

One of the largest we've done to date was on the Williams Fork River, where we restored a mile-and-a-half stretch of beautiful riparian area that ran through a wildlife ranch for terminally ill children. The problem we faced was a lack of non-migratory rock in the river channel: The entire river section, with the exception of two pool areas, was one long riffle. The river ran so swiftly that there were very few areas for fish to stay in the stream channel, and the problem was compounded by the fact that the stream banks were being actively eroded.

In short, we had one long stretch of stream with no fish.

The owners of the property wanted us to create areas in which the kids could fish, safely and easily. To accomplish this, we added large, stream-stable boulders to create pools; individual holding habitats; detritus traps; and spawning, fry and fingerling areas. (Some regulatory restrictions prevented us from using gabion baskets in this section of the river.)

The river also interacts with a large riparian aquifer that is critical to the ecosystem of the entire area. This interaction is a positive for any living waterway, because the aquifer stabilizes water temperatures and seasonal high and low flows, which is important in

## Leaving Well Enough Alone

When it comes to landscaping riverbanks, most of our work is aimed at re-vegetation. We use only indigenous plants and often end up removing certain plants that are intruding on more natural vegetation.

For the most part, however, our goal is to leave the edges alone.

In this sense, what we *don't* do can be every bit as important as the steps we take. In our work, we most often choose to encourage nature and alter things only to enhance existing natural processes. We make adjustments that allow the natural setting to take over and do the landscaping work for us.

That's not to say that our general approach is minimalist or small scale. In some cases, we may end up adding 40 or 50 semi loads of rock to an area – but in ways that augment what nature is doing with the energy in the stream or river. Understanding where the balances are between taking action and leaving well enough alone is one of the sublime challenges of this type of work.

There are, however, certain lines we will not cross: We'll never try to achieve our ends by introducing chemicals, for example, be they artificial nutrients or toxic chemicals such as algaecides. Nor will we transplant animal or plant species into unnatural settings. This in particular is a measure that can lead to unexpected results that will almost always be negative.

Bottom line: We do not rip, tear or shred. Our goal is to work so seamlessly with nature that it will take over and do the work for years after we've gone away. Yes, we'll feed fish for a time to encourage them to stay in an area, but only until the cycle that will naturally feed the species becomes established.

– H.H.

establishing and maintaining fish habitats. We found, however, that the river bottom was "cemented" to a large extent with fine sands and silts, which was reducing the water exchange with the aquifer.

To stabilize the situation, we created infiltration areas where the water could get into the aquifer by building a series of underground channels filled with gravel. Before long, temperatures along the restored waterway had stabilized: Several species of invertebrates quickly reestablished themselves, and young fish were recruited to the spawning areas.

During the initial feasibility study we conducted, it was observed that a large upstream irrigation project was removing half to two-thirds of the river's water.

(There were times you

could actually watch the water level drop.) To counter this effect, we built some deep pools where fish could stay comfortably during times when the water's level decreased. This also made for several good fishing spots!

On this project, accommodating the human element was obviously important. We built several pathways to fishing spots that were accessible to kids in wheelchairs, for example. We also built a ranch road that enabled vehicles to come within a few feet of these access points. As the project neared completion, I watched a child in a wheelchair fishing off of a small pier we'd built. The smile on his face as he reeled in a five-pound rainbow trout is hard to describe – and impossible to forget.

Even when you're working with a **limited** amount of energy in terms of water **flow**, you can create **wonderful**, naturalistic resources by working with **nature**.



## Less or More

Other projects we've tackled haven't been quite so extensive, but they've all been rewarding.

In one of these projects, we took a small stream on property owned by a family that wanted to provide a place for a handicapped relative to fish. It was a marginal little stream that was moving way too fast to support any kind of population of large fish. Rather than try to dramatically widen the stream, we used gabion baskets to develop food supplies for large for-

age organisms that would in turn feed bigger fish.

To accommodate the large fish, we crafted a pond in the flow path of the stream and arranged for easy access in and out – a simple project compared to the Williams Fork River job, but one that provided no less satisfaction to those seeking to use the stream. And it turned out to be a *very* nice place to fish.

What this project illustrates is that, even when we're working with a limited amount of energy in terms of wa-

ter flow, we can create wonderful, naturalistic resources by working with nature. This sense of balance and harmony with natural processes is something that I believe is missing in many man-made projects.

There's no reason why this gap should exist. Rivers and streams are dynamic, powerful engines of creative force: In learning how to harness that energy and direct it toward a specific result, we unlock natural beauty instead of losing ourselves in the struggle to replicate it! **MS**



**This man-made stream system is designed to provide for the needs of anywhere from 2,000 to 5,000 pounds of fish, year 'round. Meandering for 900 feet around a home in Denver, the waterway features four large ponds and connecting streams made to look as natural as if we'd been working to revitalize a natural system – right down to placing a fallen tree of the sort that help to shape real streams and rivers.**

## Natural Replication

I realize that many of the people reading *WaterShapes* will never become involved in natural restorations such as those described in the accompanying article. Many of you will, however, endeavor to replicate nature in man-made ponds and streams.

Our work in restoring natural rivers has occasionally led us to work on man-made projects. As shown here, for example, we once built a 900-foot stream that wrapped around a private residence in a project that included four ponds and several subsurface rock structures that served as places where nutrients and forage animals could develop.

The water is all re-circulated using two 10-horsepower pumps that provide the requisite energy that we would otherwise have found in the natural flow of a river or stream. There are places where the water moves fairly quickly and others where it slows down. We used a range of rock materials to provide a balance of habitats for plants, forage animals and fish.

It's all familiar territory, right down to the observation that a key to managing life in any body of water is understanding that the size of the stream relates to the amount of life that it can optimally support. In this case, we designed the system to support between 2,000 and 5,000 pounds of trout, year 'round.

No matter the type of project, I believe it's critical not only to study the aesthetic beauty of nature in attempting to mimic it, but also to gain a clear understanding of the processes that support life within a body of water. Doing so will better enable you to create truly natural streams that will remain healthy and beautiful over the long haul.

**—H.H.**



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The customer wanted it all: a large pool and spa made with natural materials; a fully-equipped outdoor entertainment area; a place to keep cool while lounging in the sunshine – all woven seamlessly into a work of watershaping art that took full advantage of a marvelously scenic location. Here's a look at how designer/builder David Tisherman pulled all of the details into their dramatic final form.

This project is all about making *connections* – connections between the inside of a home and the outdoors; between surrounding wide-open spaces and an intimate backyard; between the colors of the hillsides and the materials used in crafting the watershape; between the clients' desire for recreation and their passion for beauty; and between the splendor of nature and the modern, sculptural lines of the design.

If you've followed my "Details" column in *WaterShapes* in recent months, you've seen many of the components that have been incorporated into this particular tapestry: the thermal ledge (July/August 2001), the massive shade structure (June 2001), the stacked ledger stones (March 2001), and the boulders placed below the waterline (October 2001) – all these details are featured in the project that you see on these pages in fully finished form.

In style, this free-form, vanishing-edge pool and raised spa are something of a departure for me: For one thing, it's a large pool for the space, more prominent than most others I've been doing with respect to its placement in a space. It also makes extensive use of natural stone and shapes, although I'd never be tempted to call it a "naturalistic" design.

Still, this project picks up themes that are important in my recent work. It's all about orchestrating the experience of someone walking into the backyard from the home and directing viewers' eyes to selected features. It's also about creating a rich environment full of opportunities for enjoyment of the space – as the photos accompanying this brief text will demonstrate.

#### FRAMED VIEWPOINT

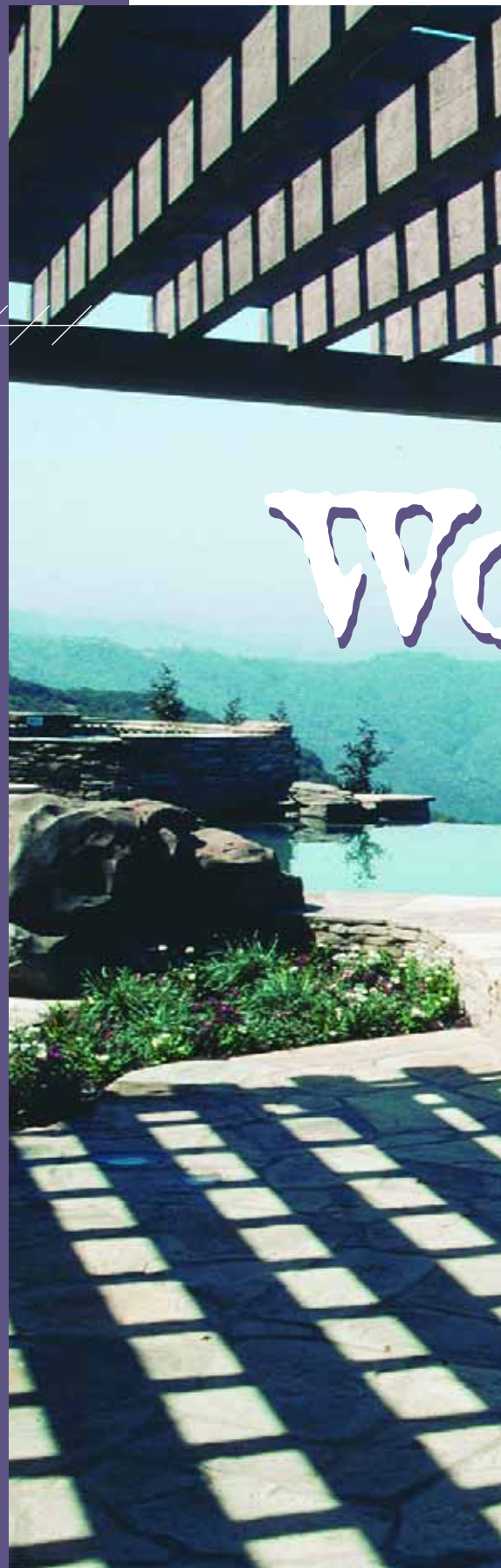
The homeowners had one thought in mind when they hired me: They wanted something spectacular – a design that took complete and total advantage of the home's dramatic physical setting.

And talk about dramatic: From the backyard, all you see are hillsides that have been set aside by the local conservancy as environmental easements that will never be developed. And those hills roll on as far as the eye can see, dissolving into the coastal haze that rolls in on all but the driest summer days.


Just below the house, however, are rows of upscale tract homes – not something anyone needs to see. To control the view – keeping the upper level of the prospect in focus while blocking the lower level, we elevated the pool and cantilevered it and the vanishing edge's catch basin out over the hillside. This had a dual advantage of giving us more space to work with while completely concealing the structures below.

Now that the pool is complete, all vantage points inside the home and in the backyard hinge on the long arc of the pool's vanishing edge.

Because you don't see the homes below, the space feels far more isolated and private than it ever did before. And because of the way the design ties the watershape directly and dramatically into a 180-degree panorama of wide-open spaces, the fact that the pool is prominent in the yard in terms of size and placement loses significance: The pool is only a component in a composition that stretches out for miles.







# Over Beauty

By *David Tisherman*

## Setting the Stage

From inside the home, reflections off the water draw the eye across the yard and out into the view, making the first connection between interior and exterior spaces. As you move past the threshold and onto the deck, you move into a grand exterior “room” created by the expansive shade structure – an easy transition from indoors to outdoors.



## Weighted *Perspectives*

As you move into the yard, the lines of the pool and deck are weighted so that your eyes travel to the right side of the property, over toward the barbecue area and the thermal ledge. As you move toward those features to get a closer look, you take in shapes that echo the hills beyond, from the elevated perch of the spa to the undulations of the pool's edge and the sweep of the vanishing edge.







## A Shallow Shelf

As you continue to the right across the patio, you finally see water up close on the thermal ledge. It's really the first time your eye is drawn directly to the water itself rather than to reflections off of it: The flagstones just beneath the surface invite the eye to linger – and make you wonder what it would be like to lounge in the space on a hot day with a cool drink.

## Room for *Gourmets*

The barbecue is nestled in a nook on the right edge of the property and has been set up to mimic the canyon forms beyond. The winding path and the stacked ledger stone draw the eye along the pool's edge to this beautiful spot. Once again, the careful interfaces between the steps, ledger and boulders all weave together to create connections within the overall composition.

From all these points on the right side of the property, you look out across the water and drink in the views – past the raised spa to the hills beyond and across the vanishing edge to the horizon. The direction of lines and their gentle contours are all meant to harmonize with the prospect, while the use of stacked ledger stone throughout echoes both the geology and geometry of the canyon setting.







## Cool *Transitions*

The subtle hues of the blonde stone and boulders, with their beige, gold and cream highlights, offered another way of connecting the new structures with the golden grasses seen most of the year in the rolling hills beyond. The cool colors, as tied into the landscape, serve to soften the overall appearance of the pool structure.

Throughout, the transitions from ledger to flagstone treatments are critical in creating a seamless flow of line, color and texture. The use of stacked ledger stones in particular creates several key transitions: from the deck to the raised beam; from the pool to the barbecue pathway; and from the spa to its winding stream.

## Deep *Purple*

I'm deeply fascinated by the refractive interplay of light and water and how various depths of water influence our perceptions of color. The custom purple pebble surface developed for this project offers a subtle depth to the broad (but not particularly deep) expanse of water, providing a gentle gradation of color from the shallows to the deeper levels. (This special color surface was developed in collaboration with Luis Marquez of Marquez Pool Plastering. We call it "Georgian Plum.")

At the surface, use of such a deep color enhances the reflective quality of the water, readily picking up the cool blue sky and the gold or green of the hillsides.





## Spatial *Echoes*

Raising the spa on the left side of the pool would seem to violate my intention of weighting everything to right side of the composition, but it works because I used a range of visual tactics to keep the spa from dominating the view.

For one thing, raising the spa gradually above the beam using stones and steps set at intermediate heights lets the structure echo the graduated, rolling shapes seen in the hills beyond. For another, the use of gently cascading water softens the appearance and adds a soothing aural presence.

In this case, the situation truly called for having a small amount of water moving over an irregular rock surface rather than for a big flow of water shooting out from the kind of manufactured spillover seen so often on raised spas. I've never been a big fan of that effect: I believe that water spilling over vertical intervals of only a few inches is far more appealing to the eye and ear – and to the soul – than is a gushing torrent of water.

Too often, in fact, I see spillovers that are oversized for their surroundings – the volume of falling water is too great for the pool and/or spa, and the sound it generates is overwhelming in the space. The key to the effect pictured here is the balance it strikes in its surroundings with respect to visual and auditory weight.



*The project you've just toured was designed with just this sort of scene-by-scene visual progression in mind – from the interior space out into the overhang-covered exterior room and then into a series of special architectural spaces beyond. There aren't many surprises here, just a careful, measured, gradual unfolding of a scene.*

*The pool is at the center of things and might be said to dominate that scene with respect to geography, but because of the way views are directed and controlled, it simply doesn't carry that much visual weight. Instead, it blends in as part of a huge composition that encompasses countless acres of views – to the hillsides, hilltops and beyond.*

*At the same time, the pool conceals the "visual noise" that would otherwise be found in the surroundings: In place of red tile roofs, black asphalt and brightly colored automobiles against the green hills, we've set the reflective surface and visual softness of the water.*

*When all of these features are brought to bear in a fully integrated design, I think a magic can be made that speaks for itself.*

**– D.T.**





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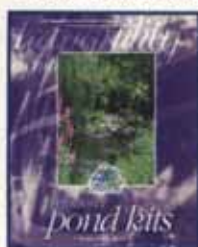
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## PROFESSIONAL POND KITS

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AQUASCAPE DESIGNS has published its Summer 2001 catalog of pond kits for professional installers. The 24-page booklet includes basic information on the company's technology, an installation guide and comprehensive information on its line of complete pond kits, mechanical and biological filters, pumps, liners, underlayments, plumbing, installation tools and training materials. **Aquascape Designs**, Batavia, IL.

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Continued on page 62

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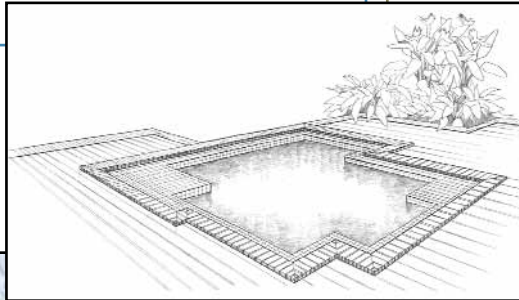
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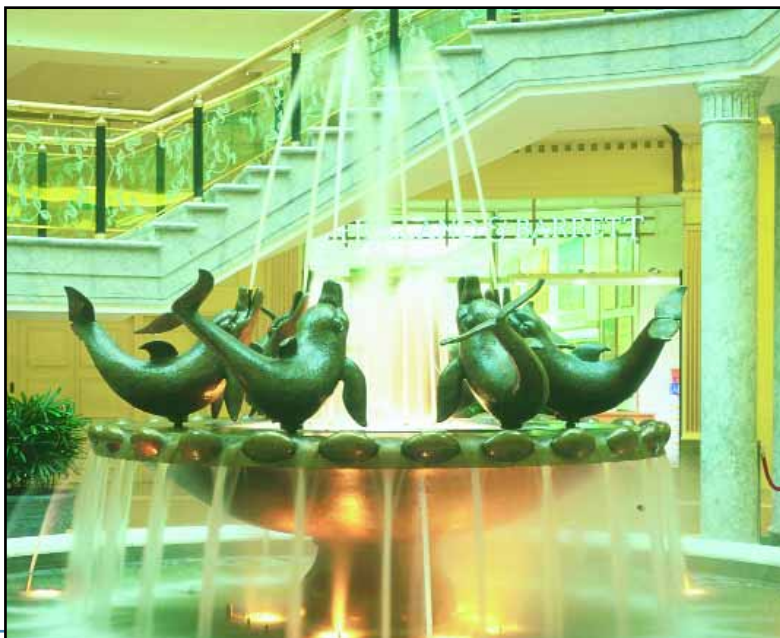
## Do you want to be the best?

### Genesis 3 Special Focus Schools 2001

This fall, David Tisherman, Skip Phillips and Brian Van Bower have arranged two very special Genesis 3 events: Special Focus Schools designed to carry the Genesis philosophy to the industry in all-new ways.

November 2-4, 2001  
Palm Springs, California  
**Genesis Special Focus School**

Sponsored by the Southern California Chapter of the National Spa & Pool Institute, this geographically focused Genesis School is open on a priority basis to chapter members and to all others on a space-available basis. The curriculum includes a special emphasis on energy efficiency along with in-depth discussions of principles of design, engineering and construction for high-end watershapes.



December 5-8, 2001  
Toronto, Ontario, Canada  
**Genesis Fountain School**

This school, hosted by Crystal Fountains, has a special focus on fountain design. Topics to be covered include selection and use of appropriate water effects, fountain hydraulics and specialized lighting design. Open to all applicants, the school also features a hands-on visit to Crystal Fountains' facility, a guided tour of Toronto's fountains and an introduction to the SonarGuard pool-safety system developed by RJE Technologies.

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## Genesis 3 Schedule, Winter 2002

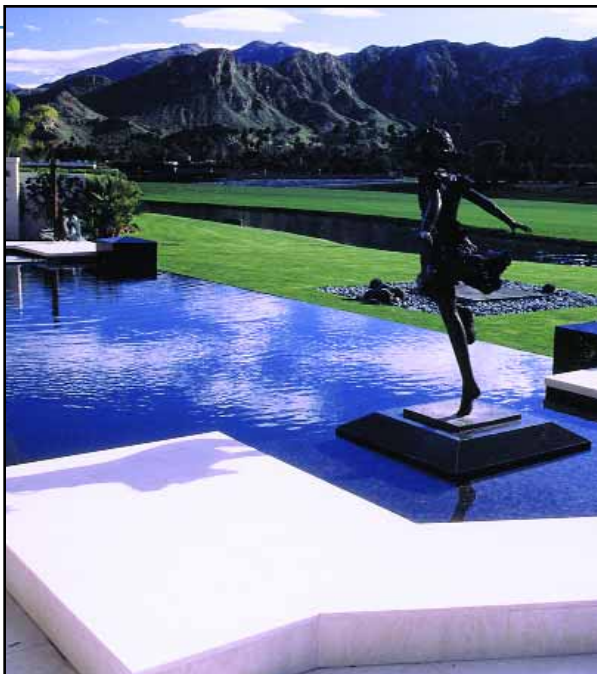
This winter, David Tisherman, Skip Phillips and Brian Van Bower are hosting two very special Genesis 3 events: The group's first-ever Pond School and the latest in the series of increasingly popular Level I Schools.

January 17-20, 2002

Miami, Florida

### Genesis Pond School

An in-depth exploration of the art and science of pond design, this program begins with an inspirational look at history by renowned designer Anthony Archer-Wills before moving on to discussions of practical issues of ecosystem management and biological filtration led by David Duensing of Pond Supplies of America. Open to all applicants, the course also features presentations on plants, water quality and the care and feeding of fish.



February 13-17

Morro Bay, California

### Genesis Level I School

The flagship school in the Genesis 3 program, this school focuses on design, engineering and construction of watershapes, drawing techniques and the Genesis 3 philosophy. Open to all applicants, this is the access point to advanced Genesis Family programs and demonstrates what it takes to operate at the highest level of expertise – including up-close and personal familiarity with the lifestyles of high-end clients.

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## ADVERTISER INDEX:

|    |   |
|----|---|
| 6  | Advanced Aquaculture Systems (pg. 24)   |
| 3  | Air-O-Lator (pg. 19)                    |
| 10 | Aquamatic Cover Systems (pg. 3)         |
|    | Aquanetics Systems (pg. 65)             |
|    | Aries Enterprises (pg. 35)              |
| 15 | Atomizing Systems (pg. 67)              |
| 28 | Carolina Solar Structures (pg. 62)      |
| 1  | Clear Tech Automation (pg. 16)          |
| 5  | Colorado Lining Co. (pg. 34)            |
| 8  | Cover-Pools (pg. 12)                    |
| 11 | Coverstar of Utah (pg. 67)              |
| 18 | Crystal Fountains (pg. 13)              |
| 19 | Crystal Fountains (pg. 56)              |
| 9  | Eco-Matic Salt Water Systems (pg. 64)   |
| 26 | Fiberstars (pg. 72)                     |
| 16 | Genesis 3 Drawing School (pg. 57)       |
| 12 | Genesis 3 Fall 2001 Programs (pg. 58)   |
| 13 | Genesis 3 2002 Programs (pg. 59)        |
| 22 | Grate Technologies (pg. 9)              |
| 66 | House of Stone/Casa de Cantera (pg. 68) |
| 23 | Jack's Magic Products (pg. 8)           |
| 27 | Macalite Equipment (pg. 20)             |
| 32 | Master Supply (pg. 63)                  |
| 29 | National Pool Tile (pg. 35)             |
| 24 | NESPA (pg. 15)                          |
| 4  | NSPI Region III (pg. 61)                |
| 49 | Pentair Pool Products (pg. 11)          |
| 17 | Pond Supplies of America (pg. 34)       |
| 20 | Regal Plastics (pg. 56)                 |
| 51 | RenoSys (pg. 65)                        |
| 21 | Rock & Water Creations (pg. 7)          |
| 62 | Roman Fountains (pg. 21)                |
| 31 | Safe Guard Surfacing (pg. 62)           |
| 25 | Speck Pumps (pg. 49)                    |
| 14 | Spectrum Pool Products (pg. 25)         |
| 58 | Spray Force Mfg. (pg. 71)               |
| 35 | Standard Bronze (pg. 64)                |
| 42 | Stegmeier Corp. (pg. 17)                |
| 52 | System Dynamics (pg. 23)                |
|    | Transtec (pg. 35)                       |

|    |                                 |
|----|---------------------------------|
| 65 | Universal White Cement (pg. 68) |
| 67 | W.R. Meadows Int'l. (pg. 2)     |
| 56 | Waterway Plastics (pg. 69)      |
| 69 | Waterworks Int'l. (pg. 14)      |

## OF INTEREST INDEX:

|     |   |
|-----|---|
| 100 | Wausau Tile (pg. 56)                    |
| 101 | Caterpillar (pg. 56)                    |
| 102 | Aquascape Designs (pg. 56)              |
| 103 | Pentair Pool Products (pg. 56)          |
| 104 | Multiquip (pg. 62)                      |
| 105 | Fountains for Pools (pg. 62)            |
| 106 | Stone Yard (pg. 62)                     |
| 107 | Laars and Jandy Pool Products (pg. 62)  |
| 108 | Rockwood Retaining Walls (pg. 63)       |
| 109 | Zodiac Pool Care (pg. 63)               |
| 110 | Blue-White (pg. 63)                     |
| 111 | Stonewear (pg. 64)                      |
| 112 | USFilter/Stranco Products (pg. 64)      |
| 113 | Shield Technologies (pg. 64)            |
| 114 | Creative Design Products (pg. 64)       |
| 115 | W.R. Meadows (pg. 65)                   |
| 116 | LaMotte Co. (pg. 65)                    |
| 117 | Valterra Products (pg. 65)              |
| 118 | Acu-Trol (pg. 65)                       |
| 119 | Del Industries (pg. 66)                 |
| 120 | Elite Aluminum Corp. (pg. 66)           |
| 121 | Paragon Aquatics (pg. 66)               |
| 122 | King Technology (pg. 66)                |
| 123 | Aqua Vac Systems (pg. 67)               |
| 124 | Raypak (pg. 67)                         |
| 125 | Crystal Fountains (pg. 67)              |
| 126 | ClearWater Enviro Technologies (pg. 67) |
| 127 | Paramount Pool & Spa Systems (pg. 68)   |
| 128 | Sea-Klear (pg. 68)                      |
| 129 | S.R. Smith (pg. 68)                     |
| 130 | Aeromix Systems (pg. 68)                |



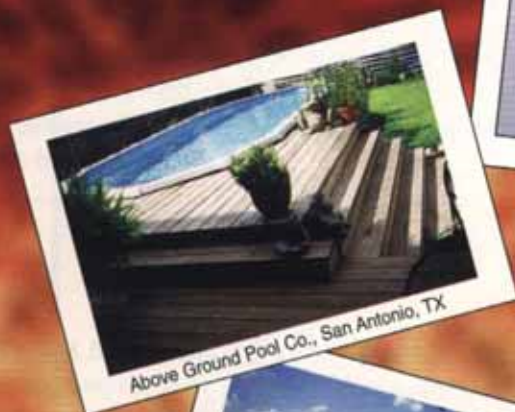
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## CONSTRUCTION EQUIPMENT GUIDE

### Circle 104 on Reader Service Card



MULTIQUIP has published a 36-page guide to its line of construction and power-supply equipment. Offered in the booklet are sections on the company's compaction equipment, dewatering pumps, concrete/material pumps, concrete equipment, mixers for plaster/mortar or concrete and generators – all broken out with descriptions of features as well as technical specifications. **Multiquip**, Carson, CA.

## SIMULATED BAMBOO FIXTURES

### Circle 106 on Reader Service Card



STONE YARD offers the Bamboo Collection, a family of cast-stone planters, site furnishings, pedestals, benches, mantels and accessories for use in commercial and residential projects. The products are available in two materials – as durable cast cement (GFRC) or lightweight Fiberstone – for maximum design

and installation flexibility, and the full line comes with a one-year warranty. **Stone Yard**, San Diego, CA.

## TELESCOPING FOUNTAINS

### Circle 105 on Reader Service Card

FOUNTAINS FOR POOLS manufactures Aquascope, a telescoping fountain that comes in four fountain patterns and transforms pools and spas into fountains during non-swimming hours. Easily installed at depths from 8 to 108 inches, the fountains retract flush into the pool or spa bottom and do not protrude when not in use. The fountain is powered by the pool's pump, so no additional pump is needed. **Fountains for Pools**, Tarzana, CA.



## DIATOMACEOUS-EARTH FILTERS

### Circle 107 on Reader Service Card

LAARS AND JANDY POOL PRODUCTS manufactures diatomaceous-earth filters as part of the integrated Pro Edge system. The filters come in 27-, 36- and 48-square-foot models and have straight, ten-grid alignments to create balanced water flow through the tank. The tanks are molded from a strong, corrosion-resistant polymeric material, and there's a ten-year warranty on all components. **Laars and Jandy Pool Products**, Petaluma, CA.



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## RETAINING-WALL SYSTEMS

Circle 108 on Reader Service Card



ROCKWOOD RETAINING WALLS offers E-Z Wall, a retaining-wall system with the look of natural stone. Lightweight and designed for ease of installation as walls up to 36 inches high, the block units come in straight and wedge shapes and feature a self-interlocking heel that creates a built-in half-inch setback for every course. The straight units weigh 25 pounds each; the wedge units weigh 24 pounds. **Rockwood Retaining Walls**, Rochester, MN.

## MINERAL PURIFICATION SYSTEM

Circle 109 on Reader Service Card



ZODIAC POOL CARE offers the complete line of Nature<sup>2</sup> water purification products. Using minerals found in nature to trap bacteria and algae, the systems can reduce

use of standard chemical treatments by up to 80% and come in seven configurations to fit just about any need for inground and aboveground pools or spas, with special models for pools with automatic cleaners. **Zodiac Pool Care**, Ft. Lauderdale, FL.

## COMMERCIAL POOL PRODUCTS

Circle 110 on Reader Service Card



BLUE-WHITE offers a catalog covering its line of products for use on commercial pools. The eight-page, full-color brochure covers the company's peristaltic chlorinators,

diaphragm-style hypochlorinators, complete chemical feeding systems and flow-measurement and metering systems. The catalog also describes a line of accessories, from tubing and pump heads to valves and test kits. **Blue-White**, Westminster, CA.

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## COMPOSITE STONE PRODUCTS

Circle 111 on Reader Service Card



STONEWEAR has published a 64-page desk reference for its composite stone products. The lightweight fixtures are available as turnkey, pre-engineered fountains; planters, benches and garden fixtures; and architectural columns in Tuscan and rustic styles, and individual components can be used in thousands of combinations. All items are available in 48 different finishes in a wide range of colors. **Stonewear**, Carson City, NV.

## COMMERCIAL FILTRATION SYSTEM

Circle 112 on Reader Service Card



USFILTER/STRANCO PRODUCTS offers the National Line NFS Series of filtration systems, balance tanks, strainers, float valves and main drains to serve the mid-range level of the commercial pool/spa market. The filters are available with 34-, 42- and 60-inch-diameter horizontal designs with variable filter areas ranging from 7-1/2 to 50 square feet at capacities from 112 to 1,000 gpm. **USFilter/Stranco Products**, Bradley, IL.

## RUST/CORROSION FIGHTER

Circle 113 on Reader Service Card



SHIELD TECHNOLOGIES has introduced Rust Shield, a rust- and corrosion-fighting system designed for use in enclosed spaces where harmful rust removers cannot be used. Safe, odorless, non-toxic and non-flammable, the product can be sprayed, brushed or rolled on and deoxidizes existing rust, leaving behind a coating of iron phosphate that is ready for painting or recoating. **Shield Technologies**, Toledo, OH.

## ARTIFICIAL LANDSCAPE FEATURES

Circle 114 on Reader Service Card



CREATIVE DESIGN PRODUCTS manufactures artificial stone and wood structures and watershapes for use in landscapes. The product range covers large and small rock spas, ponds, waterfalls, spa/waterfall combinations, spas in hollowed-out tree stumps, spas with grottos, lion- and eagle-head wall fountains and much more – including a weeping totem-pole garden sculpture. **Creative Design Products**, Lake Elsinore, CA.

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## BACKER ROD FOR DECKS

Circle 115 on Reader Service Card



W.R. MEADOWS has added Sealtight Kool-Rod backer rod to its Deck-O-Seal product line. The flexible, rope-like polyethylene material can be used on horizontal or vertical surfaces and is ideal for all types of construction calling for cold-applied sealants in expansion, isolation and control joints. Sealants will not adhere to the product, eliminating three-sided joint-adhesion failures. **W.R. Meadows**, Hampshire, IL.

## GATE VALVES AND ACCESSORIES

Circle 117 on Reader Service Card



VALTERRA PRODUCTS has published a 16-page catalog on its line of gate valves and accessories. Coverage includes gate valves in a wide range of styles, sizes, materials of construction and control capability as well as a selection of pool and spa specialty valves. Also included is information on plumbing supplies, tubing, extruded ABS water tanks and accessories for the company's valves. **Valterra Products**, Mission Hills, CA.

## COPPER/IRON TEST STRIPS

Circle 116 on Reader Service Card



LAMOTTE CO. has introduced a new Insta-Test for metals. Designed to measure pool- or spa-water levels of copper from 0 to 3 ppm and of iron from 0 to 5 ppm in just 15 seconds, the test strips come in a kit that includes 25 copper test strips, 25 iron test strips, a sample tube and a supply of 30 iron-reduction tablets. The copper strips are swirled in the pool; the iron strips are dipped in the sample tube. **LaMotte Co.**, Chestertown, MD.

## CHLORINE ANALYZER

Circle 118 on Reader Service Card



ACU-TROL has introduced the Akcolor system for chlorine measurement and control. The device measures the amount of chlorine by flushing its test chamber with sample water and then adding a chlorine-free buffer and DPD reagent. The unit measures the color change and transfers all data to a controller. Tests can be programmed for performance at 2- to 10-minute intervals. **Acu-Trol**, Auburn, CA.

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## CORONA-DISCHARGE OZONE GENERATORS

Circle 119 on Reader Service Card

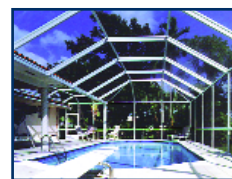


DEL INDUSTRIES offers five models in the Eclipse line of corona-discharge ozone generators. Spa Eclipse is scaled to the needs of residential spas; Eclipse 1, 2 and 4 are designed for residential pools with capacities up to 25,000; 50,000; and 100,000 gallons, respectively; and Total Eclipse, for new pools up to 60,000 gallons, has a built-in circulation system that injects ozone 24 hours a day. **Del Industries**, San Luis Obispo, CA.

## POOL ENCLOSURES

Circle 120 on Reader Service Card

ELITE ALUMINUM CORP. makes Elite Lifestyle pool enclosures that feature sleek styling, gracefully rounded supports and recessed glass and screens for a polished, finished look with the durability to withstand the elements. The system offers a wide variety of panel, glass and screen options as well as insulated ceiling and skylight choices that work in a huge range of combinations. **Elite Aluminum Corp.**, Ft. Lauderdale, FL.



## COMMERCIAL FILTERS

Circle 121 on Reader Service Card



PARAGON AQUATICS manufactures the Stark line of filtration products for use in circulation systems as diverse as those intended for competitive swimming pools, aquatic theme parks, aquariums and aquaculture environments. Modular in design, the strong, corrosion-free, lightweight, composite fiberglass units come in 15 models ranging in filter area from 13-1/2 to 124 square feet. **Paragon Aquatics**, LaGrangeville, NY.

## CHLORINE/BROMINE FILTERS

Circle 122 on Reader Service Card

KING TECHNOLOGY supplies four Perform-Max chemical feeders – models 910 and 930 for inground pools of up to 20,000 gallons (with chlorine) or 15,000 gallons (with bromine) and model 940 and 960 for pools of up to 50,000 gallons (chlorine) or 25,000 gallons (bromine). Designed for erosion feeding with exact metering, all units offer easy installation and consistent chemical output. **King Technology**, Minnetonka, MN.



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# WATER SHAPES



## MANUAL POOL VACUUM

Circle 123 on Reader Service Card



AQUA VAC SYSTEMS manufactures the Hammer-Head manual pool vacuum with 21- and 30-inch vacuum heads. The system is self-contained, with a cart-mounted, battery-operated pump and a high-capacity, easy-to-clean filter bag, so there's no need to set up and prime pump-driven vacuum hoses: Just wheel the cart up to the pool, drop in the vacuum head and turn on the power switch. **Aqua Vac Systems**, West Palm Beach, FL.

## COMMERCIAL POOL HEATERS

Circle 124 on Reader Service Card



RAYPAK offers a complete line of commercial pool heaters, with 23 model sizes ranging from 500,000 to 4,000,000 Btus. Units offer 80% to 82% thermal efficiency, operate on natural or propane gas, feature fuel-saving electronic ignitions, allow for water-temperature control to within 1 degree Fahrenheit, are easily installed and maintained and come in both indoor and outdoor models. **Raypak**, Westlake Village, CA.

## LAMINAR-FLOW JETS

Circle 125 on Reader Service Card



CRYSTAL FOUNTAINS has introduced the model NWV-101 DefoLaminar jet, which produces a 1/2-inch-diameter stream of glass-like water rod. Best suited to low-wind applications, the stream is virtually splash free and silent. The stream generator features an internally mounted fiberoptic assembly to permit illumination of the stream for dramatic nighttime effects. **Crystal Fountains**, Concord, Ontario, Canada.

## IONIZING SYSTEMS

Circle 126 on Reader Service Card



CLEARWATER ENVIRO TECHNOLOGIES makes copper/silver ionization systems to reduce chlorine use in pools, spas, fountains and lakes. A digital controller releases precise amounts of copper (to kill algae) and silver (to kill bacteria and viruses) into the water. The company offers 37 models designed for use with water volumes ranging from a few hundred up to 2.4 million gallons. **ClearWater Enviro Technologies**, Clearwater, FL.

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## COLORED IN-FLOOR SYSTEMS

Circle 127 on Reader Service Card



PARAMOUNT POOL & SPA SYSTEMS now has eight designer colors available for its line of in-floor cleaning and circulation systems — PV-3, PCC 2000, Vanquish and Vantage. Available for use with concrete, vinyl or fiberglass pools, the new colors were selected to make the company's cleaning systems complement the look of just about any pool surface. **Paramount Pool & Spa Systems**, Tempe, AZ.

## SLIDES IN DESIGNER COLORS

Circle 129 on Reader Service Card



S.R. SMITH has introduced new designer colors for its Funslide residential pool slides. Now available in such shades as Mediterranean Green and Shaded Dusk, the slides are 8-feet tall with tough, acrylic runways and built-in water systems. The handrails, ladders and leg supports are made of heavy-duty aluminum, and the slides are available with right- or left-hand curves to accommodate

any pool area. **S.R. Smith**, Canby, OR.

## CLARIFIER FOR NEW PLASTER POOLS

Circle 128 on Reader Service Card

SEA-KLEAR announces a new addition to its line of safe and natural pool treatments: Start-Up, a product that quickly clears the water in newly plastered pools. Environmentally safe, the material eliminates plaster dust in less than 24 hours by flocculating the plaster cloud from the water. It also clears away metals that can stain plaster and also promotes uniform curing of the plaster coat. **Sea-Klear**, Redmond, WA.



## AERATORS FOR LAKES AND PONDS

Circle 130 on Reader Service Card

AEROMIX SYSTEMS offers AquaTornado II, an aerator for ponds and lakes. The self-contained unit features a large-diameter stationary draft tube with unrestricted air intake and a large propeller. These combine to offer more efficient water movement and mixing as well as superior oxygen transfer. The action is just below the surface; there's no spraying or splashing, so there's less odor and no ice build-up. **Aeromix Systems**, Minneapolis, MN.



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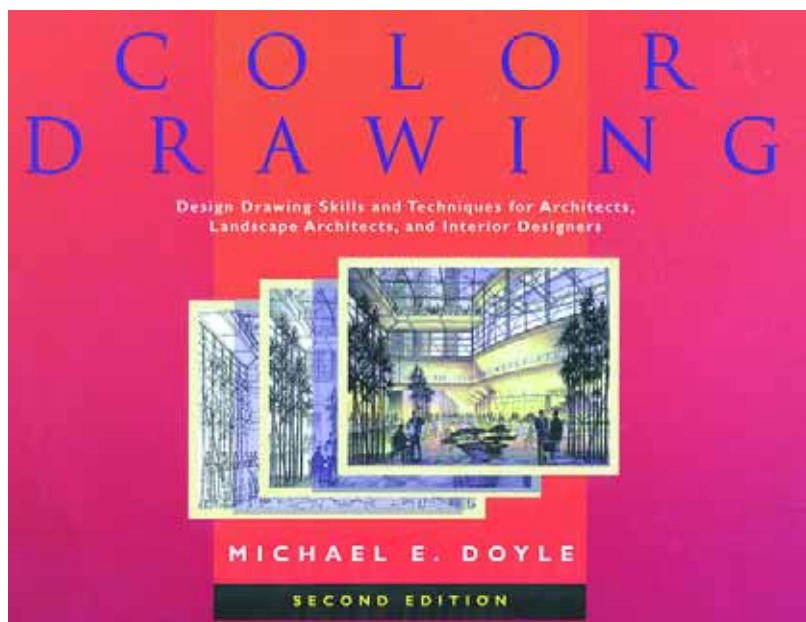
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## Rendering Creativity

**A**mong the most useful and influential books I've read in my career as a landscape architect and watershape designer is "Color Drawing" by Michael E. Doyle (John Wiley & Sons, 2nd edition, 1999).

I went into landscape architecture mainly because I wanted to learn to do beautiful hand-drawn renderings and presentations. I'd started drafting in 7th grade, always really enjoyed the process and, even though I'm far from a great natural talent, have always seen drawing as a source of tremendous fun and personal satisfaction.

When I started studying landscape architecture in college, grades in some of my design classes were based disproportionately (I thought then) on the student's ability to represent ideas on paper. Even though I enjoyed drawing, I thought the emphasis on it was outrageous because, after all, good design is good design no matter how it's represented.

Before long, I ran into an instructor who tested my beliefs. He explained to me that, in the real world, good designs simply don't sell unless you can represent them to a potential client in a meaningful and meaning-filled way.

Since then, I've come to realize just how accurate his insight was. Indeed, I've often been amazed at how something that seems so clear on a plan drawing does not come across to the homeowner, even when I've explained things in detail. (This is the peril in overhead line drawings that have no perspective: You run a great risk of the customer misunderstanding your ideas!)

It was at about this time that I discovered that, although I was a good and accurate draftsman, I didn't possess real drawing talent – and I started to fall behind in my classes.

During my junior year, I came across the first edition of Doyle's wonder-

**Where Doyle really shines is in his step-by-step descriptions of how to draw different things.**

ful book – and it changed *everything* for me. The book is written for people who don't know anything about renderings but are willing to learn. In plain English and with clear illustrations, Doyle opened my eyes to a range of techniques and specific materials and media.

In one section, for example, Doyle discusses the ins and outs of using markers, pastels and pencils. He offers brand names and product numbers, referring to them explicitly in his descriptions of drawing techniques. He also discusses types of paper in great detail.

Where Doyle really shines, however, is in his step-by-step description of how to draw different things. In one section, for instance, he offers a simple but effective technique for drawing people. In another, he delves into techniques for drawing various objects – everything from palms and conifers to shrubbery and grasses as well as stone and masonry. And there are *wonderful* descriptions of how to draw different types of water: still, moving, foaming, reflecting.

Much of the book is dedicated to drawing interiors, but I've found even those sections helpful because many interior objects, such as wood flooring, for example, are transferable to exterior spaces. He also offers suggestions on how to add handwork to the line images generated by CAD programs to infuse them with warmth and detail.

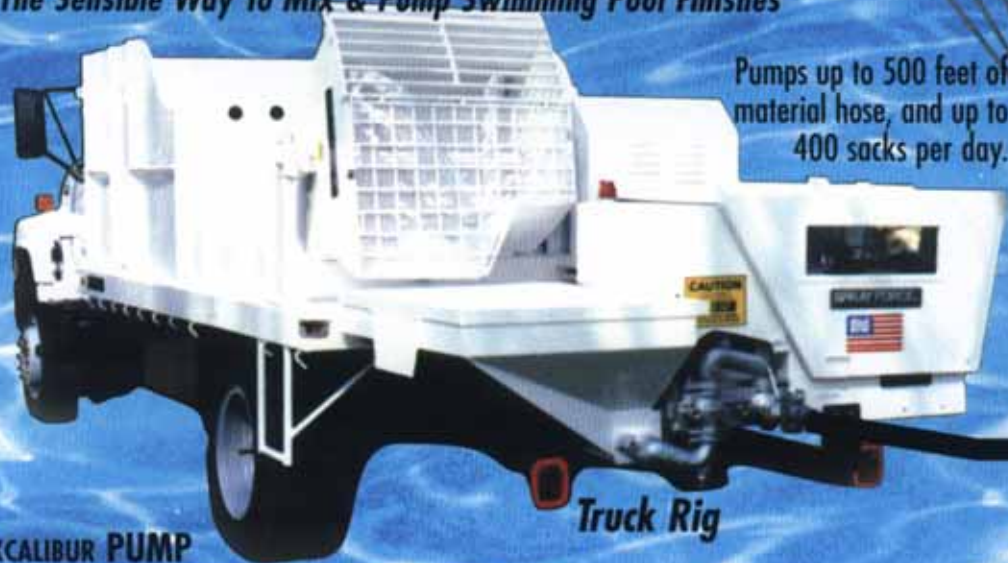
There is so much useful information in Doyle's book that it can be a bit overwhelming to someone just getting started. My advice: If you try to absorb it all at once you're almost certain to become frustrated, so get a copy and begin practicing one or two techniques at a time. You'll be surprised at how quickly your ability to create beautiful hand drawings will develop. **WS**

*Mike Farley is a landscape architect with 20 years of experience and is currently a design/project manager for Leisure Living Pools of Frisco, 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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# Jandy Automation Innovation.



## Wireless AquaLink® RS

**ADVANCED** This innovative Jandy product is the first WIRELESS automation system in a portable desktop unit that provides complete, convenient control of the backyard environment.

**WIRELESS** With no in home wiring and no need to dig trenches, you will save time and money with this easy-to-install system. When you go wireless with the AquaLink RS, total control of all features will be at your customers' fingertips.

**TECHNOLOGY** The ONLY wireless Pool/Spa control system with 2.4 GHz Radio Frequency. The RF signal, which transmits the status of all backyard equipment to the wireless control panel, is strong up to 300 feet with no line of sight required.



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