

Inside: Brian Van Bower on Hydrotherapy

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Volume 5  
Number 1  
January 2003  
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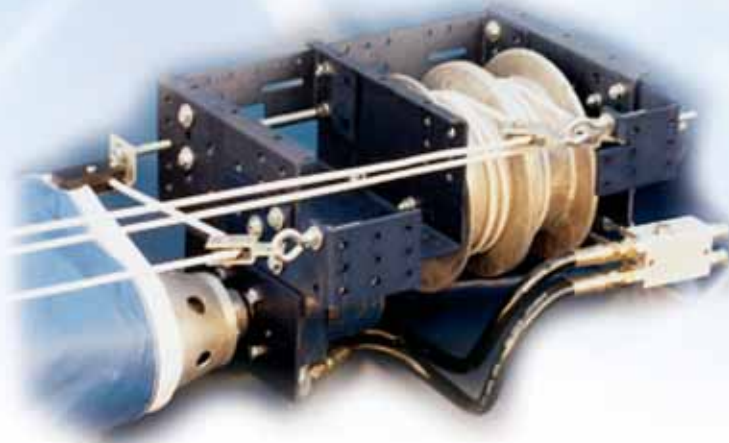
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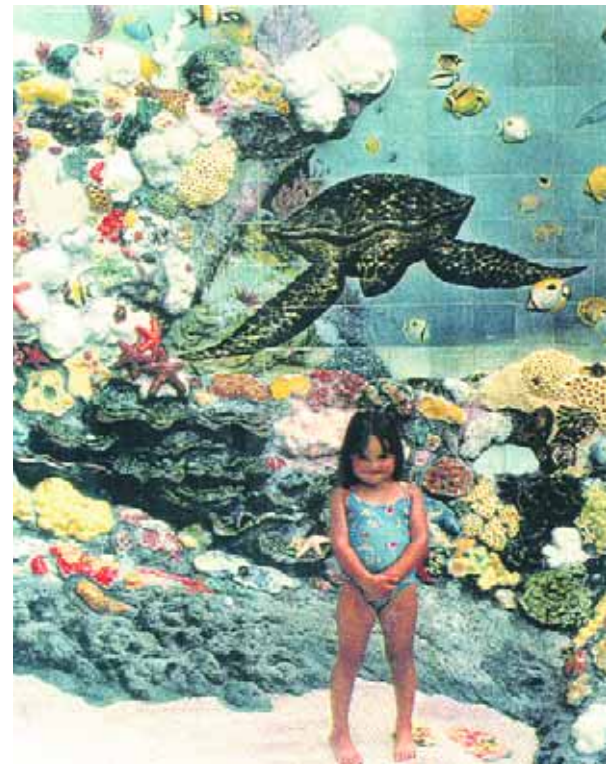


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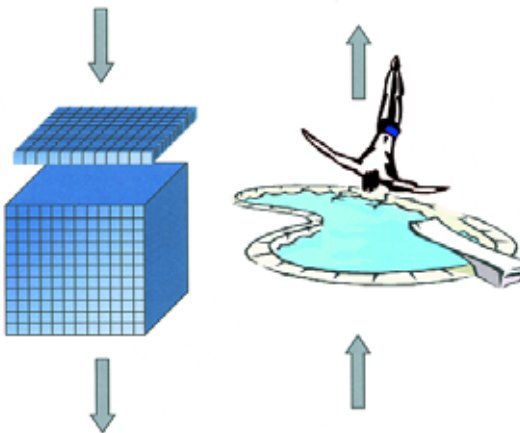
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## Proof Positive

Watching the arc of a learning curve can be fascinating – particularly when you're not the one who's going through the process.

This is why I find such meaning in presenting the article found in this issue on page 38: "Greater Expectations," by Kevin Fleming. A project manager with Lipinski Estate Pools in Marlton, N.J., Fleming's story is the long-awaited follow-up to a piece that ran two years ago in which he described the firm's initial attempts to transform itself from a focus on price-point competition to working only on quality, custom, ultra-high-end projects.

As Fleming described in the first article, the impetus for change came from his attendance at two Genesis 3 schools and some "provocative" conversations he had with Genesis 3 co-founder David Tisherman. After two-plus years of struggle, transformation and, ultimately, hard-won success, Fleming now reports that the transition is nearly complete. Today, the firm finds itself flying high over an emerging upscale market.

"The clientele we're working with now didn't even know that this approach to design and construction was available to them," Fleming told me recently. "The process we go through as a company has been completely transformed – and you see the results of that change expressed on our clients' faces and in their pride in the finished product."

Added David Tisherman, "I recently pointed out to Kevin that two years ago he didn't think they could ever sell a swimming pool that cost more than \$40,000, and now it's unlikely that they would build *anything* for that amount. But it's not about the dollars: Instead, it's about their commitment to creating works of art."

\*\*\*

I'm not particularly surprised when readers call me with comments, questions or the occasional complaint about the prominence of "Genesis 3 people" in the pages of *WaterShapes*. It's certainly true that many of our columns and feature articles are or have been written by that group's founders, instructors and students, and it only makes sense that some of you would see and wonder about the connection.

Why are they all here? It's pretty simple: From the days before we first set ink to paper, people involved with Genesis 3 have stepped forward time and again to share their work, their techniques and their insights with their fellow designers and builders, and they've done so with in a way that aligns with the instructive/supportive/illustrative philosophy of the magazine in direct and tangible ways.

It's a significant point of pride for us that such top-notch professionals have contributed so generously to the magazine's content. Collaborating with these folks is all the more satisfying for me because our work together results entirely from a closely shared vision of watershaping's future and its ultimate potential.

True, this has meant that many of our columns and articles, whether contributed by Genesis 3 alumni or not, have tended to pound away at cornerstone issues of creative design, solid engineering and careful construction. But frankly, tracing the infinite variety of ways in which those ideas can play out in today's most exciting projects is what this publication is all about.



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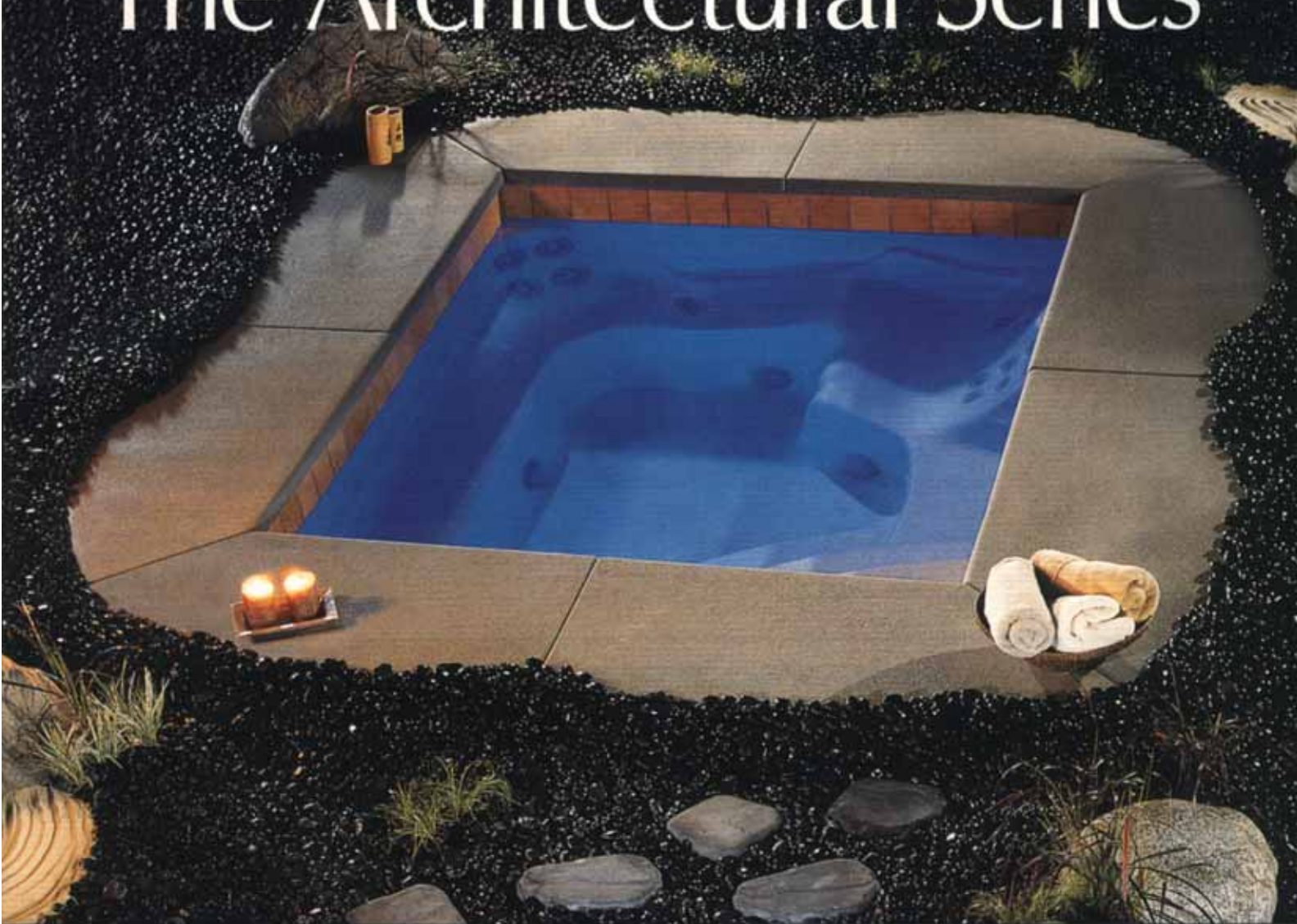
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**Kevin Fleming** is general manager for Lipinski Estate Pools in Marlton, N.J. A 1991 graduate in landscape architecture from West Virginia University, Fleming began his career with Lipinski Landscape that same year. He worked in residential landscape design, sales and project management until 1998, when company owner Robert Lipinski asked Fleming to establish and lead the firm's swimming pool division, Lipinski Pools. Lipinski Estate Pools was established in 2001 to provide design and build services for custom residential swimming watershape projects. Fleming is a member of the National Spa & Pool Institute, has received several awards from the Northeast Spa & Pool Association and is a Level I & II graduate of the Genesis 3 Design School.

**Steve Gutai** is a territory sales manager in the U.S. southwest for Laars & Jandy Pool Products, a division of Waterpik Technologies of Petaluma, Calif. Gutai is a veteran of the swimming pool industry, having spent more than 13 years as an independent service and repair technician and subcontractor in the Los Angeles area. He spent three more years as a technical service manager and outside sales representative for Waterway Plastics in Oxnard, Calif. Gutai joined Laars & Jandy in 2000 and now works directly with contractors and engineers in designing circulation systems for pools, spas and other watershapes. He teaches hydraulics at trade shows throughout the United States and is the featured hydraulics instructor for Genesis 3's Level 1 schools.

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**Glenn Harris** is founder and general manager of World Class Pools by Harris, a designer and builder of high-end custom pools with operations in Honolulu, Orlando and Tokyo. Harris has been involved in pool construction throughout almost his entire life, beginning his career at the age of five alongside his father, Charles, who is said to have been the first person to receive a swimming pool contractor's license in the state of California in 1957. Although well versed in all phases of construction, from excavation, steel and plumbing to gunite, shotcrete and even hand-packed shells, Harris now focuses primarily on cosmetic details, including tile, plaster, decking, and both natural and artificial rockwork.

**Sandra Hasegawa Ingalls** is president of Foresight Inc., a landscape architecture firm in Bellevue, Wash. Licensed since 1979, her design and installation work ever since has been driven by a passion for harmonizing human environments with nature. Her philosophy and passion

**Please note:**

In "In This Issue" for our November/December 2002 edition, we offered Wayne Pierce's biographical information as co-author with William Hobbs of "Timeless Impressions" – but failed to include his name in the byline on page 64 for the story itself. Mr. Pierce was instrumental in preparing the article, and we regret the omission.



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**BOWER**

for design was first kindled in 1969, when she and several other undergraduate students embarked on an ocean journey known as World Campus Afloat that took her to Europe, Africa, India, Thailand and Japan. Inspired by Japanese culture, she returned to Japan in 1971 and spent a year studying the gardens of Kyoto and other regions. Upon returning to the United States, she embarked on a career devoted to developing aesthetically and environmentally friendly spaces and founded Foresight Inc. in 1989.



**ROSE**

**Brian Van Bower** is a partner in the pool-construction firm of Van Bower & Wiren in Miami, where he also runs Aquatic Consultants. With more than 30 years' experience in the swimming pool and spa industry, he now specializes in the design and construction of swimming pools, recreational areas and hydrotherapy clinics. As a consultant, he also conducts training and inspec-

tions and serves as an expert witness in insurance investigations. From his start with pools in 1967, he's been a pool manager, service technician and contractor, operating Van Bower Pool, Patio & Spas from 1971 until 1991. He began consulting in 1989 and co-founded Van Bower & Wiren in 1995 to specialize in high-end pool-construction projects. He's been active in the National Spa & Pool Institute throughout his career at the local, regional and national levels, has won numerous design awards and has been inducted into the Swimming Pool Hall of Fame. Bower is also a co-founder of the Genesis 3 Design Group.

**Stephanie Rose** runs Stephanie Rose Landscape Design in Encino, Calif. A former New York securities analyst, she gave up Wall Street ten years ago to pursue a career in landscape design – and has never looked back. Her firm specializes in residential gardens for upscale clients in the Los

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Angeles area, where the lengthy planting season and mild climate provide tremendous creative freedom and year-round work. Her projects frequently include collaboration with custom pool builders, a cross-disciplinary blending of perspectives and skills she sees as having profound potential for professionals on both sides of the relationship. Rose can be seen this season in several episodes of "The Surprise Gardener," airing Tuesday evenings on HGTV.

**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.



**TISHERMAN**

**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. After receiving his degree in landscape architecture from Texas Tech University, he began his career in California with a high-end landscape-design firm through which he became involved in several pool-remodeling projects. He later joined Geremia Pools in Sacramento, Calif., where he worked for six years before joining Leisure Living Pools in 1998.

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## Taking Offense

I have read Mr. Tisherman's condescending, "I'm so smart, the rest of you pool people are idiots" articles before, but "Splashes of Color" (October 2002, page 56) takes the cake.

Are we really to believe that his motivation is to "get us to educate ourselves better, to operate in a universe that will help him improve"? What bull.

His statement that few people who build pools could design a three-dimensional environment in public or private offends me. Go to any pool convention and you will see many competent designs that far outdo his ridiculous red plaster and Crayola tile.

He says of his creation that the original design was composed without any

**'Go to any pool convention and you will see many competent designs that far outdo his ridiculous red plaster and Crayola Tile.'**

thought to its use, then goes on to say that his superior design is ideal for playing and exercise – yet his choice for the coping is slippery and dangerous tile? Good job, Dave. Well thought out.

In all his articles, the common theme is that all of us lowly pool builders would much rather be building things for the liberal intelligentsia he brushes elbows with. News flash, Mr. Tisherman: You can take care of the Anna Nicoles and Streisands and pontificate about Greek architecture and try to convince them that red plaster and orange tile look good in matching their flowers, their barn or their underwear. Most of us feel comfortable in reality.

And there's a reason your plasterer never did a red pool: because it looks horrible!

Mr. Tisherman is a pompous ass and I believe his rantings are a disservice to the pool industry. I wish he would shut the hell up!

**Ken Simpson**

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## The Main Ingredient

**A**s you spend your days creating structures that contain and control water, it's easy to lose sight of the water itself. Yes, we're conscious of the fact that we have to filter, treat and sometimes heat it, but in its role as the defining feature in our products, water is so familiar a participant that in some ways it almost becomes invisible.

This time around, I want us all to step back from the intricacies of the design, engineering and construction tasks we all perform to consider the water itself. As we do, you'll find yourself thinking (as I often do) that we're in a special, healing trade that uses the curative qualities of water to the benefit of our clients.

Through the years, the spa industry has done a lot to get across this point about hydrotherapy, but I doubt most of us – those who don't also sell portable spas on a daily basis, that is – ever fully consider the broader implications of water's healing powers or consciously apply that knowledge in our daily work.

I'd like to heighten our general awareness by relating a few experiences I've had through the years – incidents that have caused me to stop and consider the truly profound nature of what I like to refer to as our "main ingredient."

**When you stop and think about it, those of us in the watershaping trades have both a privilege and even a responsibility to share the fantastic benefits of water with others.**

### The Five Powers

For starters, it's useful to look at the specific properties of water that make it helpful in treating and preventing a variety of human ailments.

I'm no doctor, and it bears specific mentioning that information about therapeutic benefits should come from those who've studied the clinical issues involved here, but the fact of the matter is that you don't need a medical degree to know with confidence that getting in the water can be very good for you.

For several years in the 1980s, I worked as part of a company (now defunct) that designed and sold hydrotherapy equipment. During that time, I had the distinct pleasure of meeting and working with a variety of talented physicians and hydrotherapy experts in the creation of a therapy pool for the Miami Project to Cure Paralysis. The organization was set up by former National Football League star Nick Buoniconti after his son, Marc, was injured and became quadriplegic.

That experience served to develop my understanding of the importance of our main ingredient, largely through observing the disciplined, structured way the medical community uses water exercise and other forms of aquatic therapy to treat a long list of ailments.

The range of therapies used today is immense, but all of them boil down to the way they relate to five essential points:

▼ **Buoyancy:** We've all observed that when we enter a pool or spa, the water immediately supports a large portion of our body's weight. This has obvious and profound implications for those who suffer with a wide range of disabilities and physical impairments. It also makes swimming and water exercises a great way for anyone to get a workout – and with greatly re-



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duced risk of injury compared to most other forms of exercise.

▼ **Temperature:** It's also well known that different water temperatures (particularly, but not always, *warm* temperatures) can have significant effects on such bodily functions as flexibility and circulation.

▼ **Resistance:** The beauty of exercis-

ing in water is that, while it supports your body weight and thus enables a widened range of motion for those who otherwise might not be able to move as freely, it also provides even resistance in all directions. Thus, the range of possible exercises is seemingly infinite – and the level of impact can be as light or intense as you want to make it.

▼ **Massage:** One of the great pleasures of life (as far as I'm concerned, anyway) is the wonderful, soothing indulgence of hydrotherapy jets in a spa. It's an extremely pleasant, relaxing experience and can be used to treat injuries and soreness in joints and muscles as well as to increase circulation.

▼ **Psychology:** Much of the reason for water's prowess as an exercise and therapeutic medium is that it provides bathers with a pleasant and invigorating experience. Doctors and physical therapists will tell you that when patients enjoy their therapeutic regimens, they're more willing to exercise longer and more frequently. Exercising in water thereby feeds the spirit in important ways and can have a tremendous positive influence on a sense of well being.

To varying degrees, these points all come into play when our main ingredient is used for healing. Indeed, some of the most important and inspiring experiences I've ever had in my career as a watershaper have come when I've seen, first hand, this evidence of water's curative powers.

## Freedom Machines

If you ever doubt for an instant the amazing benefits of water as a therapeutic medium, spend some time watching physically handicapped children or adults work out in a swimming pool.

During the past several years, I've had the pleasure of working with the Greater Miami Chapter of the National Spa & Pool Institute on a project aimed at helping severely physically disabled children at a place called the Neva King Copper Educational Center in Homestead, Fla. It all started in 1997, when the chapter agreed to renovate the center's above-ground pool as part of what we called our "Adopt-A-Pool" program.

We held fundraisers and solicited donations from members in the form of product and the labor needed to rehabilitate and upgrade the 16-foot circular pool, including a new filtering and sanitizing system, a new heater, an improved access system and installation of a wheelchair lift, among other things.

This was all pretty ordinary stuff as pool renovations go – not an enormous un-



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dertaking by any stretch. But with respect to the effect the program had on the students at the center, it's difficult to put it into words: For a great many of these children, their small swimming pool is the only place they can rise out of their wheelchairs and enjoy any real mobility or range of motion. My memories of the sheer joy on their faces as they used the pool will stay with me forever.

I'm not alone in this impression: After watching the kids enjoy the water, *Miami Herald* reporter Eyder Peralta described the pool as a "freedom machine," a description that captures the essence of what the benefits of water are all about.

On November 10, 1998, the school held a celebration to mark the re-opening of the pool during which the staff honored those who had contributed to the renovation. Their gratitude, along with that of the students and their parents, was so moving and so beautifully expressed that dry eyes were nowhere to be found. It wasn't long after that the chapter began working on a more ambitious plan to provide a brand-new inground pool for the center.

At this writing, we're almost ready to break ground, but construction has been delayed a bit while the chapter tries to raise funds to equip the vessel with a moveable floor that will elevate from the pool's bottom to a position flush with the deck. This would enable the kids to be rolled onto the pool in their wheelchairs and lowered gently into the water. It would also allow the water depth to be changed to suit different functions, a tremendous therapeutic advantage.

With or without that elaborate feature, the pool will go in, and it will only be a matter of months before the students have an even greater opportunity to enjoy the water's remarkable benefits.

### Bodies in Motion

Our chapter's work with the center was not the first time I had been so inspired by the curative power of water.

As I've mentioned before in these pages, I once hosted a Miami-area radio show called "All About Pools & Spas." One of the shows that garnered more attention than almost any other featured an interview with Dvera Berson, who had just

published a book about water exercises called *Pain-Free Arthritis*.

During our conversation on that 1987 program, she described how for many years she had suffered with several forms of arthritis and other debilitating conditions, explaining that she'd had to wear a neck brace continuously and that things were so bad that she'd often cry out in

pain while trying to do simple activities such as trying to hold a piece of paper or just laying in bed.

She said that she couldn't comfortably sleep or move and that her doctors were telling her that she would soon be completely wheelchair-bound. Desperate to fight her conditions, she moved to Miami for its warm climate and began

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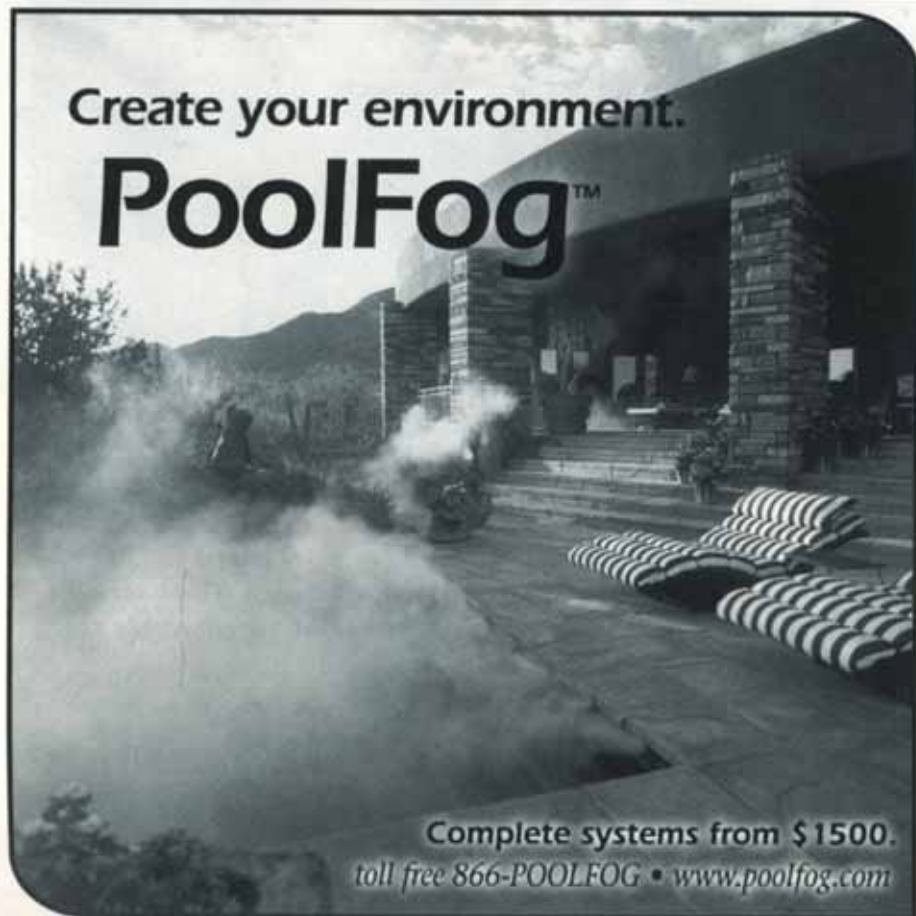


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spending time doing light exercises in a swimming pool.

She told us that, right away, the workouts gave her a small amount of relief that inspired her to press on and continue the regimen. By the time I met her at the radio station, I was amazed to see that this woman, who had started her program with what could only be described as limited quality of life, had become vital and fully functional outside the water through aquatic therapy.

**I had been working in the industry for several years at that point, but my eyes were opened wider than they had ever been to the potential water has to treat even the most serious of medical conditions.**

I'm not sure in strictly medical terms that you could say she was "cured," but her day-to-day experience had been completely transformed. She had, for the most part, quit going to the doctor and was off the continuous course of medication she'd been forced to endure. The person I met that day did not seem ravaged by disease in any way: She was energetic, enthusiastic and seemed in wonderful health.

That day we heard from numerous callers who had been moved by her story and wanted to know more. I had been working in the industry for several years at that point, but my eyes were opened wider than they had ever been to the potential water has to treat even the most serious of medical conditions.

### Pass It On

From that day forward, I've always been glad to share what I know along these lines with others who might themselves be looking for a way to improve their physical and even emotional well-being. A few years after my on-air visit with Berson, for example, I was talking to a neighbor at my vacation spot in Key Largo. As is customary in the Florida Keys, I had gotten to know my neighbors and enjoyed



conversation over the fence and over the occasional shared beverage.

One day while I was talking with the lady next door, she related to me that she was struggling with an arthritis in her knee and that the pain was becoming more than she could stand. I offered a sympathetic ear and was more than a bit stunned when she said that the condition had become so bad that she had actually considered suicide.

I was taken aback by her confession and did the only thing I could think of in that situation by sharing what I knew about hydrotherapy and about Dvera Berson's book. Not long after that, my neighbor began doing exercises in the swimming pool at Miami Dade County Junior College and subsequently bought a spa.

A few months went by. When we finally met again, she practically ran up to me, beaming with excitement. I'll never forget it: There I was, getting ready for a day out on the water, with my neighbor exclaiming that I had saved her life. She told me that the exercise had considerably relieved the constant discomfort she'd been experiencing and that she'd been able to return to a mostly pain-free life.

I don't often relate that story, but the fact that someone had told me that our industry's products had saved her life has been in the back of my mind ever since. So today, when potential clients mention that one of their objectives or desires is to use the water for exercise, I know that the value and benefits those clients will receive may well go beyond anything that can be measured in dollars and cents.

Simply knowing that the "main ingredient" in our products can have such a tremendous effect on our clients' lives gives me a wonderful sense of purpose and confidence as I move through my day-to-day paces.

Furthermore, I've found that you never have to look far for inspiration along these lines. Whether it's something as obviously important as providing freedom of motion for handicapped kids and helping seriously ill individuals regain their health or something as simple as providing everyday relaxation and/or exercise for able-bodied clients, the curative power of water is something to embrace and

hold close in our thoughts.

When you stop and think about it, those of us in the watershaping trades have both a privilege and even a responsibility to share these fantastic benefits with others. Doing so, I believe, begins with developing our own understanding of water itself and all the wonders that come with it. **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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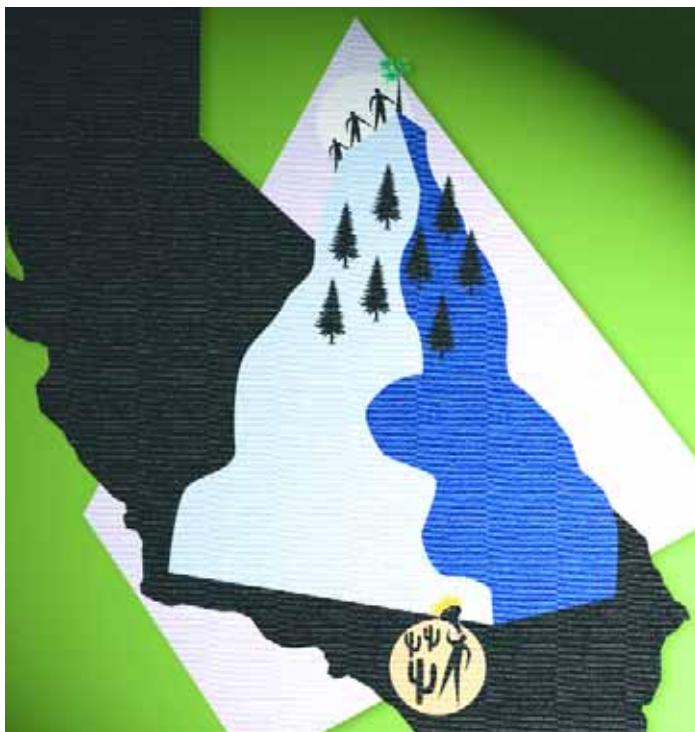
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## Making Connections

It's pretty obvious that designing projects outside your familiar climate zone takes some ingenuity and resourcefulness. That's something I could have told you before I tackled a project near Lake Arrowhead in Southern California's mountains – a world away from my usual work in the hot, arid San Fernando Valley or on Los Angeles' temperate west side.

What the experience drove home for me, however, is the importance of finding people in that “alien” zone who know what they're doing and are willing to work with you in realizing your vision when you're working away from your home base.

There were, for example, so many practical questions that no guidebook could easily answer about which plants really do survive throughout the year under the area's extreme conditions. There was also the simple necessity of working in a place where outsiders are often unwelcome and getting straight answers to questions can be about as difficult as getting a presidential pardon.

I even encountered one nursery/landscape firm that flat-out would not return my calls, but eventually I was lucky enough to

**I knew that very few contractors I work with ‘down the hill’ would be willing to drive so great a distance to work on this project – or, if they were willing, could keep their fees for travel time down to a level that made it possible to stay on budget.**

find a gracious, informative and extremely capable company that made working on this project an absolute dream.

### Crafting the Design

Armed with my fax machine and my new favorite business associate, I was able to select a plant palette suitable for Zone 3A – a three-step process that included sending the nursery a potential plant list based on my research in garden guides; receiving a list back noting which selections would work best based on the nursery's experience – and which ones would not work at all; and then refining the list to include only those plants I would ultimately use.

Next, it was time to find contractors. I knew that very few of those I worked with “down the hill” would be willing to drive so great a distance to work on this project – or, if they were willing, could keep their fees for travel time down to a level that made it possible to stay on budget. I also found that more than a few weren't pleased by the prospect or inconvenience of working in a completely different geographic area.

So I began looking for local contractors who were interested in a plan that included fences, a deck, decomposed granite pathways, a railroad tie bridge, a streambed and plenty of plants to shield the property from the neighbors' lines of sight.

My clients had relationships with a number of contractors whom they'd used to perform electrical, plumbing and other construction projects on their residence, but when it came to getting bids for various portions of the backyard design, the same people were unavailable or simply non-responsive, presumably because they were either busy or their portions of the project were too small.

As I plugged away at that challenge, I focused on what I considered to be the most important part of the package: the irrigation system.





The wood deck, nestled among some of the largest trees on the property, is the key destination spot in the landscape plan and now serves as a focus for relaxing, entertaining and communing with nature. The deck rises well above the grade on the downslope side, but it blends gently into the slope on the upslope side with sufficient clearance for runoff.

No matter what we installed for plants or hardscape, if the plants weren't being watered properly, none of the design would ultimately be pleasing. As a matter of fact, it's been my observation through the years that irrigation is ultimately the most important factor on any landscape installation.

There are plenty of licensed irrigation contractors in most areas and I'm certain I could have lured one up the mountain to do this job. But I knew I needed a specialist who could install a system that would take into account the unique nature of the mountain environment – in other words, someone who worked primarily in the Lake Arrowhead area. Eventually, I found one who was responsive and willing to accommodate my needs as an out-of-the-area designer.

### Learning Lessons

Frustration returned when I tried to find



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a local hardscape contractor. After a while, I approached the nursery I was working with and asked them to bid the entire project. They accepted, and the installation process suddenly became much easier.

I hadn't approached them for a bid in the first place because I had the sense that I was asking a lot of them: They

had no direct knowledge of me or my work and were basically doing everything for me on faith. Ultimately, however, they were willing to go the extra mile and were rewarded with a nice contract on the entire project – including ongoing maintenance of the property when I was gone.

I also learned some lessons about the weather: It seldom rains in Southern California in these drought-tending times, so it seems entirely appropriate that I chose the only two days of the past year on which

**My key meeting with the head of the nursery/landscape firm was conducted in the rain — which I took as a further demonstration of the company's willingness to get involved and do a good job.**



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The stream now links the old and new parts of the property and gave us the opportunity to add a railroad-tie bridge that gives the composition an additional point of visual and aural interest. The deck is a fair step removed from the home, but we eased the distance by adding a "dumb-waiter" to convey supplies from the kitchen to the head of the pathway far below.



it *did* rain to go up to Lake Arrowhead.

As a result, my key meeting with the head of the nursery/landscape firm was conducted in the rain – which I took as a further demonstration of the company's willingness to get involved and do a good job. Completed design in hand, we plotted out a timetable for installing the fencing, the deck and the pathways along with the streambed, the irrigation system and the plants.

A trip to the nursery on the second of my rain-drenched visits nailed down specific plant varieties and gave us the opportunity to see the coral bark maples and other unusual varieties the nursery was willing to obtain for me.

As I mentioned last time, they originally told me they'd be unable to accommodate my maple selections. When I pressed the point and made it clear I'd go elsewhere to get the varieties I wanted, their business sense took over.

The local reception has been so positive that they will now carry these maples regularly. It didn't take much persuading: While the trees were on hand awaiting delivery to us, many of their steady customers admired the trees and tried to buy them from us. I felt good about that: Lake Arrowhead is a relatively small community, and I liked having the feeling that I was giving this unexpected marketing opportunity back to the nursery in exchange for the exceptional support they'd given me.

**We succeeded almost immediately in creating a lush, mountain environment that will provide an intimate, private space for my clients – especially when the conifers we placed along the property lines grow to maturity.**

#### Toward Completion

In all, I made four trips up to Lake Arrowhead, and I'm pleased to say that

the installation went off without a hitch. Although you can see in the photographs that things need time to grow and fill in, we succeeded almost immediately in creating a lush, mountain environment that will provide an intimate, private space for my clients – especially when the conifers we placed along the

property lines grow to maturity.

The one lingering concern is the streambed, which we haven't been able to operate with the intended water flow. My clients and I have taken this on as a work in progress, with "tweaking" sessions scheduled on weekend visits I'll be making through the fall and next spring.

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As much as my client's pleasure is important to me, I'm particularly pleased with this project by the way things worked out with the nursery: Its maintenance staff has been on hand to replace plants that died early deaths (less than two percent of the total number installed); they've also been there to ad-

just and fine-tune the irrigation system and the fertilizing schedule to deal with a few problem areas that developed.

This arrangement has distinct advantages, and I guess there's a grain of truth to the observation that a contractor who is responsible for maintaining what he or she has planted will take

**Of all the many lessons I learned on this project, however, probably the most important is the idea that design and construction really do go hand-in-hand: I was dependent upon the contractors, and they depended on me.**

more care in installation than one who simply plants and walks away. I'm not suggesting that the latter contractors aren't conscientious: All I'm saying is that one who has the opportunity to observe the planting's progress can improve the outcome over time.

Best of all, because the same company installed and is maintaining the property, they have a copy of and understand the original blueprints and are able to fix small problems or replace plants without my needing to drive two hours to help them. Any questions can be handled over the phone as necessary.

Of all the many lessons I learned on this project, however, probably the most important is the idea that design and construction really do go hand-in-hand: I was dependent upon the contractors, and they depended on me. If we hadn't worked together throughout the design and installation process, I don't see how we could have delivered results that proved so satisfying to my clients and instilled so much pride in the professionals who made it all work. **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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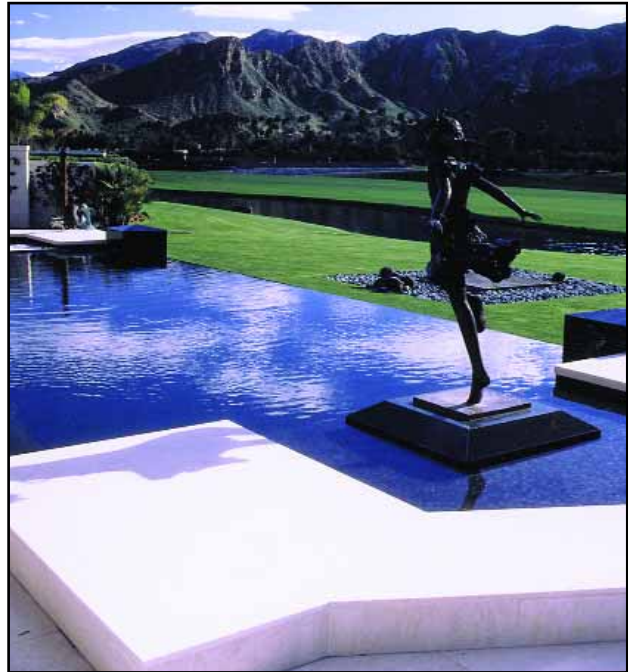


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## Up from the Depths

Last time, I described a series of unfortunate revelations that complicated the early stages of an elaborate pool renovation project in Malibu, Calif. By the time all of those enormous structural issues had been addressed, the pool project had been on hold for about six months.

When we finally returned to the site to resume our work, we were greeted by a “courtyard” that was basically a neat, seven-foot-deep hole surrounded by a beautiful home in one of the most exclusive neighborhoods in the country. Although the most significant of the troubles were now behind us, the tasks that followed were far from simple.

In the intervening six months, my clients had rethought much of what they’d formerly wanted by way of materials selections and an array of other details. The basic shape of the pool remained a constant – and would itself be difficult to achieve – but now we had to revisit a number of stone and tile details; the elaborate lighting plan and numerous other tricky electrical aspects of the project; a complicated skimmer detail; an unusually intricate array of plumbing lines; tighter-than-

Given the prominence of the clients and the fact they’d entrusted me with creating something truly spectacular for their home – not to mention the tortured beginnings of the project – I had a stronger-than-usual sense that my own reputation was on the line.

anticipated quarters for the equipment; and a whole set of issues related to installing a string of advanced laminar jets.

Some of the changes – especially ones related to the decking material, the width of the coping and the approach to landscaping – were destined to turn this project into a high-wire act from the day we returned until completion.

### Forms and Substance

We returned to find a cavernous void where the cozy courtyard had once been, and faced once again the collapsed, narrow breezeway that provided our only access to the space.

First of all, we set up a platform and ramp through the breezeway to allow access. Next, we stepped into the chasm, set a sub-drain system up under the pool (a perforated pipe encased in a foot of 3/4-inch crushed rock wrapped in fabric to handle any hydrostatic pressure that might develop), built the forms for the shell, installed the steel and plumbed the pool and spa.

This is a case in which I shudder to think about any attempt to approach the tasks at hand with anything less than the highest standards of design, engineering, craftsmanship and construction technique. Consider what was involved in forming the shell as an example.

The design called for a perfect set of matched, undulating curves along the full, 55-foot length of the pool and spa – and



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## DETAIL 23

there was no room for error. Our target in setting up the forms was a tolerance of no more than 1/16 of an inch across the entirety of the shell and a deceptively tricky shape that involved fairly tight radiuses, complex step details in the spa and squared corners within the pool to accommodate the tile that we would later install.

The need for extreme precision was required as well to accommodate the bluestone material selected for the coping atop the wave pattern. One-foot square bluestone – gauged at precisely 3/4-inch thickness – had to fit *perfectly* along the arcing contours to maintain the visual integrity of the edge.

That need for perfection was driven in part because the main vantage point for the pool from inside the house is the family room, which looks down the length of the vessel from a slight elevation. *Any* flaw at all in the appearance would be painfully obvious, meaning the bond beam had to be dead on and every stone had to be cut in a perfect wedge shape to accommodate the radiuses – or the whole exercise would be a waste.

Continued on page 30



The need for precision in laying out the wave-form edge was so great that we used an industrial computer to generate a full-scale, 55-foot-long paper template to guide us in setting up the plates for the top and bottom of the forms.





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**This is an important point: As much experience as I have, I'd never in a thousand years dream of setting up my own steel or concrete schedule for any pool.**

At this point, let me tell you that, given the prominence of the clients and the fact they'd entrusted me with creating something truly spectacular for their home – not to mention the tortured beginnings of the project – I had a stronger-than-usual sense that my own reputation was on the line.

## In the Trenches

To help us achieve the required precision in setting up the forms for the shell, the client suggested I work with a computer company he knew that did large-scale, precision work for the aeronautics industry. Soon thereafter, we had a detailed, full-scale, 55-foot paper template of the form to use as a guide.

We laid the whole thing out on a driveway offsite, where the forms were built by Rick Shevit, a builder and expert carpenter who does all of my forming.

Back on site, we used the printout once again to confirm that all of the radiuses required for the design were perfectly cut and assembled and that everything was within that 1/16-inch tolerance.

Continued on page 32



Our aim in forming was to hold everything to within 1/16th-inch tolerance along the entire length of the pool. Given the prime viewing angles from slight elevations inside the home, any flaws in the contour would have stood out like sore thumbs.



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The forms were, as on all of my jobs, made with two-by-four construction and lined with Masonite to facilitate stripping of the forms after gunite application.

The steel for this project was typical of what I usually do, including multiple curtains of steel with a six-bar bond beam and dam wall – massive amounts of rebar everywhere. I've often been accused of overkill in my steel specifications, but I've always seen it as relatively cheap insurance against structural failure.

I'm not a structural engineer, but I do understand what those professionals do and work very closely with mine, a gentleman named Mark Smith. He's a bit on the conservative side, but he has the best understanding of concrete and steel and its relationship to soil and water of anyone I've ever known.

This is an important point: As much experience as I have, I'd never in a thousand years dream of setting up my own steel or concrete schedule for any pool. I'll talk with my engineer and offer input based on my experience, but I think any builder who operates without the services and without following specifications laid down by a competent structural engineer is just asking for trouble.

So on this project as on all my others, the steel and concrete schedules were specified and endorsed by a structural engineer in accordance with prevailing soil conditions – no guesswork involved.

With the courtyard wide open, we set up a complicated plumbing network that included some convoluted runs underneath the house to a new equipment location near the front of the



The forms were made with two-by-four construction and were lined with Masonite for easy stripping. Even here, it's possible to see the long, undulating line we were after – and how important precision was to achieving the desired visual effect.

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A series of communications cables were set up to run between the laminar jets and an amazingly elaborate computer-control system mounted in the garage.

property. Most of it was stubbed up into a vault we built where a shed for trashcans had once stood. All told, 25 plumbing lines – mostly three-inch PVC lines including the manifold serving the spa's 24 therapy jets – ran from the pool to the vault.

We also set up a series of electrical and fiberoptic lines running to illuminators set up on a wall adjacent to the equipment pad. A series of communications cables were set up to run between the laminar jets and an amazingly elaborate computer-control system mounted in the garage.

## Coming Together

The work on the foundation assisted us by opening up accessways beneath the house that gave us a clear shot at the equipment pad via a trench we dug beneath the walkway on the home's north side. All this was necessary because the equipment for the original pool had been located illegally in a space on the home's south wall intended for fire department access. That placement was conveniently adjacent to the pool – but ill-advised just the same.

Continued on page 36



The plumbing that makes the pool/spa system work is unusually intricate, with more than two dozen lines running from the pool to the equipment vault. Everything was made more complicated by the need to pass all those three-inch lines beneath the house.



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None of this below-grade work came cheap or was achieved without enormous effort, but by carefully following a precise, detailed set of plans, we successfully relocated all of the equipment to the new shed — tight, but set up and carefully arranged for proper service access.

Once this phase of the work was done, the shell was shot at 3,000 psi and the forms were stripped. As with all my jobs, I asked a deputy inspector to observe the gunite stage. It's not required in all jurisdictions, but I make it a practice to have this important extra set of eyes on site during the process — an extra measure of assurance to my clients that everything is being done in accordance with the highest possible standards for quality.

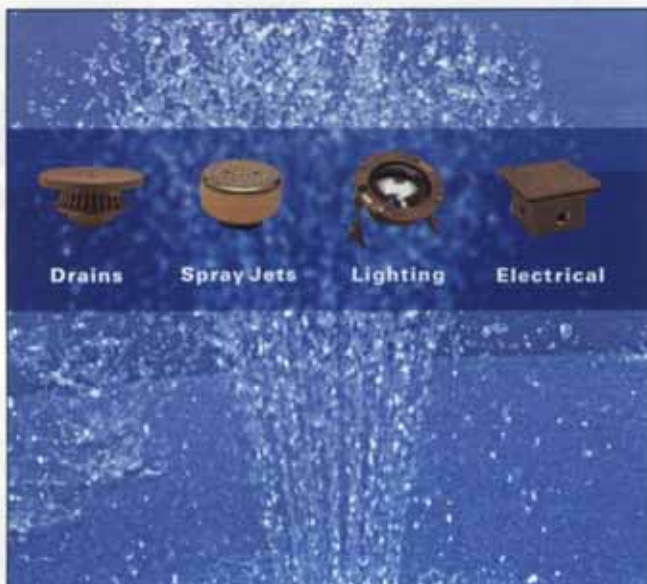
We then began to refill a hole that had now stood open for the best part of a year, raising it back up to within 30 inches of the finished level of the pool. Now it was time for the hard stuff. **VS**

*Next: a look at the coping, skimmer and bond beam details.*

**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.



Proper hydration of the curing shell was so important that we left nothing to chance: a timer and drip-irrigation system made certain the gunite was exposed to all the water it needed for several days after we'd shot the shell.



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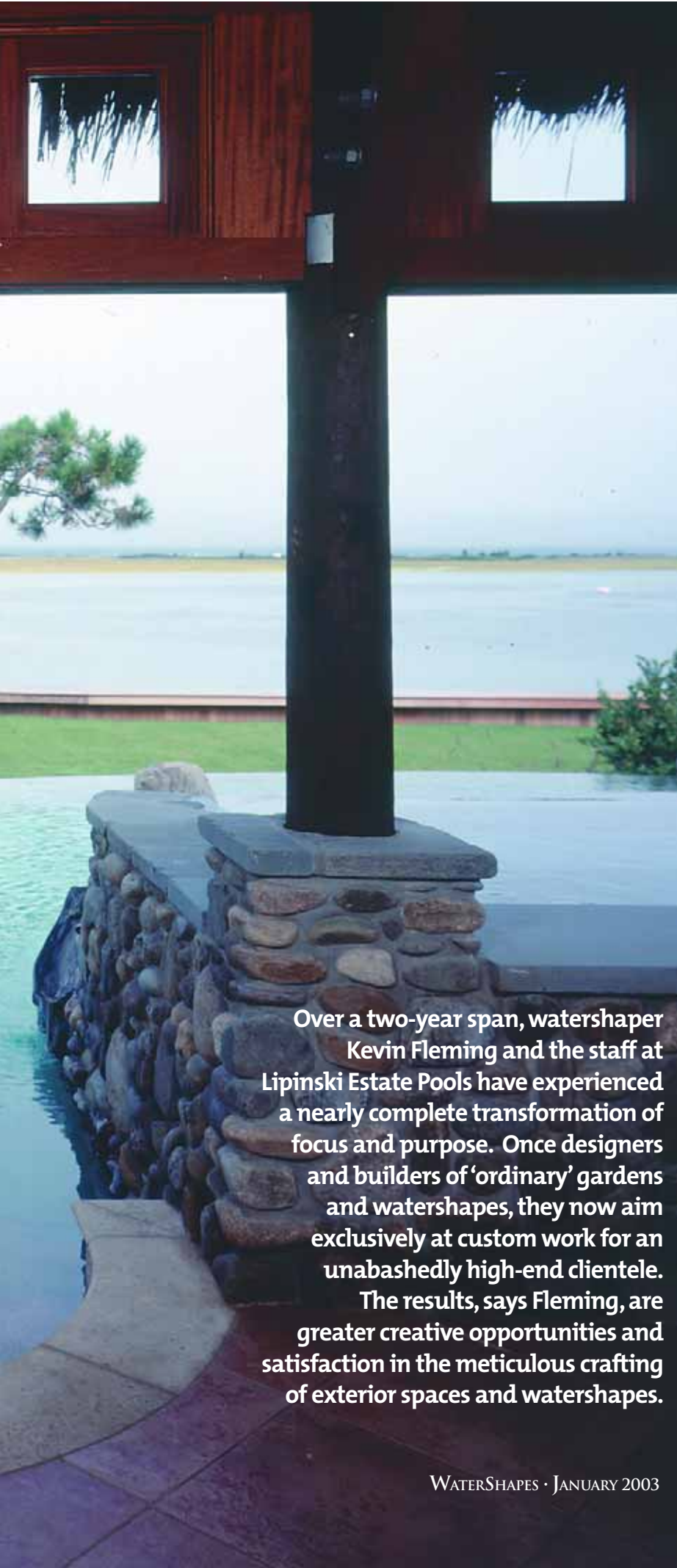




# Greater Expectations

By Kevin Fleming





**Over a two-year span, watershaper Kevin Fleming and the staff at Lipinski Estate Pools have experienced a nearly complete transformation of focus and purpose. Once designers and builders of 'ordinary' gardens and watershapes, they now aim exclusively at custom work for an unabashedly high-end clientele. The results, says Fleming, are greater creative opportunities and satisfaction in the meticulous crafting of exterior spaces and watershapes.**

Change can be both exciting and terrifying. In my experience, the biggest changes often come with the potential for tremendous rewards, but also with significant risk. During the past two years, such change has come for our company in the form of an all-encompassing transformation that has involved every aspect of the way we do business.

We've gone from trying to mass-produce affordable swimming pools and hardscape designs (and fighting for every dime we made along the way) to building only high-end, custom projects where we never compromise on quality – and make generous profit margins while working in far fewer backyards.

This metamorphosis has caused us to re-staff our firm, reinvent our company image and totally reassess the way we approach and regard our clients. We've downsized our operation while increasing staff specialization, all in an attempt to provide design, engineering and construction of the highest quality. As a result, we now find ourselves working for a clientele that we really only suspected was out there until recently.

Company owner Robert Lipinski has taken what I believe are courageous steps and invested tremendous time, patience, capital and faith in this new approach. Through this transition – and despite its challenges, frustrations and occasional awkwardness – our work has become vastly more satisfying and rewarding.

### **The High Road**

As I related two years ago ("Unlocking the Future," *WaterShapes*, January 2001, page 43), our path to change began in 2000, when key people from our firm started attending Genesis 3's Level I and II schools. Shortly thereafter, we established a working relationship with David Tisherman, a Genesis 3 co-founder and principle of David Tisherman's Visuals in Manhattan Beach, Calif., and set about re-tooling our company's structure to accommodate a more focused approach to custom work and in-house design.

Since then, we've collaborated with Tisherman

Main text continues on page 42









## On the Jersey Shore

This beautiful bay-front property is in the township of Margate, N.J. We first became involved as the home was being rebuilt, basically from the ground up, under the guidance of a local architect, Robert Johnson and Leeds Builders.

Part of his design was for a Polynesian-style cabana adjacent to a swimming pool. David Tisherman's answer to the need was a swimming pool design that came in at about the \$250,000 mark – a surprise to both the architect and the homeowner. The reason: Although it was not a dramatically sloped lot, the soil was mostly "sugar sand" and the pool structure needed the support of a system of piles and grade beams that

ultimately were tied in structurally with the teahouse and a system of short retaining walls.

The home's eclectic design, with both rustic and modernistic elements, led Tisherman to draw up a naturalistic pool with a 35-foot vanishing edge, a large, glass-tiled, raised spa and a host of tasteful visual elements including river rock veneer, properly scaled boulders scattered along the bond beam, a rock pond and wading area, a sandy beach with a pebble finish and beautiful tile details.

The vanishing edge spills into a water-on-water view, and the whole composition has a bay-front camp feeling – informal, but truly elegant and understated in keeping with its surroundings.





Continued from page 39

on a variety of projects that have involved him in every aspect of our efforts to change as a company.

In our market, which includes much of New Jersey's coastal regions, truly artistic design and construction for gardens, swimming pools and spas had previously been a rarity. Even super-affluent clients were settling for work that now seems unsophisticated and unexciting. Time and time again in the past two years, we've seen the amazement on potential clients' faces when they recognize that we've made an entirely new level of design and construction available to them.

Working with Tisherman as lead designer and mentor, we gradually began selling projects based on his designs to a select group of upscale prospects, many of whom were in the process of big remodeling projects for their homes.

At first, I was more than a little apprehensive about discussing elaborate designs and large budgets with these clients, their architects and their contractors. It was a different experience for me to sit at the table as a member of a design team, but I gradually accepted the fact that these projects were more about collaboration and teamwork than they

were about our individual contribution to the process.

I also learned quickly that the large dollars involved in many of these projects are not the defining characteristic of the work at all. To paraphrase Tisherman, it's not about selling a million-dollar project, but about making the customer feel that their project is worth a million dollars, regardless of the cost. To that extent, we don't "sell" projects any longer; instead, we develop, create and collaborate with people interested in commissioning and owning original works of art.

As I gained more experience working as part of a design team, I soon began to enjoy the process of watching a project unfold in ways I never did with the more production-oriented approach we once pursued. Now, instead of trying to close as many clients as possible to expand our narrow profit margins, we have a mindset that our firm is geared toward creating a positive experience for our clients in the design process, during construction and especially after the work is finished.

At this writing, we no longer seek to close each and every sales lead that comes our way. In fact, we now turn away more than 75% of potential projects because we're looking

## Upscale Marketing

One of the more satisfying aspects of the changes we've seen at Lipinski Estate Pools has been that we no longer need to promote our services to the masses.

As a result of the shift in our business, for example, I was pleased to cancel our Yellow Pages ads. Instead of casting so broad a net, we now use a coordinated approach with print advertising in a select set of magazines and our web site.

In those ads, we go with a simple presentation that includes an image of a single beautiful pool, a phone number, an address and a reference to our web site. We've reworked our web site to give it a more sophisticated look and have found so far that a large number of our leads come through the Internet from people who saw our print ads first. And as we've completed some projects and our reputation has grown, we've found in addition that referrals from satisfied high-end clients can be worth their weight in gold.

But none of this marketing or follow-up on leads or referrals would do us much good if the reality of what we're doing didn't align with the image we're promoting — which all folds back to the



for the discerning customers who want to commit to the elevated level of our approach.

We also no longer consider compromising on things such as plumbing size, equipment selection or the overall quality of construction, we charge for design work, and we include realistic budgets for engineering and construction documents. If the client isn't interested in true quality, we simply don't move forward.

### Inside Out

To be sure, getting to this point has not been easy. If our new "sales" process was eye opening and exciting, once we moved into the actual engineering and construction of the first of our new breed of projects, the ride turned scary. To put it bluntly, it became painfully clear that we were in *way* over our heads.

The subcontractors and crews we were using simply did not have the skills to execute the precise, ambitious designs we were committed to installing. We found quickly, for example, that people who were highly adept at installing a band of tile at the waterline were not necessarily the ones we needed to lay down expanses of one-

way we treat our clients in all phases of the work. We work *very* hard to keep them happy through every single stage of every project and absolutely see this as one of our main marketing and promotional vehicles.

One thing that hasn't changed with our high-end approach is the way we treat *anyone* who inquires about what we do. Even if we're talking with folks who don't fit the upscale mold, we take the time to work with them and educate them about what we do. I've always believed that you never know where you'll find treasure – or when a potential client will find himself or herself in a position to purchase a beautiful work of art rendered in water.

Ultimately, it's the desire to create these works of art that has driven every aspect of our transformation – and especially the way we market ourselves. When I started down this path, I didn't know that pools were art and it took me a while to realize how significant that distinction really is. Now I see clearly that, as we strive to create works of art, everything that we do has changed – all for the better.

– K.F.



by-one glass-tile mosaic.

And those sorts of hard realizations cascaded through every level of our operation: From plumbing and electrical to formwork and decking, we had to relearn or reinvent *everything*.

We knew that this upgrading process would come with a significant price tag, but I don't think we had any idea just how tough the transformation was going to be. For the first few projects, for example, we ended up paying two separate sets of subcontractors to work on these jobs: At considerable cost, we flew Tisherman's crews in from California one by one and paid select local subcontractors to work side by side with them to learn finer points of craft.

That may sound extreme, but we found it to be the quickest and most direct way to get our people the training they needed to work at this level.

On subsequent jobs, these newly trained subcontractors were indeed better able to tackle the work, but we've still experienced many painful situations where portions of their work had to be ripped out and reinstalled. We have been fortunate in that the professionals with whom we're now

Main text continues on page 47









## Mediterranean Warmth

This project was completed on Long Beach Island, N.J., in conjunction with a tear-down project directed by local architect Bill Tagland and builder Patrick Moeller. We were brought in after the owner had already acquired a proposal from a volume pool builder. To say that the design on the table was inadequate to the stunning Mediterranean architecture of the remodeled home would be a gross understatement.

Tisherman countered with a program that was to cost the homeowners about five times the cookie-cutter bid, and it was nothing short of spectacular.

The customers were initially reluctant to upgrade the watershape to such a dramatic extent, and we began by backing out several exciting features and design touches that kept the budget down without compromising the visual appeal of the proposed installation. One by one, however, the clients reinserted all the omitted features and the result has been the inclusion of all components of the original design.

The look is subtle and elegant, a classic design with arched contours that echo the architecture of the house. There's also a warm, rich blend of materials and details, including the custom-cut, buff-colored, limestone caps on the raised bond beam, the fire pit that runs the length of and adjacent to the spa. The decking surface is a custom material we've created that includes a colored-concrete base with 3/8-inch river stone exposed aggregate.





## Soft Modern

On this project, we were put in charge of the entire exterior of an amazing modernist home in the ultra-affluent enclave of Loveladies on Long Beach Island, N.J. In addition to calling on Tisherman's watershaping expertise, we also brought in landscape architect Timothy Rumph of Araiys Design in Southampton, N.Y., to create the hardscape and planting plans. I designed the lighting system and supervised the execution of the landscape design.

The pool is relatively small, just 12 by 30 feet with no spa and a very clean and simple rectangular design. It has raised beams that create seating areas topped by poured-in-place coping with a willow-green broom finish. There's also a fully equipped outdoor kitchen/bar area with granite countertops and handmade tile that matches the pool.

The interior of the pool is a soft green plaster (a color selection we believe is a first in this part of New Jersey), complemented by an ultra-elegant, handmade, cream-colored porcelain tile. The color palette is very soft and natural, which adds a measure of warmth to an otherwise edgy modern design.

Tisherman also set up a pilaster detail with recessed rectangular lights in tribute to the designs of the Mexican modernist master, Ricardo Legoretta. The contemporary look is echoed in Rumph's hardscape design, which extends to the sides and front of the home and features rectilinear concrete pads and smooth river stones of varying sizes for a textured appearance.







Continued from page 43

working have accepted this process of learning and working through mistakes as an investment in their own futures. At the same time, those we tried to bring in who have questioned the value of the process have quickly been discharged.

We also found that the need for close project supervision, quality construction documents and communication with local building officials were all of paramount importance and all required the same level of upgrading.

The engineering alone on many of these new projects goes light-years beyond any of our past work. All of the projects depicted in this article, for example, involved pile-and-grade-beam construction. The engineering drawings just on the foundations are more extensive than entire plan sets we used for some past projects!

This raised real issues with building inspectors in several instances. In fact, one of the jobs profiled here so puzzled local inspectors that they had to call in an outside structural engineer to review our structural plans. For this and other reasons, the amount of time spent in plan checks and inspections has increased dramatically, and I've found myself working in depth with city and township officials across a range of issues more than I ever would have dreamed possible.

## HARD STEPS

The cost of making these changes has been enormous indeed. From re-staffing and training to reworking mistakes and overseeing everything that's been happening, it's safe to say this tumultuous transition has been all-consuming. As we've completed our first generation of projects, however, it feels something like walking into a clearing after spending a whole lot of time struggling through the woods.

Even now, we can see how our ongoing work and future projects will flow more smoothly and easily. We can also see results – real, tangible results – of this enormous effort: These are gorgeous watershapes, Tisherman has been in top form, and the work we've done in executing these visions has made us all proud.

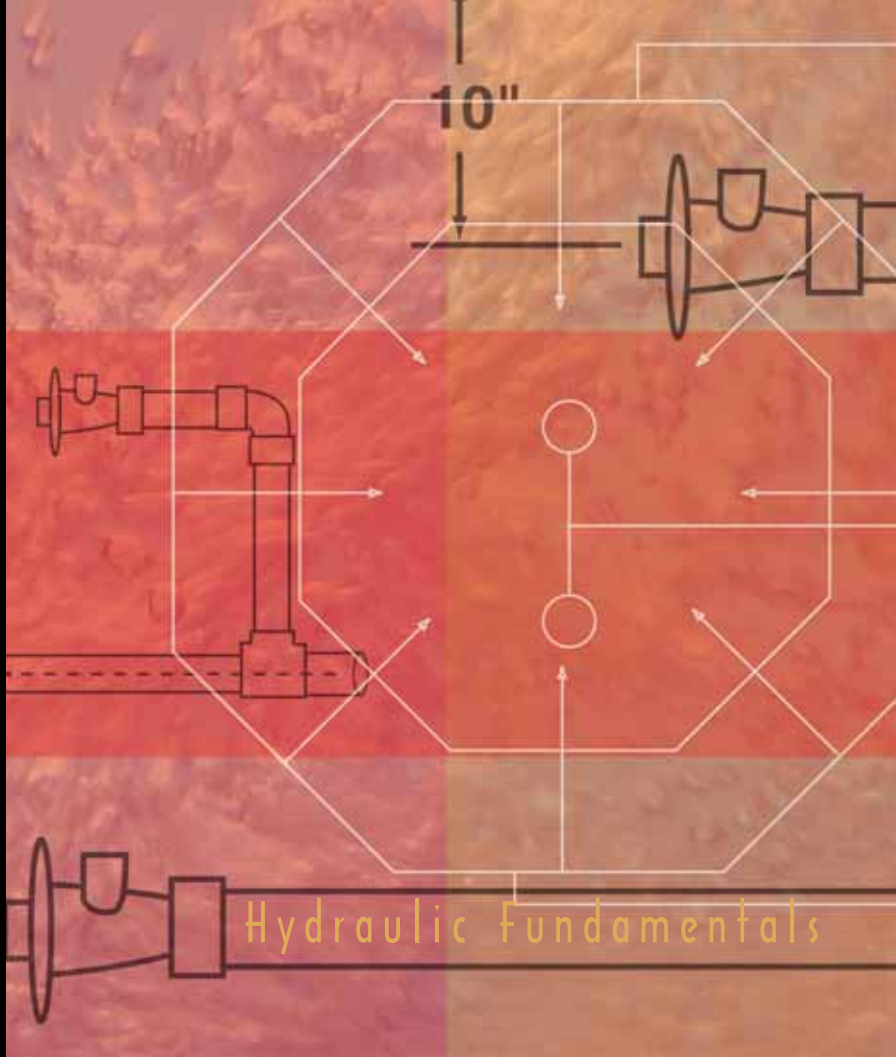
Best of all, we close our days knowing that, more than ever before, we are now participating in the creation of beautiful works of art that make our clients smile.



# Tank Command

By Steve Gutai

**Surge tanks may end up being out of sight, notes hydraulics expert Steve Gutai, but they should never be out of mind as you strive for efficiency and reliability in setting up water-in-transit systems that call for their use. While proper sizing, selection, placement and plumbing are all relatively simple, he adds, bringing them together in just the right way is crucial when it comes to the success of these dynamic installations.**



In many ways, installing a surge tank is simple. If you get it right, all will be well. As is the case with so many watershape systems, however, getting it wrong can lead to serious problems.

Let's start with some terminology. *Surge tanks* are receptacles used to accommodate the surge of displaced water in systems that can be generally defined as *water-in-transit* or *gravity-feed* systems. This class of watershapes encompasses vanishing-edge details, perimeter overflow designs, slot-overflow systems and gutter installations and is also frequently used in the design of commercial waterfeatures.

In *WaterShapes*' November/December 2002 edition, my friend Skip Phillips wrote an important article about designing water-in-transit systems in general and in particular on the many considerations involved in building troughs that adequately handle the flow over vanishing edges – what he calls “attached” surge capacity.

To complement that discussion here, I'll be covering in more detail what Skip calls “detached” surge capacity and the remote tanks that are often used to manage the flow of water in applications where a trough can't do the job for visual or practical reasons.

## THE BASICS

Whatever approach you use to deal with the need for surge capacity, your design must begin with an understanding of water displacement and reflect a clear grasp on what's involved in plumbing, equipment selection and an array of installation details.

An understanding of displacement starts with the most basic hydraulic unit of all: a cubic foot of water and how it relates to the surface area of a pool, spa, fountain or some other watershape. Familiarity with these quantities and how they work is the key to figuring out how much water will be displaced when a system is *on* (and its water is in transit) and

when it is *off* (and the water is static).

Let's visualize that cubic foot of water here:

A vessel holding a cubic foot of water contains exactly 7.48 gallons. This same cubic foot of water can be described as 1728 cubic inches (12 times 12 times 12). In visual terms, this equates to 12 layers that each include 144 cubic inches of water – a fact that makes it easier to visualize the next steps, in which you look at the surface area of a watershape, calculate its area in terms of square feet, convert this surface area into cubic inches, then to cubic feet and, finally, back to gallons (Figure 1).

Recall the sliced layers of the cubic foot of water just discussed as you think about the next question: How much water will be displaced?

The two factors influencing the answer to that question are the amount of water being displaced by the pump's operation and the amount that moves as an unpredictable result of bather surge. Sizing the



surge tank to handle the overspill from its weir is easy, but dealing with bather surge can be a real challenge.

Specifications offered by manufacturers of gutter systems for commercial swimming pools provide some guidance, but the scale is generally out of line with the residential systems we see most often. Given that information gap, both Skip Phillips and I recommend a practical approach based on the experience of the country's leading engineers and builders. As an example, if we have a vanishing-edge pool whose pump discharges a quarter of an inch of water over its edge, the catch basin needs to be able to hold the surface area the pool multiplied by the amount passing over the edge.

As stated above, the surge tank (or catch basin or trough) must hold all the water that flows in normal operation, all the water displaced when the system is off, and all of the additional bather surge. To accommodate all three, Skip and I agree that a properly designed system should be able to accept a minimum of two inches of the surface area of the swimming pool water.

### DECISION FACTORS

Sizing a remote surge tank then becomes a simple matter of selecting a container that will hold the required amount of water – and, preferably, somewhat more. Proper selection of

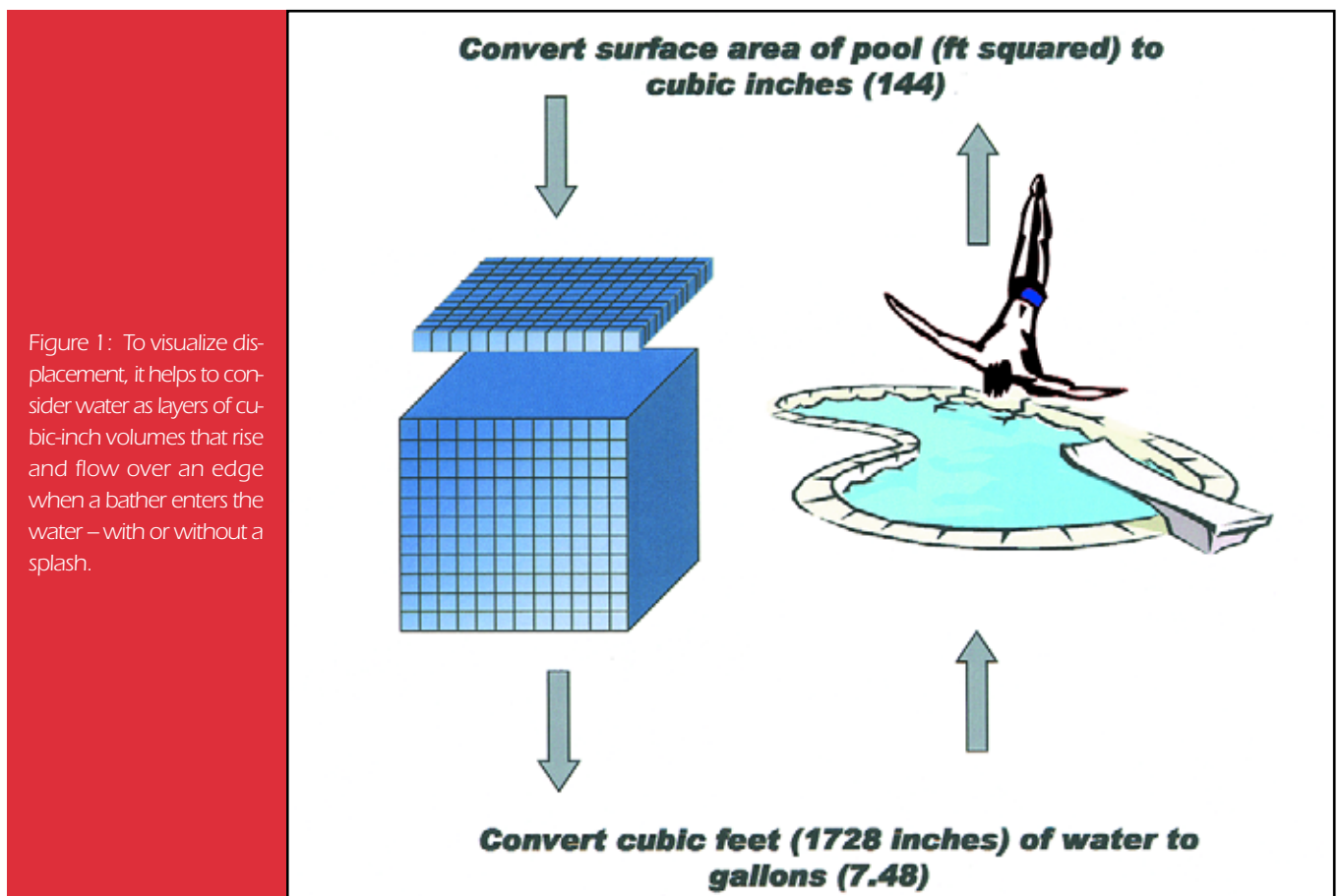
the tank, however, does not stop there: You also need to select one with proper construction relative to the ground in which it will be buried.

Surge tanks can be made of several materials – in fact, of *any* material approved by local building and safety officials. This opens the possibilities to acrylic, fiberglass, stainless steel, polypropylene, cinder block and pre-cast units, so long as the tank is approved for use with potable water (which can be an issue with some polypropylene tanks).

The *sole* criterion for selection among these tank materials is, as my friend David Tisherman steadily reminds me, the prevailing soil condition and the soil's reactions to rain, drought, trees and other factors. If the soil is expansive or if trees with invasive roots are nearby, for example, the tank may move periodically or over time. This can cause leaking at the pipe joints and unions and in extreme cases can cause damage to or failure of the tank itself and should lead you to consider only the sturdiest of your options.

Soil acidity is also a key factor: If the pH is low, it can have a corrosive effect that will further limit your choices among tank materials.

There's no room for guesswork here: You need to know the soil you're working in and the type of materials and construction techniques best suited to the application. This





means you should be talking with local soils and structural engineers, because taking even educated guesses in projects involving surge tanks can result in problems that, in worst-case scenarios, can become catastrophic.

Other factors to consider:

- Surge tanks should be serviceable. This means that any tank you select should have a manhole with a removable cover large enough for an adult to enter (Figure 2).

- Location of the tank is site specific. You need to evaluate space, elevation, slope and accessibility, with the obvious point in mind that these are gravity-feed systems and the tank needs to be placed lower than the source vessel.

The second point in particular has a lot to say about how the tank will be plumbed, a discussion we'll get to right after we briefly discuss how surge tanks fit into the overall design scheme.

#### FITTING IN

Generally speaking, there are two approaches used in directing displaced water to a surge tank.

In the first case, the water spills over a weir of some sort in a vanishing-edge, perimeter-overflow or slot-overflow configuration and moves into a gutter system of some kind. The water then flows through the gutter until it reaches the surge tank.

In this setup, the gutter system does *not*

Figure 2: This surge tank is perfectly suited to application in water-in-transit systems, with plenty of capacity, multiple penetrations to accommodate necessary plumbing and, most important of all for long-term performance, a manhole large enough to allow for easy servicing.



Photo courtesy Creative Water Concepts, Scottsdale Ariz.

retain water or maintain a specific operating level. The gutter is pitched in such a way that that water moves rapidly to several "pick-up points" (or drains) that send the water via gravity to the surge tank.

ter at a specific level. When that level is exceeded, the overflow moves down the line to a surge tank (Figure 3). This strategy is often used in watershapes in which an attached lower pool or basin is re-

**With any surge tank in any gravity-feed system, the most important factor to recognize in laying out the system is that the depth of the tank determines everything about its plumbing.**

Open pipes or atrium grates can be used in these gutter systems, in which the surge tank stores the water and acts as the supply vessel for the watershape.

The second approach is similar to the first – with one significant difference: Here, a catch basin is used to hold the wa-

quired to run at a certain operating level. Here, the overflow is handled by a standpipe or a modified skimmer that drains water to the surge tank when the level in the basin exceeds the predetermined operating level.

(There is, of course, a third option

Table I: Water quantity calculations for round pipe configurations.

Pipe Size (internal diameter)	Slope (%)	Flow (gpm)	Flow (fps)	Slope (%)	Flow (gpm)	Flow (fps)
2 inches	1/4 inch/foot	27.6	2.8	1/8 inch/foot	19.5	2.0
3 inches	1/4 inch/foot	81.2	3.7	1/8 inch/foot	57.4	2.6
4 inches	1/4 inch/foot	174.9	4.5	1/8 inch/foot	123.7	3.2
5 inches	1/4 inch/foot	317.2	5.2	1/8 inch/foot	224.29	3.7
6 inches	1/4 inch/foot	515.8	5.8	1/8 inch/foot	364.72	4.1

## Gravity Feed Systems

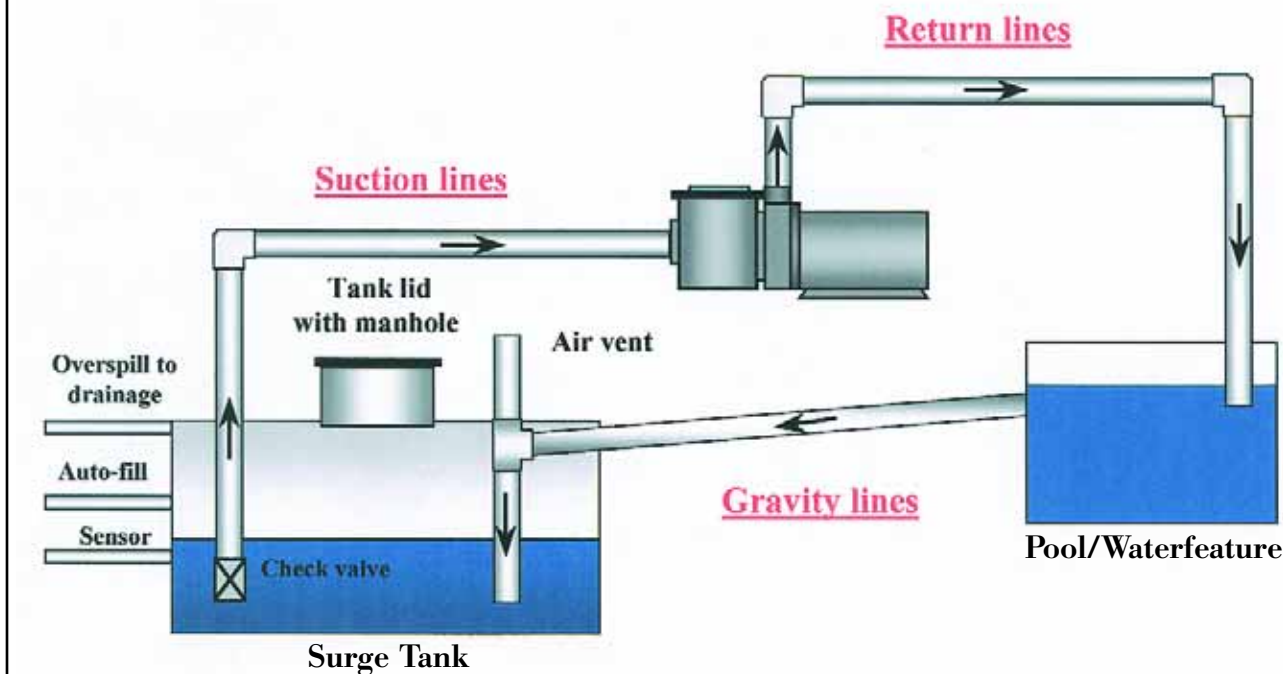


Figure 3: This schematic shows a simple system in which a catch basin is used to hold the water at a specific level. When that level is exceeded, the overflow moves down the line to a surge tank, driven solely by gravity.

that involves no surge tank at all: Here, the catch basin is large enough that it can handle all of the displacement, replacing the surge tank with what Skip Phillips refers to in his article as “attached” surge capacity. For this article, however, we’ll stick with systems that use separate tanks.)

With any surge tank in any gravity-feed system, the most important factor to recognize in laying out the system is that the depth of the tank determines everything about its plumbing.

This is true because line sizing for surge tanks is determined by pipe pitch, which controls line velocity and capacity (Table I). Line velocities generally run from two to six feet per second with the pipes pitched an eighth- or quarter-inch per foot. Typically, the lines themselves are made of PVC (schedule 40 or 80) or ABS.

As their name suggests, gravity-feed lines are *not* pressurized – but do not underestimate the volume of water they can move! This is why the incoming lines

should penetrate the surge tank near the top and the plumbing should be carried down to the floor: This retards water turbulence and *significantly* reduces the noise caused by water flowing into the tank. (To reduce the gurgling noise associated with gutters as water “circles the drain” in moving toward the remote surge tank, you can vent the gravity-feed lines or use drain covers with snorkels.)

Suction lines will also be taken from the catch basin or surge tank. These lines *are* pressurized and should be sized to handle the pump’s net positive suction head requirements. A foot valve – including a combination check valve/screen – is a good idea here. The lines should come into the surge tank and be carried down to within a few inches of the floor (as seen in Figure 3).

### UNDER CONTROL

To finish off an efficient surge-tank system, a couple more penetrations are generally needed:

- There should be one for an overflow line tied into the drainage system. (Many auto-leveling systems also include a level-sensing device that triggers a pump if the water level in the tank gets too high.)
- There are also generally penetrations for an auto-fill system – one for the fill line and one for the sensor or probe. This system adds water to the tank if the level drops too low, thus preventing damage to the main system pump. As a rule, the minimum operating level (MOL) in a surge tank should be about one foot.


With another nod to Skip Phillips’ article, it’s important to keep in mind that every water-in-transit system is different. But if you understand the displacement needs of the system you’re creating and meet the basic installation requirements outlined here, you can enjoy full command of these dynamic watershape systems – and transfer that pride and pleasure to your clients.



# Inside Moves







Most watershapers lavish nearly all of their design attention on features and details above the waterline, but designer builder Glenn Harris would rather focus his efforts on the broad canvas that spreads below the water's surface. In a series of articles, he'll explore the creative possibilities of tile, plaster and other finish materials, defining in this case what can happen when you turn your thoughts to tile and a set of new decorative frontiers.

## By Glenn Harris

We live in a wonderful era of creative development in a variety of watershaping trades and are truly blessed, it seems, with an ever-expanding generation of talented artists and a sense that our most dynamic creations are yet to be built.

For all of this forward momentum, however, I find myself surprised and dismayed all too often by the lack of creativity that goes into our work *below* the water's surface. To my eyes, pool and spa interiors in particular are simply bland and boring.

I'm oppressed by six-inch waterline tile surmounting a field of white, gray or black plaster – interrupted occasionally by a bland dolphin, starfish or beach ball. Yes, exposed aggregate surfaces have helped by adding subtle colors and textures to these interiors, but when you compare what's happening in pools and spas to the range of materials, colors, textures, finishes and sheer energy applied to dry hardscapes, you see that the (perceived) options for watershape interiors are few in number.

In my own company, we've worked hard to increase the range of subsurface options for our customers, so much so that I've come to regard the interior surfaces of pool as the final and best frontier when it comes to features we offer our clients. Here and in future articles, I'll share our approach to the design process and describe some specific techniques we employ to liven things up underwater – focusing this time on tile and mosaics.

### The Empty Canvas

It's time to take the blinders off and think about color, realism, dimension, style, snap, pizzazz and the emotional impact of pool and spa interiors.

In our business, we've found that turning our creative efforts in this direction has led to increased customer satisfaction, an enhanced portfolio, a stronger reputation, more referrals and a welcome improvement to the bottom line. Add to that the increased satisfaction that comes with creativity and the fashioning of something truly artistic and you can see why I believe that we have everything to gain from embracing decorative interior finishes.

In our work, it's not at all unusual for a project to include interior features that exceed the cost of the watershape it-





self, often many times over. But it's not all about being elaborate: In fact, in a great many projects I find that relatively small (and inexpensive) visual elements can become the most intriguing and attention-grabbing features of entire installations.

As is the case with many in the water-shaping trades, I've come by my opinions and approaches through years of experience and experimentation. I now work all over the world, but the majority of my projects are still installed in my home state of Hawaii.

One thing I've learned for certain in my career is that tile is a popular favorite on the islands – and that it's getting to be that way everywhere else. Through the years, I've installed nearly 200 all-tile interiors and do more of them every year. These days, in fact, more than 80 percent of the *rehab*s we do in Hawaii are all-tile, and almost all of the projects I do here and abroad include at least some use of decorative tile that goes beyond the traditional waterline band.

Along the way, I've sold and installed murals ranging from simple square or round crests or logos that cost just a few thousand dollars to huge and elaborate three-dimensional coral reefs that check in at several hundred dollars per square foot – and jobs of every type and extent in between those extremes. No matter the project, I've found that the key to persuading clients to share your vision and commission the work is the direct result of your spirit, attitude and approach.

In other words, it's not so much about the budget or the style or the setting; rather,

it's about how all those factors fit together and how you look at the potential of a project and convey that potential to the client.

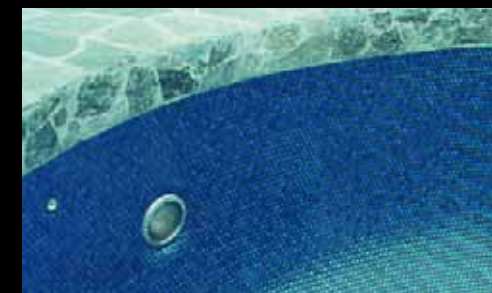
### Start With Art

In approaching my clients, I never lose sight of the fact that my ambition is to create and present to them something that will be viewed as a beautiful, valued and enduring work of art. To be sure, not all watershapers are artists at that level, but I've learned through the years that you can find someone with the talent if you look in the right places, whether it's within your family or organization or from an outside source.

In some situations, the clients themselves will provide artwork that I translate for use on an interior. Some of the source material isn't to my taste, but the truth of the matter is that there's no better way to stroke a client's ego than to immortalize his or her own design in the bottom of a pool.

This leads me to a key point: All of what I'm discussing flows from getting the clients involved in the process. You have to discover what they like and determine their favorite colors, shapes, textures and images. You need to ask about their favorite flowers and animals and find out what sorts of scenery or architectural styles pique their interest.

In Hawaii, for example, the strong Japanese influence means that designs featuring Koi are particularly popular, as are those with flowers and undersea creatures and scenery. While it's useful to keep these sorts of generalizations



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about popular tastes in mind to *open* your discussions, it's important to remember that everyone you meet brings unique tastes and preferences to the process. My job, as I see it, is to use popular themes and images as a point of departure for creating a work that will inspire and delight my clients.

Once you tap into your clients as a source for ideas, you'll find that there are infinite design directions and concepts you can develop. As you elevate your skills and reputation and put yourself in a position where you can approach the custom market, you'll find a wonderful clientele with budgets that allow you to be *extremely* creative.

That's always wonderful, but it's also true that most people, even the truly affluent, will introduce some level of budgetary constraint to the overall process. Fortunately, there are many fairly simple and relatively inexpensive design ideas that can yield tremendous results.

### Frame by Frame

Let's get specific with one of my favorite types of project upgrades: Take a rectangular pool, approximately 15 by 30 feet, either brand-new or with some years on it. Say it has six-inch waterline tile of any color and standard white plaster.

If I'm faced with a client looking for

a reasonably priced visual upgrade as part of a renovation project, I might suggest installing a six- to eight-foot square or circle as a mosaic in the floor of the shallow end to be made up of one-by-one-inch glazed tile. That mosaic might be some sort of illustration or even a simple geometric pattern.

I most always recommend framing a scene with a definite tile border so that everything on the inside and outside will finish to it. This creates a visual marker that calls attention to the art and can be used to blend the artwork with other visual elements in the waterline tile, decking or even landscaping. You might do something fairly traditional, such as set a couple of turtles, dolphins or flowers inside the frame, or you can reach for an abstract image or a realistic mountain scene – or anything else your clients desire.

To create more depth and dimension, think about overlapping the visual elements, perhaps by allowing part of the design to extend beyond the border – a dolphin's tail or nose or a single petal of one flower. Think as well about using darker tile to create shadow effects and add dimension, especially with mosaics. You can purchase ready-made mosaics from a number of sources and just wrap your frame around it, or you can create patchworks of broken tiles to achieve

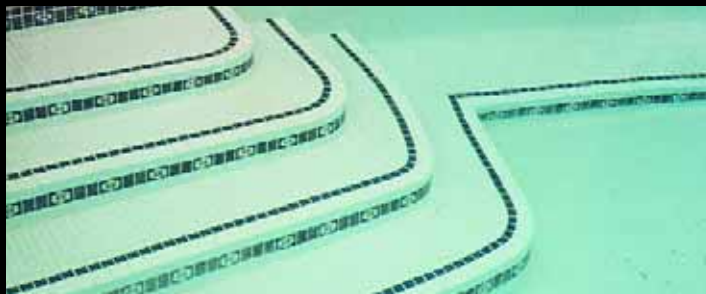
wonderfully rich looks.

The only time I don't recommend framing is with a mural of a company logo, say, or when I'm working with a design that's big enough to stand on its own.

I also stay away from frames when the client wants a number of visual features on the vessel's interior. As a rule, I've found that frames work best when they cover a single area of a pool or spa. Beyond that, I'd rather reach for a completely illustrated pool than set up three or four items scattered over a broad area. The isolated features tend to get lost, look cheap and, most important, seem incomplete. In other words, keep it simple – or run to the opposite extreme and install an entire coral reef or big schools of fish or multiple flowers and leaves.

Within a frame, you can fill out the spaces around the artwork with tile or plaster. This offers another opportunity to add contrasting or complementary colors – or you may want to pick up the color of the frame.

If you use cobalt one-by-one-inch tiles in framing dolphins with light blue bodies and white and gray bellies, for example, you might use black tile to create a shadow effect around part of the dolphins to give them a "raised off the bottom" appearance. You might then fill in the spaces around the dolphins and within the frame with the same cobalt tile or another col-







## Tile Points

When working with any tile – and especially with the highly decorative material described in the accompanying article – it's crucial to pay close attention to material and precise installation techniques. Here's a punch-list of key considerations:

- q Know the codes. Before designing or installing anything, you need to familiarize yourself with local health and building department rules – and follow them well, if only to avoid liability issues.

- q Always try to create a tile-ready surface that is as flat as possible. A perfectly flat surface helps you avoid the appearance of shadows, especially at night when the lights are on. In addition, a tile mural or logo will be much more striking and can take on an amazing shimmer if it is truly flat. So unless you're working to achieve an embossed or textured effect, flat is the way to go visually – and prevents foot hazards within the pool.

- q Be careful with your setting material. You want enough to fix the tile in place, but you don't want the material oozing up into your grout joints.

- q Always use a setting material that is as close to the color of your grout as possible. This hides small imperfections and helps the work keep up a great appearance for as long as possible.

- q Place the setting material on a properly prepared mortar bed. An acrylic-modified thinset works best for most applications, especially when paired with a sanded, acrylic-modified grout.

- q Don't cut corners on materials. Charge enough so that you can use the best products available.

- q Always, always read and follow manufacturer's mixing instructions. This is true for the mortar bed, the setting layer and the grout.

- q Make good cuts. In cutting tile, I use a standard 12-inch tile-cutting board along with side-cut nippers and a Makita-type four-inch angle grinder with a non-segmented, dry-cut diamond blade.

- q As a time saver, work at developing a photographic memory. I'll look at a gap and picture the tile that will fit, then go and make the cut to comply with the mental image.

- q Always take the time to make sure grout joints are consistent. Too many times, I've seen fairly good jobs of laying a lot of tile ruined by inferior grouting.

- q Keep the surfaces properly hydrated. That's critical, as is making sure the tiled area doesn't get too hot as the materials set.

As a last graphical point, I almost always use a staggered-joint pattern for large areas or for the field. If I start to "catch up" in areas – which always happens – I'll throw in a smaller piece to throw things off line. It takes some extra time, which is why many installers don't do it, but I think it's worth the extra effort.

Frankly, I have an ulterior motive in working with staggered rather than running joints. The former let me make fine adjustments with ease, while the latter, I think, can look too contrived – and tends to magnify even the slightest mistakes or inconsistencies.

Most people don't pick these imperfections up visually, but I certainly do. I figure that if I can spot these little areas, someone else can, too. So what's a cut or two if it can make or break the visual appearance of your work?

– G.H.



ored tile, or you could use colored plaster. Even if you are plastering the pool white, the cobalt of the tile frame and the colors of the dolphins set up enough color contrast that even filling in the space with white plaster will look good.

### Living Elements

I don't see my work on interior-surface designs as being different from any other part of the watershape design process. As a result, I'm always evaluating possibilities with respect to color, contrast, balance, context, size and a proper location in the pool for the artwork – all fairly basic, but important nonetheless.

Context, however, is particularly crucial, which means your thinking needs to encompass the colors of the waterline tile, plaster, decking and home exterior as well as the shape of the pool. (I've found that round designs can look good in square pools, for example, but that square designs don't work so well in round pools.) Look for themes you can exploit or visual motifs in the style of the home.

Just as important as context is proper proportion. You don't want a mural that overpowers the rest of the project's features: The entire watershape, interior and exterior features combined, must complement its surroundings, which means you must strive to blend your interior visual elements with the overall design with respect to style, color, size, texture and visual impact.

As you work, bear in mind that traditional visuals such as dolphins, turtles and whales don't add a great deal of striking color with their often-muted blues, grays,

browns, greens and whites. Flowers, art deco figures or contemporary art, by contrast, all allow you to select much more vivid colors. Hibiscus, plumeria (or frangipani), orchids and birds of paradise all have spectacular colors in their blooms, and I've found that their stems and leaves can be beautiful as well.

When planning these effects, it's always wise to check in with local suppliers and find out what colors they have available: It's never a good idea to get clients excited about pink flamingoes, for example, if you can't get your hands on the right pink tile within the scope of your project timeline.

As you prepare for your work on site, you should always think your designs through in great detail and draw them out in paint-by-numbers style, including the border and any field tiles that might surround a key visual feature. There's an art to tile layout that eludes many designers and installers: If, for example, you use the right "flow" of tile, you can actually give the appearance of movement once the pool is full and the element of water refraction is introduced.

This leads to another important point: As a designer, you need to know that once the water is added to the vessel, things on the bottom will look smaller and some detail may be lost.

### Opening Up

As I've developed and expanded my decorative approach to interior surfaces, I've learned to treat every project as a new and unique adventure. I get creative in

### Inch by Inch

I start with one-by-one-inch glazed ceramic tile for a great many of my watershape projects.

The tile generally comes in square-foot sheets with a mesh backing, which is a real time saver. Many of these tiles have slightly rounded corners, which is great for setting up the sort of sweeping curves I work with in setting up frames. In these cases, I usually cut the sheets lengthwise into individual one-inch strips.

I'll also use coin tile in developing coral reefs or floral patterns, but I'm cautious in doing so because the coins can leave you with some large and potentially unsightly grout gaps.

—G.H.

the process of listening to my clients and working with them to execute their ideas. I've also seen what can happen when clients are introduced to the broad set of decorative possibilities available to them and get excited by ideas they'd never considered before.

This give and take is what makes the work of building custom watershapes so satisfying. I see interior designs as one element in the broad spectrum of visual possibilities, but it's a truly exciting one because it gets so little mainstream attention. So start off small if you like: The important point to remember is that as you get more and more involved with what's happening below the waterline, you'll find an entire canvas you can fill with detail, color and delight.





# A Clear, Clean Public Service



**The structures and grounds at the Cross Valley Water District's headquarters in Clearview, Wash., stand as a prime example of how a public facility can send important messages to the community about responsible environmental stewardship. According to landscape architect Sandra Hasegawa Ingalls of Foresight, Inc., the project's watershape is a key element in a broad program that makes this facility what she hopes is a model for others to come.**





## **S**ometimes it's the small things that give a project its character and value.

By **Sandra Hasegawa Ingalls**

In the case of landscape design and installation at the Cross Valley Water District facility, we were able to take a relatively modest property and transform it into a demonstration campus that illustrates how man-made environments can be used to enhance the natural surroundings and meet the needs of human beings – all with grace and harmony.

I became involved in this project in June 1998, when I was approached by Brandt McCorkle, Lee Beard and Galen Page of Page & Beard Architects. That firm had been chosen to design the water district's new headquarters building and had developed a craftsman-style structure that blended perfectly with its rural, wooded surroundings.

Set on five acres in Clearview, Wash., the district office serves the needs of customers who still pay their bills in person and are accustomed to a gentle, small-town pace. Given this slow but steady flow of visitors, the district's managers wanted an exterior space that offered the public (and its employees) a pleasant and even meaningful experience.

This goal was met by including a meandering waterfeature as part of a design that focuses on proper soil amendment, appropriate plant selection and a spirit that is compatible with the surroundings, both visually and ecologically.

### **Rustic Charms**

Known as the Cross Valley Water Association when it started in 1964, the public utility had a mere 328 customers in 1967. By 1989, the association had grown to the point where it reorganized as a municipal water district, but even now it has just 5,450 customers. This is indeed a small community.

Nearly 90 percent of the district's water comes from wells, and the rest is purchased from the nearby city of Everett. By the mid-'90s, the organization had outgrown its original 2,100-square-foot office and commissioned Page & Beard Architects to design a facility that addressed the need for space as well as the managers' sense that whatever they built should fit naturally into its surroundings.

The overall project features three buildings: the main headquarters and two operations buildings linked to the administration building by paved paths. Environmentally conscientious from the start, the main structure features natural materials, open interior spaces and broad windows that instill feelings of warmth and spaciousness.

It's all in the details. Even the visually weighty structure that supports the broad entryway makes a statement about conservation of old-growth trees through its use of glue-lam members rather than solid wood timbers. The gabled entry vault opens into the lobby and carries through the interior, creating a sense of rhythm with composite trusses that support a finished-cedar ceiling.

Photos by Denise Becker, Alota Photography, Bellingham, Wash.





Our work on site was characterized almost as much by what we *didn't* do as by what we did. Here, for example, we left a solitary red maple to stand watch over the parking lot along with many other substantial trees that were in place when we arrived.

## Soils Alive

My work on the grounds of the Cross Valley Water District's campus expresses my design philosophy in a number of ways, including the use of naturally occurring water and the retention of important trees on the property. Another key component in the program is ensuring the presence of healthy soil.

It's my belief, in fact, that proper soil and soil amendment in man-made environments is a tool that can be used to help ensure healthy runoff of surface water and the condition of nearby well waters – among many other things.

Throughout Washington State, spectacular populations of fish thrive in our rivers, streams, lakes and ponds. Because salmon and other fish rely on clean water, they must also rely on healthy soil in the surrounding watershed and our sense of just how interconnected and interdependent the land and the water really are. Indeed, efforts to preserve bodies of water through environmental regulation are of no great use unless the land that affects those bodies of water is protected as well.

Soils alive with microorganisms keep disease-causing organisms in check while recycling and storing nutrients and making them available to plants. Many of these microorganisms enhance soil aggregation and porosity, providing a highway for air and water passage. Healthy soil also retains and slows runoff, limiting erosion and enabling water to saturate the ground. Through this process, water is filtered and aquifers are replenished.

In built landscapes, healthy soil does not require as much water to sustain plant life and will ultimately yield more beautiful and healthy plants. With healthy soil, the need for chemical fertilizers and pesticides diminishes – all of these being benefits that keep installation and maintenance costs down.

My personal belief in this sort of environmental stewardship has led me, with my colleagues at Page & Beard Architects, to implement a program called "Soils for Salmon." Through this educational foundation, we promote the use of a soil amendment called "compost tea" – a form of liquid compost that contains billions of desirable microorganisms – and conduct seminars aimed at raising awareness of proper soil amendment as a key to the health of the environment and human beings.

– S.H.I.

The warmth of these natural materials creates an engaging, soothing workplace and efficient business environment. That feeling is felt especially in the perimeter offices, many of which overlook broad garden views – which is where my contribution comes into focus.

When I initially discussed the project with McCorkle and representatives of the water district, I saw a definite opportunity to bring outside views into play as an extension of the building's interior spaces. I've spent a great deal of time traveling in Japan and in studying Japanese garden design, an experience that energizes me whenever I see ways to make connections between interior and exterior spaces and to use landscaping to express an appreciation of nature in a man-made setting.

All of this was on the table with this project, and as I looked at the architecture and processed what the district managers were saying about their desire to demonstrate positive environmental stewardship, we all began discussing ways in which the landscape could be used to tie everything together in a meaningful, expressive package.





Harnessing a small, on-site spring, we set up a stream that flows for about 100 feet along the front of the main building bridged by a walkway and, more impressively, a bridge that serves as the building's dramatic entryway. Beautiful both day and night, the stream symbolizes the Water District's responsible stewardship over the area's resources.

### A Nuanced Approach

Originally, it was Page & Beard's idea of placing a stream at the building's entry. Quite sensibly, they try to incorporate waterfeatures into all the projects they do for water districts – whether inside or outside the building – as an appropriate symbol of the services being provided.

As we focused on what we wanted to accomplish together, we came to the recognition that our work was being driven by the idea that there is interconnectedness between soils and water quality and that proper management of that relationship could be used to minimize the impact of urbanization on the natural environment.

To turn that high philosophical concept to reality, we began by leaving well enough alone through a couple of key decisions. First, we retained a buffer of significant trees near the street as well as a gorgeous Japanese maple that now serves as a centerpiece for a circular drive in the parking lot.

Second, we developed a soils-amendment program and a planting plan (described in detail in the sidebars on pages 60 and 63, respectively) that self-consciously embodied the concept of responsible stewardship.

Third, we chose to harness a small natural spring on the water district's original site on an adjacent lot to feed a decorative watershape on the new site. Although water, ironically, was not part of the water district's initial wish list, the meandering stream and pond at the front of the main building are now key visual features – and perhaps the clearest embodiments of the project's prevailing spirit.







Once the stream passes the entry bridge, it flows to a pond where our goal was water of crystalline clarity and pristine beauty – again symbolizing the district's care in supplying and protecting the area's water.





The stream runs for about 100 feet along the front of the building, flowing beneath a small bridge at the entrance and terminating in a 40-by-15-foot pond. Much of the stream is visible through office windows that bring workers and visitors within a few feet of the tranquil, slow-moving water.

The stream drops just 14 inches from headwaters to pond, so we had to be deliberate in setting up the small falls and cascades, the largest of which is located at the transition from the stream to the pond. For the most part, the water in the stream is only a few inches deep, while the pond is no more

than two feet deep at its lowest point.

Installation of the stream was expertly handled by Land Expressions of Mead, Wash., a landscape architecture/construction firm that, in my opinion, does absolutely beautiful work. This installation was no exception: I worked with company founder Dave Nelson to create a watershape that was significant enough to command attention, but retiring enough to blend seamlessly into its tranquil surroundings.

Working on a structure made with a concrete-covered liner, the Land Expressions crew made intuitive use of small,

rounded river rocks and Bandera granite, which was used throughout the site for its rich brown and gray colorations and smoothed edges that emulate stone shaped by water and the elements through time.

### Coming To Life

The gentle contouring of the soil, the careful placement of stones and the expert execution of delicate edge treatments all came together to give the space a sense of orderly composition, but at the same time there are sensations of a natural, random beauty.

## Eastern Influences

The planting plan for the Cross Valley Water District project is inspired by the natural surroundings of rural Washington State as well as by my desire to incorporate layered views of the sort found in Japanese gardens.

The plant selections began with Japanese maples, inspired by an existing, sentinel-like specimen that stands at the center of the parking area. We echoed its presence with several smaller maples set around the pond and adjacent to the stream and set up contrasts and layers by mixing in Japanese black pines. These trees all work well because they can be pruned and kept to garden scale – unlike cedars or firs for example, which are forest trees and will grow to become too large for the setting.

Many of the spaces requiring greenery and flowers were filled with dwarf rhododendrons, andromeda, mountain laurel and hydrangeas. Accent plants include heavenly bamboo, creeping thyme, heather and kinnikinnick.

The plantings are arranged in a fairly sparse pattern to avoid crowding the spaces while still softening the banks of the watershape. As these plantings mature and gradually come to fill the space, the landscape will remain balanced and orderly – especially near the main building, where we carefully considered both immediate and future lines of sight as we worked.

As you move away from the building, the plantings become progressively larger and wilder, until you reach the rear of the property, where indigenous firs, cedars and grasses still rule the terrain.

– S.H.I.







In our desire to make the stream and pond friendly to our plants and local wildlife, we set up a water-treatment system that uses a small ionizer and ozonator. The water flows to the pond, where a skimmer pumps it back to headwaters that emerge inconspicuously from beneath a small rockery at the top of the stream.

The natural spring is up the slope from the stream and flows by gravity to the headwater area. We don't need to worry much about the stream running dry—quite the opposite: Because of the exten-

sive rains that fall in the region, we had to accommodate the possibility of significant overflow by setting up a series of “bio-swales” that will capture excess water and allow it to percolate into the soil.

Early on, district managers had been cool to the idea of a watershape, mainly because of the anticipated cost. We worked hard to convince them of the visual appeal the stream and pond would lend to the space and also to persuade them that it was an environmentally conscientious approach—an approach that would demonstrate their good steward-

ship in showing while providing an excellent public display of creative ways to detain and slow surface runoff.

The clincher, however, was demonstrating that we could make budgetary room for the project by eliminating the irrigation budget through use of water-wise plant material for most of the space—and by allowing the lawn, which was set behind the main building and an area earmarked for future development, to go brown during the summer.

As it has turned out, the stream in particular has become the facility's hallmark.





In planning the exterior spaces, we took our lead from the facility's lofty interior architecture and its consciousness of the need to conserve and wisely use local resources. The resulting exteriors are simple yet evocative spaces set off with a selection of water-wise plants.

After all, it can be seen from many of the spaces and offices inside the building, and every visitor and employee who enters the building crosses over its bridge. District personnel have told me time and again how much they enjoy the beautiful scenery it provides and the gentle sounds it makes, and they're proud of the positive comments they hear from visitors.

There's no great drama here, just a careful balancing of plantings, rocks, water and soils that give this project its distinctive visual appeal, sustainability and spirit.

My hope is that this sort of low-impact design sensibility will catch on with other designers and clients. The way I see it, it's a commonsense approach founded in a desire to retain natural features and minimize the effects of construction without sacrificing anything when it comes to the enjoyment of those who occupy these built spaces.

I give tremendous credit to the staff at the Cross Valley Water District, the professionals at Page & Beard Architects and Land Expressions and the other contractors and engineers who enthusiastically embraced the values embodied in this project. With healthy soils and clean water in place, man-made spaces such as this one can delight and satisfy human beings while playing a role in preserving the natural beauty that remains around us.







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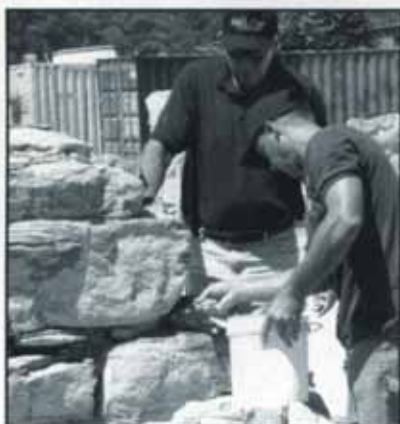
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### POOL GAMES

Circle 100 on Reader Service Card



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**Pool Shot Products**, Ashtabula, OH.

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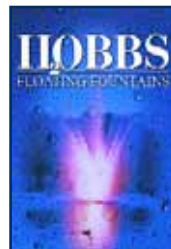
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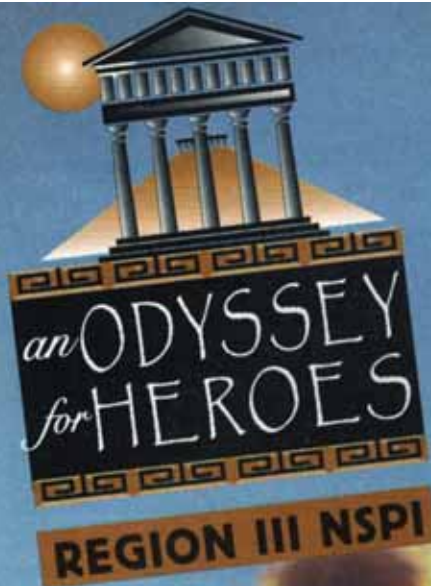
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Continued from page 69

## OLD-WORLD RETAINING WALLS

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KEYSTONE RETAINING WALL SYSTEMS has introduced Country Manor, a retaining-wall system in which dry-stacked (yet mechanically connected)

units evoke the old-world look of mason-crafted walls. Units come in six types for use in straight sections and in various radiuses, and cap pieces are also available. The system uses fiberglass pins for interconnections and alignment. **Keystone Retaining Wall Systems**, Minneapolis, MN.

## IN-LINE SALT GENERATOR

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CLEAR TECH AUTOMATION has introduced AutoClear Plus, a microprocessor-driven, in-line salt-generation

system for inground pools. The new product updates several features of the original model in its electronics and housing, providing a user-friendly system with easy-to-read LCD and LED displays and full compatibility with major control systems now on the market. **Clear Tech Automation**, Pompano Beach, FL.

## SEALING COMPOUND

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W.R. MEADOWS offers Deck-O-Seal One Step, a single-component, non-sagging, elastomeric, polysulfide-based sealing compound used for

caulking joints in surfaces subject to movement caused by temperature changes. Ideal for use in watershapes above the waterline where tile meets coping, the product works wherever a permanent, water-tight seal or expansion joint is required. **W.R. Meadows**, Hampshire, IL.



## CARTRIDGE FILTERS

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STA-RITE introduces Posi-Clear cartridge filters for swimming pools and spas. Molded of ABS thermoplastic for long tank life, the filters come in four sizes from 75 to 150 square feet of filter area and feature the company's Posi-lock ring for quick, safe access when service is required and an inlet port set at a high level for simple up-and-over plumbing. All units have two-inch inlet and outlet ports. **Sta-Rite**, Delavan, WI.

## POND HEATER

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AQUASCAPE DESIGNS has introduced a new, energy-efficient floating water heater for ponds. Designed to keep a hole open in the ice through the winter months to maintain gas exchange and protect aquatic life, the 100-watt heater uses less energy than previous 1250-watt heaters. The compact unit comes with a ten-foot cord and is controlled by an adjustable thermostat. **Aquascape Designs**, Batavia, IL.

## CONCRETE PIGMENTS

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SOLOMON COLORS offers iron-oxide pigments in liquid form. These high-solids dispersions have total pigment levels between 60% and 70% and can be pumped into batches at measured rates to ensure accuracy. The oxides come in a wide range of standard and custom colors and are permanent, inert, stable to atmospheric conditions, sun-fast, lime-proof and free of fillers or extenders. **Solomon Colors**, Springfield, IL.

## STAINLESS STEEL SUBMERSIBLE PUMPS

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BERKELEY PUMPS offers the 6TS series of submersible pumps. Featuring 304 stainless steel construction, the units come in horsepower from 1-1/2 to 60 with a choice of 50 or 60 hz configurations. Designed for maximum performance, efficiency and reliability in the toughest conditions, the continuous-duty pumps are ideal for waterfeature and dewatering applications. **Berkeley Pumps**, Delavan, WI.

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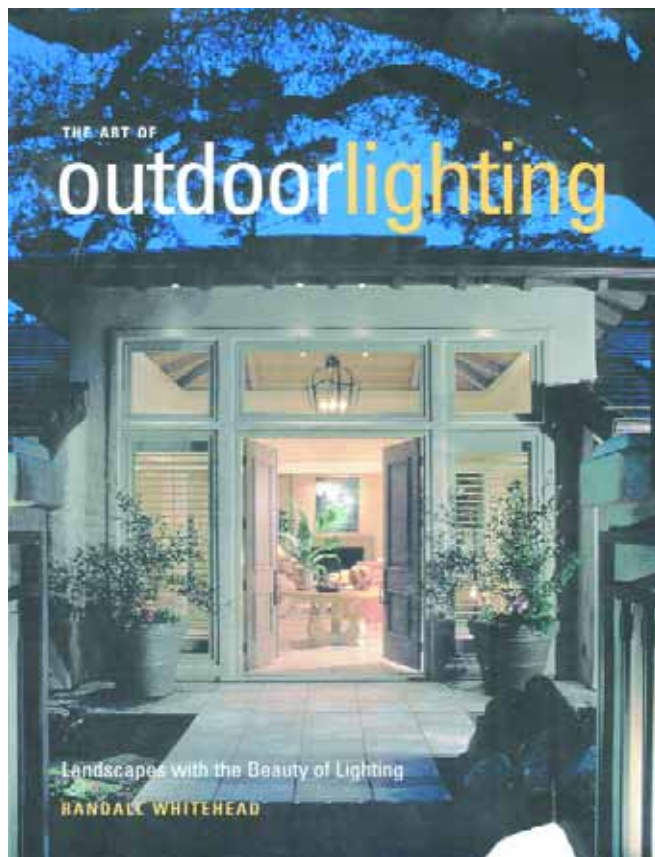
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## Night Vision

**T**he fine points of landscape lighting are the worthy subject of *The Art of Outdoor Lighting* by Randall Whitehead (Rockport Publishers, Gloucester, Mass., 1999). It's a wonderful place to begin a journey of discovery: The text consists of 192 heavily (and beautifully) illustrated pages that break the discipline of lighting design down to several practical areas of concern – and there's a generous section all about ways to light waterfeatures.

The verbiage throughout is both brief and focused, leaving most of the space for a parade of beautiful photographs of public and residential spaces. Simply by flipping through the pages and looking at some of these projects, you begin to see just how much interest and beauty can be created when you think about viewing and using a space at night.

One of the most useful sections deals with the various lighting effects you can achieve. There are discussions of familiar techniques, such as the up-lighting of trees and structures, path lighting and spot lighting. A large portion of the section, however, deals with more artistic effects, including moon-lighting and silhouetting with backlight.

Along the way, Whitehead spends a good amount of space discussing methods for concealing fixtures – and argues effectively for using few-

er fixtures in some cases. There's also a wonderfully concise and informative section on technology, including short courses on 110-volt systems, low-voltage lighting and fiberoptics – which he covers almost exclusively as a technology used in conjunction with water.

Particularly important is a section on what he calls “lighting mistakes” and how you can avoid such pitfalls as shining outdoor lights into houses or creating monotony by placing lighting fixtures at obvious intervals. On a more positive note, I greatly enjoyed his discussions of using light to bring the inside out by illuminating “exterior rooms” and of lighting exterior views with interior focal points in mind.

His section on the lighting of water is a real eye-opener. He makes a number of points clearly and effectively and, in a couple of cases, challenges some common assumptions that I and others I know have made throughout our careers. One of those is that you should always light the interior of a swimming pool: In cases where pools have dark interior surfaces, he suggests instead that you should leave the water dark to exploit the potential for reflections of lighted elements above the waterline – an interesting idea I'll consider as a possibility from now on.

The book concludes with a section that credits the landscape architects, lighting designers and photographers who provided images for the book – an extensive list that might prove to be a terrific resource for watershapers looking for professional help with their lighting designs and installations.

I came away from the text with a strong impression that most watershapers, myself included, need to know more about how much we can accomplish with lighting, whether it's for small, intimate spaces or large areas with multiple layers and varieties of key viewpoints. I also more fully understand how a space takes on different dimensions and aesthetic qualities depending on how you choose to light it.

As I noted at the outset, this book is a great starting place and worth a look if for no other reason than it shows just how far you can go once you and your clients begin considering what can be done with outdoor spaces once the sun goes down. **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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