

**Inside: Bruce Zaretsky on Sustainable Design**

# WATER SHAPES

**Design • Engineering • Construction**

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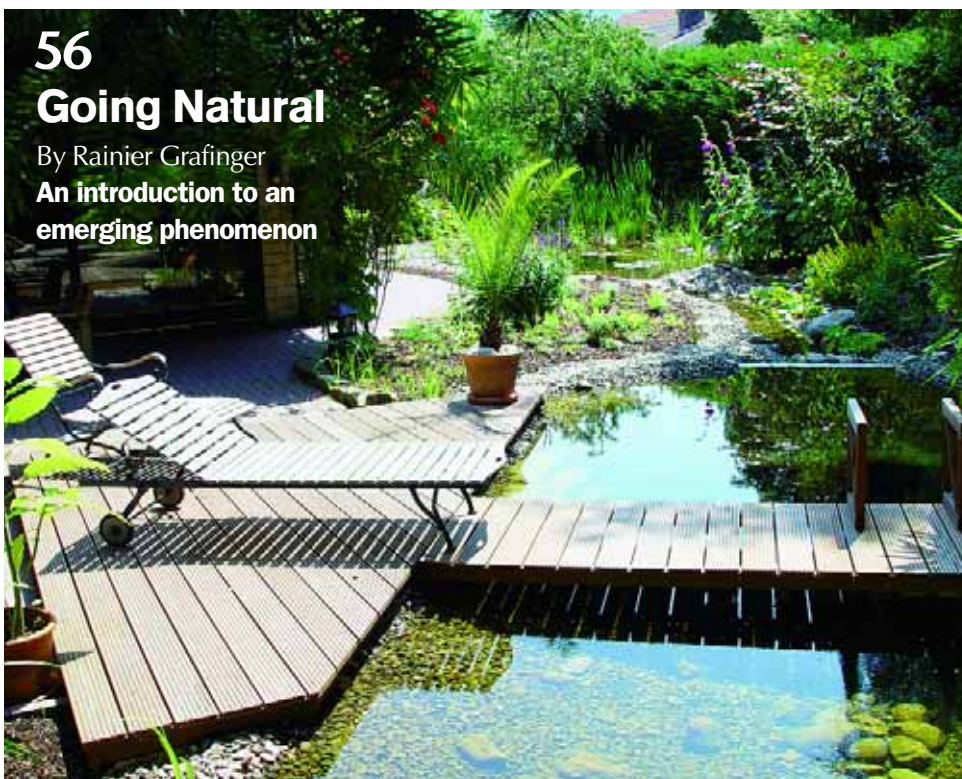
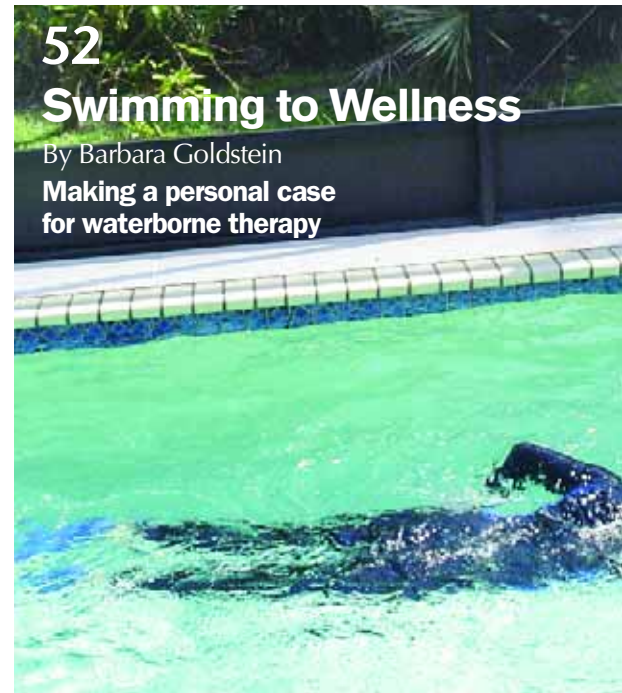
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## Dousing Disaster

For many people, the devastating wildfires that swept through southern California in October 2007 are just another memory, washed away by the tides of current events. But for those who lost their homes in places like Malibu, Lake Arrowhead, Rancho Bernardo and elsewhere, those horrifying blazes will be part of their daily lives for months and years to come as they struggle to rebuild and recapture any sense of normalcy.

As a native southern Californian, I grew up knowing that fire and earthquakes are facts of life here and that being prepared is something everyone should take seriously. During this most recent natural disaster, however, I was certainly not alone in seeing a lack of basic preparedness in images of homes burnt to the ground with full or near-full swimming pools just a couple paces away.

As the fires were finally being brought under control, I received a call from Toby Roland-Jones, director of the Hawthorne Gallery in Big Sur, Calif. – a longtime reader and friend of the magazine who is also a volunteer fireman. He'd seen the same images I'd seen and passionately urged me to use *WaterShapes* to call for action in getting all pools in potential burn areas outfitted with pumps and hoses that would enable residents to use pool water in fighting fire. (He also composed a letter to that effect, as seen on page 8 of this issue.)

Fresh off that conversation, I received an e-mail from a close friend of mine whose home borders state land in Santiago Canyon, Calif. – one of the areas hardest hit by the recent inferno. He included several images taken of him by a neighbor as he stalked towering walls of flame that approached the edge of his property.

My friend was several steps ahead in the game: Years ago, when he built his backyard paradise, he'd had the foresight to purchase a portable pump unit and fire hose that he kept stored in a tool shed. He also made sure the local fire department knew where the equipment was and that they had a key.

As the flames licked the fringes of his hilltop lot, he used that system for the first time, single-handedly fending off the flames long enough for firefighters to arrive, take over and save his house. As he tells it, without that equipment, his home would very likely have been engulfed in flames – but, because he had this reservoir of 45,000 gallons of water, a high powered pump and a proper hose and nozzle, he was able to deliver enough water at critical moments that his home and those of some of his neighbors were saved.

It's also worth mentioning that because of the location and size of his lot, fire crews used his property as a staging area and fought the flames from that position for more than two days, with crews sleeping in shifts in his gazebo. City officials even held a televised press conference at his home, a story he recounts with no shortage of pride.

It is indeed a great story, and one that absolutely supports Toby Roland-Jones' contention that pools in areas subject to fire should always be equipped with systems that enable a pool's water to be used to protect the property. This is not a new idea, but it's never caught on in a big way – and should have by now.

I can't help wondering how many homes might have been saved in October had we all taken this commonsense technology more seriously.



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## A Legitimate Need

### Dear Editor:

The recent wildfires and ensuing loss of property in southern California highlights the need for action with respect to water usage and watershape installations. I write this as a volunteer firefighter on the central coast of California, where we are trained to make use of *all* water supplies available to us through use of submersible or floating pump systems.

In looking at the media images of burned out houses during this recent set of conflagrations, I noticed several expensive homes reduced to ash and debris with a swimming pool right there, still full. The more I saw, the more frustrated I became: With 30,000 or more gallons in each of these pools, why, I asked myself, do homes or neighboring structures burn down? Why, I asked myself further, do pool installers and property owners not collaborate in creating sim-

ple systems to protect these properties?

There are already a few simple answers here. In potential burn areas, all pools built with homes should have:

- ▶ integrated pump systems that squirt water up and around the sides of the house. (Remember, it's generally not roofs that catch fire: Trouble starts under the eaves, where embers lodge themselves and continue burning.)

- ▶ plumbing that links the pool water to a three-inch outlet adjacent to the pool so that firefighters do not have to drag hoses fed by hydrants that may be far away.

- ▶ direct connections from the pool to foam systems installed atop the house with timing systems that reactivate the flow every four hours after initial activation. (Simple foam systems work well for about eight hours in hot weather, but linkage to a water supply extends that protection for much longer periods.)

- ▶ portable pump and hose equipment

that stores away easily and can be accessed quickly in the event of a fire.

Of course, this means more work for pool builders and greater cost to clients, but as I see it, many property owners in high-risk areas would appreciate this as a value-added service. And if the industry can't make this work on a voluntary basis, then I suggest we need to push for legislation to require homeowners to have these features installed with new pools in areas where fire-suppression is likely to be required.

As firefighters, my colleagues and I cannot be expected to reach and protect every house when fast-moving fires erupt. Even the basic levels of fire-resistance these four suggested systems provide can make a difference between complete destruction and a bit of smoke damage.

**Toby Rowland-Jones**

*Volunteer Fire Brigade  
Big Sur, Calif.*



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## in this issue

### January's Writers

**Jason Fragomeni** is founder of the Boonton, N.J.-based firm J. Fragomeni Design, which specializes in the design and installation of elaborate exterior environments for upscale clients. He has run his own businesses since he was 15 years old, starting with a landscape maintenance firm. In the years since, he has studied landscape design and horticulture at the County College of Morris in Morris, N.J. He has also traveled extensively throughout Europe, a set of experiences that inspired him to establish his current firm in 1998 with an aim of bringing European elegance to his local marketplace.

**Barbara Goldstein** lives and swims in Central Florida.

**Rainer Grafinger** operates BioNova, a worldwide network of watershapers that focuses exclusively on the design and installation of swimming pools treated entirely using natural processes. A licensed engineer, he has been designing private natural swimming pools since 1994 and commercial natural pools since 1996. An avid proponent of the concept, Grafinger has organized numerous training courses, conferences and lectures on the subject throughout Europe, using headquarters near Munich, Germany, as his base of operations. He has served as president of the German Society for Natural Swimming Associations and as vice president of the International Association for Swimming.

**Rick Driemeyer** is founder and president of Both Sides of the Door, a watershape and landscape design/build firm based in Oakland, Calif. His design career began in Ann Arbor, Mich., in the early 1970s, when he became a specialist in interior landscapes and wa-

tershapes. After moving to California and expanding his work to include exteriors, he established his current company in 1981, deriving its unusual name from the fact that he now works with both interior and exterior spaces. An Arizona native, Driemeyer traveled extensively as a child with his family and has lived in Florida and Pennsylvania as well as Michigan. He credits this exposure to different types of landscapes and his parents' love of the arts and nature as primary design influences.

**Brian Van Bower** operates Aquatic Consultants in Miami and is a co-founder of the Genesis 3 Design Group. With more than 35 years' experience in the swimming pool and spa industry, he now specializes in the design of swimming pools, recreational areas and hydrotherapy clinics. As a consultant, he also conducts training and inspections 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 trade associations 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.

**Bruce Zaretsky** is the owner of Zaretsky and Associates, a landscape design/installation/consulting firm in Rochester, N.Y. Since starting in the landscape design industry in 1979, he and his firm have become nationally recognized for their creative and inspiring landscapes and waterfeatures in



projects ranging from small residential spaces to innovative public projects. Zaretsky also works as the Landscape Consultant to the Town of Penfield, working with developers to ensure that the city's beauty is preserved. He teaches courses on landscape design and installation at the Chicago Botanic Garden and at national landscape conferences, and recently his firm has placed emphasis on conceiving and installing healing and meditation gardens for healthcare facilities and on promoting sustainability and conservation in the landscape industry.

**David Tisherman** is the principal in two design/construction firms: David

Tisherman's Visuals in Manhattan Beach, Calif., and Liquid Assets of Cherry Hill, N.J. A designer and builder of custom, high-end 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 College 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. Tisherman is a co-

founder of and principal instructor for the Genesis 3 Design Group.

**Mike Farley** is a landscape architect with more than 20 years' experience and is currently a designer/project manager for Claffey Pools in Southlake, Texas. After receiving his degree in landscape architecture from Texas Tech University, he began his professional 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 returning to Texas in 1998. A graduate of the Genesis 3 schools, he assumed his current position in the fall of 2003.

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## Expanding the Circle



In my November 2007 column, I discussed the power of friendship and how it can enhance our professional and personal lives. Along the way, I used examples from my own career and kept the focus on a personal level. This time around, however, I'll be broadening the focus and expanding the concept to cover cultural and even *global* relationships.

One of my key points in November was that by surrounding yourself with a circle of diverse, passionate, knowledgeable and thoughtful friends, you expand your base and gain access to resources and to people who can enhance just about every aspect of your life. What's so exciting about all this is that the concept isn't limited to individuals, but can encompass entire industries and even other countries as well.

That's hard for many folks (even open-minded among us) to grasp: I've long observed that there's a natural tendency among people to stay within familiar confines – of their families, industries, societies and cultures – without giving much thought to what's happening beyond those conceptual or physical borders. That's just human nature to a large extent, but I've come to believe that it doesn't necessarily serve our best interests.

Indeed, when you branch out and invest time and resources to explore the ways people in other societies think and act, you often experience revelations of a sort you might never have imagined.

When you branch out and invest time and resources to explore the ways people in other societies think and act, you often experience revelations of a sort you might never have imagined.

### growing as a group

In late October/early November 2007, I traveled as part of a group of more than 20 people to Cologne, Germany under the auspices of Genesis 3 to attend the third annual Aquanale: International Trade Fair for Sauna/Pool/Ambiance. It was an amazing event, and the name alone speaks to a huge difference in the way the Germans integrate watershaping into a much broader collection of business activities than we do in the United States.

The massive event focused entirely on the broad concept of "wellness" as its unifying thread – a remarkably progressive approach in a show that includes swimming pools and spas in the context of recreational and health-related industries ranging from interior and exterior facility design and sports programming to fine arts and various technological, scientific and therapeutic disciplines.

We were on hand as a result of the alliance Genesis 3 formed last year with the German trade association for swimming pools (*Bundesverband, Schwimmbad & Wellness* or BSW), which in turn is part of the broader European Union Swimming Pool Association (EUSA), an umbrella association that includes trade organizations from Spain, Portugal, Italy, France, Germany and the United Kingdom, among others. Basically, it's like the United Nations of swimming pool associations – a network of professionals of which we should be more aware in the United States.

BSW is the "conceptual sponsor" of the Aquanale. Its chairman, Guido Rengers, has worked tirelessly with Genesis 3's European liaison, Gera van der Weijden, to forge an alliance between our organization and the network of European associations.

Continued on page 14





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This trip was the second in what we hope will be an ongoing set of opportunities for Genesis 3 and other representatives of the U.S. industry to get involved in these overseas events. We're also aware that this sort of traffic is something that ultimately should flow in *both* directions.

Among the many activities we pursued on our trip, Genesis 3 co-founder David Tisherman and design-school instructor Don Gerds offered well-attended seminars on presentation skills and drawing. We also had detailed discussions with members of Germany's Technical Inspection Association (TUV); perused exhibits on the show floor; and enjoyed visits with companies in the area.

To say it was a busy, mind-expanding experience is a grand understatement: Not only were we exposed to the way people think and do things in other countries, but we also had the sense that, on a variety of levels, we were joining a community of professionals that has much to teach us in the United States – and were just as eager to learn from us as well.

## across lines

Before I get down to specifics, I want to make it clear that, although it's wonderful to think in metaphorical terms about joining hands around the globe, this is also very much a process of absorbing and exchanging utterly practical information and approaches that can improve the way things are done on both sides of the Atlantic. So while I may sound as though I'm being wildly idealistic, I must say that, at every turn, I look at these possibilities with keenly pragmatic eyes.

As Americans traveling in Europe, for example, one of the first things you notice is that, while few of us in the United States speak foreign languages, it's actually pretty easy to function in Europe without interpreters because a great many people there are multilingual: It seems you can almost always find *someone* who is fluent in English. In other words, there are few barriers to communication, even on technical levels – a fact that may give them an edge but which also works to our advantage.

This sort of pan-linguistic, pan-cultural agility was particularly evident in our conversations with members of the TUV. Founded in 1870 to create and enforce standards for the steam-boiler industry, the TUV has decades of experience in serving the public interest by developing standards and training inspectors.

At a glance, we could see that the organization's program on pools is *extremely* detailed and in many instances promotes technical standards that exceed those we observe in the United States.

As it turns out, however, those standards are right in line with the ones promoted by Genesis 3 (and are part and parcel of the approaches supported in the pages of *WaterShapes*), so we opened discussions of the possibility of combining our efforts and working both toward global technical standards and the adoption of a version of the TUV inspection system for the United States.

Coincidentally, the TUV is currently in the process of developing systems in the English language for implementation in the United Kingdom. For that and other reasons, we came away from our meeting confident that we had laid the groundwork for a col-



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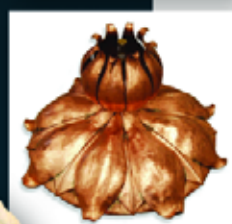
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# LANDSCAPE DESIGN

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laboration that in my opinion could vastly improve the way we do things here.

## showing up

But of course, the centerpiece of our journey was the Aquanale itself – an amazing experience that illustrates in ways both large and small how cross-pollination between U.S. and European interests

could benefit both sides.

Let me start with an area in which they could use some help from us: As tremendous as the show was, its organizers invited chaos in the way they controlled how people entered and exited the show floor. They used an elaborate electronic system that tracked movement both in and out of the hall, so not only did you

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need to pass inspection to get in, but you also had to line up to get out.

Apparently, that's just the way they do things there, but it uses identification badges that don't fully print your name (leading to a need for lots of careful introductions since a name couldn't be gathered from a badge) and creates logjams at the turnstiles. Even worse, this business of checking people out struck me as being slightly paranoid, as though they were worried about attendees disappearing undetected in the course of a day.

Beyond that one logistical foible, however, the Aquanale was pretty well flawless. In fact, once we made it through the line, everyone in our party was stunned by what we saw. First of all, the word *booth* doesn't apply: Nowhere did we see any of the familiar pipe-and-drape-style slots that define U.S. trade shows. Instead, what we saw in many cases were exhibits that had to be considered works of art.

Many, for example, were huge structures that had all sorts of levels for seating and other public functions, secluded rooms for private meetings, and counters and dining areas where food (in many cases prepared on site by chefs) was being served. Some had stages for presentations, and there were audiovisual displays everywhere you turned.

Notably absent were exhibits that made products the focus: In many cases, you felt as though you were entering completely separate environments on the exhibit floor, and all you could do was admire the level of execution and the quality of the furnishings. Yes, products and literature were frequently on hand, but the activity on the floor was much more directed to human interaction, education and outreach.

By design, this was mainly a social environment (as compared to the *selling* en-

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vironment we see most often in U.S. shows), and we were always encouraged to linger and spend time getting to know the people involved in exhibiting companies while enjoying good food, wine and beer. There was never the sense you get at U.S. shows that the aisles are filled with people numbly strolling around, barely glancing at what's on display. By contrast, the Aquanale was about meeting new friends, absorbing information and generally having a fine time.

## big tents

Another aspect of the show we found fascinating was the way it was organized by area of interest. Unlike most U.S. pool shows, where there seems to be a deliberate attempt to scramble things up and intermix every conceivable sort of interest, the huge facilities in Cologne

were cordoned into pavilions where like was presented with like.

There were distinct areas for saunas, tanning systems and massage therapy, for example, that featured more variety than any of us could have imagined. Closer to home, there was an entire area dedicated strictly to indoor murals (most swimming pool and wellness facilities in Germany are

indoors because of the climate, so there's a great niche for artists who paint murals for these spaces) as well as an area devoted to commercial facilities that featured all sorts of high-tech furnishings, lighting and sports amenities.

As for the pool and spa section of the show, it was a different world benefiting from some truly spectacular displays. In

## out and about

While our main purpose in going to Cologne was attending the Aquanale, we also had some wonderful experiences away from the exhibition.

Chief among these was our visit to Riviera Pool with its owner, Guido Rengers. As mentioned in the accompany text, he's the chairman of BSW, the German swimming pool association. Already a prized friend and associate, he treated us to a tour of his facility and a great dinner.

His showroom is something to behold — light years beyond anything I've ever seen in the United States. The layout, design, lighting scheme, materials — every aspect of the setting was breathtaking. And the thing is, Rengers' firm specializes in fiberglass pools, which are sometimes seen in our country as lower-end products. That didn't seem to be the case here: These pools were all stunning — watershaping at its finest.

All in all, it was a tremendous experience and showed us all that attitude is everything: If you believe in what you do, conventional associations and definitions don't matter nearly as much as the way you present what you do.

— B.V.B.



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short, we all enjoyed the way the huge exhibition space was organized and saw this as a concept that merited consideration back home.

Another point we couldn't help noticing was the professionalism on display everywhere throughout the hall. For starters, the attire was all business and high style, with men in suits and ties and

women dressed to the nines. We all remarked on the air of sophistication and elegance this lent to the proceedings and were just as impressed by the profound courtesy and warmth of the people we met. (Some say the Germans can be aloof and rigid, but our experience was just the opposite.)

One of the most gratifying aspects of

**I take distinct pleasure in the whole idea of integrating watershapes into the broader context of all things that contribute to human wellness.**

the entire experience was the way we were treated as VIPs just about everywhere we went. Yes, they were aiming to please and impress us, but we never had the sense that we were being "played." Instead, we picked up a profound impression that they were open to learning from others and appreciated the fact that being friendly is a great way to start meaningful conversations and working relationships.

On a more personal note, I took distinct pleasure in the whole idea of integrating watershapes into the broader context of all things that contribute to human wellness. Naturally, it reminded me that we do a pretty poor job of recognizing and celebrating those health benefits here in the United States and convinced me as never before that we need to retool our thinking on that front — soon and in a big way!

## two-way street

Officially speaking, we were on hand at the Aquanale to do some Genesis 3-style teaching, and the fact that those beyond our party were ready to listen and learn was magnificently on display.

Both of our seminars — David Tisherman's on the elements of design and Don Gerds' on measured perspective drawing — were extremely well attended and received by industry professionals who seemed hungry for both information and inspiration. With our liaison Gera offering simultaneous German translation for the seeming few who didn't understand English, the presentations went off without any confusion or inconvenience.

All in all, we were both energized and encouraged by the reception we received and are all hoping that it leads to bigger and better things to come! **WS**

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By Bruce Zaretsky

## Sustaining Quality



It seems that everyone's talking about "sustainability" these days, with the usual thought being that, as exterior designers, good environmental stewardship must be one of our main missions.

But what *is* sustainability? What do watershapers need to do to encompass this philosophy? As important, what does it mean to our clients, and where are they in all of this?

According to the numerous sources I've consulted, *sustainability* is defined as striving for the best outcome for both human and natural environments, now and well into the future. In other words, it's about configuring human activity in such a way that society and its members are able to meet their needs and express their greatest potential while preserving biodiversity and natural ecosystems.

That's definitely a Big Picture concept, and accepting it (as I do) means we should all – irrespective of socioeconomic status, career choices and lifestyles – live our lives while taking no more from nature than we need, creating no more waste than is absolutely necessary and doing our best to meld the two goals by doing what we can to turn waste into usable commodities.

We should be thinking about where our supplies come from, how they are being shipped, how much waste we generate on our projects and other things we do that influence how future generations will live.

### in harmony

I'm not suggesting that anyone should stop installing watershapes or patios or landscape plantings or irrigation systems or anything else: What *I am* saying is that we should be thinking about where our supplies come from, how they are being shipped, how much waste we generate on our projects and any of a number of other things we do that influence how future generations will live.

So how do we go from being the disposable society to being a sustainable one? The great news is that it doesn't take a tremendous amount of sacrifice – just a different way of looking at things and a concerted effort to educate ourselves as to what's involved.

There are lots of good models out there. In many cases, for example, forward-thinking developers are creating buildings that are at least partially self-sustaining through use of established energy-generating technologies such as windmills and solar panels that help to offset a building's power needs. They use reflective glass that allows light in but not heat to provide natural lighting for workspaces, thereby helping to keep electricity use down. Some are even taking simple advantage of the alignment of their structures relative to the sun in order to maximize natural heating and lighting potential.

As exterior designers, it may not seem that we're involved at a level that enables us to influence such decisions, but enough of us have the opportunity to meet with clients before ground is broken that I think we have a responsibility to raise the issue and help direct structure placement and orientation. Indeed, simple decisions about which direction a house faces





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can have monumental impact on energy use, site preservation and lifestyle.

I believe, in short, that this is our future and that we all need to get engaged in considering our role in shaping the environment and minimizing potential threats to it. Our planet is loaded with natural resources that make our lives easier, but we need to use them wisely and conserve

them when we can.

And although this movement may not have spread strongly to the watershaping realm as yet, it's clear that big developers and businesses are all jumping on the bandwagon, if only to seem like good members of the community. And they're doing so because consumers are insisting that they climb aboard!

## making the most

It doesn't matter what motivates us to join the sustainability movement: What matters is that you take up its challenges in ways that benefit the Earth, our clients and watershaping.

I'm also a believer in personal responsibility and don't think we can wait around for government and big business to take the lead. What excites me most about this, in fact, is that as designers and installers we're beautifully positioned to influence our clients in making good decisions and then ensuring their implementation.

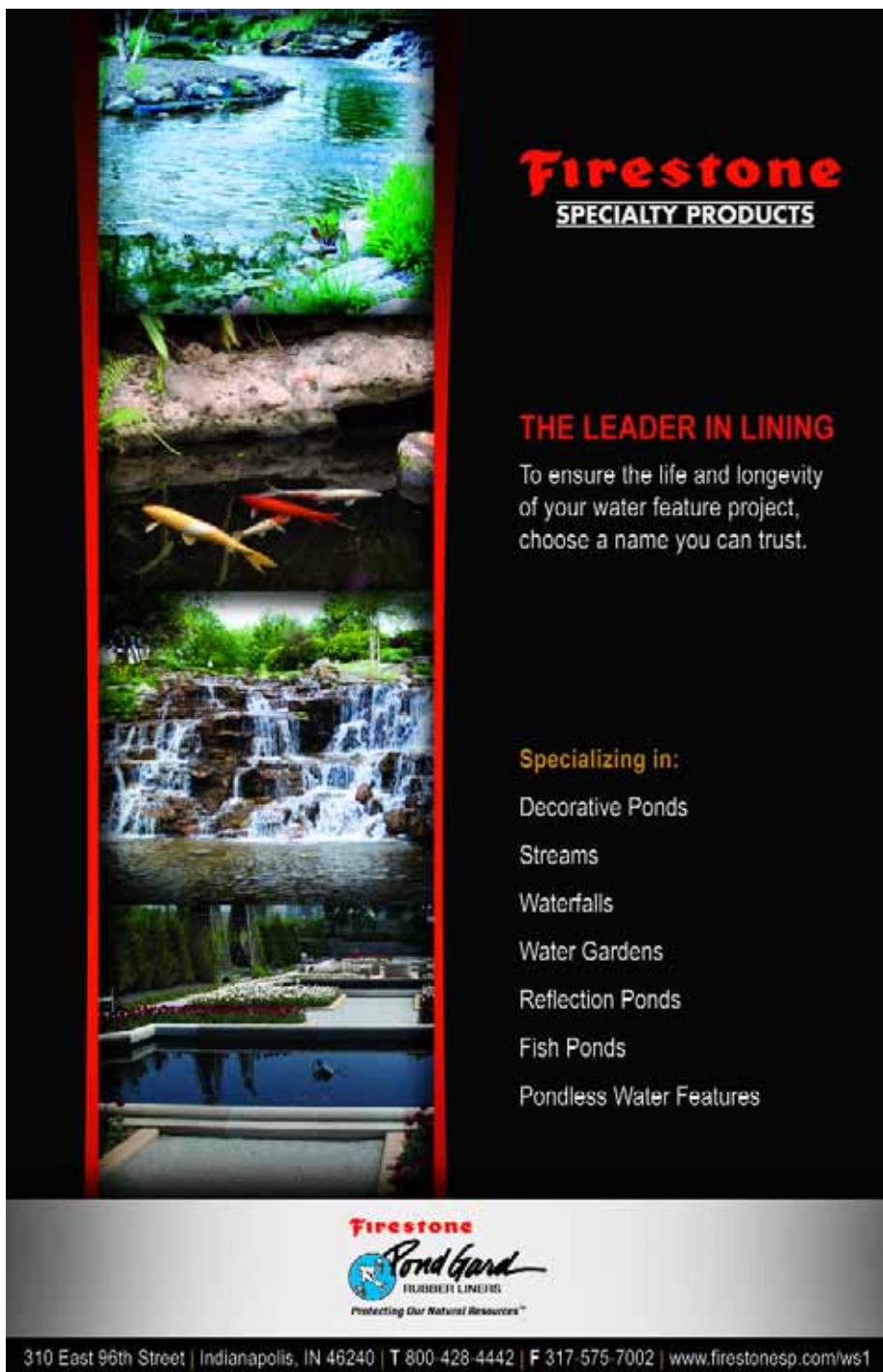
To that end, for example, one of my goals in 2007 was to do my best to get through the entire year without having to bring any dumpsters onto my job sites. While I haven't been entirely successful (we removed a good number of pressure-treated decks this year and had no other choice than to haul any unusable portions to the landfill), we substantially succeeded in minimizing what we threw away.

In a number of cases, we removed old concrete pavers from residences in advance of replacing them with other materials such as stone. Rather than take the removed pavers to the dump, we stacked them on pallets and put them at the curb of the client's home or our facility with a sign saying "free." In several cases, the pavers were gone within hours.

We used this same approach with old grills, used pallets and even empty nursery containers, giving proof to the old saw that one person's trash is another person's treasure. It's a simple solution, but it worked and we'll keep on applying it.

We also did the obvious recycling, salvaging wood from structures we dismantled and doing as much as we could to save any reusable materials. Old barn beams and panels worked their ways into many of our projects, and we reused brick, stone, concrete and plants. True, it takes a bit of design ingenuity and some thinking outside the proverbial box, but in many cases recycling makes perfect sense and the materials work themselves perfectly into new designs.

I've also focused a lot of thought on basic energy conservation, especially when it comes to lighting. I only use low-voltage systems not only because they're less



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expensive to install, but also because they use less energy in the long run. I also use photo-cell/timer combinations (to turn lights on at dusk and off at bedtime) along with motion sensors. I'm even beginning to warm to LED lamps: Although they have their drawbacks at the moment, I see them as the future when it comes to landscape lighting.

## everywhere you turn

The odd thing about this line of thought is that the opportunities you find seem to multiply like rabbits as you ponder the possibilities.

We can, for example, conserve energy by how we choose to move water in our watershapes. No matter the type of the feature – from large-scale cascades to small-scale overflowing urns – they all need pumps of some sort, and I now work only with the highest-efficiency models I can get my hands on. They may cost more up front, but the energy savings for the life of the system greatly out-

The concept of 'buying locally' is a key concept in sustainability, basically because the environmental cost of shipping heavy materials great distances is something that can and should be counted in more than dollars and cents. In this case, we could have made this wall from an exotic stone trucked it in from across the continent, but instead we used a stone from a quarry just 300 miles away.



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weigh the initial expense.

I use timers here as well, because no harm is done by shutting off waterfalls at night when nobody's looking. It won't significantly affect water quality, and it allows for system operation at a fraction of the full-time operating cost.

And then there's the whole realm of considerations swirling around the materials we select and where they originate. In sustainability terms, the rallying cry is "buy local," because shipping across the country or, in the case of stone, from the next state can add seriously to the overall environmental impact of what we do.

Yes, we all clamor for the prestige of using that rare, imported stone on the patio or around the pool, but the plain truth is that almost every area has good stocks of perfectly presentable local stone.

I am fascinated that we as humans place greater value on materials brought in from a distance in place of local resources; maybe it's an expression of the grass-is-greener principle? I'm amused when I read, for example, of a northern California project that uses Pennsylvania or New York Bluestone and describes its wildly exotic value. Certainly it's a great material and I love using it, but where I live and work it's about as un-exotic as it gets.

My point is, common local materials are just as worthy as products shipped in from Peru or Italy or China. Yes, if an exotic stone is the best fit for a project, there's nothing wrong with procuring it. What puzzles me is when a local material will do just as well but a distant one is brought in strictly for snob appeal.

So whenever I can, I use locally quarried limestone, Bluestone, granite, quartzite and flagstone: They're gorgeous and relatively inexpensive, too – and there's also the fact that it takes great amounts of fuel and carrying cost to ship materials over roads and seas. I'm not saying we should stop importing exotic materials (I, for one, love Peruvian Travertine and Mexican Beach Pebbles), but we should balance those indulgences when we can with more sustainable options.

### into the water

As watershapers, we all appreciate the fact that water is our most primary "ma-

terial" – and it should come as no surprise that it's a key consideration in sustainability all on its own, although not necessarily in ways we might expect.

I read a study not long ago that said if we took all the lawns in the United States and placed them side by side, they'd cover an area about the size of Pennsylvania. That's a lot of mowing, fuel, fertilizer and,

ultimately, pollution. But what I get stuck on is how much *water* all that lawn consumes and how much potable gallionage we dedicate to maintaining landscapes of this sort.

And what's truly amazing is that lots of those green expanses are in the middle of deserts, where you'll find the most amazing emerald-green golf courses on the

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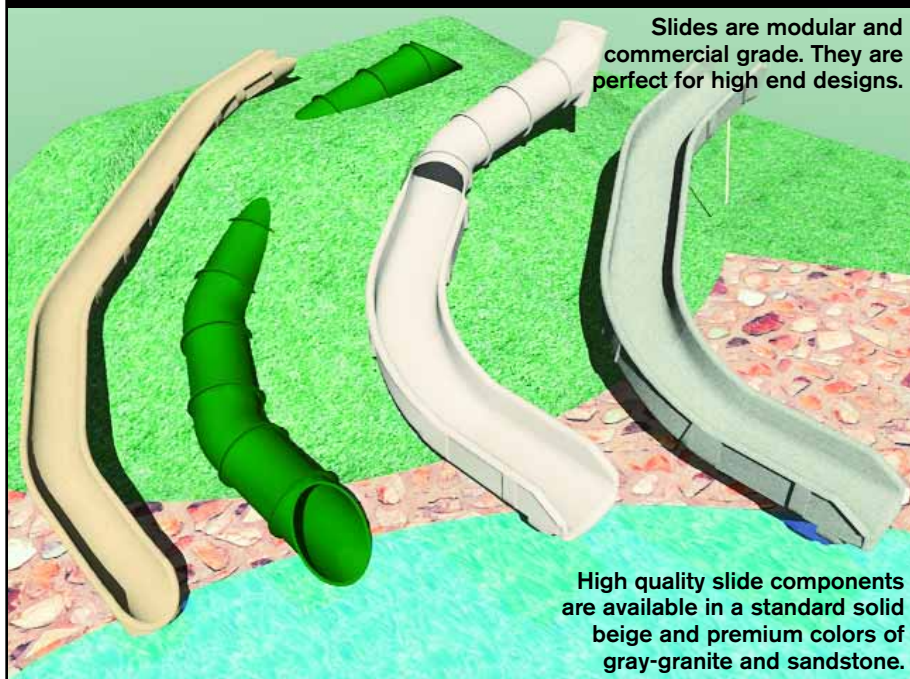
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## on the level

planet. Those glorified lawns use countless thousands of gallons of water daily to keep them looking good, and in many cases, what they're drinking is liquid that would otherwise serve as tap water for local communities.

This sort of questionable water usage isn't limited to desert climes. In the rest of the country, where we get considerably more rain than the desert Southwest, we have this great resource falling out of the sky but seldom think about where it goes – that is, down our gutter systems and across dirty parking lots into storm drains and then into our natural waterways loaded with contaminants collected along the way. In my book, we're wasting that rainwater.

As an alternative, I'm now suggesting to clients – particularly those who are just starting to build – that they should install cisterns to store rainwater before it becomes runoff. This water can then be used for landscape irrigation and other non-potable uses, such as flushing toilets. Even with established structures, I suggest installing rainwater-collection barrels at every downspout around the house. This water can be used to water plants, and a small pump can feed this water to soaker systems to make that chore even easier.

And for all my clients, I advise them to irrigate their yards only in the early morning, urge them to check their irrigation heads regularly to make certain they're not watering the street and suggest they install rain sensors that will turn the irrigation system off when it's raining.

We're also suggesting to our commercial clients that they should install rooftop gardens: Not only do these use up to 100 percent of the rainwater that falls on them, but they also provide landscaped environments on tops of buildings that reduce heating and cooling costs, cool the general environment and last longer than typical flat roofs. (This is a subject to which I'll return in a future column.)

### getting thoughtful

The key to making sustainability work on the level of watershaping and exterior design is becoming more thoughtful about what we do and how we approach it.

Now, for example, when I work on a



large site, I'm always thinking about where the runoff from rooftops, decks and other hardscape will go. Then I use my design skills to create interesting watercourses, such as dry creek beds and waterfalls and rain gardens (that is, areas with plants that can withstand periodic inundation with water but can also handle dry conditions).

Water falling on these properties flows along these waterways and eventually reaches these rain gardens, where it slowly percolates through the plants' root systems, is swept clean of contaminants and returns eventually to groundwater. I like to think of these rain gardens as miniature, man-made wetlands.

And I haven't even gotten into water-shape-related conservation and ways of reducing evaporative losses by placing our vessels so they're sheltered from the wind, running fountains with anemometers to shut them down when the breezes kick up, using auto-fill devices to maintain efficient operating levels and a host of oth-



Some materials themselves are 'sustainable,' as is the case with this decking made with Ipé, a beautiful, fast-growing, readily harvested Brazilian hardwood. Yes, it comes from far away, but it doesn't deplete our stock of far-less-renewable alternatives such as redwood.

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er steps that can be taken to maximize the efficiency of our water use.

As exterior designers, we need to consider the environment in which our work is found and use our powers of persuasion to influence clients to do the right thing. They entrust us to design and install beautiful watershapes and landscapes that will benefit their lives, and as I see it, it's up to us to help them develop a vision of what they want that encompasses the well-being of their children and their children's children.

That may make me sound like a grand environmental missionary, but the fact is I'm not advocating that we ditch our cars and televisions or abandon Peruvian Travertine. All I'm saying is that we'll all benefit by doing what we can to lessen our impact on the land. We may not be able to undo damage already done, but I like to think we can be a bit more respectful of the planet while creating works of art of which we and our clients can be proud. **WS**



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By David Tisherman

## Enduring Beauty



Last month, I entered into a discussion of the emergence of a whole range of beautiful finish materials that have helped (in my humble opinion) turn watershaping into an art form. My focus there was on glass and ceramic tile; this time, I want to turn the same sort of attention to plaster and exposed aggregates – huge additional factors in the industry's ongoing creative momentum.

Before I begin, let me draw an important distinction: The artistry in watershaping is not so much based on the types of materials we choose or how special or costly they might be; instead, it has everything to do with how we use them. It is possible to take the most precious material and create a visual abomination; conversely, modest materials can, in many situations, be wielded in such a way that the results are spectacular.

In other words, our aim as watershapers should single-mindedly be to figure out how to use the materials we have at our disposal in balanced and appropriate ways.

The artistry in watershaping is not so much based on the types of materials we choose or how special or costly they might be; instead, it has everything to do with how we use them.

### beyond the basics

For all my passion about the jewel-like wonders of glass tile, my first love has always been plaster. It's a wonderful material that, used correctly, can create a rich look that changes subtly through the years. As I see it, the key to using this material to best effect is an understanding of color and the ways the colors we choose work in the context of specific site conditions.

Many years ago, when I was chairman of the Builders Council for the National Spa & Pool Institute (now the Association of Pool & Spa Professionals), I brought up the subject of colored plaster at a meeting and mentioned my love of using green to create inviting water. One of the council members spoke up, questioning why I'd want to make the water look as though it was shot through with algae.

Beyond the limitations of that unimaginative point of view, the comment revealed to me the gap many builders of a past era had when it came to understanding color. Happily, that situation has changed (although there are still substantial pockets of resistance), and many more builders these days are willing to use color in ways that have elevated plaster beyond being a bland commodity to a point where it is now a design element that makes watershaping into an art form.

I've been fortunate through the years to work with a plastering company – Tony Marquez Pool Plastering of Sun Valley, Calif. – that is open to working in color. Tony and his sons, Luis and John, are simply the best, and I've always admired their collective professionalism, creativity and unflinching attention to detail.

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oxides and pigments, we can achieve an incredibly broad range of precise looks that reach well beyond the usual white, gray and black. They're savvy enough to know (as few seem to do) that when you use a green oxide, for example, you get distinctly different looks when you combine it with white cement instead of any of the myriad gray cements. In fact, Tony was the first plasterer I ever worked with who was willing even to explore these variations and create samples for clients who were looking for unique or precisely toned finishes.

It is exactly this openness and flexibility that has ushered in the current era of adventurousness in watershaping. Yes, we were still working with the same basic plaster material the industry had been using for decades, but we were now applying an understanding of color and manipulating the material in ways that opened an almost infinite range of possibilities. Just with a basic green oxide, for




By working with a plastering company that's open-minded when it comes to color, I'm able to open a vast realm of possibilities for my clients and their watershapes. In addition to familiarity with color theory, knowing what works in which contexts takes experimentation, careful observation and experience, but a creative investment here can lead to spectacular results.

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example, we can create subtle hues, pastels and tints with variations in tones.

Having championed this sort of experimentation with plaster, I become frustrated when I'm confronted by those who still think in exclusive terms of white, black or gray. They're simply missing out on a spectrum of possibilities they could use to give their clients

something that no one else has.

## breaking free

I look at this way: When you use plaster in the context of the colors seen in waterline tile, coping, decking or the home, it becomes something akin to paint. Yes, mixing samples and developing truly custom colors takes time, effort and re-

**Plaster is an amazingly flexible design element and a critical component in creating an overall impression.**

sources, but what you can achieve will be light years beyond the limited palette that shackled pool design in years past.

In that sense, plaster is not a fallback option or a lesser choice. Instead, it's an amazingly flexible design element and a critical component in creating an overall impression.

These days, I routinely work with plasters in varying shades of green, gray, brown, cream, red, lavender, mauve and, very occasionally, white. The only limitation is my imagination and my understanding of the relationships among colors, water, external light sources, the environment, details of the setting and the way they all interact. Explaining those relationships can get complicated in a hurry (time to break out the physics books!), but the simple fact is that experimentation and careful observation can help just about anyone see how dazzling the effects can be when everything comes together.

In more practical terms, the colors I use in pools are about the architecture and the surrounding environment and the role of water in a given space – whether it is to be, for example, a highly reflective surface or a free-standing, glass-tiled work of art. In that context, I seldom use white plaster because it amplifies the conventional sky blue cast of pool water. If that's what the setting calls for and my clients want to head that way, I'll use white. But as a rule, I think the visual effects are much more compelling with other choices.

Unfortunately, among those who've paid attention to those "other choices," relatively few of them are plasterers. That's understandable, because few have been challenged to open their minds and eyes to the range of available options. What

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this does, however, is make it incumbent upon designers and builders to get involved in the educational process and insist on doing things in new ways.

The good news is that a number of plastering companies now seem to “get it.” Nonetheless, experience shows me how much more work needs to be done. Helpfully, my good friend Randy Dukes and others at the National Plasterers Council have moved to the forefront of this educational process, investing time and the collective energy of its membership in advancing the state of the art. What they’re doing is creating situations in which plasterers become true collaborators rather than people who just show up to do their jobs.

What Randy and others have taught all of us is that plaster – and especially colored plaster – is a natural material that does not provide a visually uniform finish: It will always have a somewhat mottled look and will change over time. Some

**Colored plaster is a natural material that does not provide a visually uniform finish: It will always have a somewhat mottled look and will change over time. The key is clearly informing clients about the nature of the finish and the fact that it will almost certainly change as time passes.**

consider that a drawback, but I see it as adding visual interest and beauty.

The key here, of course, is clearly informing clients about the nature of the finish and the fact that it will almost certainly change as time passes. In addition, I let them know that plaster is a relatively “soft” watershape finish and that expert, routine maintenance is always a good idea if the aim is to keep it looking great.

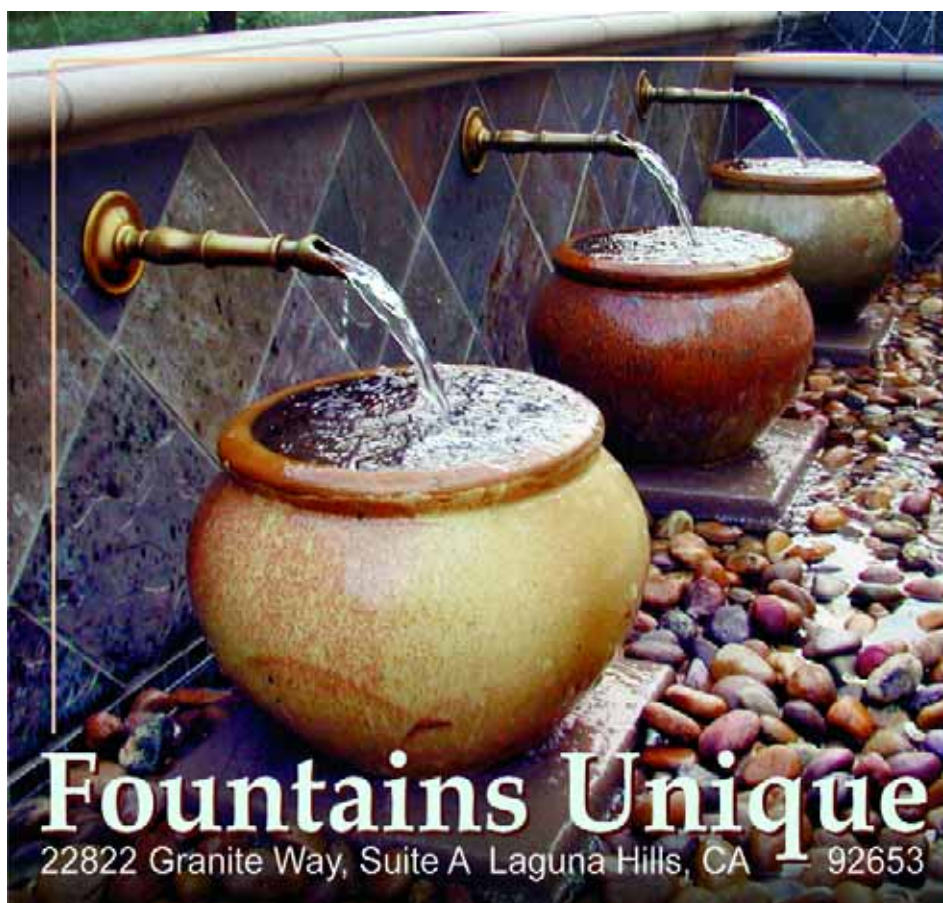
## the pebble revolution

While plaster finishes for watershapes date back to ancient times, the use of exposed-aggregate (or pebble) finishes is of

much more recent vintage. I’ve heard a number of claims about where it all started and when, but it’s my simple position that none of that matters because these finishes are now widely available and truly wonderful.

Of the many options out there, I have the most direct experience with those from Pebble Technology of Scottsdale, Ariz. That’s not to demean other suppliers in any way; in fact, I’m happy there are so many choices because the competition among suppliers seems to be leading to an ever-broadening range of design possibilities.

Continued on page 40



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## finding harmony

As a design principle, it's my firm belief that a plaster color should harmonize with the color of the tile at the waterline – no ifs, ands or buts.

In most cases, I find that it's far easier to select a tile first and then work my way back toward a color for the plaster rather than the other way around, basically because there are so many waterline options available to me now that it simplifies the process to work this way.

Once the tile is chosen, I then make a decision about plaster that will make the vessel's interior as monochromatic as possible. This concept extends past the plaster itself, which is why I'm so big on using trim pieces (drain covers, inlets and spa jet fittings) that work with the finish color as closely as possible – or can be made to do so by applying some of the finish material directly to the trim pieces.

I've worked a lot through the years with the folks at Color Match Pool Fittings (Surprise, Ariz.), who make a variety of products that help me make fittings and drain covers effectively vanish into the background, whether it's the color of the materials they use or has to do with inlaying a trim piece with pebbles, plaster or tile. Better still, their line includes 10-inch drain covers – a must if you're a believer in using big plumbing to create efficient hydraulic systems.

–D.T.



My goal often is to make pool interiors as monochromatic as possible. This is why I like the fact that these drain covers (from Color Match Pool Fittings of Surprise, Ariz.) can be coated with the same material as the interior finish of a pool – making them effectively disappear into the field once installed.



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Personally, I love the available color palettes and the look and feel of these finishes. In my case, I tend to stick with one or two favorite Pebble Tec colors – either the Bordeaux (also known as Majestic Plum) or Sandy Beach. Both of these soft, rich colors change appearance depending on the depth of the water, which is a variability I frequently exploit. Both also have the distinct advantage of working wonderfully well with a wide variety of stone materials.

Pebble finishes in general also have an edge over plaster finishes in that the former is much harder and more durable than the latter. Pebbles also suit clients who are after a more naturalistic, rustic appearance in their watershapes.

By the same token, I rarely use pebble finishes in modern or contemporary designs: I see the look and feel of these finishes as not harmonizing well with crisp, clean, sharp lines and angles.

What I think I like most about peb-



I've always been intrigued by the differences in appearance reflected by pebble finishes at different depths, and it's a phenomenon I often exploit on behalf of my clients – particularly those who are interested in more naturalistic looks for their watershapes.

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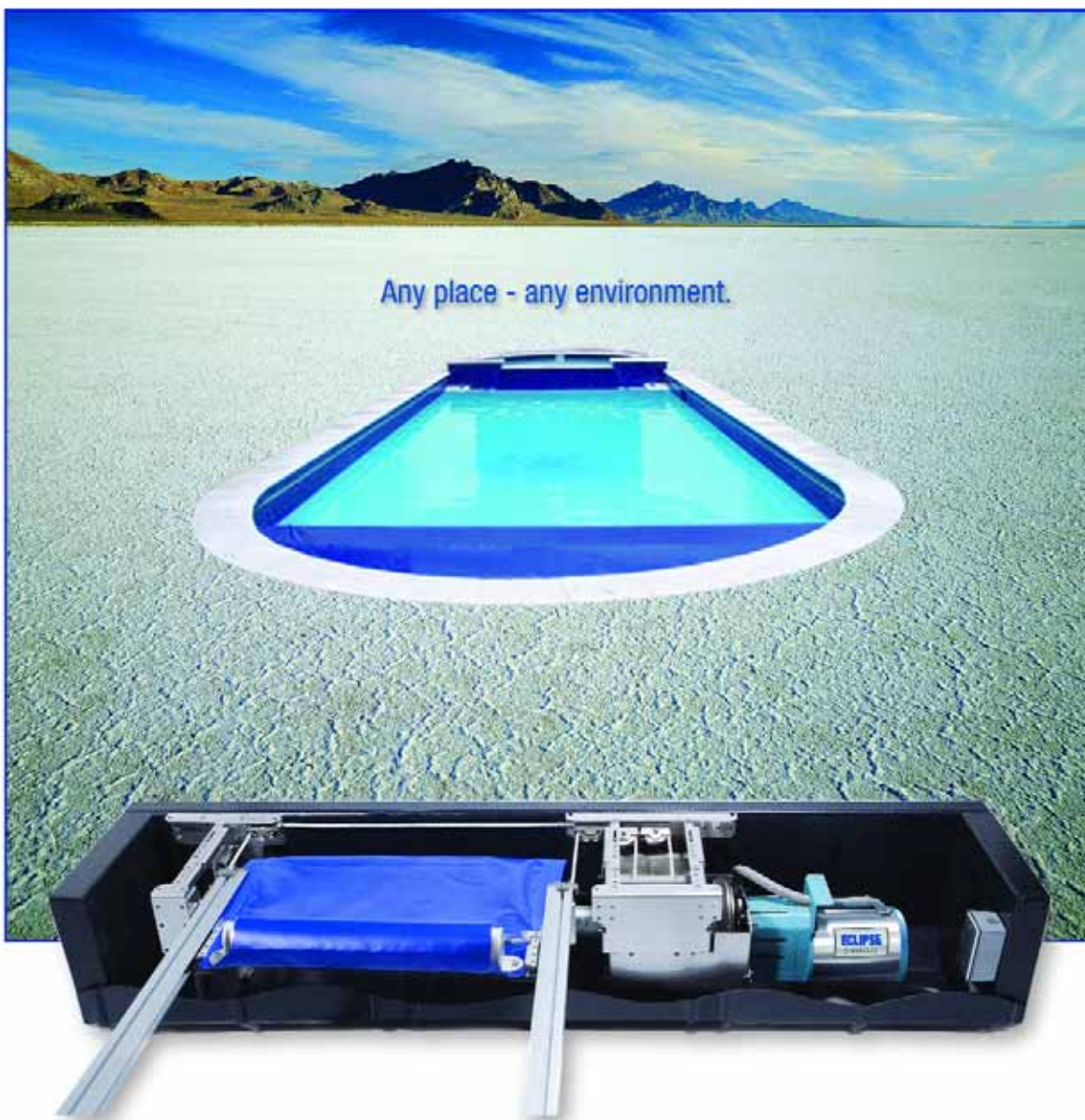
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ble finishes is their texture, which represents a complete departure from plaster or tile. Some say it's too rough to the touch, but having been in literally hundreds of pools with pebble finishes, I find the feel to be extremely comfortable. The key here is making certain clients know what to expect with respect to both appearance and texture.

Some have said through the years that pebble finishes have had problems with delaminations, especially on benches and steps. My observation has been that this isn't a problem with the finish at all and is instead a problem with substrate.

As I've written countless times in this space, whenever and wherever I see finish delaminations, in almost every case the problem rests with the fact that rebound was used to create portions of a vessel's interior structures. If the issue manifests itself in the finish falling off, that's not the fault of a pebble (or plaster) product, yet the fact remains that it puts

plasterers in the difficult position of defending their work.

I dodge these issues altogether, insisting on proper shotcrete and gunite application and supervising the process to make certain everything is done as I think it should be – *no rebound!*

## back to colors

Another oft-repeated note in these columns has had to do with colors and how they are combined in and around watershapes. I'll bring it up again here, simply because choices made about colors are generally more critical with plaster and pebble finishes than they are with other surface materials. (For more on the subject, see also the sidebar on page 39.)

Perhaps the most egregious of all color-choice miscues involves the use of black plaster with blue waterline tile. If you take one and *only* one point away from this discussion, let it be that this combination should never, ever be used! What happens

**Choices made about colors are generally more critical with plaster and pebble finishes.**

when you combine black and blue at the waterline is that you essentially create what emerges as an almost neon band of blue that attacks the eyes and completely deflates the deep, reflective quality you were after with the dark plaster.

Happily, this blue-on-black abomination seems to be fading away with time, but I'm still confronted almost daily by another ridiculous selection decision – that is, *white* plaster with blue tile: To my eyes, this is almost as offensive as the blue-on-black problem just mentioned. It's so common a usage that it's basically become traditional, the result being that many people unquestioningly accept these blue-on-white monstrosities without thinking, despite the fact that the combination attracts undue, undesired and completely unreasonable attention to the waterline.

For my part, in cases where I'm not using glass tile to create a work of art, I believe that the waterline treatment is best taken in one of two directions: Either seek to make the tile look as though it's an extension of the interior finish, or make it seem as though it's tied to the coping. There's also a third possibility of making the waterline work in both directions by creating blends that work between the interior finish and the coping.

Look at it this way: Do you *really* want someone to walk into the backyard and say, "Oh, my! Isn't that beautiful tile at the waterline?" Or would you rather have them say, "Wow, isn't this backyard just gorgeous?" It's all about context, and it's my belief that a thoughtful design process should inevitably lead a competent watershaper to wise choices.

*Next: A look at coping and decks around watershapes.*



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## key considerations

Installing plaster and pebble finishes is an art form unto itself, and doing it properly is all about skills in troweling and finishing contours, steps, benches and other internal structures that reach well beyond this discussion.

At the same time, *preparation* for use of those skills is very much within my purview as a watershaper. First and foremost, for example, the shotcrete or gunite substrate must be finished properly. This is why I am ever vigilant when my shotcrete subcontractor is at work to make certain walls are straight and plumb without undulations: It should never be left to the plasterers to create the shapes and dimensions of the interior design or make up for deficiencies of the concrete applicator's work.

In addition, I make certain the concrete substrate is free of dirt and debris when the plasterers arrive on site, because I don't want to compromise proper adhesion of the plaster and again think it's my responsibility, not theirs, to make everything ready. The same holds true with plumbing penetrations: I make sure they're all stubbed out far enough so the plasterers aren't asked to leave div-

ots in the plaster surface.

This is among the many reasons why I work with quality firms and stick with them through the years. Good subcontractors know what their responsibilities are and complete their work in ways that set things up for the next crew that will come on site: When I find plasterers who know enough not to apply plaster anywhere other than the interior surface of the pool, keep the tile clean and pay attention to basics such as not dragging their hoses over new planting beds, I am a happy man.

This isn't rocket science, but it does require care, supervision and a generous dose of common sense.

And when the crews are gone, I know for myself that I need to use a clean hose to fill the pool. Yes, that sounds incredibly simple (and it is), but if you use a hose that's dirty, you can completely ruin a fresh plaster finish. And for goodness' sake, a new hose costs, what, \$50 tops? At that rate, it just seems crass not to buy your client a new hose!

—D.T.

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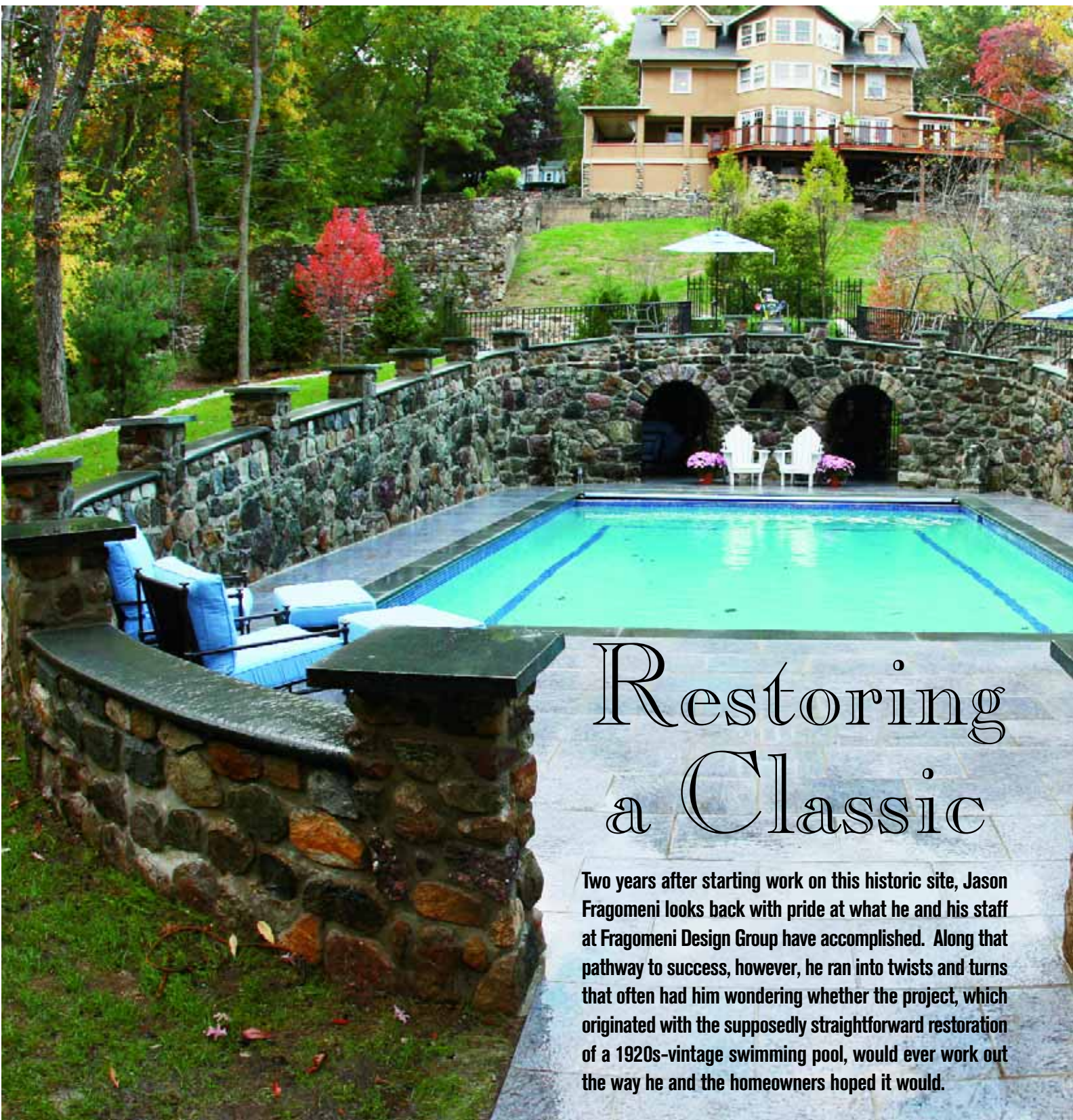
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# Restoring a Classic

Two years after starting work on this historic site, Jason Fragomeni looks back with pride at what he and his staff at Fragomeni Design Group have accomplished. Along that pathway to success, however, he ran into twists and turns that often had him wondering whether the project, which originated with the supposedly straightforward restoration of a 1920s-vintage swimming pool, would ever work out the way he and the homeowners hoped it would.





## By Jason Fragomeni

It seems odd to say it, but I first became involved with this project largely because I happen to live on the same street as my clients.

We all live in a beautiful, historic neighborhood in Mountain Lake, N.J., a small town that lays claim to having the largest collection of authentic Craftsman-style homes of any municipality in the United States. It's the kind of place where residents take immense pride in the architectural splendors you see almost everywhere you turn.

Most of these homes were designed and built by the legendary architect and builder Herbert Hapgood, a leading practitioner in the Arts & Crafts Movement that spread across the country early in the 20th Century. For the past three-plus decades, it's become the local passion to restore these homes and their surrounding grounds to approximations of their original glory, and today this area is shot through with stunning properties that celebrate a wonderful design tradition.

My clients' particular property is, at an acre and a half, unusually large for the area. When I first arrived on the scene, I was impressed by the variety of its mature trees—white and red oaks, spruces, elms, maples and magnolias—some of which rose to more than 75 feet in height. I also found an abandoned, debris-laden swimming pool, originally spring-fed, that had been installed nearly 80 years earlier along with a series of stone retaining walls and an unusual subterranean grotto.

### Vintage Roots

Before I received the call, the homeowners had visited with a number of other contractors and had been dissatisfied with what they were hearing—specifically, voluminous suggestions of alterations that violated the integrity of the historic setting and the community's pervasive spirit of careful restoration and preservation.

They called me at the prompting of a mutual friend, and from the start it was clear that the fact I lived nearby was a point in my favor: By simple virtue of local residency, it was clear to them that I understood and shared their appreciation for the home's historic status. It was also clear to them after we spoke and they had a chance to review my company's work that we had a strong track record in just this sort of complex, site-sensitive project.

At first, our entire focus was renovating the pool and sprucing up its immediate surroundings. Had that been all the project would entail, it would have been challenging enough—but as it turned out, this was just the starting point: Indeed, as we moved forward, it was uncanny how one major task after another seemed to flow naturally and necessarily into yet another major task.



Early on, however, everything seemed reasonably straightforward, and we were excited to be involved. I was fascinated to learn, for example, that in its heyday during the 1920s the house had been owned by an Italian diplomat who hosted highly publicized soirées alongside the pool, which was something quite exotic and novel at the time. The clients even have a book that was written about the place, and it features photographs of the original pool and the consul's well-heeled guests.

I ran into something of a dilemma, however, in figuring out an approach to the pool and its surroundings: Because the Craftsman movement predated the advent of swimming pools, there has never been what one could describe as a recognized "Arts & Crafts swimming pool style." What I saw on site was an utter ruin, but it was good to see some signs (supported by the old photographs) of its having been integrated into the distinctive surrounding architecture.

It helped us, of course, that the Arts & Crafts design tradition is defined by clean lines and a spare structural geometry that seeks to reveal function while paying tribute to nature and natural surroundings. It's also true that while these forms *seem* simple, they're also marked by rich materials and intricate detailing.

This was, we concluded, no place for a free-form pool with artificial rockwork – as had been suggested by several of the rejected contractors the clients had met with previously. Instead, we decided to integrate the pool and its surroundings into this pervasive design sensibility by working with a rectangle – the perfect design form for the Craftsman style – along with beautiful stone, tile and an interior finish that would all serve as fully functional ornamentation.

## Heavy Lifting

In every way possible, the history of the property played a role in what we were doing. As we learned, the pool had originally been part of a neighboring property to the rear of our clients' home. About 80 years ago, that part of the two properties changed hands. By law, it was now associated with my clients' home,



**The pool was in a derelict state when we arrived on site, having been filled through the years with rubble, branches and debris that the high groundwater level turned into a most unappealing stew. Clearing all that muck away was our first order of business.**



but by dint of orientation and layout, it was still tied more directly to the house across the revised property line.

In fact, when we arrived, the way the fences and hedges were configured gave the distinct impression that the pool was *still* part of the neighbors' yard, so some of our discussions early on had to do with ways of reconstituting the visual boundaries between the two homes.

One point working in our favor was the pure coincidence that, although the pool had been built with another home in mind, it happened to be perfectly oriented on the axial line of sight from the main windows of our clients' home. Leaving it right where it was therefore made perfect sense – but truth be told, most of the revelations to follow were not so fortuitous.

In our original scope of work, we were to renovate the pool doing what we could to preserve its original "style" while upgrading it with modern technology; we were also to add a spa to an existing subgrade grotto. It wasn't long, however, before the mission was altered in a whole string of convoluted, difficult ways.

The first big change in direction had to do with the wonderful old retaining walls that surrounded the pool site. In clearing away the structure to replace the pool, we discovered that the retention system was nothing more than a pile of rocks without any system of footings. We also discovered that the soil throughout the space was not only subject to high groundwater levels, but also mainly consisted of worthless, inadequately compacted fill.





As we became more deeply involved, we soon discovered that the abandoned pool was not much more than the tip of a distressed iceberg: large sections of the wall appeared unstable (A), and a little investigation revealed not only that they'd been built directly on the ground with no footings, but also in miserable soil (B). The groundwater was also an issue and made dewatering the site a particular and constant challenge (C) — and we found the same conditions in the covered grotto when we dug into the rocky base to install the spa (D). Completing this list of challenges was the discovery that the ceiling of the grotto was unsound and would need demolition and reconstruction as well (E).



Not only did these revelations have profound implications for what we were trying to accomplish, but they also presented us with real concern about the safety of working on site in the shadow of tons of precariously situated boulders. For their part, the owners had to face hard decisions about moving forward.

Ultimately, they decided to have us implement a number of dewatering and water-control strategies and, much more significant, pull down and reinstall the wall atop a properly engineered footing and drainage/water-control system. Almost by default, these additional project “details” fell into my lap – and not for the last time I wondered what we’d gotten ourselves into.

### Shoring Up

The walls constituted a major project all their own not only around the pool but also at other spots around the large property.

It was clear that they'd probably always been something of a concern, given how many times the walls had apparently been patched and repaired through the years. Indeed, we found layer upon layer of mortar in some places, and as we tried to focus our work on one area, we'd often find we had to jump ahead to the next area to prevent failures.

To get things done efficiently, however, we did all we could to move systematically from wall section to wall section. We started by taking numerous photographs to assist us in re-assembly, then carefully chiseled away the mortar and removed thousands upon thousands of large granite field boulders one





by one, marking, acid-washing and carefully storing all of them.

It was an awesome, arduous task – and once we installed the properly engineered footings, we had to reverse the process and reassemble the same walls, stone by lovely stone. In all, this task required a dedicated crew to work for more than a year in every conceivable sort of foul weather, from withering cold to blistering heat.

As mentioned above, these issues with the wall emerged during demolition of the original pool shell. It had become filled to the brim with rocks, debris, muck and garbage through the years, all of it nicely soaked by the natural spring that had served as the pool's water source. It was a nauseating, ice-cold mess – and space was tight because of the retaining walls, so we had to build a “road” down into the pool on one end so demolition could proceed.

Once the shell and old decking had been cleared away, we had to deal with the constant flooding of the hole provided by the high water table. We set up a dewatering system, but that didn't entirely solve our problems because of the poor quality of the fill in which the pool had been built. Almost as soon as we'd excavate an area, the walls would cave in. And all the while, we kept looking up at granite retaining walls rising five to 11 feet above grade.

Those were not days for easy breathing, and it was no small relief when the decision was made to deal with the walls once and for all. Thousand of man-hours and thousands of tons of boulders later, all is well, but we opened a real Pandora's box the day we started our work.

**Once we'd finished the shell, the fact that the walls were in a less-than-desirable condition and would only get worse led the homeowners to decide they needed to be disassembled and rebuilt to resemble the originals as closely as possible. After photographing them every which way, we pulled them apart stone by stone, inserted suitable footings and rebuilt them with painstaking care and attention to detail. Adjunct to this process, we also replaced one wall section at the foot of the property with an ironwork fence and gate.**





## On the Move

Given the soil conditions and the high water table, the new pool structure needed to be completely free-standing. We'd dig an area and frame it up as fast as possible, trying to stay a step or two ahead of the constantly collapsing sides. Ultimately, however, we ended up significantly over-excavating the pool's footprint.

To keep our forms straight and true, we stabilized them by driving two-by-four stakes 14 feet into the ground. Because we'd over-dug the entire site, when it came time to install the steel and the plumbing, we also had to construct a catwalk system throughout the pool to give ourselves places to stand.

semble a beehive. We did what it took to get the walls down before winter set in, then set up crews in heated work huts placed at strategic spots around the property to chip away old mortar and acid wash the stones. Elsewhere, the crews swarmed over places where the walls had stood, busily digging, forming and installing steel-reinforced structural footings. In many places, we had to break up subsurface boulders so we could get the footings down to the requisite 42 inches.

As that work moved along, a third crew took care of wall reassembly, following the original look as closely as they

## Juggling Acts

Our work on the pool was no picnic, either. The original structure was completely compromised and had to be removed, and its footprint, although still rectangular, was to be somewhat enlarged to 40 by 21 feet in the new design. The surrounding decks were also to be expanded by some 400 square feet.

At first, before the decision was made to deal with the walls, we spent a lot of time worrying about their looming presence and whether our activities might be weakening them in any way. *Nobody* wanted to witness that avalanche, believe me.

When the shell was finally in place, we



**With the walls artfully rebuilt and the pool restored to reflect as truly as possible the look it might originally have had, the setting is both inviting and intimate in a way that delights the homeowners and harmonizes efficiently with the Craftsman architecture that dominates the neighborhood.**

If I've made this seem as though it was a constant struggle, then I've succeeded in conveying some sense of what was happening on site: It truly was an ongoing battle filled with more than its share of tense, dramatic moments. Fortunately, the homeowners understood the nature of what we were experiencing and had both the patience and the wherewithal to see things through. And cost was no small consideration, as it roughly quadrupled as the scope of our work expanded.

Before long, the job site came to re-

possibly could. In some areas, they ended up needing to backfill the restored walls with concrete to forestall the root intrusion that had damaged the old walls. And in many places, all of the backfilling had to be done by hand because of inadequate equipment access.

In all, we figure we must have taken down, cleaned and reassembled well in excess of 2,000 tons of boulders—hard, backbreaking work that also had to be extremely precise despite frequently miserable conditions.

installed Bluestone coping around the edge, set up the waterline and the steps with a beautiful glass tile from Oceanside Glasstile (Carlsbad, Calif.), installed a pebble finish, positioned deck jets at the pool's four corners, wired low-voltage lights (from Jandy Pool Products, Petaluma, Calif.) in the pool and organized an equipment pad with basic components and controls from Jandy along with a salt-chlorination system and a distributed outdoor sound system.

At the same time, we were also focus-



## Digging Deep

The grotto mentioned in the accompanying text proved to be one of the most significant hurdles in what was generally an extremely challenging project.

Featuring roughly 30 by 24 feet of floor space with a nine-foot ceiling, the grotto sits at the level of the pool beneath a stone deck installed above one side of the watershape. The grotto's walls are stone, and there are three five-by-six foot arches that were eventually to be hung with large iron gates.

Nobody's quite sure of the space's original intended use – and we let our imaginations run a bit wild on that score – but all we knew for certain was that our clients wanted a very private retreat that would have a spa for relaxing and entertaining.

With no access available for equipment, we had to hand-dig the 14-foot-square spa to accommodate its interior depth of four-and-a-half feet. We basically treated it like a small indoor pool, with a 27-inch-high seating bench and 14 therapy jets. We then finished the floor in the same granite material we used for the pool deck and installed nine wall lights – the niches for which had to be core drilled into the granite walls and then shaped using grinders.

As was true for just about every other aspect of the project, our work on the grotto also grew in difficulty as we moved along. As mentioned briefly in the text, the ceiling leaked so badly and had to be re-engineered and rebuilt with poured-in-place concrete and structural steel. Also, in digging the spa, not only did we run into the same groundwater issues we'd experienced in pool construction, but we also found numerous large boulders that had to be jack-hammered into pieces so they could be hauled away.

It was a huge physical challenge, but in the end it's one of the project's many unique, defining features. Best of all, the clients love it!

– J.E.

ing some attention on the grotto, which was situated to the side of the pool. Installing an inground, concrete spa in that space was made difficult by lack of access: The excavation had to be done by hand, and we ran into plenty of rock as we dug. (For details on this part of the project, see the sidebar on this page.)

Our work in the grotto would have been tough enough without complications, but it wasn't long before they started cropping up. First, we discovered that the ceiling inside the grotto was no longer structurally sound, so we had to remove it, have it completely reengineered and then reinstall it before work could be completed on part of the pool deck directly above the space.

On that same level, we set up a broad granite veranda as well as a new spiral staircase to convey the homeowners and their guests from one level to the other. We also installed a number of sculptures our clients had collected as well as a custom-designed ironwork fence and gate system – all very beautiful but occasionally hard to manage with everything else that was going on.

We also reworked a large number of landscape features, installing a screen of 35 16-foot pines along the property line. (Naturally, we had to hand-carry most of them into position because of the access issues.) We also demolished an old stone wall at the property line and replaced it with another section of the iron fencing. Finally, we engineered and installed a massive drainage grid to eliminate problems the property had always had with surface water; organized an extensive landscape lighting system; and tended to hundreds of detailed planting and hardscape details throughout the property.

### The Unforeseen

As well as the project turned out, I can't help thinking about it as a tale of constant battles with the unforeseen. From the beginning almost to the end, one aspect of this project forced us to deal with another in a long cascade that had lots of my friends, family members and staff questioning my sanity.

Ultimately, it worked because our crews proved their fortitude and skill

in every phase of the operation and especially because our clients maintained a singular, unbending focus on creating an outdoor environment that was appropriate and true to the spectacular setting.

We'd tackled big, upscale jobs before and I suppose we'll keep on doing them, but this one set a standard that will be hard to meet, either operationally or aesthetically. All jobs come with challenges, but overcoming those involved with this particular project will always be a special one for me: When I drive by it on my way to and from home, I'll always be filled with a sense of pride and the knowledge that our work has contributed to the historic beauty that surrounds us.





Now fully renovated and brought completely up to modern standards, the old grotto (with its new spa) and wall encompassed swimming pool are once again a delight to the eyes. It was an arduous process filled with more than its share of surprising turns, but our clients had a vision and were determined to see things through to a happy and complete resolution.





# Swimming to Wellness

**Most people know that swimming is a great form of exercise, but far fewer seem aware that getting in the water can mean the difference between a life of disability and one of well being for those who live with chronic injuries and illnesses. In this special feature, Barbara Goldstein describes how a daily swimming regimen has enabled her to stay fit and able in mind, body and spirit while keeping symptoms of three serious medical conditions at bay.**

**By Barbara Goldstein**

**W**hen I was a child, I read a biography of Theodore Roosevelt and discovered that we had asthma in common. In my case, doctors treated the condition with medications, but Roosevelt had lived in a time long before the era of modern medicine, and I was interested to learn that he kept his condition under control by swimming regularly.

About the time I turned 40, we had a pool installed at our home. Even with infrequent workouts, I noticed immediately that Roosevelt was on to something and that my asthma was much better after I'd swim. All these years later, I found myself recalling his regimen and wishing I'd turned to swimming earlier in my life to help manage the condition.

Little did I know then how much more important swimming was to be-

come to me!

In those early years as a pool owner, however, I was quite busy raising children and pursuing a career, so I didn't devote myself to water exercise and only swam a couple of times each week for short distances. Even that helped, however, mostly because it prompted me to become a daily swimmer when I was diagnosed with a far more serious medical condition later on.

## **Flickering Signals**

I had my first attack of multiple sclerosis (MS) when I was 47. I'd heard of the disease before, of course, but like most people who haven't experienced it at close range I didn't know much about it.

In brief, MS is a condition in which the body's immune system attacks the

myelin layer around the nerves in the spinal column and brain. Myelin is the fatty substance that protects the nerves, and when your body chips away at it when you contract MS, it becomes harder for your nerves to transmit signals.

This causes a range of symptoms beginning with a heaviness in the arms and legs, memory loss, crushing fatigue, loss of balance, impaired eyesight and some truly peculiar physical sensations. In extreme cases, the axons – that is, the nerves themselves – can be significantly damaged, with paralysis and death being the result.

It's an illness that, on one extreme, can be so mild that some people don't even know they have it – and on the other, so extreme that it will completely debilitate or, rarely, kill. Everybody's symptoms





are different because MS attacks different parts of the central nervous system – sort of like with the wiring in your house, where you lose lights in one room if a circuit fails but the rest of the house stays lit. It all depends on which nervous “circuits” are damaged.

In my case, the first documented symptoms involved the sensation of having 50-pound weights strapped to my legs: I couldn’t walk from one end of the mall to the other – and then the sensations spread to my arms. I also had all sorts of strange manifestations, sensing at times that I’d just been slapped in the face or that water was trickling down my leg. Sometimes I would scratch my thigh and also feel as though I was scratching my ankle at the same time – or would feel as if ants were biting me all over my body.

Not only was all this extremely upsetting, but it was quite odd – and even when things weren’t severe I knew that something just wasn’t right.

I was simply terrified when I was diagnosed, as is the case with most people who learn they have a serious condition. I had young children and was worried that I would no longer be part of their lives, and I cried for at least a few minutes every day for months. My situation was at first exacerbated by the fact that I had three contradictory diagnoses: One neurologist said that I didn’t have MS, another said I definitely did and a third (along with my family doctor) said I “might” have it but wanted to observe me for a while before deciding how to proceed.

In all, it took more than three years to confirm that I had MS beyond any doubt.

## Learning to Cope

Based on my symptoms and the reading I’d done, however, I’d believed from the start that I had MS, but there was no way of knowing how aggressive my particular condition might be. The upshot of the split verdict on what was going on was that the doctors initially decided not to treat me because the drugs that slow down MS have considerable side effects. Prudently, I think, they wanted to see how things progressed before starting me on that path.

One of the characteristics of MS is that when your body heats up, you experience what are known as “pseudo-flares.” These aren’t actual MS attacks but instead are episodes in which you experience some combination of your symptoms.

These pseudo-flares result from the fact



that your body has the capacity to compensate for damage to one part of the nervous system by re-routing signals through undamaged nerves. Sometimes, even nerves with damaged myelin sheaths will fire up and transmit signals, but not as efficiently as before. When the body heats up, however, myelin function decreases – and that’s when these odd symptoms start to appear.

Of course, this heat sensitivity makes most forms of exercise extremely problematic, and this was a real difficulty for me. I’d been physically active throughout my life and had always been one of those people who, when I would go to the store, would park in a space far away from the entrance so I could get in a few extra minutes of walking. As anyone with children and/or a career knows, it can be tough to find time to stay in shape, so I always

making it possible for someone with MS to pursue vigorous workouts without experiencing pseudo-flares. In addition, because you’re in water, you don’t run the risk of injury as you would if you experienced symptoms (such as a loss of balance) while doing land-based exercises.

So even though swimming isn’t a cure for MS, it enables those with the condition to keep up good cardiovascular health, increases strength and flexibility and, perhaps most important, offers a wonderful feeling of empowerment: Even though you have a serious illness, you can still stay fit and active.

### An Odd Disconnect

As I mentioned above, one of the most significant symptoms of MS is that you can feel extremely *fatigued*. It’s one thing to say that, but it’s quite another actually

fantastic – and what I just can’t understand is that this power of getting in the water isn’t being pushed by the medical community.

In researching MS through the years, I’ve routinely visited patient bulletin boards on the Internet and have read numerous accounts of others with MS who’ve also discovered the amazing therapeutic benefits of swimming. Not long ago, in fact, I read a message from a woman who said she’d been confined to a wheelchair before she began to exercise in a pool: She’d been told she’d never walk again, but after months of slowly increasing the duration of her workouts in the pool, she was able to get around again on her own.

My own case is just as compelling, although the story is different.

Without dwelling on the specifics, at a certain point in my experience of MS one of my doctors prescribed a standard medication. As it turned out, certain batches of the drug had been incorrectly manufactured – but by the time this news was made public, I’d taken it for eight weeks and it had severely damaged my lungs and my heart. So, on top of having asthma and MS, I had cardiovascular damage as well and could not walk more than a few steps without resting. It would have been easy to lose hope.

In subsequent months, I sought treatment wherever I could find it and eventually ended up at the Mayo Clinic, which I believe saved my life. To that point, nobody I’d spoken with had ever recommended exercise, but doctors there said they wanted me to get active because exercise has anti-inflammatory properties they thought would be useful against MS, which causes inflammation.

I was deathly ill at the time, but within five months after I received that recommendation, I was swimming a mile every single day. And I haven’t looked back.

### On Track

That was three years ago, and today I feel much healthier. Although I still have asthma, MS and permanent medication-related scarring on my heart and lungs, my symptoms are much milder, my balance is better and all that swimming

did little things like that to keep up my level of physical activity.

I’d also been a tennis player, but I found that I could no longer play without experiencing pseudo-flares that brought on loss of both vision and hand dexterity. Then there’s the fact that I live in Florida, which meant that I could only do things when the weather cooled off. It was clear that I needed to find another path – and this is where swimming entered the picture.

Exercising in water allows you to keep your core temperature down,

to experience it – sort of like running a marathon, staying up all night afterwards and then running another marathon the next day. It’s a state of exhaustion that’s difficult to imagine unless you’ve been through it, and it’s something I experience every single day.

With swimming, however, for several hours after I get out of the water the fatigue stays away. Miraculously, the sensation of weightlessness in the pool also helps me feel semi-normal, as my legs and arms do not feel like they weigh so much when I’m immersed. That’s just





helps me keep my weight down.

Although I'm not a medical professional, a scientist, a researcher or even an expert in aquatic exercise, I am certain beyond any doubt that swimming laps is a magic bullet for people facing not only asthma and MS, but also a range of other physical challenges. In my case, in fact, exercising in a swimming pool helped me greatly improve symptoms of three separate ailments.

I believe this is a message that has been underplayed for far too long. Whether it's the medical community, the water-shaping industry, people involved in the sport of swimming or perhaps celebrities who've had similar experiences, *somebody* needs to spread the word about the benefits: I know through personal experience of the most critical kind that there are people out there who need to know how much swimming might possibly help them.

Call it Theodore Roosevelt's legacy: It's a story that needs telling!

## A Place to Swim

As a person with multiple sclerosis (MS), I'm lucky to have a place to swim at home – and even luckier to have a pool designed for lap swimming.

We live in central Florida, so the pool is screen-enclosed to keep insects away and was originally built for our kids long before I was diagnosed with MS. Happily, before we developed the design, a close friend of mine recommended making the pool at least 40 feet long to allow for lap swimming: She'd been using swimming to recover from injuries sustained in an automobile accident and was a strong advocate of aquatic exercise.

Although I didn't think of her advice with respect to my own health at the time, we followed her guidance – and now my only wish is that we'd made the pool even longer.

It's warm here most of the year, and there are only a few winter months during which it's too cold for me to get in the water comfortably. At those times, I turn to a local, heated public pool and now swim year 'round in a full-body swimsuit to avoid exposure to the sun's ultraviolet rays.

For people who are, as I am, combating serious illnesses and other physical conditions, the importance of having places to swim in private and public settings simply *cannot* be overstated. We need more pools!

– B.G.



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# Going Natural





Although the concept is relatively unfamiliar in the United States and largely untested here, pools supported by an entirely natural approach to filtration and water management have been under development in Europe for decades and have caught on there in a big way in recent years. In this special feature, German watershaper and natural-pool expert Rainer Grafinger discusses the ‘technology’ behind this potent European trend.

For most people in the United States, swimming is far from a natural experience: Bathers move back and forth in man-made, chemically treated backyard or public swimming pools and seldom (if ever) find themselves in truly natural bodies of water such as lakes, rivers or oceans.

What most of these people don’t know is that it’s possible to swim in backyard pools filled with naturally treated water. Indeed, we’ve been building entirely natural pools for quite some time in Europe that operate without either purification equipment or chemical sanitizers. These “swimming ponds,” as some also call them, rely on natural processes to purify water – the same sorts of processes that make mountain lakes and streams so refreshing.

This movement toward natural water treatment originated in Austria as long as a century ago, and by now the approach is established and broadly accepted in Europe. Our firm, BioNova of Bergkirchen, Germany, has become a passionate proponent of this form of watershaping and now provides professionals throughout Europe with designs and components for natural pools.

We are now seeing a small number of these systems being installed in North America and believe that this trend will gain worldwide momentum in coming years as swimmers become aware of and begin to ask questions about this option. To give you some worthy answers, let’s take a look at what makes these pools tick.

### A Fresh Approach

In our designs, natural swimming pools actually consist of two sections: a swimming area for relaxation and recreation and a watergarden in which water regeneration and purification take place.

The swimming area can be a normal-looking pool with typical shapes, coping and finishes – or it can look like a pond or some hybrid combination of the two forms. The big difference is that this swimming area, whatever its configuration, is physically linked to a watergarden that supplies it with purified water.

For its part, the watergarden is basically a pond with an ecosystem specializing in water purification. This regenerative section features water-loving plants that absorb nutrients released by microorganisms involved in the decomposition of organic matter. Just as with an artificial backyard pond that supports fish and other wildlife, the watergarden is purified both biologically and mechanically as water flows through reeds and roots and is ultimately drawn down through a filtering bed of sand and gravel.

A huge range of design looks is available with these pools, but what’s common to all is that disinfection technologies and chemical treatments are not needed. This is true for designs in which the swimming areas closely resemble natural ponds and feature such details as beach entries that transport clients to stream- and lakeside resorts. It’s also



true for refined, architecturally inspired pools made with graceful contours, beautiful materials and fine finishes.

Experience also shows us that not only do these watershapes work in all sorts of settings and all kinds of styles, but that they also fit into a wide range of budgets. And there's also a grand opportunity in retrofitting existing pools to accommodate this new approach.

Yet even though these pools represent a dramatic departure from tradition, they don't involve significant operational changes for watershapers who are already familiar with pool and pond construction. The challenge as always comes in creating conditions that support and sustain stable ecological balance in closed systems.

In every case, nature serves as our guide. Natural lakes have zones with water at various depths and are home to indigenous plants. Water treatment primarily takes place in the shallow-water zones at the fringes of these ponds, where cattails, sedges and canes predominate. These plants absorb nutrients to fuel their survival and continued growth.

This fringe is also where small animals find food and protection, but our interest here is in the filtering function that happens in this zone as water flows through the plants on its way to the sand/gravel bed below.

### Separate Vessels

In one of the several configurations we use in designing and installing these watershapes, we contain both the swimming area and the regenerating plant zone within the same vessel, masking the construction measures we take to separate them physically so that one, unified structure seems to allow for the co-existence of people, animals and plants.

Distinct separation methods are important, because we want to keep any strong currents of the swimming area or the circulation system from disrupting calm flows within the watergarden. We fashion these barriers with concrete, acrylic panels, natural stone or timber planks that rise from the bottom of the vessel to within inches or even fractions of inches of the water's surface so that the unified appearance



of the vessel remains visually intact.

In other designs, we separate the swimming and regenerative functions into two vessels, either adjacent to one another or at some distance apart. In the former case, we'll often set one vessel slightly above the other and have one flow gently down – it doesn't matter whether the swimming area is above the regenerative area or vice versa. In warmer climates, however, we set up two bodies of water and put some distance between them because we need greater control over how they interact.

Wherever they're installed, these natural swimming pools are closed systems, so sealing is especially important. This is why, in addition to installing concrete shells, we always line our regenerative ponds with liners: Their flexibility helps us shape natural-seeming shorelines and embankments in ways familiar to pond installers, but we also line our swimming areas as well just to make certain there are no outside intrusions upon the system.

The technical requirements for these liners are described in various standards and regulations applied throughout Europe. They must have expansion capability and resist tearing, aging, ultraviolet radiation, frost and root penetra-

tion, which means we can choose among PVC (polyvinyl chloride), PE (polyethylene), EPDM (synthetic rubber) and FPO-A (flexible polyolefin) liners in thicknesses of 1.5 to 2 mils.

Within our regeneration zones, we also spread a fibrous web over the liner to serve as mechanical protection. All lining in the regeneration zone is then covered with gravel and sand to establish the underlying filtration system. We also use gravel in the shallow areas of the swimming zone, but deeper areas are left uncovered so water can be drawn off to the purification system with ease.

As a rule, the swimming and regeneration zones in typical projects are set up in a one-to-one ratio with respect to surface area. But as is often the case in system design, the rules change as the overall size of a project grows: The more water there is, the more stable the overall system becomes, so in certain situations the regeneration zone can become smaller relative to the swimming zone.

### Key Decisions

Ultimately, many of the decisions about which specific way to go – one vessel with an interior separation, two vessels with one flowing directly into





the other, or two separate and distinct vessels – are driven by the property owners, the setting and a variety of aesthetic goals.

Do the owners want a unified, nature-oriented swimming pond that blends in with the garden landscape? Or are they after a more conventional pool for which the watergarten is no more than a purification system? Should the vessels be side by side? Should the regeneration zone not even be visible? These decisions are fundamental to the way the overall space will be organized and designed.

Whether or not a particular location is even suitable for such a watershape can depend on how much sun exposure and shade there is, given the plants' need for sunlight. Some consideration must also be given to placements near existing trees, as you want to minimize nutrient input. Finally, thought should be given to isolating these systems from the wind, again to minimize the introduction of debris.

Then you need to ask: What relative zone sizes does a specific system require? Where should they go? How will access to the water be provided? Will there be enough space for a gradual beach entry?



Many of these natural swimming pools are set up in such a way that both the swimming and the pond-like regeneration zones are contained within the same vessel. In some cases, the barriers between the two areas are subtle; in others, however, they are clearly defined or even celebrated.





Or will there be conventional steps down into the swimming area? Is there to be a special shallow area in which small children are to play? Other than the fact that two vessels (either unified or separate) are being discussed, this is a normal set of issues for discussion in the design stage of any watershape project.

But the dual nature of the environment leads us to reach a bit beyond the conventional list of possibilities to be discussed. These are, after all, systems that include ponds as well as pools.

This, for example, is where we get into discussions about such details as having stepping stones pass through the regeneration zone – an odd case where pond installers need to think more like pool builders because, for stabilization purposes, each stepping stone will need to be placed in a mortar bed that reaches down to a stable surface beneath the waterline. (These stones often come up because they allow property owners or maintenance personnel to move freely

throughout the regeneration zone without disturbing the water.)

Along with such specialized features, we also cover the usual range of water-features that accompany modern pools and ponds, from associated streams and waterfalls to more architecturally oriented fountains and jets – not to mention underwater lighting systems, massage stations and counter-current swimming devices. Almost anything is possible so long as details applied in the swimming area don't disturb the vegetation in the regeneration zone.

### Smart Layout

Once the location and detailing have been determined, a whole range of practical issues must be settled.

In these systems, for instance, water flows through the pool and is drawn into the regenerative system from its deepest point, but as with conventional pool systems, there must also be a means of skimming debris off the surface, thus re-

**A distinctive visual drama results when the two zones are established on different levels and one spills into the other, but the same can be true when the two zones seem to function completely apart from one another. This lends tremendous design flexibility to this approach to watershaping and allows us to consider the full range of looks, from the purely naturalistic to the architecturally formal.**

quiring the layout of gutters or skimmers. You also need to consider placement of the equalizing tank and equipment pad as well as the basic configuration of the water-circulation system.

The basic aim is to set up circulation systems that skim the water's surface and transport the water to be purified beneath the root zone of the pond. In addition, these systems also must oxygenate the water to keep the decomposition processes moving along. These tasks are all easily handled by conventional hydraulic de-







signs using familiar centrifugal pumps.

Throughout this article, I've tried to make the point that, although the basic concept of natural swimming pools may be new to many watershapers in the United States, literally thousands of them have been installed in Europe using techniques and technologies that are familiar to North American watershapers – although they're applied in slightly different ways in a few cases.

The bottom line here is that we've found a large population of homeowners (and even commercial-property developers) who are captivated by the prospect of swimming in chemical-free, naturally purified water – and don't object to the fact that they can also save money up front and in the long run by eliminating the cost of chemicals and/or other water-treatment technologies.

To be sure, the water in natural swimming pools looks different from the pristine water of chemically treated pools: There's a degree of turbidity that requires an adjustment in client expectations. But here in Europe, where rules about water use are as strict (if not more strict) than they are anywhere elsewhere in the world, the degree of public acceptance of these pools is high. Moreover, European regulators now readily accept this approach to water treatment, having found these pools (when properly installed and maintained, of course) to be completely safe for bathers.

It may represent a radical shift in approach, but with environmental concerns becoming more and more important in upscale consumers' minds, it's not unreasonable to see natural swimming pools as an idea whose time may have come.

**Experience has shown that numerous homeowners and commercial-facility managers like the thought of chemical-free, naturally purified water – and that children (and adult bathers as well) take to the water and enjoy it in just the same way as they do conventional, treated pools. There are technical distinctions that might take some explaining, but the functional differences are relatively few.**







Natural swimming pools are safe havens for swimmers and casual bathers, but what we like about them as watershapers is the fact that they afford us the opportunity to deliver fully naturalistic watershapes to clients in forms that help ease day-to-day stresses, please the eye and foster relaxation at the water's edge at least as much as they encourage their owners to exercise and enjoy family-style fun in the water.









Photos by Brad Kupper, Barn Door Studio, San Jose, Calif.

# Garden Tea

With equal doses of patience and understanding, observes garden artist Rick Driemeyer, great watershapes and gardens can emerge from extended periods of close interaction between designers and their clients. A case in point is the project shared here, where long acquaintance with his clients' wants and needs enabled him to transform a compact teahouse/pond/waterfall composition into a finely decorated, highly personalized sanctuary.

By Rick Driemeyer

It's rare in our fast-paced world when you get the chance to work closely with clients over an extended period of time — and in this case we took full advantage of the opportunity: All the way through the evolution of the project, the couple gave me voluminous information about what they wanted and enabled me not only to understand and deliver what they were after, but also allowed me in many instances to exceed their expectations.

I had worked with him before on one of his previous homes; during that process, we'd developed a terrific working relationship and I was thrilled when he called me about his new home. In contacting me again, all he was after was a simple fish pond for him and his new wife to enjoy. Years later, I can trace the way that simple charge morphed and evolved and grew into the composition displayed on these pages — and the process continues to this day.

The home is located in a neighborhood of small, turn-of-the-20th-century cottages in Woodside, Calif. When I first arrived, the small lot showed no signs of ever having been “developed” in landscape terms. But even though it was





The immediate impulse for the additional work we began on site was concern about the long-term health of a collection of koi, but before long the focus shifted and we set about creating a meditation-oriented refuge for the clients themselves. Seen on the far side of the enlarged pond is a bamboo-sheltered shower area with a yard-expanding mirror to its left.

a small space, I knew right away that this neighborhood and its vintage home could provide the backdrop for a wonderful small garden.

In our initial conversation, they let me know that they wanted to place the pond where I saw a tangle of blackberry vines and weeds that probably hadn't been touched in 40 or 50 years. The chosen space also was hemmed in by an oak and a fir, but I went ahead and installed a small rock-lined watershape, cautioning the clients that with so small a volume, they would face water-quality problems if the fish were either too plentiful or grew too large.

Later on, in a second phase, we would double the size of the garden and completely redefine the space. In the meantime, I did what I could to address the fish-health issues in the shady pond.

### Initial Moves

For starters, I upsized the biofilter to double the manufacturer specification. (This is something I generally do with my ponds, the thought being that it's hard for pond owners to resist bringing in more fish than the chosen volume can handle.) The unit I selected in this





case (from Aquaculture Systems of New Orleans) has an automatic backwash feature that further helps accommodate the bio-load that comes with an excessive fish population.

The upshot: Water in the 14-by-eight-foot 1,800-gallon pond is turned over every 45 minutes.

We still faced some difficulties, however, because the area was shaded and the water temperature seldom rose above the low 60s. This made it easy for the fish to get sick, because the cool water slowed their metabolisms to a point where it was hard for them to resist parasites. Although he is a veterinarian and knew how to treat the fish, there were sufficient losses among some valuable koi that my clients wanted a better solution.

Before long, we installed a solar heating system and increased the water temperature to a point where cool northern California weather was no problem.

Not far away (because nothing in this space *could* be very far away), we had set up a small bamboo structure with an outdoor shower. This new structure was mirrored on the opposite side of the pond by an old, small storage shed, and before long we started talking about how



**Our clients wanted water to be an integral part of their teahouse. They'd seen rills running through other rooms of this sort, so we incorporated one that flows down the face of a mounted boulder, across the room, under a deck and, finally, into the pond.**





Although the project is probably best described as ‘eclectic’ in style, there are certain distinctively Japanese-architectural touches we used in the space, including the teahouse’s use of circular moon-windows and other circular forms seen elsewhere in the garden.

that structure might be used.

It was at this point that I started installing pathways and planting beds around the pond and the entire space began to take shape.

The key to the next phase of the project had to do with converting the shed into a teahouse. At first, the homeowners wanted to split the shed’s function, turning part of it into a meditation room but leaving the rest for storage. As we worked through the possibilities, however, they decided that it would be better to devote the entire 12-foot-square space to stress reduction and make it an indoor/outdoor room dedicated to helping them enjoy the garden.

The driving force here was the clients’ growing involvement with traditional Japanese tea ceremonies and their emerging desire to have a structure in the garden suited to that purpose. I’ve always admired Japanese architecture and began designing a building that would open up on two sides and would include a large porch area overlooking the pond.

## Measured Motion

All that seems straightforward enough, but these details actually evolved through months of discussions in which more and more ideas came into play as we moved ahead.

At one point, for example, she mentioned that she’d seen a house with water running through the middle of it in the form of a small rill. So we started playing with different ideas, beginning with a basin inside the house but eventually landing on a configuration in which water would emerge from a stone embedded in a wall. This trickle would then run down a nar-





The clients were personally involved in making the space theirs, which included her painting of the door that serves both as a privacy screen for the shower and to hide equipment from view. They also found fragments of statues, complete icons and a variety of other decorative pieces found throughout the space.

row, 12-foot-long channel in the floor of the shed that would pass under the porch before spilling into the pond.

In cases like this, of course, moving from concept to execution adds its own stretch of time. It didn't take long to find a great piece of fieldstone to mount in the wall for a nice sculptural look, but it took months of experimentation in my shop to find the right orientation and a flow rate that wouldn't wet the rock's entire surface or spill onto the floor. Then I had to cut the panels for the wall to accommodate the stone's irregular shape.

Later, when everything was installed, my clients said it was "exactly" what they wanted, although they would have been hard pressed to come up with that sort of design solution on their own!

We also spent a great deal of time pursuing the right details for the teahouse's interior. We started with rice wallpaper, which was both authentic and appropriate, but the homeowners didn't care for the way it looked. So instead we went with an aromatic cedar paneling: This gave the space a rich, natural look, not to mention the fact that it served up a wonderful scent.

Then came a host of details, from cubbyholes for stowing shoes to shelving where they could display floral arrangements and artwork as well as the tea-ceremony accoutrements they'd collected in their travels. Next we installed laminated trusses with lovely, arching shapes over the rear entry; redwood burl decking on the rear porch and the (heated) black slate interior floor; and two salvaged windows. Above the porch is a roof made of a polycarbonate material that allows light to filter in and softly illuminate the room's interior.







The traditions of the Japanese tea ceremony had a lot to do with key features of the garden. This square *tsukubai* with its bamboo spout, for example, is intended for the washing of hands by tea-ceremony participants, and the clients filled the teahouse itself with an array of accessories related directly to these rituals.

The doors on the front and back of the teahouse slide open, completely disappearing from view and creating a sense of interior/exterior integration. Even the door handles took careful consideration: They're made from the nuts of a South American cycad and are often used as a substitute for ivory; we left the husk on and polished them to a warm finish.

### Magical Details

Although the elements of the teahouse are decidedly eclectic, there are also a significant number of touches drawn from the traditions of Japanese architecture.

One of the details I enjoy most is circular moon windows, so we installed one in the teahouse with red rice-paper bands that represent a sunset when viewed from inside the room. Another of these windows is mounted in a fence adjacent to the teahouse and includes a shelf for displaying Bonsai trees. I also used this form to develop a small cabinet used to conceal the thermostat for the teahouse's floor-heating system.

In a small way, this repetition of motifs is one way I like to create a sense of dynamism and motion in my gardens. In a much more direct way, however, I work with the element of

surprise to encourage anyone entering a garden space to explore and catch unique and interesting views of special spaces.

That was certainly a focus here, despite the fact that the yard is only about 65 feet from one end to the other. On the edge of the space opposite the teahouse's front porch, for example, I installed a large mirror hidden in the shadow of the shower structure. When you look down the length of the space, you see a reflection that suggests the garden extends well beyond its physical limitations.

I've also found that getting clients directly involved increases the sense of the space having been personalized to their needs. Adjacent to the mirror and shower, for example, is a salvaged door that alternately serves as a privacy screen for the shower and a blind for the equipment set: She painted the door with beautifully vivid colors. They also collected art that appears throughout the garden, including a broken Buddha, a Ganesh figure they found in India and statues of Christian luminaries including St. Francis.

Directly related to the tea ceremony, next to the pond there's a square *tsukubai* with a bamboo spout (or *kakei*) for the ritual washing of hands. The basin was originally a concrete bird-



bath we found in a junkyard with moss growing on it: Now the flow from the bamboo spout fills the bowl before overflowing into the pond – and because it's constantly wet, ferns have actually started growing out of its sides, giving the waterfeature a look of age well beyond its years.

The Asian theme is further expressed through the use of bamboo as a structural element in the shower area and as a plant that goes well with the dozens of species of ferns, fruit trees, Japanese maples and flowering plants we planted to follow the lead of traditional Japanese gardens.

### Completing the Scene

Adding even more design touches associated with the Japanese garden style, we spent a great deal of time selecting and placing unusual stone pieces to create a sense of asymmetrical balance. Then we wove lush plants in among those stones, both to add to the sense that the garden had been there for a long time as well as to create the impression that everything in this garden refuge has been fully and thoughtfully integrated.

With the structures and details in place, we refocused our attention on the pathways we'd installed early in the project, extending and expanding them to carry visitors throughout the completed garden. A key here was a small, gently arching bridge across the pond – a great place for everyone to gain an intimate, overhead view of the homeowners' collection of koi.

Although the garden is now essentially finished, we continue to collaborate with these clients in polishing up certain areas and adding small details that augment its array of visual delights. Indeed, we all see it as a dynamic, still-emerging space, and they keep telling me that the more time they spend in the teahouse, the more views and details come into focus.

The closeness I've developed with both the clients and the site makes this one of my all-time favorite projects, and one happy byproduct of the friendship that's come to characterize our relationship is that they don't mind if I occasionally stop by after work to spend a few minutes sitting in the garden to relieve my workday stress. It's a great place to unwind – and absolutely the perfect venue for enjoying a well-brewed cup of tea.



Our main aim in designing and installing the entire space was to create a proper atmosphere of serenity and meditative calm for the homeowners, their guests and their tea ceremonies – and even I have been known to stop by from time to time to step into this special realm and shed the stresses of the workaday world.



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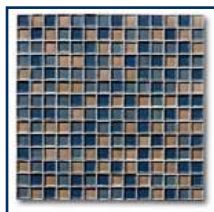
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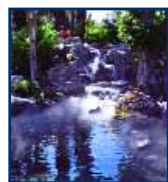
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**SWIMEX** has added a Programmable Monitor option to its resistance-flow swim systems. Designed to give users more control over workouts and swim routines, the device lets the swimmer adjust the pool's current with finite precision, track elapsed or remaining time, set the current to shut off automatically when a routine is done – and allows for programming of up to nine separate routines and intervals. **SwimEx**, Fall River, MA.



## FOG SYSTEMS

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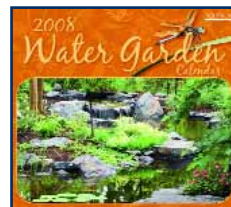


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AQUASCAPE has published its second annual Water Garden Calendar. The 2008 edition is filled with dozens of project photographs and is intended for use as both a gift to clients and as an idea-generating sales tool for pond designers and installers. It also features a number of tips and suggestions pond owners can implement in the course of a year to maintain their ponds and watergardens in top shape. **Aquascape**, St. Charles, IL.



## LED LIGHTING BROCHURE

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KIM LIGHTING has published literature on its LED Collection, a line of more than two dozen solid-state landscape-lighting fixtures that use super-bright white LEDs. The 28-page, full-color booklet covers low-profile, all-climate luminaires suited for both commercial and residential applications as step lights, in-grade uplights, wall- or stem-mounted landscape lights and accent floods. **Kim Lighting**, Industry, CA.

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## JETS FOR GUNITE SPAS

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**PARAMOUNT POOL & SPA SYSTEMS** has partnered with Bullfrog Spas to distribute Bullfrog's JetPaks for concrete spas. These modular, interchangeable systems are designed to allow builders to deliver the therapeutic benefits of portable spas in their inground concrete spas, and the units come in three models and four colors to complement various needs and finishes. **Paramount Pool & Spa Systems**, Chandler, AZ.

## POND LINERS

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**FIRESTONE SPECIALTY PRODUCTS** offers PondGard EPDM geomembrane systems in standard and polyester-reinforced forms. Designed for dependable performance in demanding environments, the material is flexible, ultraviolet- and weather-resistant and safe for plants and fish. It also comes in a variety of panel sizes to reduce the need for field seaming. **Firestone Specialty Products**, Indianapolis, IN.

## DECORATIVE ACCENTS

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**WALLART CASTINGS** makes decorative wall accents in bronze, aluminum and brass. Designed to adorn fountains, pools and ponds in addition to cement, brick, block or stone walls, the products come in a range of forms (everything from frogs, sea turtles, dragonflies, fish, crabs, starfish and more to unique, custom designs) and attach to any substrate using a standard pin-mounting system. **Wallart Castings**, El Cajon, CA.

## CERAMIC TILES

### Circle 150 on Reader Service Card



**CABRIDG** offers ceramic tiles in a range of sizes and in a number of styles, colors and formats. Designed for interior flooring or exterior decking applications, the line includes piazza tiles in nine colors and a series of art tiles that have the look of fine stone and brick. There are also a number of brick-mimicking veneer products suitable for use as architectural finishes and to upgrade the look of walls. **Cabridg**, Arcadia, CA.

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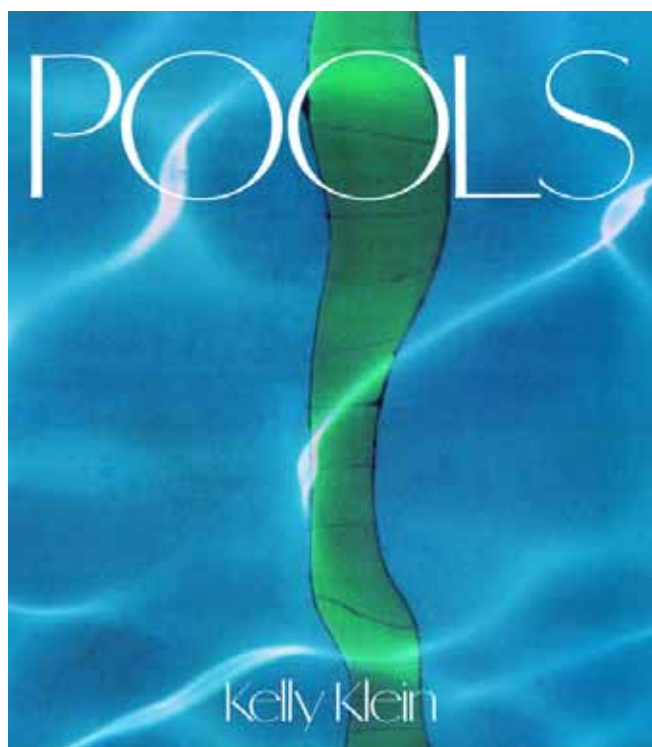
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By Mike Farley

# Fifteen Years After



It's unlikely that anyone back in 1992 would have imagined that the daughter of fashion designer Calvin Klein would change the way we think of swimming pools.

That might be a slight exaggeration, but to me there's no question that *Pools* by Kelly Klein, first published by Rizzoli 15 years ago and re-released late in 2007, was unique at that time in treating pool design as a legitimate art form. In many ways, in fact, I think her book may well have ignited the design revolution that has unfolded in the years since it was first published.

I didn't run across this oversized volume until 1999, when I attended my first Genesis 3 design school. Instructor Mark Holden had displayed a number of books on a variety of design topics on a table, and front and center was a copy of Klein's oversized volume – the only book he'd brought that dealt exclusively with swimming pools. I was immediately impressed: Nowhere had I ever seen pools treated with such lavishness and so distinctly artistic an attitude.

The book was long out of print by then, but I kept looking for a copy and was always depressed to find that the only ones available were selling for \$400 or more – a true collector's item, and it was about *pools*! With the recent re-

issue, I was finally able to track down a copy of my own at a far more reasonable price.

Why all the fuss about what is essentially a picture book, largely text-free, compiled by a young woman who previously had absolutely nothing to do with watershapes? Quite simply, Klein was way ahead of her time, a visionary who used the book to capture and celebrate an underappreciated art form.

And as she put it in her introductory notes, "This book is for inspiration." It succeeds brilliantly on that level as well.

Legendary status aside, I'm amazed at how well this compilation of images still holds up to professional scrutiny. There are beautiful photos from all around the world – Japan, France, the South Pacific, Italy and, of course, Hollywood – in every conceivable style from classic rectangles to naturalistic forms and everything in between. The images depict the range from turn-of-the-20th-Century plunges to pools completed just before the book was published, and many were taken by the famous fashion photographers Klein credits with blazing her trail by using pools as backdrops for photographing celebrities and models.

Most eye-catching of all (in my humble opinion) is a gatefold spread depicting a vanishing-edge pool set against a sweeping view of a meadow – an image that changed the way lots of us look at this most spectacular (and now familiar) of pool-design elements. It's also worth noting that Klein demonstrates her father's penchant for sensuousness, with many of the photographs depicting nudes in tasteful, artistic ways.

In some respects, Klein's treatment of pools might be considered excessive and perhaps self-indulgent – dismissible as great photographs of what are in many cases pedestrian watershapes. For my part, however, I'd argue that the book's excesses are what make it so wonderful.

Today, a decade and half after its initial publication, *Pools* by Kelly Klein is just what I thought it was when I first saw it: In a word: *classic!* **WS**





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Photo: One of 25 all-tile swimming pools at Jade Mountain Resort, St. Lucia. Each pool is tiled in one color of Lightstreams Glass Tile.

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