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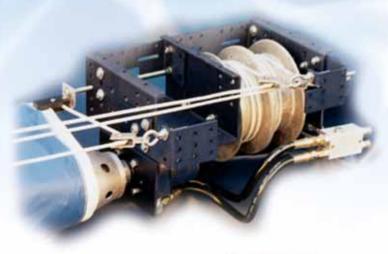
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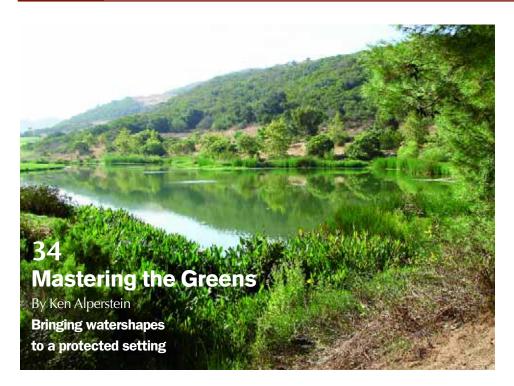


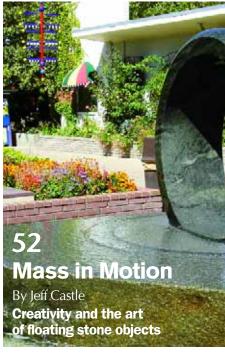


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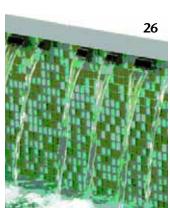
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Photo by Kathleen Persoff, Los Angeles, courtesy New Leaf Landscape, Agoura Hills, Calif.

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By Eric Herman

Healthy Pursuits

When you talk to clients about why they want a swimming pool or spa, which benefits generally top their lists? Are they after beauty, luxury or a relaxing lifestyle accessory? Or is it the sound of moving water, a focus on entertaining or a place to play?

Through the years, I've spoken with lots of you about how important it is to understand precisely what clients are after and the extent to which their desires drive design decisions. Many of you have mentioned that it's like being a detective and getting inside clients' minds. That's a tough job, and ferreting out cues can encompass discussions of anything from art history or entertainment options to the child-like joy that comes with playing in the water.

Of all the things I hear, however, the basic health benefits of hydrotherapy and aquatic exercise seem to fall way down the list. That's always surprised me, frankly, and reinforces my personal suspicion that most people (watershapers and clients alike) don't fully appreciate just how good swimming and other forms of exercise in a pool or other body of water can truly be for all of us.

Sure, we all know in general terms that aquatic exercise is healthful in the same way as jogging or working out on treadmills or with weight machines, but beyond that we just accept it and don't explore the subject to any great degree. We don't see seminars on aquatic health benefits offered at trade shows, nor has it been a frequent subject of coverage in the trade press, *WaterShapes* included.

At the same time, we often see information on the risk factors associated with pools and spas – child drowning, suction entrapment, bacterial challenges and more. While preventing these problems is hugely important, I've long argued that there's an imbalance in the types of health-and-safety information readily available to the industry and the public at large.

My interest and involvement in these issues was rekindled by a recent conversation with Laurie Batter, a long-time swimming advocate who, among many other things, is the public relations agent for the National Swimming Pool Foundation. She called to convince me that *WaterShapes* should take up aquatic health and fitness as a crusade and put our powers of persuasion behind promoting a broad range of benefits about which everyone needs to know.

As she explained, those benefits are profound and surprising – but too few people recognize just how health-sustaining a product our industry provides.

Spurred by our conversation and taking advantage of her access to a variety of top-flight resources, I began exploring the possibility of an article on the subject of aquatic health benefits – and what I found was nothing short of astounding, as you'll see in "Therapy Power" on page 44 of this issue.

It's a quick look at a huge subject, but even this mere scratching of the surface demonstrates that watershapes made for human immersion might be the most healthful of all products of any kind, anywhere. That's no exaggeration, and it's my hope that this article (and others to follow) will shine a light on a set of benefits that every watershaper should embrace and unfailingly discuss with clients at every opportunity.

What's really at stake, after all, is giving clients access to longer, healthier lives.

Ein Hemm

Water Shapes

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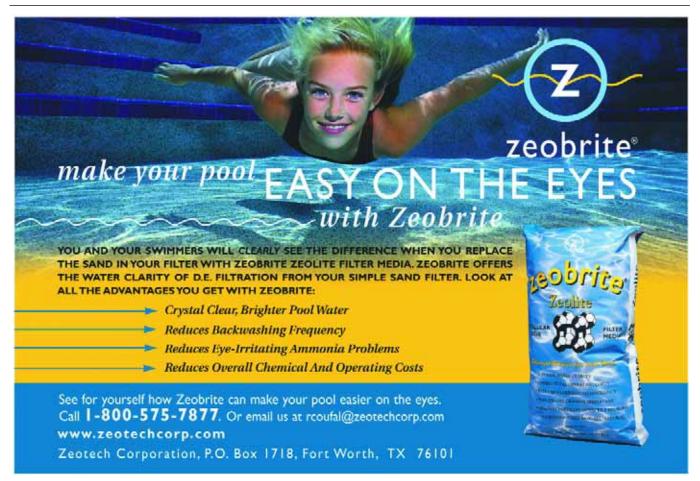
Castle

Ken Alperstein is co-founder of Pinnacle Design, a golf-course architecture firm with offices in Palm Desert and San Diego, Calif. He is a 17-year veteran of the landscape-architecture industry and has specialized in golf-course landscaping since 1989. Alperstein and his partners, Ron Gregory and Bill Kortsch, founded Pinnacle to serve the highly specialized golf-course-design industry. The company's portfolio includes high-end championship golf courses, clubhouses and grounds throughout the Western United States – including several courses rated in the top 100 in the United States by *Golf Digest* and *Golf* magazines.

Eric Herman is editor of *WaterShapes*. A career writer and editor with more than 20 years'

experience, he has published and edited articles for publications across a wide range of industries, technical subjects and cultural interests. A native of southern California, he graduated from California State University at Fullerton in 1983 with degrees in Journalism and English literature. In addition to his work in magazines, he has published poetry and written screenplays, technical manuals and speeches and is an aspiring novelist. Herman has worked for McCloskey Communications since 1996 and was the founding editor of *WaterShapes* in 1999.

Jeff Castle is executive vice president of Kusser FountainWorks, the Tampa, Fla.-based division of Kusser Aicha Granitwerke, a family-owned and -operated company



located in Aicha vorm Wald, Germany. He joined the firm in 2003 after more than a decade in the fountain industry and is the principle designer and manager overseeing the design and installation of fountain systems featuring a range of granite and stone structures. Before joining the watershaping industry, Castle worked in a variety of roles in the electric-motor and HVAC industries and has degrees in HVAC engineering and business administration.

Colleen Holmes is president of New Leaf Landscape, a full-service landscape design/construction firm based in Agoura Hills, Calif. A landscape designer with more than 30 years' experience, she began her career as a child at the side of her father. Charles Prowse, who instilled in her a love of the art of landscape design. She studied landscape architecture at the College of the Desert in Palm Desert, Calif., where she was profoundly influenced by sculptor/landscape artist Michael Watling, and later attended UCLA's school of landscape architecture. Her early work focused on designs for country clubs and gated communities in the Coachella Valley. Since then, Holmes has run her own pool and landscape maintenance firms and founded her first landscape design/construction company in 1980. She established her current firm in 1987 and now focuses exclusively on high-end residential projects including a number of celebrities' homes.



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aqua culture

By Brian Van Bower

The Big Picture

nyone who runs a good business knows that day-to-day operations are so all-consuming that it's difficult to step back and scope out where you fit within your corner of the industry, let alone within the context of national and international business conditions and trends.

We can't give those daily details short shrift or step away from balancing the needs of our clients, our projects and our employees and/or subcontractors. We invest in the here and now and in our futures with blood, sweat and tears.

Still, it occurs to me that, like all major investments, our daily endeavors need to be protected by an understanding of the entire range of factors that influence our success. So to me, understanding the Big Picture is a practical necessity, because failing to do so means I'm almost certain to miss opportunities and, just as bad, will not be prepared for conditions in the market that influence my success.

wide angles

In an appropriate year-end sort of way, this column extends my recent comments about trade shows ("A Season for Renewal," October 2006, page 10). As I mentioned then, there's much "business intelligence" to be gained by at-

Understanding the Big Picture is a practical necessity, because failing to do so means I'm almost certain to miss opportunities and will not be prepared for conditions in the market that influence my success.

tending industry gatherings – they take us out of our routines, expose us to new ideas and products and, most important of all, place us in the company of our colleagues. That's all valuable.

There is, however, more to be considered. We all know that our world is extraordinarily complicated and that events take place that are well beyond our control: We can't do much about higher gas prices, the costs of worker's compensation insurance or slow-downs in the housing and construction market. What we *can* control is how thoroughly we evaluate those factors and position ourselves in response to them.

To illustrate, let's run through what we all know (or should know) has happened around us in recent years. There's no doubt, for example, that watershaping and the overall exterior-design market has boomed since the early 1990s, exploding successively into all sorts of new areas including outdoor cooking and dining areas, landscape and exterior lighting, interactive waterfeatures, fire effects, outdoor sound systems and much, much more.

Those of us who have embraced those trends as part of our Big Picture and moved beyond the water's edge have done well. By contrast, those who haven't broadened their scope have either stayed in the same place or perhaps lost ground in the marketplace.

Even in prosperous times, there's peril in not thinking on a broader level. But when times get tougher, a heightened level of situational awareness may be the key to securing ongoing success – or surviving.

I inserted the word *surviving* there for a reason: Many of you are certainly aware that there are ominous signs of a major slowdown

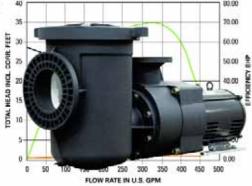


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in the housing market, and it's my observation that a great many of you have never worked your way through down markets. After all, it's been about 15 years since the last time the housing market tanked, and the fact that it's happening again to varying degrees around the country and across all levels should not come as a surprise to anyone.

Trouble is, many watershapers weren't running their own businesses 15 years ago, so they lack a visceral appreciation for what such a downturn really means.

rougher waters

Speaking for myself, I've rolled through tough times in the past, and on those occasions when I was running much larger companies than I'm running now, cyclical economic ebbs and flows caused a fair measure of stress.

Ultimately, what saw me through was the conscious adjusting of my approach to business in response to what I saw around me. Had I left my head in the sand and chosen to only focus on the small picture within my companies' walls, I'm certain I wouldn't be writing this column now.

On a couple occasions in the past, I've written about the concept of the "front-runner fee" – that is, the cost of the learning curve that comes with doing things that are innovative and out of the box. Some of us choose to make these investments in our future, while others are happy to sit back and emulate what trend-setters are doing.

The frontrunners may lead more exciting lives, but there's truly nothing wrong with following behind so long as you pay attention to what's ahead. In addition to those two classes of business owners, however, there are those who stay put no matter what happens. These folks are left to pay (for want of a better term) a "backrunner's fee" — and there's absolutely no upside or true benefit to that cost.

Let's get specific: We all know that the housing-construction market is slowing down and that it's going to put pressure on watershaping from the supplier level all the way through to subcontractors and service firms.

My own experience in tight times has taught me in no uncertain terms that when the overall market cools, the middle ranges and especially the lower end of the market are particularly vulnerable, while the upper-middle and high ends are far more stable. Defining the value of that stability has been an undercurrent in this magazine from the very beginning: Indeed, we've heard countless voices extol the virtues of moving toward custom, higher-end work largely because people with money will still have it when the economy drops a stitch – and they'll still be interested in spending it.

Those of you who have moved in that direction and absorbed all the principles of design, engineering and construction that are involved in operating at the high end are going to be in a far better position during the months and maybe years to





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come than are those who have focused on digging as many holes in the ground as possible. That's not to say there won't be quality-oriented, midrange companies that will thrive, but with trends rolling as they are now, there's no doubt that a great many volume-oriented firms will be assessed the back-runner fee – the only question being how deeply it will cut.

over there

The Big Picture, however, is much more complex than the low-end/high-end phenomenon I've just defined: Life isn't that simple.

To see more of what's going on, you need to address some key questions: Who will be leading the way in times to come? What will make for success down the

road? What are the possible pitfalls? Where are opportunities likely to emerge? Finally and most important, how can my business make the most of the situation?

Helpfully, there are resources at your disposal that can guide you to some of the answers you need, including the aforementioned attendance at trade shows. There's also paying attention to the news and, perhaps most valuable, watching what recognized industry leaders are doing. But nobody will spoon-feed this information to anyone: It's up to each and every one of us to explore this territory on our own.

Personally, my partial focus on work overseas makes it valuable (and natural) for me to consider what's going on internationally.

It's no secret that what happens beyond our borders can have a huge influence on watershaping here: All it takes is remembering that vanishing-edge pools hit the scene in France big time *well* before they started appearing all over the United States — and that those here who embraced the vanishing edge years ago were better positioned to ride that wave than were those who didn't.

That's just one example, and it's safe to assume that additional features, techniques, equipment and aesthetic approaches emerging in Asia, Europe and Australia right now will become part of our world in a relatively short time. As a self-proclaimed frontrunner, I want to know what those things are and begin preparing myself so that when my clients start asking questions, I'll be ready with answers.

At this writing, I'm preparing for a big trip to Germany to meet with leaders of Europe's watershaping trade organizations. I'll be representing Genesis 3 with the hope we can establish some sort of international conference, summit or forum for the exchange of ideas on some level. What will happen, I don't know. My guess is that we'll confirm that our European counterparts are ahead of us in terms of working in environmentally sensitive ways – but who knows what else I might learn?

It's likely you'll hear more about this trip in a future column, but I bring it up here to point out that unless one makes the effort – and sometimes a *dramatic* effort requiring travel – there's a world



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aqua culture

swirling all around us and it's easy to miss something important when you keep your focus purely on the home front.

what we don't know

Of course, you don't have to be an avid follower of current events or international affairs to understand some basic things about the world at large these days.

Yes, a growing fear of leaving home has prompted some consumers to invest in "backyard vacation" destinations, a trend that has helped our businesses a good bit in recent years. Yes, we all know that the planet has its scary parts, but that's no reason to put on blinders, avoid contact or suppress curiosity.

In fact, I believe that fear of the outside

world among professionals will only retard our growth at home, mostly because people in Europe and Asia are sponges when it comes to what's happening here and embrace all things international in ways we Americans seldom do. The simple existence of the vanishing-edge phenomenon is motivation enough for me and my partners at Genesis 3 to want to engage the Europeans in dialogue, and I think it's up to us as individuals and as an industry to get involved as best we can with the international watershaping community.

As mentioned above, there's a risk in remaining ignorant – the problem being that you don't know what you don't know until you commit to various types of personal and professional exploration of the world around you.

As curious and engaged as I try to be, there are things that surprise me – including a recent inquiry about the prospect of designing private mineral spas for a new resort. I've never given that particular concept any thought at all, but you can bet I'll be spending a good bit of time getting engaged with the idea in the next little while. Will mineral spas be the next vanishing edge? I don't have the slightest idea, but I'll be ready.

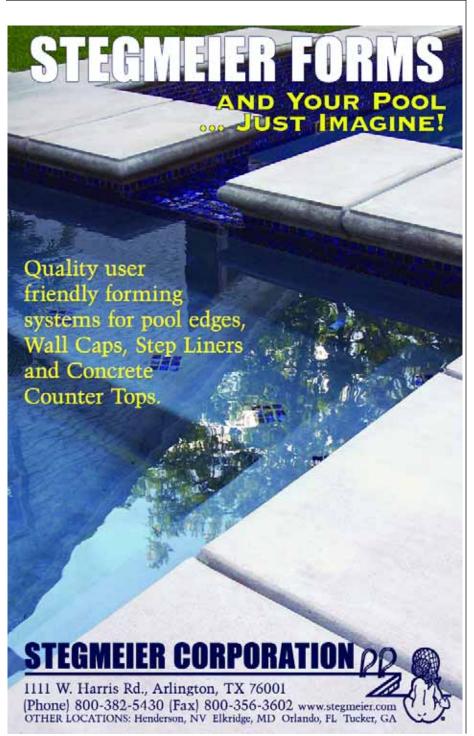
Truth be told, of course, it's unlikely mineral spas will be the next Big Thing and as a result they are unlikely to transform my business. It *might* happen, but there are some trends and market areas that are *far* more readily identifiable as hugely important, including the one with which I'll conclude this discussion – that is, the healthfulness of aquatic exercise and therapy.

In this issue, *WaterShapes*' editor Eric Herman offers us all an important article on that subject, and it's something I think should be at the forefront of our broader thinking in the months and years to come. In fact, the preview he gave me is so significant, so compelling that it might be just the concept that guides us through economic uncertainty to brighter times ahead.

shining prospects

Consider the fact that our population is aging and that Baby Boomers as a category are more health and appearance conscious than any other generation that went before them.

As these Boomers (myself included) col-



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lectively get older, it's easy to see that the benefits of swimming, aquatic exercise and hydrotherapy are going to become increasingly powerful enticements for those considering some type of watershape in which those activities might occur.

As an industry, we've begun doing a much better job of embracing this overall issue, and I'd like to give big-time kudos to the National Swimming Pool Foundation and that organization's chairman, Tom Lachoki, for advancing and documenting our knowledge of these issues with current research and the dissemination of kev information we all can use.

As the market tightens, I believe the industry should aggressively embrace information pertinent to the health benefits of swimming pools and spas and shout the news from rooftops around the globe. If I had to back a horse in the race through the downturn and toward a brighter future, I'd jump right on the healthfulness of our products: It may be second to none when it comes to securing projects (or not).

That's a Big Picture issue, certainly, but it's not necessarily the only thing out there that we need to know. Perhaps something will emerge with energy efficiency or environmental responsibility or something else I can't anticipate as yet. What I do know is that if I don't keep my eyes and ears open, I'm likely to be a follower rather than a frontrunner – and these days I'm unwilling to risk letting trends move forward without me.

How we think about our world is a personal matter, no question, but we do live in an age when information is king and there are plenty of ways of accessing it. In that environment, there's no excuse for ignorance, no matter how bewitching day-to-day operations may be. W

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



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natural companions

By Stephanie Rose

That's Just Wrong



'm not a big believer in conformity, strict rules and absolutes, but sometimes in my travels I'll come across something that, well, is just wrong. These aren't matters of taste, style, or visual appeal: What I see is just plain wrong!

Whether we classify ourselves as watershapers or landscape professionals, we collaborate with our clients to create spaces that appeal to them both visually and emotionally – environments that fit sets of needs and wants they have conveyed to us. Generally, we will find that there are certain colors that appeal to them, design styles they prefer, budgets they can afford, physical limitations to the site and codes by which they must abide.

For all that, it's our professional responsibility to guide them within those parameters to a design that makes sense to us while following principles of proper installation. Aside from basic issues of visual incongruity that might be carried in clients' preferences, we need to be keenly aware of other ways projects can go off track, whether it's about liability issues, installation practices or (not to be too insulting here) professional common sense.

We need to be keenly aware of ways projects can go off track, whether it's about liability issues, installation practices or professional common sense.

case in point

This thought came to mind recently as I was driving in my neighborhood. (It's amazing, by the way, that I haven't gotten into any accidents as I conduct drive-by evaluations of local handiwork.)

Not far from my house, I spotted a cornerlot landscape that was being reworked, and what was complete at that point was a six-foottall, concrete-block wall that screened the house from the street. It was massive, but not necessarily a bad idea with respect to blocking out traffic noise and giving the homeowners a greater sense of privacy and security. The wall was smooth-troweled and had been painted white.

My first thought is that I would probably have used an off-white to minimize glare and the prominence of the wall, but I moderated that assessment by imagining a beautiful selection of foreground plants with colored foliage and/or flowers that might be arranged in a variety of ways. But that's *not* what I saw in driving by a couple days later (Figure 1, page 20).

Instead, whoever was running the project planted a lawn right up to the wall and completely surrounded it on the street-side edge with a hedge. (In my quick drive-by, I didn't determine whether it was a Privet or a Ficus hedge, but the latter would have been a terrible choice so close to a freestanding wall.)

I'm sorry, but try as I might, I couldn't come up with a redeeming rationale for these choices. The main reasons this design is flat-out wrong flow from both aesthetics and maintenance: On the one hand, that nice lawn will become invisible once the hedge grows. On the other, the only way to trim the lawn even now is to pass a mower *over the hedge*! Just plain wrong.

So now the bright, white wall serves only to



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separate the private from the public area of the property: It's not a backdrop that enhances a tasteful planting; rather, it is a barrier that stands out like a sore thumb, pure and simple.

Forgive me for sounding so passionate about just how wrong this is: These are the types of errors in judgment that give landshapers a bad name – and the same holds true in the realm of watershapers as well. In the case of this wall and the ridiculous planting, even if it were a case of the client being interested in saving money, all the landshaper had to do was reverse the arrangement, placing the hedge against the wall and the lawn in front.

searching for reasons

So why would anyone do this? In this case, I fix blame completely on the landshaper, and I'm certain most of you can think of analogous follies you've seen perpetrated by watershapers who just can't get proportions right or who overreach

Figure 1: A lawn surrounded completely by a hedge is hardly the way to go. Who will see the lawn once the hedge fills in, and how will anyone get a lawnmower in there to keep it neat and tidy? The fault in such cases rests with designers and/or installers rather than with the homeowners who entrusted the tasks to them.





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their abilities and make gross errors when installing water effects.

Revisiting our list of responsibilities – one shared by landshapers and water-shapers alike – it's our job to take all of a client's wants and needs and roll them into a design that works. Cutting corners to fit a budget or doing things you don't understand or haven't learned to do are

unacceptable and hurt not only clients and your business but also the industry as a whole.

It's not the *client's* job to figure out why this wall/lawn/hedge arrangement does not work. It's the *professional's* job, and what seems to be missing in too many cases is application of a spark of common sense. (In this particular case, I'm hop-

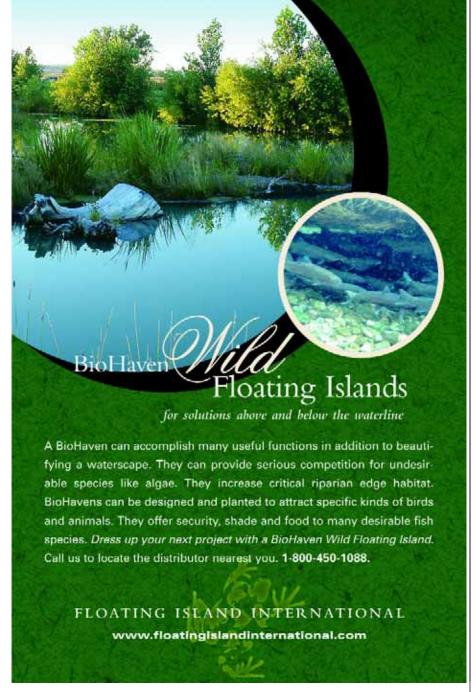
ing a *bulldozer* is what's applied to this project sometime soon.)

Trouble is, the eyesore I've been discussing here is hardly an isolated incident. While walking my dog the other day, for example, I passed a lawn in which the pop-up sprinkler heads are elevated about six to eight inches above the soil level (Figure 2). Most homeowners wouldn't think twice about this – until, of course, a pedestrian trips, falls and calls an attorney.

The landshaper should have known better, but this sort of obvious tripping hazard is one of the most common mistakes I see in installations. Whether it stems from laziness on the part of an installer who doesn't want to dig an adequate trench or simple ignorance of proper installation practices, anyone can see that raising sprinkler heads this close to a heavily trafficked sidewalk is a recipe for disaster.

Again, I don't know how this came to be, but whatever the "reason," it simply shouldn't have been done this way.

Or take the sad driveway I spotted another short distance from my house (Figure 3 on page 24): In this instance, I would surmise that the client wanted to







save money and did so by finding a slate that looked right but was completely incapable of handling the weight of cars. As a result, the slate started breaking up immediately after installation – no doubt the first time the homeowners rolled over it in one of their cars.

I'm sure they look at this mess every day and blame the installer. Yes, the installer has some culpability, but had it been my project, I would have informed the clients that the chosen stone was wholly inadequate and would break the first time someone drove over it. Why this conversation didn't happen is anyone's guess.

getting it right

I know I'm not alone in seeing these situations, and I know for a fact that cases like these aren't limited to landscapes. My point is, any good watershaper or landshaper looks around and evaluates his or her environment, constantly on the lookout for better ways to do things – but let's face it, we're also vicariously fascinated by failures.

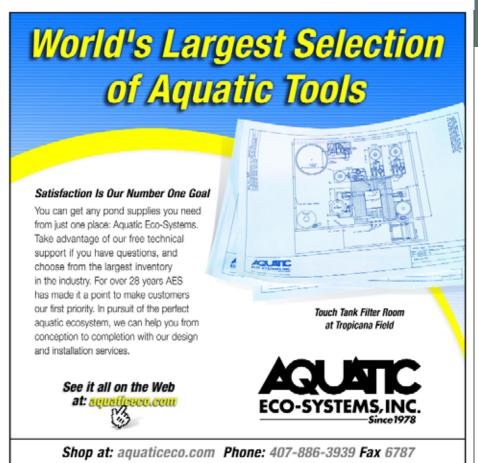
The fact that we see so many errors tells me that there are plenty of so-called "professionals" out there who are either un-



Figure 2: Protruding sprinkler heads are an obvious trip hazard and an open invitation to vandalism or simple accidental damage. I wonder what the installer was thinking in arranging things this way.



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scrupulous or incompetent. But it also tells me that there's a poorly educated client base shopping for price and the almighty "bargain" rather than quality. In no case is poor performance acceptable, but it is perpetuated by the fact that clients don't know what to expect – which leaves them open to being victimized by the unscrupulous and the incompetent.

Client education is the key. Those who buy our services need to understand what quality watershape and landscape design and installation mean, including issues of liability and the long-term performance of their investments. The surest way to convey this information is to build it into our initial client meetings — a chance for the good players in the marketplace to arm clients with questions they need to ask to ensure that everyone they speak with thereafter is playing on a level field.

If budget is an issue, it's our job to develop a design that works within that constraint. And if all else fails, you need to be



able to tell clients that you cannot deliver on the design they want for the amount they're willing to spend. I've found that using this direct, honest approach has a way of nudging the budget to a higher, more workable level. I've also found that clients have little or no idea what landscapes or watershapes cost – a point that makes education about what "quality" means all the more important.

On the flip side, landshapers and watershapers need to take more responsibility for their designs and installations. There are lots of qualified designers and contractors out there who already deliver on their promises, but it's important that *all* of us aspire to operate with higher standards and are willing to walk away from situations that will show us and our industries in a bad light. When we lower our standards to meet a client's wishes, we *all* lose.

Still, I firmly believe we need to spend more time educating people that a qual-

Figure 3: The stone selected to accent this driveway may have looked good for a couple days, but it was just wrong: The thin 'pavers' were too fragile to hold up under the weight of any vehicular traffic—something a competent designer or contractor would have known.

ity landscape or watershape installation does not have to be expensive to be beautiful and that within almost every budget is a way to do things properly while simultaneously meeting a client's basic expectations. In that light, there's absolutely no excuse for poor workmanship, sloppy designs, upset clients – or unmowable lawns.

Stephanie Rose runs Stephanie Rose Landscape Design in Encino, Calif. A specialist in residential garden design, her projects often include collaboration with custom pool builders. Stephanie is also Editor of LandShapes magazine and an instructor on landscape design for the Genesis 3 Design Group. If you have a specific question about landscaping (or simply want to exchange ideas), e-mail her at sroseld@earthlink.net.



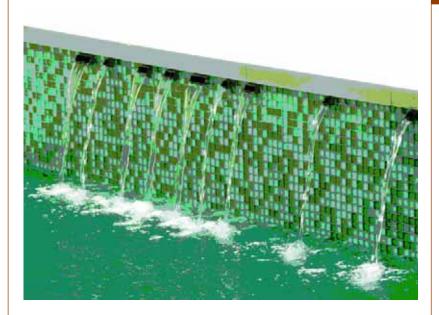


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tisherman: detail 70

By David Tisherman

Wall Wonders



legance, romance, subtlety, tranquility: All these words speak to a potential of watershaping that is realized far too infrequently.

If ever there were a common detail that typifies these missed opportunities, I'd have to give the prize to the standard waterfall/waterwall effects seen on too many pools and other watershapes these days. I can think of nothing less compelling than the typical sheet of water spilling down the face of a wall or in front of some other structure on its way into a pool or spa. This look is not only overused, but *mis*used as well.

This happens, I think, because too many watershapers approach these flows as easy bells or whistles to add onto projects (with nice profit margins attached) rather than as fundamental design decisions – decisions that in large measure will dictate the way these watershapes will be perceived forever by homeowners and their guests.

I'd argue that this indiscriminate, bottom-line-oriented approach is a negative impulse that tends to result in work that is often uninspired, sometimes awful and almost always lacking in creative spark. It's a shortcoming in vision we collectively need to address.

proportional effects

What you usually see in the field are knife-edge weirs that are simply too big relative to the structures they are used to adorn.

Water in motion draws far more attention than does a motionless wall, so

If ever there were a common detail that typifies missed opportunities, I'd have to give the prize to the standard waterfall/waterwall effects seen on too many pools and other watershapes these days.

when you dedicate a large percentage of, say, a raised bond beam to a three-foot-wide weir pouring a sheet of water, *all you see* is the water because it's out of proportion to the rest of the structure. You can use the most beautiful finish materials in the world, but all anyone will ever perceive is the outsized water effect – which means the client wasted money on whatever tile, stone or other finish is going unnoticed behind and around the sheeting water.

In addition to problems of proportion, there are also issues of balance related to the fact that, to many people, "balance" means "symmetry." In design terms, the odd thing is that setting things up symmetrically is often the best way to create *imbalance* in a composition. In knowledgeable hands, that can work effectively, but for the most part it is a short path to visual conflicts.

As a rule, designing with asymmetrical flows of water that are small relative to the size of a hardscape structure will create a more balanced composition and represents a better use of the visual power of water in motion.

A related problem is that too many water-shapers position sheeting water effects too high above the water's surface. Depending on the flow rate, when water falls more than two or three feet, the sheet will start breaking up, creating a ragged look at the bottom. Moreover, as it falls, the sheet tends to narrow relative to the weir above in what I call the "tubular effect" (if any of you know what this should be called, please let me know!). Both these behaviors result in a sheeting water effect that isn't really "sheeting" and never looks its best.

Confronted by this narrowing, broken appearance, lots of watershapers try to compensate by increasing flow over the weir. Yes, that might address a shortcoming in the appearance of the waterfall, but it has the greater effect of throwing things even more out of proportion. To me, there's nothing at-



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tisherman: detail 70

tractive about a three-foot-tall wall that has a wide, knife-edge waterfall spewing water out two feet onto the surface of a pool or spa. It's *horribly* out of balance.

It also represents a broader-scale assault on the clients' senses: Not only are the visuals bad, but the flow of water that comes out of these weirs is so vigorous that, in any small space, it's like standing next to Niagara Falls. The flow stops being soothing background noise and instead is like sitting next to a freeway.

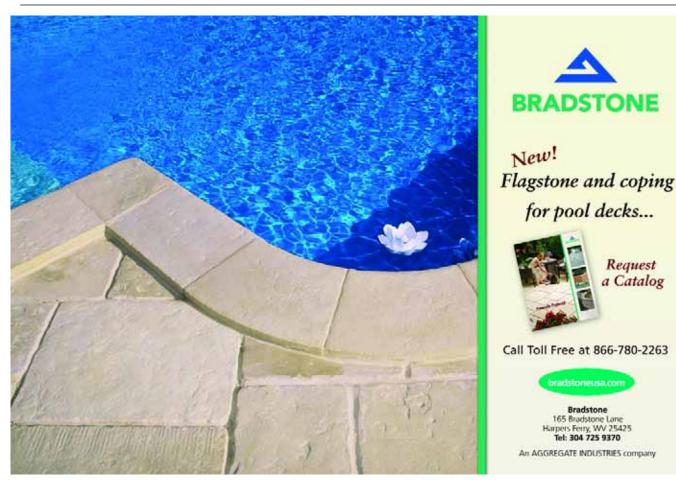
And don't get me started about the ways in which some of these weirs are installed. All too often, they're out of level, which means the flow must be boosted simply to keep one edge or the other from running dry.

industry inspired

It's bad enough that many projects suffer from one or two of these design-related problems, but all too often projects run the table with waterfall effects that are complete visual, aural and functional dis-



In my last few columns, I've used this project to exemplify nice ways to handle transitions between materials. This time, I'm calling out the project's asymmetrical line of wall spouts – small flows relative to the hardscape mass that contains them that lend motion to the setting without disrupting the sense of scale or visual balance in the way a sheeting waterfall would.



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tisherman: detail 70

asters. And this isn't just an affliction with low- or mid-range pools: What amazes me is how frequently this cluster of errors afflicts high-end pools and that clients are asked to pay big bucks for what can only be described as aesthetic failures.

The same set of issues applies, of course, to basic spa-dam spillovers and raised spas. In most cases, concerns arise about

proportion, scale, balance and ragged water flow. In too many cases, the errors stick out like sore thumbs — and these aren't dismissible as being "matters of taste": Anyone with eyes can spot functional shortcomings that only serve to bring poor aesthetics into clear focus.

Too often, and especially on lower-end projects, these waterfall effects assault the

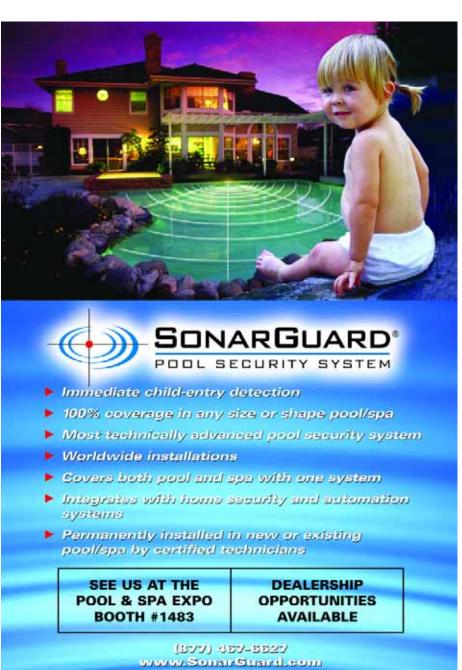
eyes, but they also gush and roar so loudly that you can't hear yourself think. Yes, they help build the bottom line, but at what cost to homeowners and, ultimately, the reputation and future of the watershaping industry?

A couple years back, my detailed observation of these issues led me to develop TishWays – sets of weir components that could be used to achieve consistently better results in spillover design. The



In this application, the wall spouts would be almost invisible if it weren't for the shadows they cast on bright, sunny days. Their main impression is made when the





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system generates small flows of water that replace gushing overflows, and I've been pleased to see other designers and builders adopt and apply the system (available from Oreq of Temecula, Calif.) in their projects. It's flattering, of course, but it also gives me hope that some of what I've been saying about design in these columns is having some effect.

Soon, I will be introducing a second, related system, as yet unnamed, that will

serve the same sort of purpose for wall rather than spillway applications – let's call them WallSpouts for now.

The idea is simple: Instead of total reliance on often-clunky sheets of water, designers will have the option of using small weir components that can be installed in just about any vertical surface to create small water flows that will almost always

be much more to scale and proportion. This may seem basic, but it's a plain fact that watershapers can use any tools that will help them get things right.

I'd love to take full credit for this concept, but this is hardly a new idea. Some of master architect Ricardo Legorreta's massive walls are highlighted by flows of water from large, perfectly proportioned



water comes and serves to soften the walls' big visual planes, lend a gentle noise to the yard and bring a sense of motion and energy to the large water surface.





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tisherman: detail 70

spouts, for example. But my main inspiration here is probably the painter Piet Mondrian, whose compositions of white and colored rectilinear shapes in black frames speak volumes about proportion, balanced masses and the creation of compelling visual planes.

master practitioners

The WallSpouts system consists of small boxes to be mounted in walls in any quantity desired – and not necessarily all at the same elevation. Each box provides a small spillway ranging in width from one to three inches. The weirs can be used in endless combinations and patterns across the available wall surface – whatever it takes to achieve visual balance (which, by the way, is usually an *asymmetrical* visual balance).

The mechanics of these WallSpouts is not much different from any other wallmounted weir fixture, involving mostly a plumbing connection to a reservoir and a spillway. One difference is that the new system will include niches for fiberoptic connections that will add subtle night-time lighting effects to the mix.

What makes the weirs most useful is that they're appropriately scaled to the parameters of most pools, spas and waterfeatures. Moreover, the fact that they can be installed in combinations gives the designer the ability to create all sorts of different, balanced looks. The weirs are made out of different materials (brass, copper, ABS, stainless or plated steel) to fit with a given look, and the outside of the box can be covered with any type of finish material (stone, plaster, concrete, tile or stucco).

The weirs are designed to protrude an inch to an inch and a half beyond the wall surface, depending on the finish material and the application, and are meant to be set no more than 18 inches above the water's surface. They are small, so they're barely noticeable when they're not operating.

As seen in the photographs accompanying this text, I like using them as clus-

ters at the bottoms of tall walls. As you can see, they don't make big statements: The effect instead is one of understated elegance – far more artistic and pleasing to me than an oversized plastic box stuck haphazardly in a wall or raised bond beam that spews water into the void in a way that attracts a lion's share of attention.

In all cases, although the moving water is definitely a key aesthetic element, it is not the main feature in the scene. Instead, it's an accent – as it almost always should be.

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

















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WATERSHAPES · DECEMBER 2006



the Greens

Creating watershapes and landscapes that are natural in appearance is always a challenge, says Ken Alperstein of Pinnacle Design, a firm that specializes in high-end projects related to top-flight golf courses. For this project in Shady Canyon, however, the ante was upped considerably by the site's location in an environmentally sensitive coastal canyon in southern California – a design challenge intensified by regulatory scrutiny every step of the way.

By Ken Alperstein



It was a job that forced everyone involved to be on exactly the same page at all times.

The landscapes and watershapes at the Shady Canyon Golf Club in Irvine, Calif., were developed by the Irvine Company as the heart of an upscale residential community. The wilderness area set aside for the course and its immediate surroundings had a subtle, bucolic charm all its own – a character the design team needed to respect in every way as the work progressed.

But there was a huge complicating factor: The site is in a pristine coastal canyon in southern California, complete with dramatic topography, spectacular rock formations and a delicate sageand-grasslands landscape dotted by indigenous Sycamores and Live Oaks. What this left us to do was figure out how to build an 18-hole golf course of great beauty and distinct playability while treading as lightly as possible on a state-protected natural environment.

A light touch was truly essential: To gain permission to build homes, roads, the golf course and its amenities on the site, the Irvine Company had to dedicate huge adjacent acreage as permanent environmental easements that were to provide habitats for multiple species of protected birds, mammals, reptiles, insects and plants.

It was always a challenge, but our success in making things work here in ecologically responsible ways has also become a distinct point of pride.

On the Team

The facility was designed by renowned golf-course architect Tom Fazio, who thrives on incorporating the natural landscape and topography into his work. He had worked previously with the Irvine Company in creating courses at nearby Oak Creek and Pelican Hill. In turn, Fazio had worked with our company, Pinnacle Design of Palm Desert, Calif., on past projects, so all the pieces fit together neatly in a way that eased everyone's progress.

Our role was to design, engineer and oversee installation of 81 acres of planted areas and watershapes related to the golf course. The watershapes included a three-and-a-half-acre lake, a one-acre pond and a stream measuring more than 900 feet in length. We had worked in environmentally sensitive areas before, but to date this project stands out for the degree to which we were required to preserve surrounding habitats.







It's interesting to note that the rigorous approval process didn't extend our timetables dramatically; rather, it simply intensified the context in which we worked. For its part, the Irvine Company had been working on obtaining permits for the entire development (including the golf course) for nine years before we came on the scene. For ours, the designwork and submittal and approval process took us about six months. All the way along, we were considerably aided by the

fact that the Irvine Company was consummately professional at every turn and did all it took to keep the process moving and the regulators satisfied.

Project biologists mapped everything – homes, roads, clubhouse and course – using GPS technology to record *exact* measurements and contours and establish the easements intended to protect the delicate Coastal Sage habitat. All of these maps had to submitted, reviewed, approved and subsequently inspected, of-

The area surrounding the golf course was in pristine condition when we arrived, complete with classic coastal landforms, vegetation and wildlife, and our aim was to make our work mesh with the natural environs in every way possible. We started by placing water where it belonged – at low, collecting points on the terrain – and mapped out the array of displaced plants so we could restore disturbed areas to near-original condition.





ten by multiple agencies including city and county building departments as well as state environmental agencies. The development was also approved by the Audubon Society – a step that wasn't required but that lent credibility to the preservation effort.

Everyone involved appreciated the fact that the area in which we were working was environmentally sensitive as well as tremendously beautiful and that preserving as much open space as possible was highly desirable. As mentioned above, the area serves as habitat for a number of protected species – including the gnatcatcher, a bird that has figured prominently in restricting developments in many other areas of the state.

The Natural Look

Two biologists were on hand at all times, checking and rechecking easement boundaries, dictating when certain areas could be cleared and asking us in a few cases to sequence our work to accommodate the mating and migration habits of gnatcatchers, raptors and other species. In some cases, they had us work on a portion of a hole at a time because the access in and out would've trampled too much ground; in others, they told us when we could trim foliage to avoid disrupting the nesting patterns of hawks and other raptors. They also steered us away from introducing certain invasive plants and guided us in removing species that had previously invaded the habitat.

The purely preservationist side of the project dovetailed neatly with our design work.

Our real masters throughout the process were the birds, mammals and reptiles that had called Shady Canyon home well before this project came to be. A great deal of our satisfaction comes in the fact that they seem to have taken a shine to the ready supply of water in what can be a parched environment, with numerous species of birds taking obvious advantage of the pond and lake along with deer and numerous other species.

The planting areas, for example, are considered "enhanced re-vegetation," meaning that we blended the newly planted areas in seamlessly with the vegetation of the undisturbed land with just a few additions of non-native species for aesthetic purposes. In all cases, of course, these selections had to be reviewed and approved by various city, state and federal agencies.

We worked with a local resource – Tree of Life Nursery (San Juan Capistrano, Calif.) – that specializes in propagating indigenous species. In addition to Sycamores and Live Oaks, we also worked with chaparral species including Monkey Flower, Brittlebush, sage and various grasses.

In a sense, working off the natural landscape in this way took some of the pressure off the landscape-design process in that what we were doing was looking at the natural environment and mimicking the "planting plan" that na-

ture provided. Our aim: Once everything grows in, you won't be able to tell where the existing landscape stops and the re-vegetated areas begin.

As might be expected, the course and its surroundings were graded with exceptional care. We followed original contours wherever possible, but in a couple of areas we imposed new grading that looked just as natural as the original lay of the land. This occurred most often where playing areas abutted the bases of steep slopes: If we had run the edge of the course to the base of the slope, it would've looked unnatural even though the slope itself hadn't been touched.

That naturalistic ethos defined every aspect of the design and installation work – including the watershapes, which also take their cues from nature. In these environs, we find two primary water systems: streams that run during the rainy season, and inland lagoons that form in low-lying areas when the rains come. We



studied these natural features and did everything possible to replicate their looks in our bodies of water.

Water Hazards

Water is used on golf courses for three basic purposes – either as an obstacle in the field of play, as a source of irrigation water or strictly as an aesthetic enhancement. In this case, the watershapes situated in and around the first two holes serve as a way to make a spectacular first impression without creating hazards in the field of play.

In fact, the stream that runs down the left side of the first hole was sited there partly because most players are right handed and are more likely to slice the ball away from the water rather than toward it. It was also strategically placed to draw attention away from the *right* side of the first hole, which is one of the few areas on the course where homes stand in close proximity to the playing area.

The stream flows from headwaters hid-



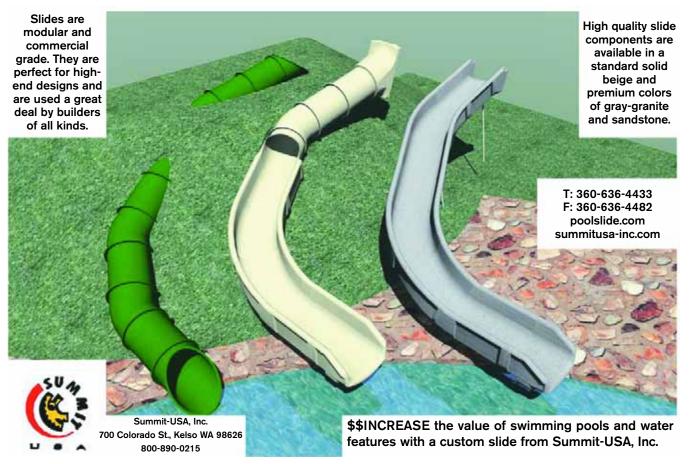


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The large lake plunges to a depth of 20 feet, holds approximately seven million gallons of reclaimed water supplied by a local municipality and is drawn down and replenished as needed to serve the course's irrigation needs. Despite that utilitarian role, we carefully fashioned the edges to give the lake a convincingly 'natural' appearance.



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40 WaterShapes · December 2006



den in an area adjacent to the first green, flowing back to the tee area and into the one-acre pond. The larger lake is located on the second hole, situated in such a way that, from the back-tee area, players have to hit over the water, thus putting the lake in play for the first half of the hole. It holds approximately seven million gallons and supplies water to the course's irrigation system.

There is no filtration system: All the water is reclaimed and is constantly being used for irrigation and then replaced.

A big part of bringing a naturalistic look to these vessels comes simply from locating them in spaces where water might collect naturally. The lake and pond have accordingly been set up in low-lying areas, while the stream passes along a natural gully that runs through the course. (About 50 yards away and running parallel to our stream behind a row of indigenous Sycamores is a natural seasonal stream we used as inspiration.)

The other key to establishing a natural appearance has to do with the edge and shoreline treatments we used. We always put a great deal of effort into these details, and this project is certainly no exception.

All of our ponds, lakes and streams are constructed with 30-mil PVC liners and covered with concrete along the edges. The challenge is creating edges that provide interwoven transitions from the water to the aquatic plants at the edge and

on to the terrestrial plantings. This includes angled edge transitions in which we bring turf and "dry" plantings right up to stands of emergent aquatic plants to give the edge an eroded appearance.

In all areas, we bring the soil over the outside of the concrete edge to make certain no concrete can be seen. And in the event that erosion or stormwater might wash away the covering soil, all of the concrete is finished with cobble and spoils that will make it look like exposed dirt until maintenance crews get around to restoring these areas.

Edge Success

We design the aquatic planting beds on all of our lakes and ponds with irregular configurations at the edges. We create small eddies, estuaries and peninsulas where water and plants weave in and out and give the impression that the plants are invading both the shoreline and the water's surface.

We also create a variety of small structural details that hold the soil in place and keep it from sloughing off into the water – a point facilitated by the fact that in most areas our "soil line" stops just below the water's edge, then transitions to a concrete "spoils finish" to a depth of about 36 inches.

The only soil we use within three feet of the water's edge is in the planting beds themselves. This has the dual advantage





The stream cuts a wide path across the land, averaging about 22 feet in width along its 900-foot length. With the pond and lake, clarity wasn't a huge issue, but it was a focus here: We wanted to show off every subsurface detail and every linear foot of edge because the streambed is plainly visible from many angles along its winding course.

of allowing us to intermingle the plants freely between the landscape and water while retarding photosynthesis in the edge areas. Such an approach helps us maintain clearer water at the edge while making the watershapes more serviceable down the line. Beyond the edges, the rest of the liner is covered with 12 inches of earthen material.

The edges are planted primarily with irises, pickerel and various water lilies and rushes. (We avoided cattails and other tulles because, although native to the area, they can be fairly invasive.)

In addition to the liners and concrete, the pond and lake have multiple underwater aerators, and the suction and return points are also all underwater. As mentioned above, there's no filtration on the project. Instead, we generate quality water through ecological balance, recirculation, aeration and overall lake maintenance. And this is perfectly adequate for the application: Most healthy bodies of standing water have moderate levels of turbidity, so we didn't really want the water to be crystal clear and therefore seem part of an artificial system.

As was also mentioned above, the lake is fed by a municipal reclaimed-water source and is drawn down for irrigation. The fill-and-drain system is set up so the level of the lake never fluctuates by more than six inches. There's also an air-gap detail to prevent any backflow from the lake into the city's water system.

The lake reaches a depth of 20 feet, but nowhere does the slope exceed a four-to-one ratio. There's a hidden overflow box that is plumbed to a culvert leading to a nearby natural streambed: In the event of a good, soaking rain, excess water is stored in the lake and subsequently is used for irrigation.

Stream Scene

The lake and pond water have a natural, deep-blue appearance but are not crystal clear, so they required minimal detailing beyond the edges. By contrast, the long streambed plays a high-visibility role, so its underwater landscape is something to which we paid a great deal of attention.

The detailing of a streambed, of course, is always done on site in a mostly improvisational manner, with installers, course

designers and other staff constantly eyeballing views and adjusting configurations of stone material and edging details with natural streambeds in mind. In this case, the effect we sought was of a thick, slow-moving meadow stream meandering along the side of the fairway.

The stream averages about 22 feet in width and goes through seven feet of vertical transitions along its 900-foot length. It's a gentle-seeming flow (of about 2,500 gallons per minute) over a rocky bottom and past highly detailed edges.

The stream's source is a small, upwelling bog hidden from golfers' views around a bend. It *appears* to flow from the large lake

- a simple solution that accommodated our need to separate the two water systems.

The water works its way down through a series of levels marked by small ponds in the heart of the stream. These ponds slow the flow and accentuate vertical drops over carefully placed weirs. When installing these weirs, we went to great pains to vary their looks because it's so rare in nature to see water cascading over knife edges.

What usually happens instead is that the water breaks over cobbles and smaller stones that build up behind bigger stones and then hugs the bigger rocks as it flows to the lower level – and never do these tran-





As is the case with the lake and stream, the pond into which the stream flows isn't intended to make the course more difficult: It's removed far enough from the field of play that it is mainly a decorative presence rather than a hazard – all in keeping with the player-friendly philosophy that guided the course's design.

sitions occur in straight lines perpendicular to the shore! Accordingly, we work these transitions over broad areas, creating a variety of places where water breaks, separates and rejoins the flow.

Our stream edges follow the same sort of pattern we use with ponds and lakes, although the transitional areas are narrower in streams and there are many places where the turf interfaces with the water. To accentuate a natural appearance, we placed two large, fallen sycamore trunks across the streambed — a simple detail that draws a lot of attention, adds a sense of natural drama to the setting and serves as a habitat for turtles that thrive in the area.

We generated sketches of the stream before installation began, but the on-site process was so improvisational and involved so much give-and-take with the golf-course installers that no more than 30 percent of what we drew actually wound up being built. In this arena, we relied heavily on the skills of our water-feature contractor, Cook & Solis Construction (Escondido, Calif.), which did a patient and masterful job.

Time Tested

In keeping with the guiding philosophy of the course architect, the watershapes are primarily decorative and come into play only when a golfer hits an offline shot. That kind, aesthetic spirit certainly inspired our efforts in creating watershapes that delight the eye without factoring too heavily into anyone's game or ruining anyone's good time.

We completed our work in Shady Canyon in the fall of 2001, and it's a delight at this point to visit the place, see how well the plants have grown in and observe at first hand how seamlessly our work flows into the surrounding, undisturbed landscape. This is partly a trib-

ute to our work, but it also requires a tip of the hat to course superintendent David Major, who has seen to the scrupulous maintenance of all planted areas and who has fine-tuned many a detail through the years.

Much has been said in recent times about the need to make massive landscape structures such as golf courses work harmoniously within their larger settings, and Shady Canyon is clearly a place where that need has been met. In this case, our actions along those lines were largely governed by the ecological sensitivity of the area in which we worked, but I prefer to think that the site itself inspired our work and guided the entire project team to a spectacular conclusion.

Shady Canyon Golf Club has a unique, subtle beauty of which all of us are proud – a natural splendor that adds lasting value to the adjacent properties and the entire community.



For centuries, human beings have turned to immersion and exercise in water as a means of healing injuries and illnesses and of promoting both physical and mental health. Researchers have investigated the hows and whys of these phenomena for years, and the benefits seem to be even more remarkable than originally thought. There's still much to learn, but there's already more than enough good news for watershapers to share with motivated clients.

By Eric Herman

Most people know that aquatic exercise and hydrotherapy are good for them.

We know that activity in water can be used to treat and even heal a long list of physical ailments, and it's no secret that aquatic athletes are some of the fittest people on the planet or that physicians of all stripes have long made a habit of touting the benefits of swimming and other forms of water-based recreation for just about everyone.

Yet for all that accepted wisdom, most of us aren't particularly well informed about the specific medical science that backs up the centuries-old belief that being in water is good for the human body. That research has long been available and has been joined in recent years by new studies that relate the experiences of scientists and physicians who are constantly being surprised by the depth and range of specific physical and mental benefits that flow to those who engage in aquatic activity.

This emerging picture points to the profound fact that swimming pools and spas are arguably the healthiest of all products. By extension, those in the watershaping business who are aware of these remarkable, diverse benefits – and communicate them to their clients effectively – are positioned on the crest of a wave that will carry the industry for years to come.

Making the Case

Before we delve into the facts, studies and educated opinions of a pair of the

medical community's top aquatic-health researchers, let's look at the issue of promoting aquatic health and spreading the good word.

In nearly 20 years of observing the pool and spa industry as a writer and editor, I've long perceived that too few of those who would benefit most from greater awareness of the value of swimming, water walking, aquatic aerobics, rehabilitative exercise or hydrotherapy - that is, watershapers and their clients – are fully aware of what's at stake. And the voices of those who do understand these issues have all too often been overwhelmed by those of advocates for other causes.

In fact, much of the dialogue that has permeated the watershaping world in the past two decades has focused on child safe-



Photos ©Dreamstime.com

ty and possible risk factors (biological and otherwise) associated with bodies of water. Let me be clear: Those messages are important, but they are only part of a much bigger, much more positive story.

It is my belief – and the position of more than a few experts in the field – that the people who design, engineer, build and sell swimming pools and spas as well as other bodies of water suitable for swimming and human immersion stand to gain immeasurably by changing the focus of these discussions to the industry-wide importance of building a better understanding of the benefits of immersion and water exercise. Even if this information spreads on no more than a cursory level, we'll all be taking huge steps in the right direction.

Just consider a population of potential clients that is increasing in average age every year: In 2004, according to the U.S. Department of Health's Administration on Aging, the number of Americans 65 years or older numbered 36.3 million, representing 12.4 percent of the population. By 2030, that number will increase to 71.5 million – more than 20 percent of the projected population.

We also know that the Baby Boomer generation that embodies that growth is arguably the most health- and lifestyle-conscious group of people the world has ever seen. They spend more on health care, plastic surgery, working out and vacationing than any previous generation, bar none.

It simply stands to reason – and this should surprise none of us – that as this

group collectively ages, many will seek ways both to heal their physical ailments and improve their general health. When you couple those trends with the benefits afforded by aquatic exercise and hydrotherapy, it's clear that watershapers are in a position to provide exactly what many of these clients desire most: *a healthier life*.

Aquatic Miracles

Dr. Joel M. Stager has spent the past several years conducting a range of studies on the relationship between swimming and aging. What he's found is nothing short of amazing.

"When you look at all the standard physiological markers associated with the aging process, we see that every one of

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Healthy Resources

Known most widely within the pool and spa industry as an educational resource, the National Swimming Pool Foundation is about more these days than Certified Pool Operator's courses. In fact, it has become the industry's leading advocate for research examining and validating the benefits of aquatic exercise and hydrotherapy.

This past September, for example, NSPF sponsored the third annual World Aquatic Health Conference in Austin, Texas, with a program including presentations by leading experts on the specific medical science at the heart of what is known about aquatic health.

Those interested in seeing what happened at the conference – including presentations by Drs. Becker and Stager whose work is a huge component of the accompanying article – can do so by logging onto *www.eproacademy.org* and registering to receive seminar access codes. (These presentations will be available on the Internet through March 31, 2007.)

In 2005, NSPF extended a grant to Dr. Becker in the amount of \$247,000 – the largest single grant ever dedicated to a study of aquatic health benefits. NSPF has also recently agreed to match donations from 12 hot tub-industry organizations to fund a two-year study by Dr. Becker of the effects of hot-water immersion on the cardiovascular system, respiratory system, brain and more.

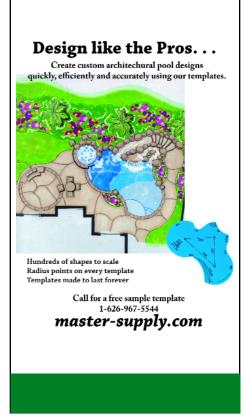
To communicate these results to the greater health community, NSPF will launch the *International Journal of Aquatic Research and Education* (IJARE) in 2007.

To learn more about NSPF, contact its chief executive officer, Thomas Lachocki, by phone at 719-540-9119, via e-mail at *media@nspf.org* or through NSPF's web site, *www.nspf.org*.

– E.H.







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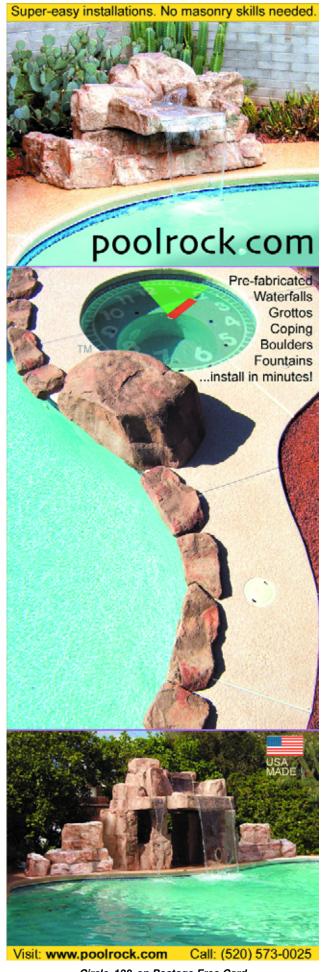
Compared to runners, swimmers are seldom if ever injured. In fact, the vast majority of people have never experienced any kind of injury at all related to their time in the pool.

> them is slowed dramatically in people who swim regularly," says Dr. Stager, a researcher at the University of Indiana. "Of course those differences vary based on a number of factors, but the science is conclusive: Exercising in water slows down the aging process, and often quite dramatically - by upwards of 20 percent in some cases. You almost cannot overstate the benefits of exercising in water."

> Indeed, the research Dr. Stager cites points to a range of benefits across the full spectrum of health.

> "Not only does swimming slow down the aging process in terms of respiration, muscle mass, bone density, cardiovascular activity and neurological function," he says, "but there's also evidence to suggest that it increases mental health and even spiritual and social health. Fact is, swimmers lead happier, healthier lives than those who don't get in the water."

> Dr. Stager notes that his research has focused on master swimmers – that is, people who have spent years, decades in some cases, swimming at least five hours each week. But the data are so



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conclusive and dramatic that he argues the benefits will flow to *anyone* who swims, even for much shorter periods of time.

"We wanted to study groups of people in which we would likely see the most dramatic benefits," he explains. "But we've also seen that when anyone goes from not swimming at all to swimming, say, a couple of times a week for a half hour at a stretch, the health benefits those people experience are extremely dramatic.

"For someone who already swims five hours a week," he says, "adding an extra hour doesn't mean nearly as much as it does for someone who hasn't been doing any kind of exercise at all (or very little). When you look at the benefits from the perspective of routine swimmers, it's fair to say that it's as close to a genuine fountain of youth as exists in the real world."

Not only that, he says, but exercise in water offers huge advantages over land-based forms of activity.

Fountains of Youth

"When we look at swimmers compared to runners, for example, we see consistently that people who swim tend to do so for longer periods throughout their lives, and they do so without injury," says Dr. Stager. "Statistic vary, but runners typically spend significant portions of their lives recovering from various injuries they incur while running."

"By contrast," he adds, "swimmers are seldom if ever injured. In fact, the vast majority of people we've studied have never experienced any kind of injury *at all* related to their time in the pool."

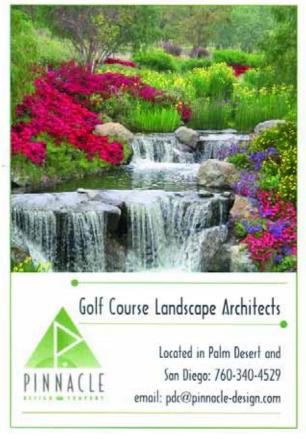
If you consider the fact that swimming provides even resistance and a workout for the entire body, the case gets even stronger: "Just about every part of the human body benefits from swimming," he says. "It improves cardiovascular health as well as muscle tone and overall flexibility. There's simply no other exercise like it – the only activity we know of where you can say that if that's

With swimming and other able to meet the challend









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r forms of aquatic activity, people will be happier, healthier and better jes they encounter in their lives.





all you do for exercise, you can be almost perfectly fit."

And the benefits of water are not reserved for those who swim laps, says Dr. Bruce E. Becker, medical director at St. Luke's Rehabilitation Institute in Spokane, Wash., and a clinical professor at the Department of Rehabilitation Medicine at the University of Washington's School of Medicine.

For more than 30 years, Dr. Becker has studied the effects of a range of aquatic activities among athletes as well as those recovering from injuries and other physical ailments. "What many people don't realize is that simply by sitting in water up to your neck, you experience huge benefits.

"When immersed in water, for example, the volume of blood in your chest cavity and in your heart dramatically increases. This is due," he says, "to the hydrostatic pressure on your body and the effects of being in a buoyant state: Your heart's ability to pump blood goes up, while at the same time your heart rate goes down. Your cardiovascular system becomes far more efficient, and that affects just about *every* function of the human body."

According to Dr. Becker, central blood volume increases by nearly 60 percent and cardiac blood volume and output rise by nearly 25 percent – all while the heart rate drops by approximately 15 percent. "The ultimate purpose of the heart as an organ is to pump blood in response to physiologic demand, so its best measure of performance is volume of blood pumped per unit of time," he observes. "Submersion to the neck increases cardiac output by more than 30 percent in a sedentary individual. The implications of that single fact are so broad that medical science has not caught up with them."

Dr. Becker and other researchers report that similarly dramatic benefits of simple immersion extend to the pulmonary, musculoskeletal, renal and endocrine systems. "There's a great deal of research that remains to be done," he notes, "but it's fair to say that the science is in at this point: Immersion in water produces a range of effects that are dramatically and uniformly beneficial."

In Times of Healing

One of the most dramatic aspects of aquatic health is that it applies across the board, from the most fit and ablebodied of people to those with some of the most severe physical issues. There are literally thousand of case histories and testimonials of people who've recovered from serious physical problems by working out in water, and almost uniformly the stories such people tell qualify as miraculous.

Consider Cindy Carter of Laguna Beach, Calif., a longtime sufferer with a variety of physical ailments stemming from a congenital immune-system deficiency: Among her many daily trials was a bone condition that resulted in the replacement of both of her elbows and knees as well as a shoulder and a hip. After years of surgery, her prognosis for regaining full motion throughout her body was bleak at best.

"My doctors told me that I'd never have anywhere near a full range of motion throughout my body and that I'd likely be confined to a wheelchair at some point," she says. "My condition was such that nearly every joint in my body was compromised – those that were replaced as well as those that weren't.

"Several years ago, an orthopedist recommended that I take up aquatic exercise as part of my physical therapy. It took years in the pool," she says, "but today, I have complete range of motion everywhere. I comfortably do yoga and pretty much any other form of exercise.

"If it wasn't for aquatic exercise," Carter concludes, "my life would be something very different than it is now. I believe I owe my health to exercising in water."

The range of conditions that are effectively treated with similar results is remarkably all-encompassing: Ankle, hip and knee injuries, spinal injuries, neurological disorders, arthritis, all manner of sports injuries and most types of congenital disabilities can all be treated with some form or other of water exercise.

"What we know about the ways in which aquatic exercise and therapy benefits the spectrum of physical conditions and disabilities is limited only by the research that's been done to date,"



observes Dr. Becker. "Every time we look at a new issue with respect to aquatic exercise, immersion or hydrotherapy, we find the same thing: The benefits are greater and more profound than we would've imagined.

"Yes," he says, "the regimen and type of treatment must be specific to a person's particular condition, but we've yet to come anywhere near finding the limits of what can be done in a pool or spa."

Broader Benefits

The range of health benefits is so broad that the implications extend to the society in addition to the individuals who directly benefit from hopping into the water.

"In the studies we've done with master swimmers," reports Dr. Stager, "we've found a key distinction between fitness and wellness: *Fitness* is something that is easily measured and, obviously, swimming and other forms of aquatic exercise have incalculable benefits. *Wellness* is a more subjective issue, but one that



We've yet to come anywhere near finding the limits of what can be done in a pool or spa.

is equally affected by exercise – if not more so.

"Consider that our research shows that people who exercise in water tend to be sick far less and miss work far less often than those who don't. Their health costs plummet," he says, "and their mental acuity, energy and productivity almost always increase. Imagine how insurance companies and employers would respond to an activity that might reduce absenteeism by 15 to 20 percent – and that's a conservative estimate – or might reduce health costs by the same factor. I contend we'd have companies installing pools and requiring employees to get in the water."

Adds Dr. Becker, "You'll stay healthier when you're well and almost always recover more quickly when you're sick or injured. With swimming and other forms of aquatic activity, people will be happier, healthier and better able to meet the challenges they encounter in their lives.

"There simply is no downside to be

found in this discussion anywhere," he says. "We'll be less dependent on drugs and more self-sufficient in maintaining increased levels of wellness across the boards.

"In this country," he adds, "our therapeutic approach has been to respond to conditions after they occur. Focusing on aquatic exercise and therapy encompasses a paradigm shift in which we get ahead of problems in a preventative context. If as a culture we were to embrace that approach, the benefits would be remarkable, even transforming."

The enthusiastic comments of leading experts such as Drs. Becker and Stager are not the least bit unusual: In gathering material for this article, I reviewed information from a wide range of sources and found similarly bright conclusions at every turn: There indeed may be no limit to the benefits of exercising and relaxing in water.

If that's in any way a valid statement – and I see no reason to doubt it – the time has certainly come to let prospective owners of watershapes know all about it.

Taking a Stand

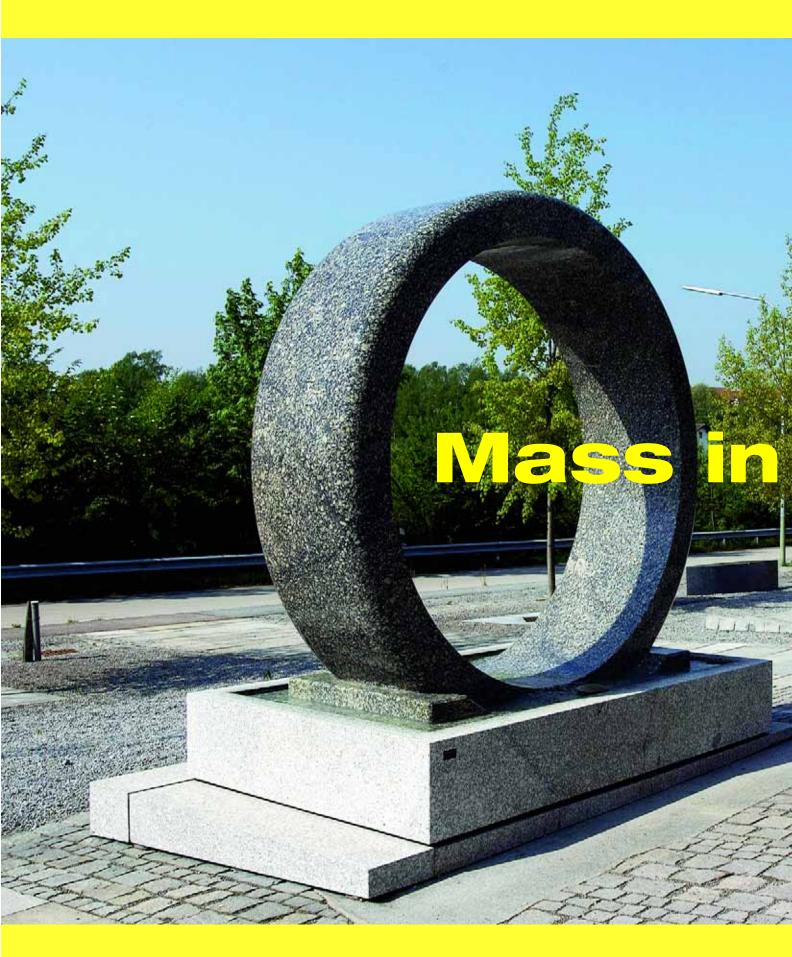
Through the years, we at *WaterShapes* have printed a number of features in which *clients* have challenged designers or builders to come up with a watershape that meets specific health-related needs, but rare have been the cases in which such concepts and details have reached the client at the *water-shaper's* initiative.

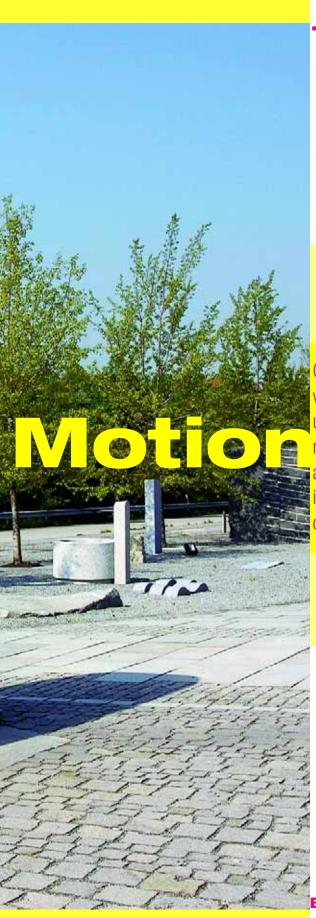
That is something that needs to change, and the sooner, the better. We'll do our part in the months and years to come by approaching these issues from a number of supportive angles, but the true weight of conveying messages about the health benefits of pools and spas rests on the shoulders of those who design and sell these watershapes.

Helpfully, organizations such as the National Swimming Pool Foundation, the National Institute of Health and more are churning out treasure troves of information pertaining to specific conditions and the ways in which immersion or exercise can be beneficial. There's much more research to be done, but what's already available is incredibly impressive, persuasive and valuable.

It's our position at *WaterShapes* that the benefits of aquatic exercise and hydrotherapy should be familiar to everyone at every level of the industry – something we all can (and should) be promoting at every turn.

-E.H.





There's something intriguing about heavy objects that float on water. In our daily lives, we often see traditional fountains made with utterly huge pieces of stone, but as gorgeous and compelling as those systems can be, it's the ones in which that stone moves that are the most fascinating of all.

The very idea that you can move a massive piece of granite with just the slightest touch of a hand is simply mesmerizing. These floating objects become centerpieces immediately – a fact that has led to their proliferation in plazas and other public spaces around the world in recent years.

Kusser FountainWorks of Tampa, Fla., designs and builds both traditional and floating-object fountains. We're a division of Kusser Aicha Granitwerke, a family-owned and -operated firm based in Aicha vorm Wald, Germany, that for more than 100 years has manufactured a range of granite products, many of them quarried in Bavaria, a region long famous for beautiful stone.

Through the years, the company has produced spectac-

Granite and water have long been combined to create spectacular visual compositions — artistic statements with the ability to speak to us across the centuries. Today, says fountain designer Jeff Castle, modern technology has kicked these materials to all-new levels of aesthetic performance, and a new breed of fountains has emerged in which various precision-crafted granite objects float on thin sheets of water and move as if they were weightless.

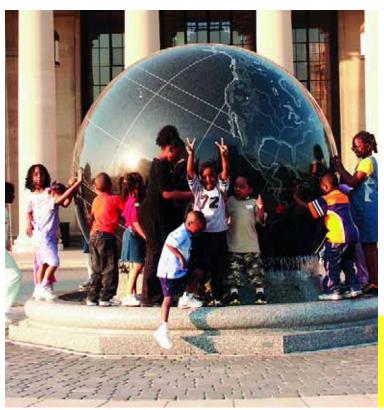
> ular granite objects of all shapes and sizes, but its most prominent claim to fame among watershapers is having perfected the floating-ball-fountain concept in the early 1970s: This innovation unleashed a genre that has since become popular around the world and was the subject of a WaterShapes article in January 2006.

> Precision engineering is the heart of our company's success and has led to the development of new machinery and advanced production techniques. These advancements in manufacturing make it possible to create massive objects with dimensional tolerances that are stunningly slight. And what we discovered along the way is that more than spheres can be made to float.

HARD MOVES

Through the years, we've been challenged by various architects, landscape architects, builders and property owners to create ever more interesting systems. These requests have had the effect of pushing us to look beyond spheres and to consider possibilities with granite discs, wheels and By Jeff Castle rings. In many cases, the firm has developed whole man-

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ufacturing processes and technologies to produce just a single system, knowing that advancing its capabilities in this way would offer the potential down the road for devising increasingly interesting systems.

Paired with that forward-looking attitude about technology is the timelessness of granite, a material that lends a sense of permanence to a project that is nearly absent in our modern world. It's a perfect blend in our company, and we know that what we produce and the precision with which we produce it will result in an object or system that may last for centuries.

For us in the fountain division and, we trust, for our clients and those who enjoy our work, just seeing spheres, wheels or disks that weigh tons and have been machined into shapes within fractions of millimeters creates an additional sense of wonder. And the fact that they float on *incredibly* small amounts of water shows just how precisely these objects are

Our work with floating objects began in the early 1970s with simple spheres, and as our manufacturing capabilities have grown, so has our ability to create larger and larger spheres – although no commission has yet reached our limit of a ten-foot diameter.



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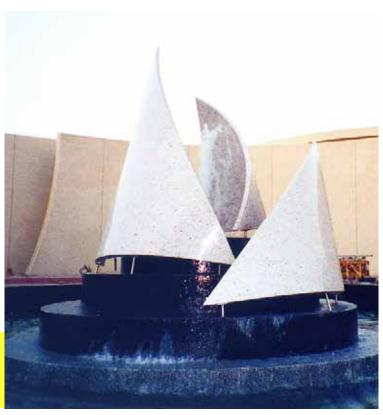
made and how amazing basic physics can be.

All of these systems work because of the surface tension of water and the precise contouring we bring to the stone pieces and the sockets or grooves that contain them. Many of these objects weigh several tons, but even the largest ones never take more than a flow of 60 gallons per minute to create the effect. Without the precise contours, of course, many times that amount of water would be required to get them to float.

In all cases, there are a few key constants: There's the object that moves, the socket that contains it and the water that makes it float. Those elements can be applied to create fountains that fit into a wide variety of styles and accommodate a wide range of design ideas.

It all started with spheres, and through the years the company has developed technology that enables a

Our explorations of the floating potential of non-spherical objects have led us in interesting directions – and in this case to a threepart fountain in which large sails independently drive the motion of floating discs.



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Our German headquarters features one of our most elaborate compositions to date: A tall spire of tremendous mass that rotates at the slightest touch and is clearly a fitting corporate symbol.

Perfectly Permanent

For centuries, granite has been among the world's most enduring and flexible building materials. In my travels in Europe and especially Germany, I've been amazed to see the extent to which it remains in use, even when cheaper materials are readily available.

Granite curbs, for example, are common on European streets. Curious, I once asked Joseph Kusser, CEO of Kusser Aicha Granitwerke in Germany, why that was so when concrete curbs would be so much less expensive. As he explained, granite curbs can be re-used when roads are repaired or rebuilt or new ones are constructed, whereas concrete in similar applications would be broken up and sent to a landfill. In that sense, granite is very much a recyclable material that can be used and re-used for centuries.

In our work at Kusser FountainWorks (Tampa, Fla.), we get involved with a variety of materials including quartz, marble and other stone types. While those pieces can be spectacular, no other material is quite as flexible or durable as granite, which comes in a dazzling array of colors in massive chunks that are usually extremely consistent in terms of density and quality.

Because granite is so consistent, Kusser is often able to create elements such as fountains spheres or rings from single pieces of stone, which means they'll require minimal balancing and adjusting of their weight once shaped. Occasionally, a piece will fracture during the manufacturing process, but those that survive the process and are machined and prepared for shipping are highly reliable.

The material is so remarkable that I often compare finished pieces to jewelry: There's an elegance and delicacy to the finished material that is difficult to describe and really must be seen and touched with your own hands to be appreciated.

-J.C.

granite object to be machined to precise dimensions up to 10 feet in diameter – although to date no sphere has been asked for at a size that large.

HEAVY LIFTING

Once the spheres started catching on, it was natural for the company to take the basic concept and move in new directions.

The floating disks pictured here were the next step in the evolution of these objects. The disk is actually a partial sphere that floats in a socket, just as a full sphere does. In this case, however, the disk portion extends above what is essentially a hemisphere that floats on a thin sheet of water. This results in a sort of massive turntable effect that is now being used in a range of designs.

In some cases, the disks are flat – and many are used as a sort of rotating seating area. Some people find it surprising that even with the weight of multiple bodies atop these disks, they still spin freely. Again, it's testimony to the amazing compatibility of water and precisely crafted stones.

In some applications, the disks are basically used as platforms for other objects. In one fountain, for example, we fashioned a series of three disks that had large sails mounted on top of them, enabling the pieces





Partial disks floating atop jets of water have added another layer of visual interest to these fountains: As the discs turn, they expose different jets that make these sculptures constantly renew their appearance.

to spin with the wind. In another at Kusser's corporate offices in Germany, a towering spire has been mounted atop a huge disk—which, although the composition weighs several tons, can be spun with the slightest touch. (One of the amazing things about this feature is that the top of the spire, from which water emerges and then runs down to the horizontal sculptural disc, turns independently: The system is equipped with two small pieces of metal that act as vanes, enabling the structure to spin with the wind.)

What this has meant is that the basic floating-ball concept has become far more flexible with respect to both designs and applications. Some systems now feature *partial* disks that rotate and expose leaping jets at intervals, while others have *secondary* floating objects mounted on top of them, giving these systems added layers of interest and fascination.

The third stage in the evolution of floating-object technology has involved vertically oriented rings or wheels. These are different from the disks and



With this highly sculptural fountain, the spheres float atop angled cubes that themselves float on their pedestals – another sure way to make a compelling visual statement.

The latest stage in floating-object evolution has taken the form of massive wheels and rings that float and spin in troughs. The wheels have become popular because of their ability to carry logos or decorative patterns that change with their motion.



spheres in that these objects sit in grooves rather than sockets and therefore spin in only two directions. Some are solid, but others are open like wedding rings.

As with the horizontal disks, the wheels and rings have opened up designs to more creative approaches. In many cases, the surfaces of the wheel carry company logos or some kind of decoration, and in some the rings are so large that people can walk through them. Our most complex projects to date have involved floating rings mounted atop floating disks, which is actually a fairly complex hydraulic trick in that these systems require separate circulation systems for each floating component.

IN A SPIN

Having worked in the fountain business for most of career, I've been thrilled to see how rapidly the range of concepts and applications has expanded. As more and more people have seen and enjoyed

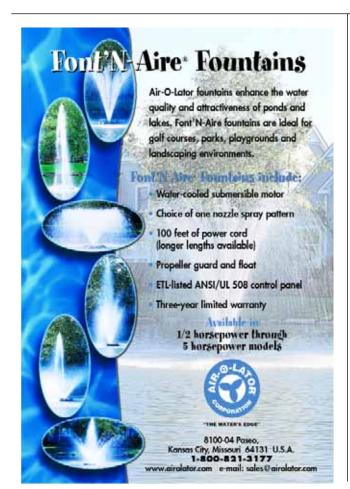
these systems, architects, landscape architects, designers and property owners of all types have come to us with creative ideas and seem constantly to be pushing us toward increasingly intricate technical solutions.

At every project stage, we work hand-in-hand with our clients at all levels, and we've found that almost every system is somewhat different. For this reason, all of our German-made granite components are fully assembled and tested before they are shipped to the job site. In many cases, we do the entire installation ourselves – and at the very least we closely supervise the process.

By being so involved, we ensure that the precision that has gone into designing and fabricating these objects is expressed fully in the finished product. After all, the materials and systems are made with materials that can withstand all the tests of time, so we approach each project with the idea that work we're doing now will be seen by generations to come.



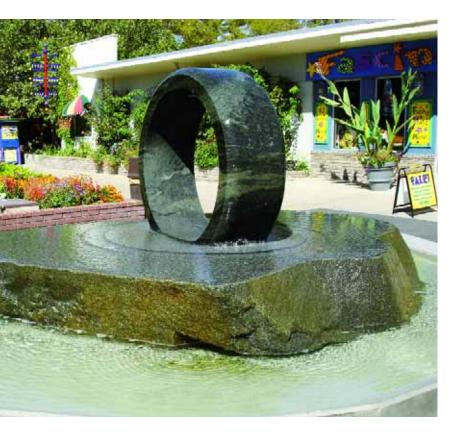
In the case of rings, some of them are large enough to walk through, and they seem irresistible to those who see the opportunity for interaction.

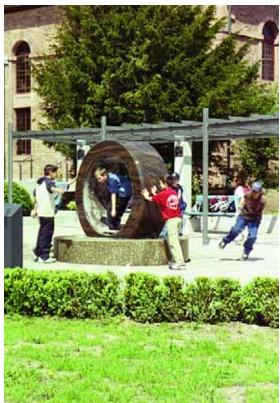


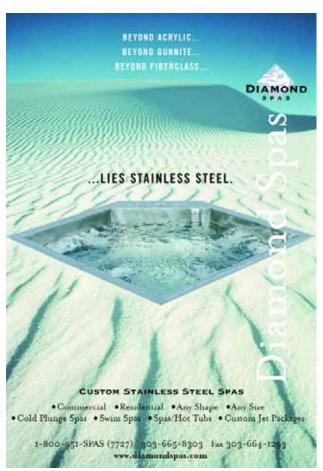




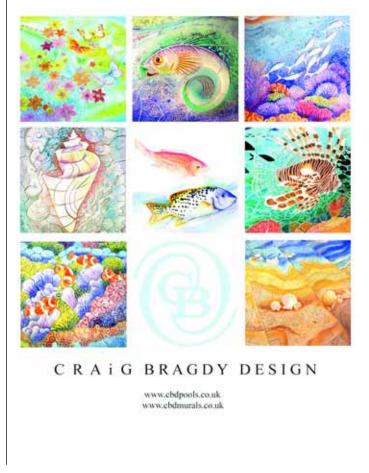
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Landscape designer and watershaper Colleen Holmes specializes in highly creative, richly detailed residential projects that embrace her clients' personalities, are based on solid engineering and construction practices and reflect her own distinctly lyrical sensibilities. The project featured in these pages captures all those qualities and more in a fascinating tapestry of plants, hardscape and water that was a full six years in the making.

By Colleen Holmes Clinical Suits

All projects come to an end, of course, but there are times when the inevitable takes its own, sweet time. The project featured here, for example, took more than six years from the time I first met the clients until we wrapped things up.

Unlike some projects that take a long time because of ongoing problems, change orders and difficult challenges, this one was very much a labor of love from start to finish. Sure, there were some tough spots, but for the most part, this was one of those jobs that we watershapers and landscape professionals can only *hope* will come along from time to time – projects we don't mind extending through a period of years.

This one had everything going for it, starting with great clients who had the re-

sources to do something special as well as playful, fun-loving personalities that made the process exciting and rewarding. Then there was the property: an acre of oceanview hillside in Brentwood, Calif., with mature trees and a big, Cape Cod-style house that was going through extensive remodeling during the time we were involved with the landscape.

The clients wanted something that was elegant but playful, with formal lines and structures but a light overall touch. They insisted on beautiful materials, were heavily involved in every decision and, ultimately, called upon our firm, New Leaf Landscape of Agoura Hills, Calif., to work with almost every square foot of the available exterior space.

The result is a project that may be



difficult to define stylistically but that certainly has a distinctive, welcoming character.

The Starting Line

I was at home when the first call came from the clients – an unusual event made even more striking by the fact that I had gone to elementary school with the man on the other end of the phone. He'd had no idea I'd gone into landscape design, nor that I was a friend from the past.

They'd heard about me through a college instructor of mutual acquaintance and from a geologist as well. At the time, they said, they were looking at a piece of property in the hills above Brentwood, but the site was located in flood plain in a spot known for mudslides. It was a beautiful property, they said, but they just weren't sure about it.

I visited the site and agreed with their basic enthusiasm as well as their misgivings. I passed along some preliminary design recommendations that proved to be to their liking, but the questionable geology was always an issue and eventually led them to pass on the parcel. All was not lost, however, because in the process I'd gotten to know the clients quite well and knew that if we ever did get down to business on a job, they would be wonderful collaborators.

The nearby property they *did* buy was beautiful as well – still situated on a hillside but far more stable geologically (although we wound up installing 30 caissons to support the retaining walls). It was also complete as purchased, with landscaping, a

When we arrived on site, what we found was a backyard that had been surrendered to the slope: The space was largely unused, and to avoid hikes down into the yard, the original pool and decks had been crowded into the heavily shaded area to the left on the house level. It was tolerable for a time, but the clients ultimately decided that complete renovation was something they wanted to pursue.

pool, decks and a tennis court.

But nothing really worked: The pool was too small, too shaded and in the wrong place, the masonry was remarkably substandard and the layout of the entire space offered absolutely no sense of continuity or connectedness.

There was obvious potential, however, with the ocean views, the steep slope and the way the house was designed and carefully sited on the property. (At first glance, the home seemed small and modest, even given the lot size and the home's true massiveness.) And after walking around the side toward the back of the house, an *amazing* setting unfolds — as if you've been transported to a completely different place.

For all that promise, the place was finished and livable, and it seemed for a time that the clients were going to stand pat and endure its flaws.

By now we were good friends. I didn't bring the yard up for about a year, leaving them to work out the details of a home-remodeling project with an architect and always hop-



Bolstered by a new system of down-slope retaining walls that created a large, workable area, we designed and built a large pool that has plenty of length for lap swimming and enough width for all sorts of other water exercise and play. It's deeper than the typical modern pool, but my clients wanted to be able to dive from the artificial rock structure that now rises above the deep end. Note the 'moki' steps – small hollows in the rock that serve in place of a conventional ladder.

ing that they'd eventually want to move forward with revamping the exterior as well.

Pream Schemes

One day as we hiked together in the Sierra Nevada mountains, my old schoolmate mentioned that it was probably time for me to come back out to the property and begin the design process.

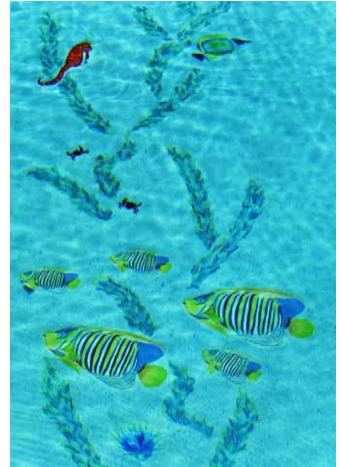
I did so, becoming involved in a creative dance with them that lasted about a year. We kept coming up with ideas and revising basic schemes but never seemed to settle on anything. To break out of that box, I suggested that I create a plan for them to judge, hoping that when they saw what we had been discussing, they might be motivated to take the next step – and it worked!

In retrospect, I know that had I pushed a plan on them earlier in the process, we might never have moved forward. As warm, friendly and upbeat as these clients are, they also are extremely particular and take their time in gaining a comfort level with big











ideas. The time was apparently right, and once we had a plan down on paper, the process picked up speed. There was a great deal of adjusting and back-and-forth about material selections and the like, but the basic scheme stayed in place.

At this point, the site's occasionally awkward realities snapped into sharper focus.

First there was a series of existing trees the homeowners wanted to keep – several Birches, Sycamores, Live Oaks and Chinese Elms among them. An arborist was called in to make certain our planning accommodated various root systems – an overlay that left us with a whole string of really strange elevations and slope contours that I couldn't touch.

The other challenge was the geology. Although we didn't need to worry about mudslides, we knew that many of the proposed structures would require subgrade support.

The structural scheme included the previously mentioned 30 caissons to support the retaining walls. Interestingly (and fortunately), the

swimming pool and spa, which were engineered by Mark Smith Engineering of Tarzana, Calif., did *not* require extensive substructures: In that part of the yard, we were working in competent soil – a testimonial to how distinctive soil can be within just a few feet and how important it is to design based on good information.

Pown to Spaces

Some of the solutions we came up with in that design were fairly creative.

The new pool, for example, stands out among the project's key elements. The clients lead very active lives, and it was important to them that the pool be big enough for lap swimming as well as other activities.

They didn't want a rigidly rectangular "lap pool" by any means, but they did want plenty of clear distance across the water. So as installed, the pool has a curvilinear form that stretches 75 feet in length and spans 35 feet at its widest point. They also wanted a deep-water area suitable for diving from various

points on the artificial rock structures that make up the grotto and the slope rising above the deep end. This led us to establish a ten-foot depth at one end of the pool – quite deep by today's standards.

At first, I was at something of a loss to figure a way to get people out of and away from the deep end of the pool, which, as just mentioned, was to sit at the bottom of a steep slope. The solution came to me in a dream (which is not all that unusual in my experience): It involved a detail called "moki," which are the steps carved into stone by cliff-dwelling tribes of Native Americans.

Working in artificial rock in this case, we ended up creating a set of moki steps that leads up from the deep end to a "plateau" several feet above the edge of the pool. I'll admit to being a bit hesitant about this concept at first, but the approach worked perfectly in this setting.

The clients also love to entertain and wanted an oversized spa – a good thing, because from a visual standpoint its 12-





Some of the tile details are purely whimsical, as with the startled fish atop the spa step, but the pattern running down the middle of the swimming pool is both decorative and functional, serving as a lane line to guide swimmers on a 75-foot track. The spa's glass-tile finish shimmers in the sunlight, which made it a favored target of migrating ducks. We took care of that issue by setting a taxidermy iguana on the dam wall as a seasonal sentinel – it's been great for keeping birds at a distance.

by-20-foot size (as large as some pools) helped keep it in scale with the big adjoining vessel.

The spa itself is something special: It's finished completely in glass tile (the Iris series Iridium by Sicis of Ravenna, Italy, which we obtained from Rhomboid Fax Tile of Los Angeles), but the clients wanted it to have the same sorts of contours typically found in manufactured portable spas – not easy to achieve in concrete. To make it happen, we had the clients get in the spa during the gunite phase, sitting directly in the wet concrete in various places to create custom "bucket seats" for each of them as well as reclining therapy lounges with jets arrayed for full-body massages.

Beyond the Water

We also were creative in approaching the existing tennis court. Although the clients are both athletic, neither is a tennis buff so they wanted to convert the court for basketball and volleyball. This let us reduce the size of the court, and a smaller, more versatile sports court is the result. Of course, these areas can be extremely difficult to sustain in visual terms. We did our job by completely enclosing the area in a screen fencing covered with a variety of flowering vines.

On a terrace just above the sports court, we set up a putting green with a large bunker for my old school friend, an avid golfer. The green is quite large - some 50 feet in length - and follows a crescent-shaped contour defined by the retaining wall. This single element required a great deal of effort: Not having any experience with golf myself, I had to do plenty of homework particularly when it came to turf options. (We ended up installing an artificial surface that will be much easier to maintain than genuine turf but looks almost indistinguishable from the wellcropped real thing.) I also had to learn about bunkers - a far more complicated and challenging detail than I had ever imagined them to be.

The entire site is graced with winding pathways, stairs, landings, retaining walls and all sorts of intimate destina-

tions, many of them set up to take advantage of the spectacular views. Even on our more extensive projects, *rarely* have we encountered a property that is so completely built out: In this case, we used the area all the way down to the fence line at the bottom of the property, installing a small orchard with fruit trees, herbs and vegetables.

We also designed (but did not complete plans for or build) the pool house, a beautiful affair located across a broad deck from the pool on one side and perched over a nearly cliff-like slope on the other. There's a beautiful fern grotto area near the bottom of the slope at the back of the pool house. To access this area, we designed a custom spiral staircase in iron that itself is a work of art.

Associated with the pool is a large grotto located in the slope beyond the deep end. Built with artificial rock, it features a waterfall that can spill hot water into a basin that is visually connected to the pool but is actually separated from it. There's also what I call a "necklace staircase foun-



tain" – also made of artificial rock – located at the intersection of two sweeping staircases that connect the upper deck to the pool level.

Pistinguished Petails

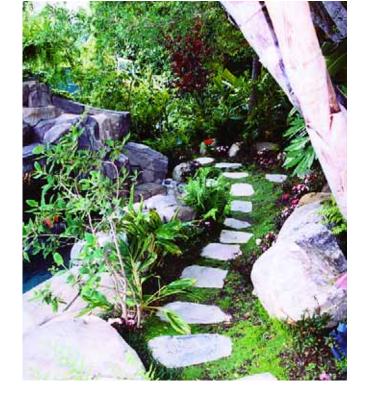
As with most any major project, the basic design we put on paper truly came to life with the materials and detailing – so many little touches in this case that it would be impossible to list them all. Among the most significant:

▶ **Deck material:** The decks are made of a natural flagstone called Jurassic stone, a wonderfully rich material colored with creams, buffs, grays, browns, pinks and whites. My first idea had been to use a cut stone tile for terraces connected to the main house to create a transition between the home's interior (which would've led to a different choice for the decks), but the clients wanted something less formal.

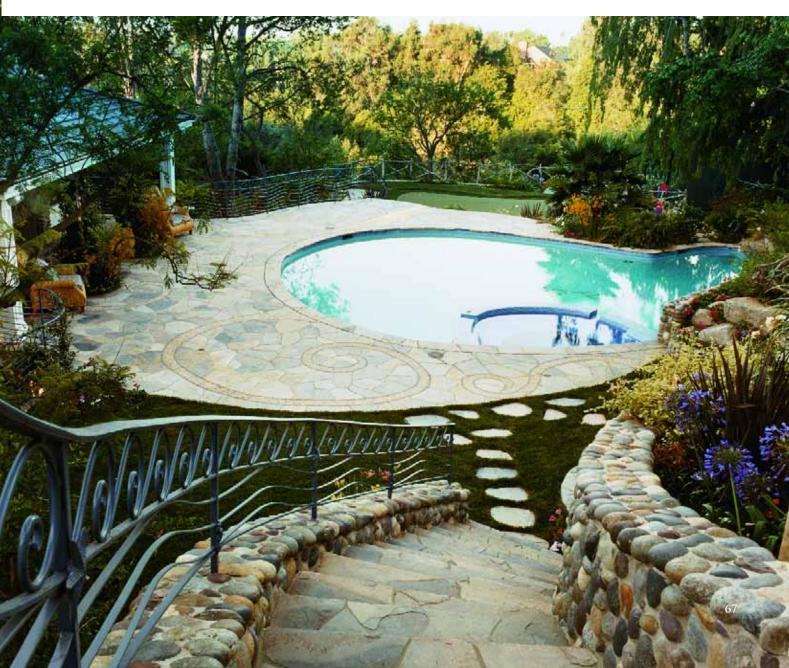
This led us to spend *months* looking for the right material, which the clients located at a small local stone supplier. It was quarried in Colorado and is not widely available, which led us to spend a great deal of time and effort in finding suppliers that had the stone in adequate quantities. It was all

worth the wait: The stone provides the color palette that we picked up throughout the design.

- **Swirls:** The decks include swirling patterns that we included to provide immediate visual interest as well as a motif that we could use elsewhere. On the decks, these swirls are made of stripes of fine multi-colored pebbles and larger, smooth, taupe-colored stones that required extreme patience on the part of our masons. It was meticulous work, but the look is great whether you see them up close or from a distance.
- ▶ **Hand rails:** With so many terraces and stairways, we decided to use a single, unifying wrought-iron rail treatment that picks up the swirls. It's a completely original design and is repeated with hundreds of feet of railing throughout the property.
- ▶ Pool and spa finishes: The interiors of the spa and pool are done in blue, the spa in a glass tile made much more difficult to install because of the specially contoured benches; and the pool in a polished exposed-aggregate Hydrazzo finish (by Aquavations of Coral Gables, Fla.) decorated with ceramic fish from Topanga Art Tile of Topanga, Calif. The mosaics were used to define (roughly) the "lap lane" down the



The front of the house has a distinct cottage feel to it, and the cozy, well-planted path along the side of the house (past where the old pool was) branches out in several directions – all of which eventually open out onto spectacular views of the yard, its various amenities and distant views of mountains and, on clear days, of the Pacific Ocean. From the deck directly behind the house, for example, you partake of a scene filled with swirling lines and serpentine contours in the foreground with glorious views in the distance.







center of the pool and was expertly installed by local tile artist and consummate perfectionist Fin Johnston.

- ▶ **Lighting:** Extensive landscape lighting using both lowand line-voltage fixtures was organized throughout the property, and all of the watershapes are artistically lit as well. We almost always work with a variety of lighting approaches and effects — moonlighting, backlighting and/or silhouetting of key plants and structures — as well as more standard pathway and up- and down-lighting to set a variety of "scenes."
- ▶ **Retaining walls:** The retaining walls are thoroughly engineered and were finished in smooth river rocks. The arrangement is distinctly, deliberately linear and architectural, with the material itself offering contours that soften the look while preserving a formal feeling. This is another case in which a great deal of time was spent in selecting stones, which ultimately included six different types.
- **Description** Boulders: We located several hundred tons of large boulders throughout the landscape, every one of them hand-picked for color, shape and size. It bears mentioning that we had very narrow access to the property behind the house and that craning in the boulders was a huge, labor-intensive, time-consuming challenge.
- ▶ **Plants:** The clients are both crazy about plants and wanted *variety*. In all, more than 200 plants species are represented, including all sorts of flowering perennials, structural plants, ferns, palms, evergreens, vines, edibles, fragrant blossoms and existing trees augmented by several mature trees we craned into place.
- ▶ The approach: The front of the house has a quaint, cottage-like appearance, so we enhanced that sense with flowering plants in beautiful colors. A white, wooden gate to one side leads to a pathway along the house where we added transitional touches that increase the anticipation as visitors get closer to the backyard. Ultimately, they're led to a landing from which they catch a first glimpse of the expansive space that awaits them.

The detailing of the stone and ironwork serve both to unify the space and lend formal touches that complement the home's architecture. The pool house, with its sheltered fireplace and columns borrowed from the front of the house, invite family and guests down to the pool level and into a part of the yard that formerly went unused, while the swirls in the deck and within the ironwork serve as another way of building visual connections to the home above.



Long Road

As I suggested up front, so much time was involved in the design, engineering and planning phases of this project that I began to wonder if we'd ever get to the end. Once the actual work started on site, however, our work was completed in a (relatively) short 18-month span.

This project is less easily described than it is experienced, which is why we all were so happy it was selected for inclusion in a prestigious garden tour organized by the staff of the nearby Virginia Robinson Gardens of Beverly Hills, Calif.

During the tour, I took the opportunity to chat with many

of the people who were seeing the space for the first time, and their feedback was encouragingly positive. Many said they came away feeling the space was very "spiritual," a word I heard over and over again. That affirmation was wonderful – and a result, I believe, of our ability to constantly view the project with fresh eyes.

Projects like this don't come along too often, but when they do, it's worth both the time and the effort because the result is frequently an object of great beauty and no small source of pride.



Organizing this composition while dealing with the various levels created by mature trees growing on random elevations down the slope gave us some interesting design challenges, but ultimately it all came together in a way that meets the clients' desire for multi-function spaces and our objective of creating a composition that looks as though it had been designed and built right along with the house.

The following information has been provided to WaterShapes by product suppliers. To find out how to contact these companies, look for the Product Information Card located on page 76.

COMMERCIAL-POOL CATALOG

Circle 135 on Reader Service Card



KIEFER has published a catalog on its comprehensive line of products for commercial pools. Intended specifically for aquatic consultants, designers and builders, the 64-page booklet offers access to equipment for waterparks, competition and leisure pools and other aquatic facilities and includes a product-specifications section as a guide to designing new cen-

ters or renovating existing facilities. Kiefer, Zion, IL.

AERATORS AND FOUNTAINS

Circle 136 on Reader Service Card

AQUA CONTROL has published literature on its Select Series of 1/2- to 7-1/2-hp display aerators and fountains. The 56-page, full-color booklet covers general features and displays fountains with dozens of spray patterns in breadths spanning more than 100 feet and heights to 50 feet. It also includes lighting options, cables and electrical controls as well as a range of options and accessories. **Aqua Control**, Spring Valley, IL.



COMPACT EXCAVATOR

Circle 137 on Reader Service Card



BOBCAT offers the Model 335 compact excavator. Designed for power and performance in a compact, easy-to-trailer package, the device's load-sensing, torque-limiting, pressure-compensating hydraulic system delivers smooth, predictable

response; its engine supports excellent cycle times in tough digging conditions; and its attachment-mounting system provides for quick and easy changes. **Bobcat**, West Fargo, ND.

POOL-FINISH GUIDE

Circle 138 on Reader Service Card

PEBBLE TECHNOLOGY has released literature on its line of pool/spa finishes, including Pebble Tec, the original pebble finish available in 17 standard colors; Pebble Sheen, a smoother, finer-grain finish available in 15 colors; and Pebble Fina, an even finer finish that combines the look of Venetian plaster with the durability of a pebble finish. The six-page leaflet also includes a color guide. **Pebble Technology**, Scottsdale, AZ.









Circle 54 on Postage Free Card

EXPANDABLE WATERPLAY

Circle 139 on Reader Service Card

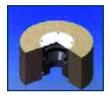


AQUA BELLA DESIGNS offers the AquaBox fountain kit. Designed for indoor or outdoor use, components include a heavyduty, 52-inch-square, 20-inch-deep HDPE box, two grates (one with a service hatch),

a filtered pump and a hose. Any overflowing fountain feature weighing up to 2,000 pounds can be set atop the grates, whether it comes from the company or a custom source. **Aqua Bella Designs**, Harpers Ferry, WV.

Circle 140 on Reader Service Card

RAIN DROP PRODUCTS offers the Omnipod system for expandable waterplay areas. In the system, multiple waterfeature couplings are installed flush with the surface when concrete is poured. When a winterizing cover is removed, either an interactive ground feature



or an aboveground/overhead feature can be installed, allowing for presentation of a new play array each year. **Rain Drop Products**, Ashland, OH.

FIBEROPTIC TRACK

Circle 141 on Reader Service Card



MODERN POOL SYSTEMS has added a new aluminum fiberoptic track to its extensive line of tracks for gunite pools: Designed to work with

Supervision SV42 and SV32, Fiberstars FS-CABL-49, American Fiberworks FW Glow perimeter and Polaris AD79 fiberoptic cables, the Round Fiber Optic Track comes in 8-foot lengths, including prenotched lengths for radiused corners. **Modern Pool Systems**, Columbus, MS.

PERMEABLE PAVING STONES

Circle 142 on Reader Service Card

ANCHOR BLOCK offers the Holland Grand Permeable line of paving stones for residential or commercial applications on driveways, patios and parking areas. Available in 5-1/2-inch-square



and 5-1/2-by-11-inch interlocking modules, the material features perimeter joints that, when filled with clear crushed aggregate, allow water to flow to the sub-base instead of running off. **Anchor Block**, Maple Grove, MN. Continued on page 72

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OF INTEREST

GLASS TILE

Circle 143 on Reader Service Card



HIRSCH GLASS CORP. has introduced the Murano Vena Glass Mosaic Series of art-glass tiles. Designed for exterior and interior applications in both commercial and residential settings, the tiles are nonporous, resistant to chemicals and staining, fully col-

ored throughout the body of each piece and suitable for use in watershapes and a variety of other applications, both horizontal and vertical. **Hirsch Glass Corp.**, Secaucus, NJ.

AIR/VAPOR BARRIER

Circle 144 on Reader Service Card

DECK-O-SEAL offers Air-Shield LM, a single-component, liquid-applied, polymer-modified air/vapor barrier. This special, all-season formulation can be applied to most common surfaces and integrated into various wall systems at temperatures as low as 10 degrees F. It cures to form a tough, seamless, elastomeric membrane that exhibits



excellent resistance to air and moisture transmission. **Deck-O-Seal**, Hampshire, IL.

UPHILL WATER RIDE

Circle 145 on Reader Service Card



WHITEWATER WEST has added Master Blaster to its line of licensed products. Designed for indoor and outdoor applications in waterparks, resorts, amusement parks and other aquatic facilities, the ride features crowd-pleasing, hairraising drops, banked curves and time-tested technology that blasts riders along on streams

of jetted water in ways that defy gravity. **Whitewater West**, Richmond, British Columbia, Canada.

POND HEATER

Circle 146 on Reader Service Card

INTERNATIONAL POND SUPPLY offers Thermo-Pond Heater 3.0 to protect ponds from sudden drops in temperature. Designed to maintain a 12-inch hole in pond ice, the device allows for an exchange of gases that enables fish to breathe easy during cold winter months. Tested at tem-



peratures to -30 degrees F, the heaters work on ponds holding up to 1,000 gallons of water. **International Pond Supply**, Santa Fe, NM.





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HIGH-FLOW SAFETY DRAIN

Circle 147 on Reader Service Card



PARAMOUNT POOL & SPA SYSTEMS offers the SDX High-Flow Safety Drain. Designed to meet the industry's need for anti-entrapment drains, two of these units installed together comply with split-drain suction codes. The company also offers SDX Retro

to refit most existing drains and provide an alternative to older suction fittings in floor- or wall-mount applications. **Paramount Pool & Spa Systems**, Chandler, AZ.

FORCED AIR HEATERS

Circle 148 on Reader Service Card

DESA has introduced the Pro-Tough line of portable, forced-air propane heaters. Designed to keep key areas of construction sites warm when the weather turns cold, the rugged, quiet-running devices spread instant, efficient heat that allows for worker comfort and efficient tool operation.



The units have easy-to-use, top-mounted controls and adjustable-height footings to provide spot heating. **DESA**, Bowling Green, KY.

OUTDOOR LIGHTING CATALOG

Circle 149 on Reader Service Card



SPJ LIGHTING has published a catalog on its line of solid brass, solid copper and stainless steel lighting fixtures and accessories. The 96-page, full-color booklet covers new products and path, walkway, directional, inground and task lighting as well as transformers, lamps, underwater lighting, Craftsman-style fixtures,

speaker systems, lanterns, finish options, demonstration kits and more. **SPJ Lighting**, South El Monte, CA.

POOL UMBRELLAS

Circle 150 on Reader Service Card

SHADE SYSTEMS offers single-post umbrellas. Designed for use in spaces where the number of posts in a shade structure must be kept to a minimum, the units have 7- or 8-foot eave heights in 16- or 20-foot diameters and come in 10 standard fabric colors that block upwards of 91 per-



cent of UV rays. The steel frames come in 7 standard colors, and custom colors are also available. **Shade Systems**, Pompano Beach, FL. Continued on page 74



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PVC FENCING

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MERCHANTS METALS offers literature on its complete line of PVC fences. The 14-page, full-color brochure covers more than a dozen styles and variations – straight and scalloped lines, models

adaptable to slopes, classic pickets, ranch-style rails and models for partial or complete privacy. Reinforced with aluminum, the fencing is available in three colors — tan, white or gray. **Merchants Metals**, Houston, TX.

PERMEABLE PAVERS

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WILLOW CREEK has introduced Aqua-Loc permeable-concrete pavers. Designed to reduce runoff and pollution of lakes, rivers and streams from paved surfaces by 90 percent and more, the modular, freeze/thaw-resistant pavers allow water to pass through for subsurface filtration and detention for gradual release and come in



three colors – slate, sandstone and Sedona – to complement any setting. **Willow Creek**, Oakdale, MN.

FIBEROPTICS FOR PONDS

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UNITRAC ENERGY MANAGEMENT offers the IlliminFX pond-lighting system. Each illuminator can light up to 16 separate fixtures that can be positioned next to the water, underwater, out of the water,

between rocks – anywhere they need to be placed. Each illuminator includes a four-color wheel, and the system is fish-friendly as the fibers generate no heat or UV radiation. **Unitrac Energy Management**, North Chili, NY.

DECORATIVE CONCRETE

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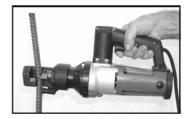
BRICKFORM offers an array of mats for use in creating decorative concrete finishes: Flexible Mats, an inexpensive way to texture new concrete; Creative Images Mats, heavy-



duty, tight-fitting mats designed for repeated professional use; Seamless Mats, with feathered edges to produce continuous surfaces; and Overlay Mats, for low-relief patterns. Custom mats are also available in any pattern. **Brickform**, Rancho Cucamonga, CA.



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FILTER UPGRADE

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SAVIO ENGINEERING has devised a way to make its full-sized Skimmerfilters compatible with large solids-handling pumps rated to 5,000 gph and even 6,500 gph. The modified units reduce costs, enhance clarity and combine superior biofiltration with powerful solids-handling capability – and all it takes is five minutes and a few cuts to modify the shape of the

filter's inner frame. Savio Engineering, Santa Fe, NM.

WATER CHEMISTRY TEXT

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GAFFEY TECHNICAL SERVICES has published Basic Chemistry for Pool Water Quality Management. Intended as a definitive guide to pool-water chemistry, the book offers comprehensive information on the chemistry, chemicals and processes used in modern pool-water treatment, including introductions to disinfec-



tion chemistry, details of disinfection technology and more. **Gaffey Technical Services**, Rossendale, Lancashire, England.

FLOATING FOUNTAINS

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VERTEX WATER FEATURES offers an array of floating fountains and lake aerators in sizes from 1 to 60 hp to meet the full range of design and functional needs. Elaborate, multi-jet displays are available (as are sprays reaching heights of more than 100 feet) and can be accompanied by lighting systems from 500 to

6,000 watts. Each features cast bronze and brass nozzles. **Vertex Water Features**, Pompano Beach, FL.

OUTDOOR LIGHTING

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TOUCHSTONE ACCENT LIGHTING offers brass lighting fixtures for outdoor applications. Designed to be inconspicuous during the day and soft and subtle after dark, units for lighting architecture, decks, walkways, waterfeatures, ponds, gardens, steps, trees, pools, walls and



more are available for residential and commercial settings along with mounts and transformers. **TouchStone Accent Lighting,** Long Lake, MN.

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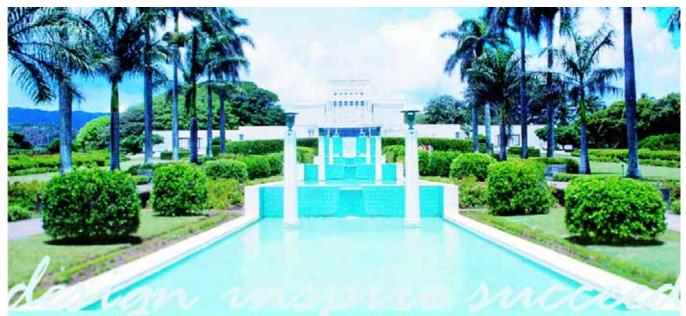
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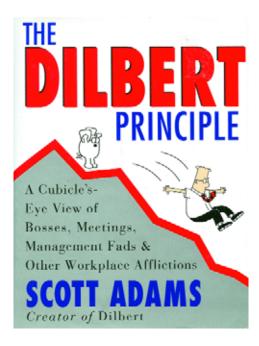


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By Mike Farley

That's a Laugh



e all have our different strengths and weaknesses and know that there are certain areas in which we can all improve.

In my case, I'm good at the technical side of watershaping, but I'm much less accomplished in the client-relations/"people skills" department. I've made concerted efforts through the years to seek resources that can help me grow in this area, and my latest book selection is part of that personal quest.

Not long ago, I took a twelve-point quiz that's designed to test whether or not you have a good sense of humor. I've never been a big one for telling knee-slapping jokes and I'd describe my sense of humor as "dry," but I certainly like to laugh and I've always considered myself as being someone who enjoyed things on the funny side. When I took this test, however, I scored a perfect zero out of twelve, so by this assessment it seems I have no sense of humor at all.

Working past this odd humiliation, I began thinking about this "deficit" and how it might be affecting my ability to work easily with clients and colleagues. The way I see it, people who know how to use their senses of humor have an easier time bonding with clients and finding graceful ways to defuse tense situations. Right then and there, I decided it was time to work on the lighter side of my personality, just as I have before in polishing my public-speaking skills and general creativity — the thought being that a sense of humor is basically another mental muscle that can be exercised and developed.

So I headed to a bookstore to scope out the humor section in hopes of finding a resource that would help me see the world around me in a more humorous way. There were scores of choices, so it took me a while to make a selection. As good fortune would have it, I eventually picked up a gem by Scott Adams,

creator of the "Dilbert" comic strip, that is not only loaded with laughs, but also goes a long way in demonstrating how the world around us is, in fact, a savagely funny place.

Called *The Dilbert Principle: A Cubicle's Eye View of Bosses, Meetings, Management Fads and Other Workplace Afflictions* (United Features Syndicate, 1996), even the book's subtitle gave me the suspicion I was making a good choice.

In this 330-page volume, Adams offers a stream of stories that his loyal readers have shared with him through the years, all framed with his satiric observations. It's broken into more than two-dozen chapters covering a range of work-related topics, each with self-explanatory headings such as "Great Lies of Management," "Pretending to Work," "How to Tell if Your Company is Doomed" and my personal favorite, "Engineers, Scientists and Other Odd People."

The material made me laugh, sometimes a lot, but what I appreciate most is the perspective reading through it all gave me about the working world and the fact that so much of what we go through in working with clients and our colleagues can be seen through a more humorous lens. After reading Adams' observations of the working world, I feel I have a firmer grasp on the absurdity of lots of human interactions – a grasp that lets me take myself a bit less seriously and, more important, has yielded some genuine laughter and many moments of personal amusement.

Let's face it, our world is a serious and sometimes scary place – and our work is often extremely hard and frustrating. For my part, finding some humor in the challenges that come up on a daily basis is a tonic that I can tell already will help me in a big way. I certainly won't be taking up a career as a comedian, but I'm hopeful I won't be quite as consistently serious as I have been in the past.

My goal is simple: Next time I take that sense-of-humor test, I'm shooting for at least two out of twelve.

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

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