

**Inside: Brian Van Bower on Productive Relaxation**

# WATER SHAPES

**Design • Engineering • Construction**

Volume 8  
Number 9  
September 2006  
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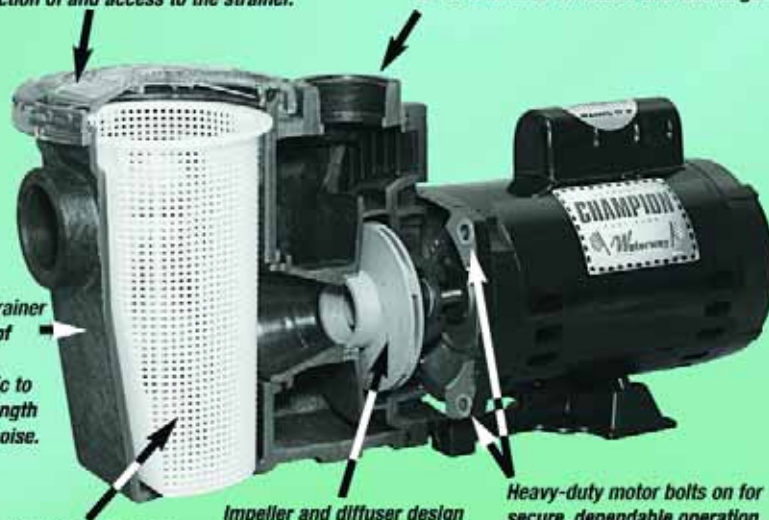
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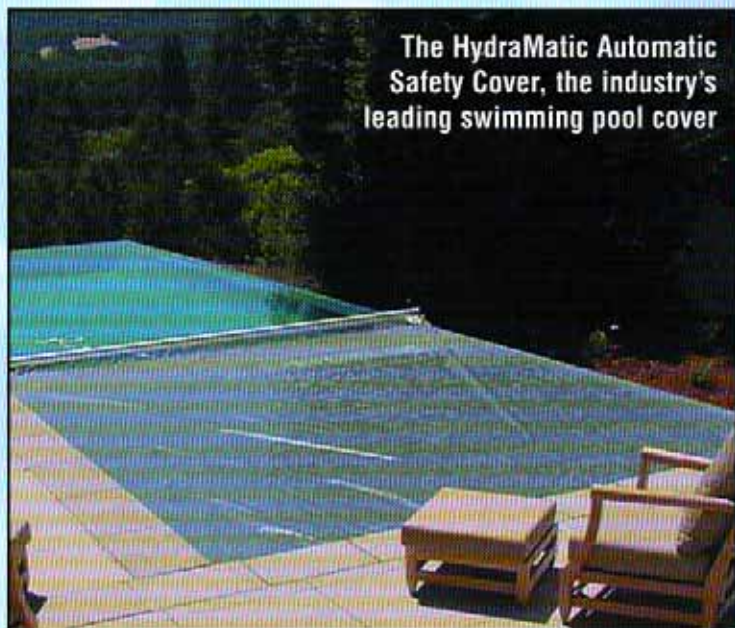
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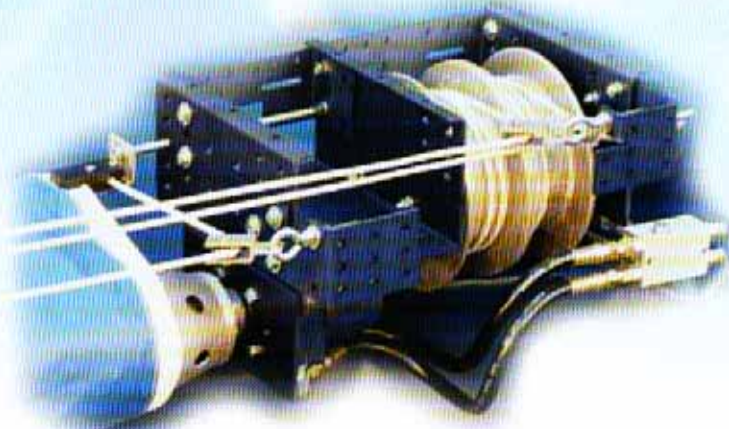
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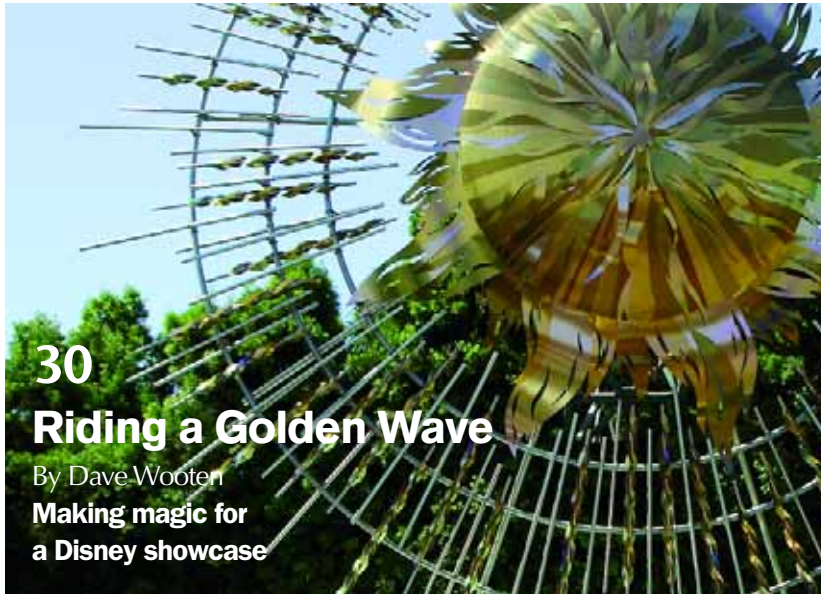


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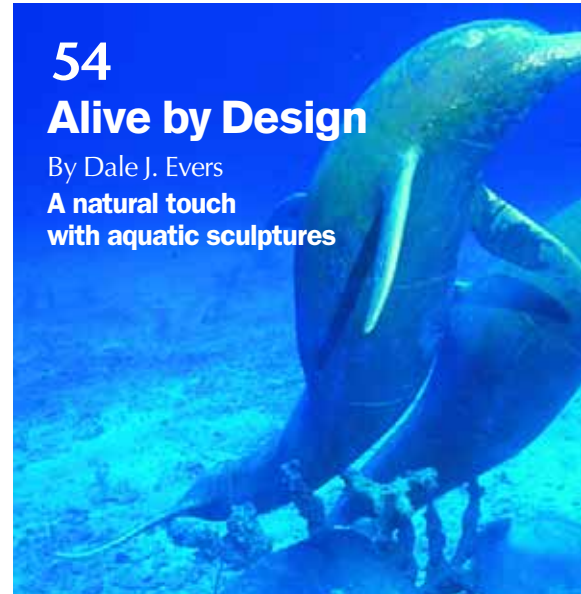
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Photo courtesy Dale J. Evers, Morro Bay, Calif.

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## Beneath the Surface

One of the perks of my job as Editor of *WaterShapes* is that from time to time I get to go on the road to see truly great work in person, often in stunning locations. Occasionally, however, when I walk on site my best expectations are blasted to smithereens.

I had one such rude awakening a couple years back, when I visited a home with a brand-new, highly elaborate swimming pool. We were in a beautiful area of northern California, the home was both expensive and gorgeous and I was primed for a good time – but the watershape out back was one of the most misdirected monstrosities I'd ever seen.

It was a bells-and-whistles extravaganza, with extensive artificial rockwork, a large grotto, a stone bridge, a lazy-river effect, multiple knife-edge weirs emerging from rock faces, a volleyball court, tile mosaics and sculptures. But everything was “off” to one degree or another: The rockwork was too much, the bridge was clunky, the lazy river didn't work and the whole composition was surrounded by fake grass.

In the right hands, in the right setting and with the right client, any and all of these elements might have worked together, but not here. And the very worst of it from my perspective was the cheesiness of the sculptures: The mirror-image dolphins rising awkwardly from the water's surface were about as unnatural and un-lifelike as they could possibly be.

It was all so bad as to be laughable – except that the homeowner had paid a huge sum for the whole shebang and seemed quite proud of it. And then we came to the big question: Would I be publishing the project in *WaterShapes*? Suffice it to say I had a few awkward moments swallowing my true opinion – but lived to tell the tale.

As bad as so many things were, those dolphins have always stuck in my mind – so much so, in fact, that every time I've seen marine-inspired art since then, I've pretty much looked the other way. Is there anything more cliché in the world of watershaping than sappy images of fish, seashells and dolphins? There may be some fun in their designs, but artistry, subtlety and sophistication? Rare, I'd say.

But recently, my appreciation for representations of dolphins and other marine life underwent a significant change for the better through the persuasive persistence of an artist named Dale Evers, a lifetime aquaphile and talented sculptor of all things oceanic. I visited his studio in June and was startled by just how beautiful figures of whales, fish, aquatic plants and even *dolphins* can be when shaped by the hands of a fine artist.

What had seemed so hackneyed elsewhere rises in his capable hands to the level of high art, dignifying aquatic subject matter without sentimentalizing it. (For a sampling of his work, see the feature on page 54 of this issue.)

My fresh look into the potential of the marine-art genre is a powerful lesson in the capacity of art to change minds, drive appreciation into even the hardest hearts and uplift any observer's spirits. That's what it took to rid my mind of the tragic dolphins that long ago had jaundiced my perception of an entire artistic genre – a new look I've been happy to take.

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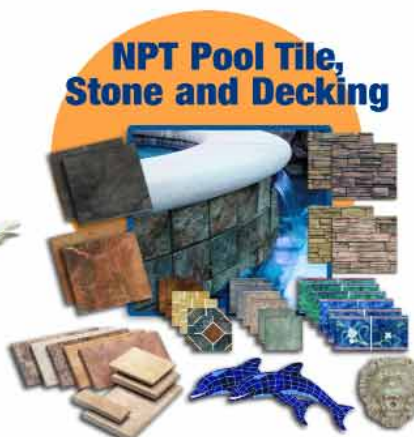
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**Dave Wooten** is founder and president of Captured Sea, a decorative fountain design/installation firm based in Sunset Beach, Calif. He started the company in 1980 at age 19. Through the 26 years since then, he has devoted himself to developing comprehensive expertise in all aspects of decorative watershape design and construction. Working exclusively in the southern California market, his firm boasts state-of-the-art design technology and a cadre of accomplished designers and craftspeople. The company has a remarkable portfolio of extremely complex and innovative projects for high-profile clients, including the Walt Disney Co., the Getty Trust and a host of municipalities, commercial properties and high-end residential clients.

**John Mee** is marketing manager for Mee Industries, a fog-system design/manufacturing firm in Monrovia, Calif. Son of company founder Thomas Mee – the inventor widely credited with pioneering fog and misting systems for a range of applications – Mee joined the family firm in 1985, beginning his career in system manufacturing, assembly and installation. (His brother, Thomas Mee III, is CEO; his sister, D'Arcy Murray, is president.) The senior Mee passed away in 1988, leaving a legacy of innovation and creativity that continues through his family's efforts to this day.

**Dale J. Evers** is a sculptor based in Morro Bay, Calif. Focusing almost exclusively now on works that depict various forms of marine life, he studied art at California State Polytechnic



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University at San Luis Obispo and at San Diego State University. By his own account, however, he was educated in the arts mainly by his parents, both artists in their own right. During his 25-year career, he has created and sold thousands of original works to a range of residential clients including a host of celebrities as well as to commercial clients including the U.S. Olympic Committee. He has been given awards by The American Oceans Campaign in recognition of his contributions to the marine-life genre, and his work has been featured in galleries around the world.

**David Tisherman** is the principal in two design/construction firms: David Tisherman's Visuals in Manhattan Beach, Calif., and Liquid Assets of Cherry Hill, N.J. A designer and builder of custom, high-end swimming pools since 1979, he is widely known in the pool and spa industry as an advocate for the highest possible standards of design, engineering and construction. He has degrees and credentials in industrial design, scientific illustration

and architectural drawing from Harvard University and Art Center College of Design and has taught architectural rendering and presentation at UCLA. An award-winning designer, he

serves as an industry expert for California's Contractor State License Board. Tisherman is a co-founder of and principal instructor for the Genesis 3 Design Group.



If you'd like to contribute an article to WaterShapes, contact Eric Herman at [edit@watershapes.com](mailto:edit@watershapes.com)!



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By Brian Van Bower

# The Art of Relaxation



I've always believed that we should make a point of playing at least as hard as we work.

My parents taught me that: They were both hardworking people who always made time for big-time fun and relaxation, and that outlook has influenced my entire approach to life. Fact is, relaxation in almost all forms is far more important than most people think – especially in our modern culture, which promotes what I see as an unbalanced view of work versus play.

Most everyone in watershaping, for example, knows that this business can be extremely hard work and that “the busy season” has become a year-round gig for many of us. Yet when you stop to think about it, we're in the business of providing the very experiences to our clients that we all too often deny ourselves.

This begs the question: Would you buy bread from someone who doesn't enjoy eating it? Or, more to my tastes, would you drink wine made by someone who doesn't know the joy of sharing a great bottle during a good meal? The answers here are obvious, so I pose a more relevant question: How can we possibly provide luxurious relaxation if we ourselves haven't mastered the art?

Not only does mixing business with pleasure make all sorts of sense from an enjoyment standpoint, it also enhances my ability to place myself in the clients' mindset and tailor subsequent design work to the experiences they're after.

## counting the perks

The list of obvious and not-so-obvious benefits of relaxation is impressive when you step back and take a look.

On the professional level, there is simple power in knowing how to have a good time. Whenever I travel anywhere for the purpose of consulting on or generating a watershape, to the best of my ability I make a point of arranging some sort of accompanying good time – often with my clients, but not always.

Not only does mixing business with pleasure make all sorts of sense from an enjoyment standpoint, it also enhances my ability to place myself in the clients' mindset and tailor subsequent design work to the experiences they're after. Perhaps I'll come to appreciate the views their property offers through their eyes or learn something about family or local history that can be woven into the design.

Simply by spending time with them outside the bounds of a meeting – just relaxing – I find that I come to understand the sorts of activities they value most and get a much better feel for their personalities, lives and favorite experiences. Moreover, by speaking authoritatively on luxury, relaxation and fun, I inspire them and build their anticipation of the finished product.

And it's not beside the point that I've made some very good friends along the way, which can have tremendous benefits when it comes to working through the process of designing the watershapes of their dreams. Breaking down social barriers in this way helps me, for example, provide input that can redirect the clients' thinking about relaxation. It's a plain fact that many of the people for whom we work are so focused on success that they have a tough time





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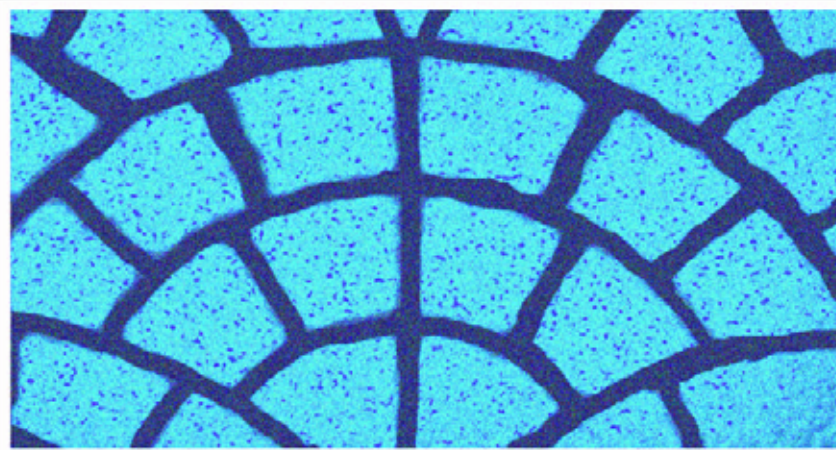


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## aqua culture

even thinking about kicking back and unwinding.

Not long ago, I visited a client who took me for an afternoon outing on his 60-foot catamaran. Imagine the scene: We're out on the water in this gorgeous boat, sailing just off Tortola past the end of St. John. It's a beautiful day, with gentle breezes filling the sails, and we had little to do because the boat was fully staffed with a captain, a cook and a first mate.

I'm sitting on the back of the boat at a large teak table enjoying a cocktail, the view and some fresh guacamole. In the midst of what I can only describe as perfection on every conceivable level, the guy just can't get away from his Blackberry. Noticing his fixation, I gently posed this question: "Wouldn't it be great if someday you became so successful that you wouldn't have to work while you were out on your yacht?" He laughed, agreed with me, put down the Blackberry and joined me in having a good time.

## good spirits

Time and time again, I've found that clients almost invariably appreciate the fact that I can relate so closely to their desire for luxurious relaxation. If they are among those who simply don't get enough down time, they tend to envy it even as they enjoy it vicariously. If, by contrast, they're among those who manage to escape the rat race on occasion, they value my perspective even more and appreciate the fact that I share their point of view.

Seldom (if ever) have I run into someone who's so wrapped up in a hard-charging work ethic that they view my love of kicking back as some sort of negative. Indeed, even the most driven personalities have at least *some* room for appreciating the concept of relaxation: It's human nature and, in professional terms, gives us common ground with most if not all of our clients.

I've used my own capacity for having a good time to great effect over and over through the years, and it's to the point that relaxation is never far off my agenda, at work or on vacation, rain or shine: It no longer has to do with where I might



be at the time. And make no mistake, the reason is only partly because my outlook tangibly benefits my work as a water-shaper. In fact, I think if honing a competitive edge is your main motivation for embracing the art of relaxation, you're missing the bigger point that kicking back from time to time is good for everyone – no exceptions.

So let's get back to the benefits.

For starters, taking a break clears the mind and reduces stress – both of which increase creativity, sharpen mental acuity and are, in one way or another, good for your health both mental and physical. Down time also gives you opportunities to enjoy family and friends, engage in new experiences and gain an appreciation for hard work. Conversely, if all you ever do is work hard, the tendency will be to start resenting the process and/or deny yourself rewards you probably deserve because you "just don't have the time."

In other words, we all owe it to ourselves to chill out from time to time, regroup and recharge the batteries. Consistently, I've found that setting aside time for fun on the calendar gives me something to anticipate beforehand, something to enjoy in the moment, and something to remember fondly afterwards.

Your down time is also good for the people around you. There's no question, for example, that getting away with family and friends reinforces personal bonds and almost invariably strengthens relationships. We tend to remember family times that involve recreation, getting close to friends and making new ones. And let's be honest here: When it comes to sharing down time with our significant others, vacations and other breaks away from the routine are nothing but positive, mentally or physically.

**Your down time is good for the people around you. There's no question, for example, that getting away with family and friends reinforces personal bonds.**

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## when and how

Of course, there are always scores of reasons why we put off good times. After all, we're in business to be successful, and when there's work to be done, we tend to zero in on it and give it our total focus. That sort of ambition is truly wonderful, but only so long as your life has balance.

That's why I believe that everyone should plan their fun and put good times on par with all the other events on our schedules. In my case, I go to great lengths to set up situations that lend themselves to feeling a sense of freedom from the rigors of daily life. This requires balance, too, in that you maximize fun by having a general game plan, knowing something about where you're going and having some idea of how you'll spend your free time.

In other words, planning in and of itself is not a chore if it adds to the overall richness of the relaxing. You can overdo the preparation, of course – too much

planning will kill both spontaneity and the sense of adventure – so I always try to keep things loose and leave some things to chance.

Sailing, for example, is among my favorite of all recreational activities. What I love about it is that the boat itself is the destination: Once I'm aboard and out cruising around the Florida Keys, I'm where I want to be and everything else is optional.

Why have an itinerary in such a time and place? Whenever I set sail, my only thought is to live in the moment, revel in the beauty all around me and indulge whatever pleasurable whims emerge as the days unfold. For me, that's perfect balance in a planned activity in that the activity is defined by a complete sense of freedom.

Others get this same set of sensations in different ways, perhaps by riding horses or off-road vehicles, by fishing or hiking, by soaking up the sun on a beach or snorkeling to explore the universe just be-

**Taking a break clears the mind and reduces stress – both of which increase creativity, sharpen mental acuity and are, in one way or another, good for your health.**

yond the dry sand. It doesn't really matter what you enjoy, so long as you take the time to do it!

The great thing about relaxation is that it's an art form that works on all economic and social levels: You don't have to fly to the south of France in a private jet to have a good time. In fact, it can be as simple as barbecuing franks over a firepit on the beach, or having a cold beer at a baseball game, or playing softball with your kids.

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who are not wrapped up in becoming or remaining affluent might have an easier time attaining moments of pure and simple pleasure. That being the case, I think we all can learn a thing or two from people who embrace the joy of tossing Frisbees in a park somewhere or listening to their favorite music on their patios after dinner.

## to each his own

To me, the key to full-range enjoyment of relaxing comes from learning how to pursue it in different contexts and settings. It's easy to consider big vacations as times for relaxation, for example, but for a lot of people it's not so easy to incorporate similar joy into daily life.

Some of us who are on the advanced side of middle age may remember a time when weekends were reserved as sacred days off. I'm not sure when it happened, but at some point Saturday became part of the workweek, and now we see the decay of the weekend-off concept erod-

ing Sundays as well. I certainly don't take off both days every weekend, but I make sure that at least one of them involves relaxation.

I see absolutely nothing wrong with taking off two days out of seven, and I'm well aware that weekend fun can be terrific at keeping me focused during the rest of the week. Human beings really do need to recharge themselves, and based simply on my own experiences and my observations of others, it's just not good to go weeks on end without a break. It wears us down in ways we might not even notice.

How difficult can it be to find 90 minutes during the workweek for a relaxing activity? Personally, I take about that much time out almost every week for a massage that wipes my mind, body and spirit clear of every ounce of stress and worry I might be carrying. Others do the same thing with exercise routines, playing racquetball, taking yoga classes, running, swimming, surfing or, perhaps best of all, just taking a walk.

There are countless ways to relax, and countless slots into which relaxing activities can be placed. Some of us probably do these things without even recognizing them, but that's a shame in my book: To translate relaxation into a personal or professional positive, you need to be conscious of enjoying it, think about its benefits and figure out ways of making great situations even better.

That's the level where the right attitude about relaxation can change your life and influence the lives of those around you, including your loved ones — and your clients. **WS**

**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](mailto:bvanbower@aol.com).

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By Stephanie Rose

## Creative Genus



In looking back over several recent projects, I noticed that I've been using one particular genus of plants more frequently than just about any other.

Its name probably evokes thoughts of petri dishes and bacterial colonies for most of us, but this plant genus – *Pittosporum* – has truly held an extremely valuable position in most of my plant palettes in recent years and is one of the most useful of all plant types I use.

I find myself pointing them out every time I take clients to a nursery to view and select plants, and it seems I'm always trying to find ways to fit one or more of its many varieties into my planting plans. I treasure them for their great variety in color, form, texture and even scent – a versatility that often lets me use several types within a single design.

### plant profiles

*Pittosporum* is a genus composed of evergreen shrubs and trees and in my experience is among the hardiest groups that grow in California.

It's been used extensively since the 1960s and is a standard selection in many commercial designs because of its hardiness and visual appeal. In color, the

Too many of us tend to find a favorite plant within a genus and use it over and over again. For me, *Pittosporum* broke me of the habit.

leaves range from a very light gray-green to an intensely dark green; in form and size, they go from low, mounding shrubs to large, graceful, slightly arching trees.

Even the leaves differ between varieties – from less than a half-inch long with *Pittosporum tenuifolium* 'Silver Sheen' to six inches long on *Pittosporum undulatum*. They are further differentiated by the glossiness of their leaves, ranging from very shiny on *Pittosporum tenuifolium* 'Silver Sheen' to dull and almost fuzzy on *Pittosporum crassifolium*.

I consciously and conscientiously use these variations to my advantage placing these plants in the fronts of borders, using them as anchors to an entire design or placing them as filler shrubs in the middle or back of borders where a plant is needed to blend in. I've also used them as specimens against a wall, where their forms can be highlighted vividly. On occasion, I've used five or more varieties of *Pittosporums* in just one design.

These plants do best in warm climates, so they may not be of immediate use to some of you. I'm certain, however, that there other species with a similar range of possibilities and points of distinction – more than enough to give you the sort of versatility I've found with *Pittosporum*.

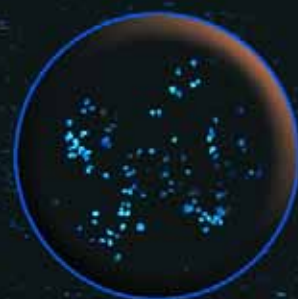
Too many of us tend to find a favorite plant within a genus and use it over and over again. For me, *Pittosporum* broke me of the habit – and if my experience here can be translated to yours with any genus, take a look at what's available: You might just find something else within a genus that might make a valuable addition to your designs.

I've found all these *Pittosporum* varieties by observing others' design work and conduct-



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ing regular nursery visits during which I ask lots of questions and pay particular attention to what I see in the “hold” section where plants await pickup or delivery. In *Pittosporum*, I’ve discovered a workhorse for my designs that offers many different visual forms, low maintenance and an ability to transform my clients’ gardens into something never be-

fore seen in their neighborhoods.

## best bets

Let’s run through a list of different species within the *Pittosporum* genus that I have found particularly useful:

► ***Pittosporum crassifolium***: The first time I saw the ‘Compactum’ variety of this plant, it lined the entry path to a classic,



**Pittosporum Crassifolium**

Italian-style home where its gray-green leaves contrasted quite subtly with a bed of English Lavender and the darker gray-greens of Olive trees. The compact variety usually grows to no more than about three feet tall and wide and works very well at the front of a straight border or when used to punctuate an undulating border at even intervals.

There’s also a taller variety of this plant that can reach as high as 20 feet tall and 20 feet across, but I typically see it as a six-to eight-foot tall single plant or hedge. With either variety, I like to surround these plants with darker foliage so that their unique colors and forms stand out.



**Pittosporum Tenuifolium**

► ***Pittosporum tenuifolium***: This is my current favorite among all of the

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Pittosporums – and it's held that position for quite some time despite my usual tendency to tire quickly of new, unique plants that suddenly everyone starts using. Despite myself, I keep finding situations in which the 'Silver Sheen' variety of this plant continues to dazzle my clients.

Basically, *Pittosporum tenuifolium* is an upright shrub with dark twigs and leaf-stalks that contrast with its medium-green leaves – a great alternative to the myriad shrubs used as hedges in my region.

'Marjorie Channon' is the variegated version and is particularly useful against darker foliage or in a partly shady spot in which the white variegation creates the illusion of light filtering through the canopy. But my absolute favorite is 'Silver Sheen,' with the tiny, reflective leaves that work spectacularly as a specimen against a light-colored wall. It has a lacy form so gentle that it can't help but draw attention when contrasted with a lighter color. (I have also seen a variegated version of the 'Silver Sheen' variety, but I haven't had the opportunity to use it yet in a design.)

In a situation where you might have the opportunity to place a lacy 'Silver Sheen' specimen in a place where it's seen against the backdrop of the sky, its form would be beautifully emphasized. The plant would also have tremendous, double appeal when reflected off the dark, cool surface of a watershape.



**Pittosporum Tobira 'Variegata'**

► **Pittosporum tobira:** This was my first introduction to Pittosporums way back

when I was taking plant-identification classes. It's similar to *Pittosporum crassifolium* in that it has both upright varieties as well as mounding, compact varieties (*Pittosporum tobira* 'Wheeler's Dwarf'). It comes in variegated forms as well.

I've used 'Wheeler's Dwarf' quite successfully to cover slopes that have needed low-profile, low-maintenance plant-



**Pittosporum Tobira 'Wheeler's Dwarf'**

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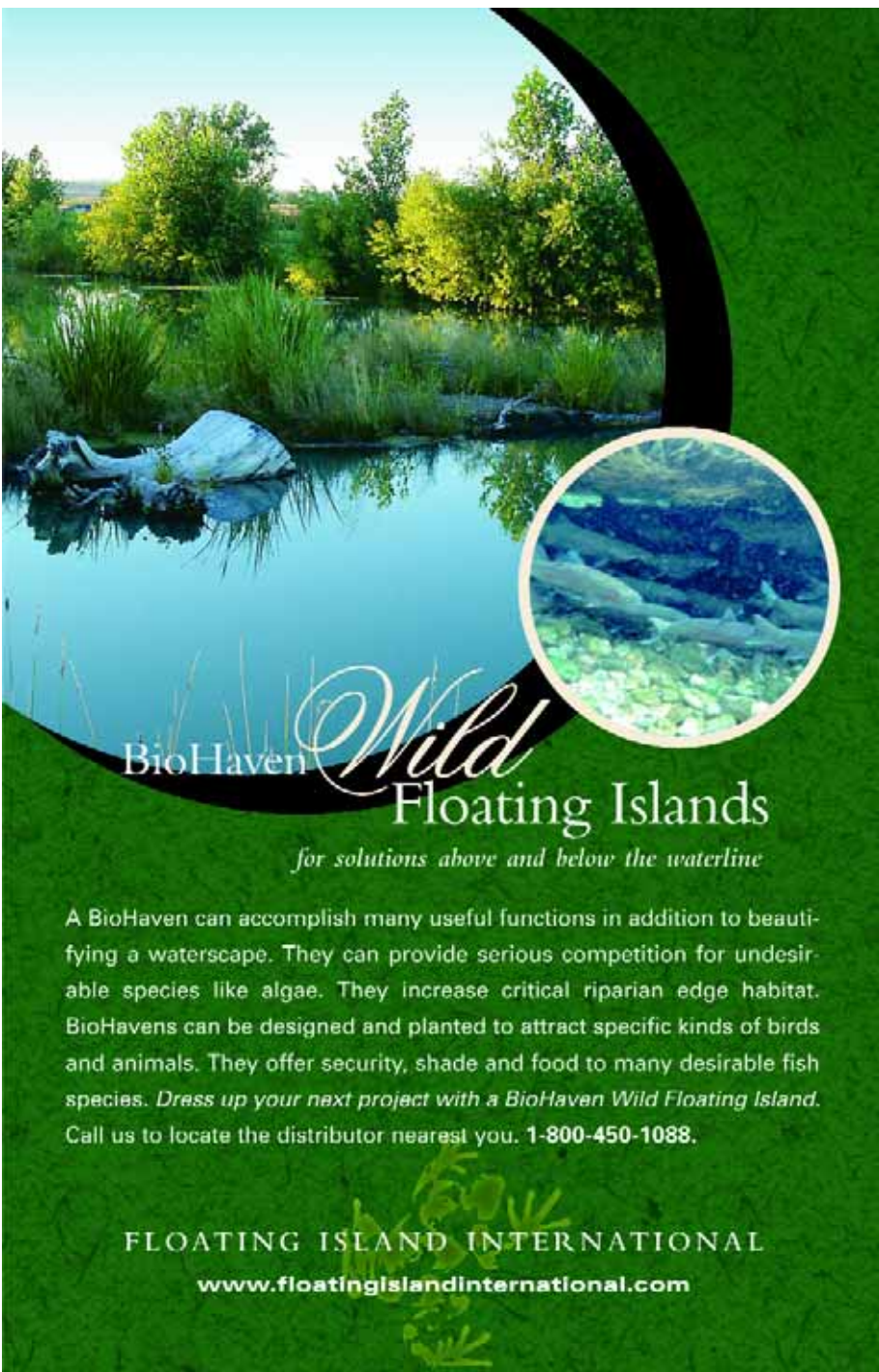


ing. Lately, however, I've been shying away from this species because I think it's been over-planted. That doesn't mean I won't use it at all: As with any plant, it's worth regularly revisiting its use – particularly if you're someone who likes to design with a twist by weaving together new, unusual plants with the "old school" vibe a plant like 'Wheeler's Dwarf' offers.

Another reason I can't break entirely away from this variety is the slight citrus fragrance it gives off when in blossom each Spring – a scent that explains why it is commonly referred to in my area as "Mock Orange."

► **Pittosporum undulatum:** This is the largest tree in the group and was once my nemesis. For years, I had one in my yard

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that stuck out like a sore thumb – *literally*, as that was the shape it adopted in the course of about two decades of inattention.

I was ready to hit it with the wrecking ball, but an arborist persuaded me to lace it out and give it a much more graceful appearance. I did so and was pleasantly surprised to find what a nice contrast its soft, slightly arching canopy made to the majestic Oak and towering Ash, Pine and Pepper trees that also grace my hillside lot.

Since that experience, I've often found myself suggesting this course of action to other dissatisfied Pittosporum owners, as well as adding it to their designs. It's a slow grower initially – but worth the wait for a form rarely matched by other tree selections. I recommend seeking out larger specimens for instant gratification.

The only drawback with this variety is its fruit drop, which (with strategic pruning) can be minimized.

This genus doesn't thrive in cold climates, but the underlying principle is the same. If your region supports a genus that contains several hardy plants, do a bit of research and see if there are plants within that genus that have the same general characteristics but different qualities when it comes to colors, textures, sizes and forms. It may add just the edge you need to make your designs stand apart from everyone else's. **WS**

**Stephanie Rose** runs Stephanie Rose Landscape Design in Encino, Calif. A specialist in residential garden design, her projects often include collaboration with custom pool builders. Stephanie is also 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](mailto:sroseld@earthlink.net).



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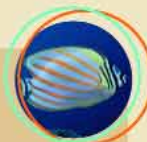
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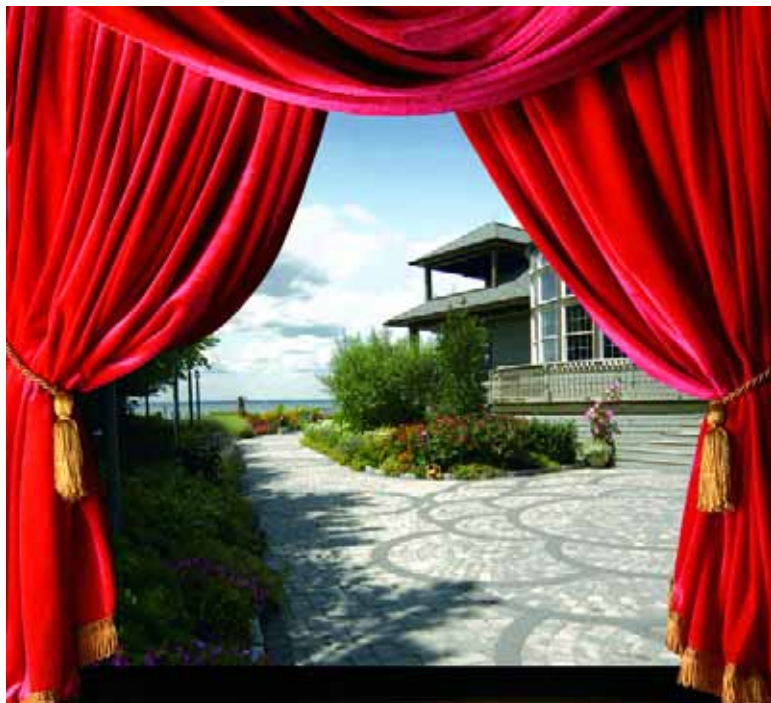
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By David Tisherman

## Revealing Elegance



It often happens that the way people enter a space has everything to do with the way they experience it and come to regard its overall design.

This was much on my mind as we concluded our work on the Long Beach Island project I've discussed in my last few "Details." By orchestrating access and movement toward the backyard/pool area, we developed a string of transitions that lend a sense of surprise and delight to those entering a beautifully designed and constructed space that literally seems like a world apart.

As discussed in previous columns, the backyard features a swimming pool set up as a reflecting pond that augments rather than distracts from the architecture of the house and its environs. Indeed, we intentionally designed the exterior spaces to mirror and extend the feelings conjured by the home's interior, with its handmade tile, beautiful wood veneers, lovely windows, eclectic furnishings, elegant artworks and a range of other personal touches too numerous to list.

Every move we made *outside* was inspired by the impression gained *inside* that a new discovery awaits around every corner. In that context, and despite the fact my recent columns have focused entirely on the pool, the watershape is a complementary feature – a supporting character rather than the star of the show.

Every move we made *outside* was inspired by the impression gained *inside* that a new discovery awaits around every corner.

### decked in

As mentioned previously, the backyard decks are finished in Lompoc stone, a material that offers subtle hues of oatmeal, gray, beige and buff with subtle blue veining. These decks are meant to be formal, but they are elegant, soft and subtle as well – almost feminine in tone.

There are also terraced planters that enclose various spots around the deck, all of them finished in a ledger pattern of the same Lompoc stone. The totality of this stonework forges soft transitions across the planted/softscape areas and up to the wooden deck that encircles the home. Throughout are inviting seating areas, places for umbrellas and a variety of step treatments, all acting as subtle appointments for superbly elegant surroundings.

The challenge we faced in organizing these areas had to do with managing the way visitors would transition from the driveway area and the home's front door in moving toward the backyard. We knew from the start that we wanted to have those who happened to bypass the transforming experience of the home's interior undergo a similar process in approaching from the side.

That side approach is accessed from a 150-foot-long driveway surfaced in the cheap, interlocking pavers you find just about everywhere in the northeast these days. They may be easy to install, but I don't care for them at all, especially not in the multicolored-fish-scale patterns that seems so popular. But despite their hideousness, we have to live with them because the driveway is huge and shared with a neighbor.

This was, by the way, the same material and pattern that originally surrounded the pool (see page 26 in the May 2006 issue): Where we had control, we had no hesitation in removing the pavers – and I have to say that even the



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bare dirt we found underneath was more appealing.

Given the fact that the driveway was there to stay, we faced a real challenge in figuring out how to take someone entering the property beyond that sort of sterile hardscape treatment and quickly transport them into an entirely different realm of beauty and elegance. And we're talk-

ing clinical here: Visitors pass an electric gate and move along to a garage on the right and the front entry to the left, and we needed to pull them past this visual wasteland to get them to the backyard.

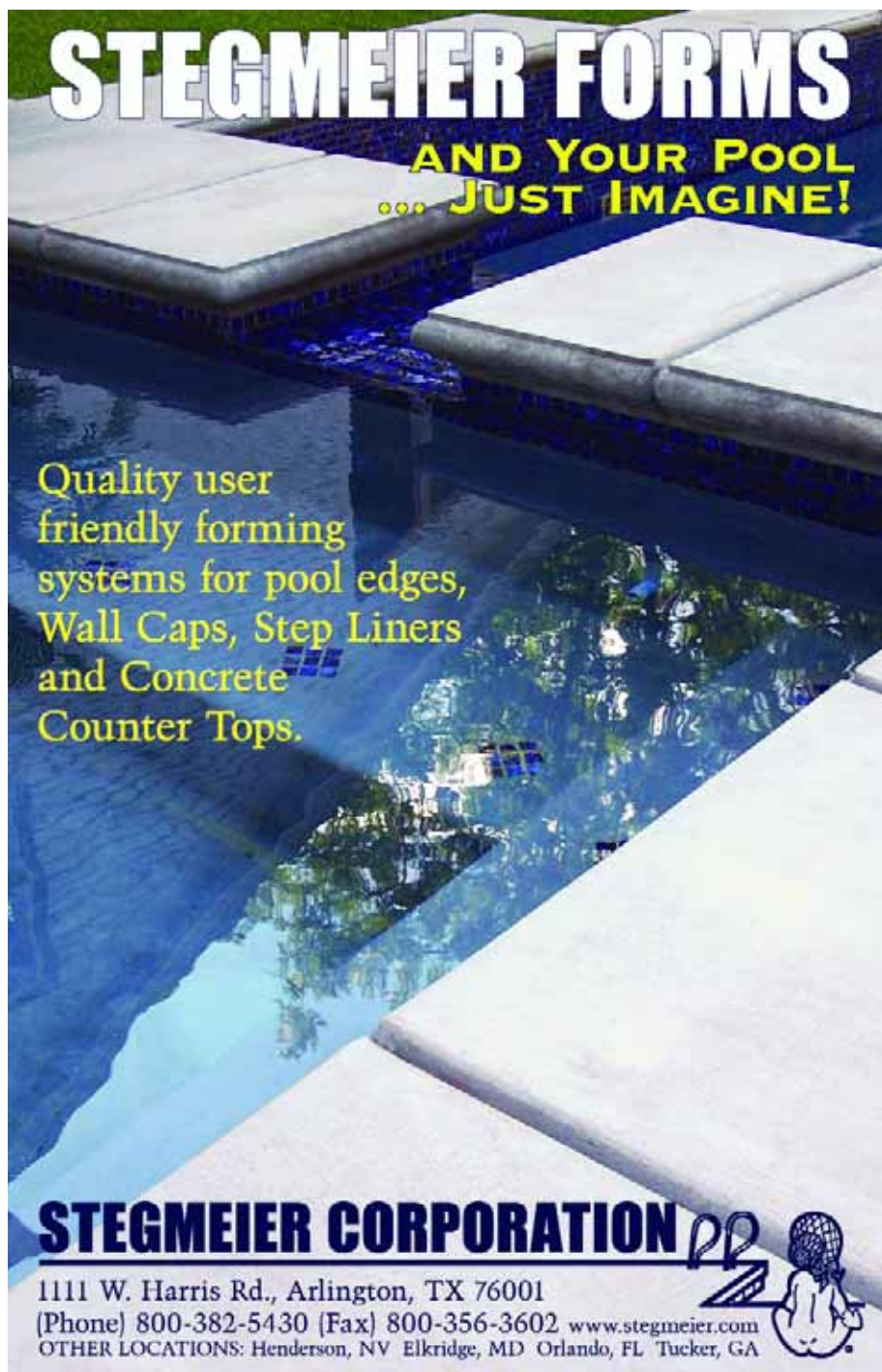
## gate solution

The solution will involve setting up visual barriers and creating a new corridor

that leads visitors down the side of the house and invites them to move into an area that will be separate from everything around it.

The entry to the corridor is to be marked by a pair of planters that will gracefully sweep up to pilasters that will bracket an iron gate. (We'll go with planters here in preference to any other structure in order to comply with permeable-surface requirements set down by local building codes.)

The gates, which will look like the entrance to an enchanted castle, will be fabricated by a wrought-iron specialist from California (another sort of craftsman we couldn't find locally). The two panels will span seven and a half feet but will rise to a height of just six and a half feet – a manipulation of proportions that will make them seem less imposing. They'll have a curving, filigree pattern with an arch that splits down the middle, and the plan is to have them stand open all the time – a thoroughly whimsical and welcoming artistic statement.



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The pavers that wrap around the side of the house are of the same sort we removed without hesitation in the backyard around the pool, but that wasn't an option here. To minimize their negative visual effect, we've developed a program that will turn the approach to the pool into a voyage of unfolding discoveries that will set the stage for a unique experience beyond.





Our plan also includes letting them rust and oxidize in the ocean air and develop a weathered patina that eventually will make them look like they'd been there since the home was first built years and years earlier.

The key here is that the openwork gates will constitute a transparent visual barrier that invites visitors to approach and pass. The walls on either side will be low and engaging rather than repellent, exploiting the natural tendency we all have to approach and look beyond an open barrier before moving on. In other words, it may be a barrier, but it will be an invitation as well.

Three feet or so in front of the entry gate, the deck material will change from the driveway's pavers to the Lompoc stone, sharply indicating a transition. (It's worth pointing out here that the corridor beyond the gate *could* be accessed by simply walking around the planters instead of passing through the gate. The fact that it will not be a functional barrier adds to the sense of fun in the space.)



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Beyond the gate, the pathway slopes up gently, leading first to the steps on the right that rise to the front door, then moving beyond a formal landing to a set of large Lompoc-stone stepping pads.

## a secret place

In direct line with these pads is a small “secret garden” that leads the eye to a point well to the left of the main portion of the backyard and the swimming pool.

This garden is still under construction, but eventually it will include some sort of fountain or sculpture that will control the view as visitors move up the pathway. There will also be distressed-concrete benches, a series of planters and a meandering dry streambed that will wrap around an area to be paved with a tumbled green Colorado stone – or perhaps some other material that suits the final color scheme.

So now, instead of confronting an ugly driveway and a choice between the garage and the front door, visitors who make it onto the property are invited through a whimsical wrought-iron gate along a special path that draws them up into a secret garden. Only when they reach the top of the trail will they turn to the right and see the full backyard, the swimming pool to the left and the ocean beyond – a surprising and beautiful chain of revelations.

That sense of an unfolding is what our approach to this space was all about. Visitors have the sense that good things await them at every fresh step as they move further into the space. Only when the journey is over does the pool come into view – and by that point, it's only part of a glorious overall composition. **WS**

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



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# Riding a Golden Wave

By Dave Wooten

Completing the fountain for Disney's California Adventure theme park presented watershaper Dave Wooten and his company with immense technical and operational challenges: In crafting a huge artificial ocean wave that serves as the park's symbolic core, he and his staff not only pushed the limits of hydraulic and mechanical design, but also met incredible standards for planning, performance and system serviceability set by an awesome client.

Sometimes you just know that a client is going to want something special – something nobody else has. I can think of no other entity that better fills that bill than the Walt Disney Company.

Justly famed for its remarkable record of creativity, spirit of innovation and ultra-high standards for design and execution, I knew going in that working with this amazing organization would mean coming to the table with strong ideas, supreme self-confidence and a demonstrated willingness to test boundaries and perform beyond expectations.

Our firm, Captured Sea of Sunset Beach, Calif., was founded with those exact qualities in mind and a mission to create fountain systems throughout southern California that are distinctive, unique in concept, superbly engineered and built to last. Through the past eight years, we've been fortunate to tackle several projects for Disney in southern California. In each case, they were looking for watershapes that would delight visitors while enduring the rigors of heavy-duty use and near-constant operation.

The call about the fountain featured in this article came in late summer 1999 from Glendale, Calif.-based Walt Disney Imagineering (WDI), the remarkable division of the company responsible for designing its theme parks and attractions. They told us that they were in the process of developing a new park called Disney's California Adventure that was to be located adjacent to the original Disneyland in Anaheim, Calif.

The basic concept under discussion was an elaborate wave fountain to be located at the end of the new park's main entryway. They called it the "Icon Fountain" in "Sunshine Plaza" because, as they put it, the piece was to be the thematic equivalent of the globe that symbolizes Disney's EPCOT Center in Florida and the magic castles that anchor other Disney parks. From day one, we knew that this system would have to be something *very* special.









The equipment room supporting the wave-effect fountain was designed and executed as a model of exactitude. From the bank of pumps and filters to the circuit and control panels, from the pump winches to the 88 valves and lines feeding water to the wave, every single detail was considered, positioned, stubbed out and ultimately assembled with fantastic precision.

## A Natural Selection

At the time of initial contact, the concept was in its earliest stages: The imagineers had established a basic vision and footprint that indicated the location and size of the wave fountain, and they knew that they wanted a wave to be the primary water effect and that it would be surmounted by a big sunburst sculpture – but that was about it. All we had to go on was a plan-view layout along with a beautiful artist's rendering of the sun and the fountain as they saw it. (The rendering hangs in my office to this day.)

We were brought in because we'd already worked successfully at Disneyland and with WDI in other capacities by that time. We had consulted with them extensively, for example, about the Matterhorn bobsled ride, which was experiencing various problems with rust and corrosion after more than 40 years in operation. We were also asked to step in and finish and rework the park's three-million-dollar Cosmic Wave Fountain, a deck-level, dancing-water system that was being installed by another contractor that went out of business, leaving the project about 80 percent complete. This was part of a renovation of Tomorrowland in the original Disneyland park.

Although those projects were fairly extensive, being asked to offer a design/build proposal for the Icon Fountain at California Adventure represented a significant step forward for us with WDI, which

has a reputation for being extremely selective when it comes to establishing relationships with outside firms.

In this case, we knew that developing the system would have us working with designers and engineers at WDI at the highest possible creative level. With that in mind, it made perfect sense to us that WDI would put us through an extensive vetting process before signing the contracts: They visited and scrutinized a large number of our past projects and peppered us with a long list of questions about how and why we design and build the way we do.

I probably shouldn't have been surprised, but it was amazing just how much they knew about us – and more than obvious they had done a thorough, independent in-

vestigation into our company history. They weren't going to give this iconic fountain to just anyone, and they were apparently more than satisfied with our past work and the responses I gave them: WDI hired us as a general contractor for the project and we immediately went to work.

Outside of the basic concept for the fountain, however, they hadn't done anything to figure out how to make it all come together and work. It was left up to us to develop all of the mechanical, hydraulic, waterproofing, room layout, filtration, electrical and structural details, and we knew from the start that, whatever we designed, we also had to build – and that it would need to pass muster at the company's highest levels.







## Beneath the Surface

Here's what we knew: The fountain was to consist of a 200-foot, semi-circular, split-level basin with a large curved wall over which a 60-foot-long, 15-foot-high ocean wave was to break. The wave was to break from the center to the outside, the outside to the center, from left to right, from right to left and run "all on" or "all off" to meet various program needs. Moreover, it was to sound as much as possible like a naturally occurring ocean wave.

That may have seemed like a straightforward commission from WDI/Disney's perspective, but from ours, the system proved to be remarkably complicated. Making it happen required a slew of custom details to provide the sort of reliable, easily maintainable, high-performing sys-

tem they wanted.

The fountain does indeed consist of two pools: the upper reflecting pool (which adds shimmering light to the sunburst) holds approximately 6,000 gallons of water, while the lower pool contains 18,000 gallons. The top pool sits on a curving, 80-by-15-foot, poured-in-place concrete bunker that was built so that the floor of the upper fountain serves as the ceiling of the equipment room. The walls are 12 inches thick, reinforced with dual curtains of #5 rebar on 12-inch centers, while the floor of the equipment room is 24 inches thick with double mats of #6 rebar on 12-inch centers.

The stainless steel/titanium sun sculpture is mounted on a series of bases lo-

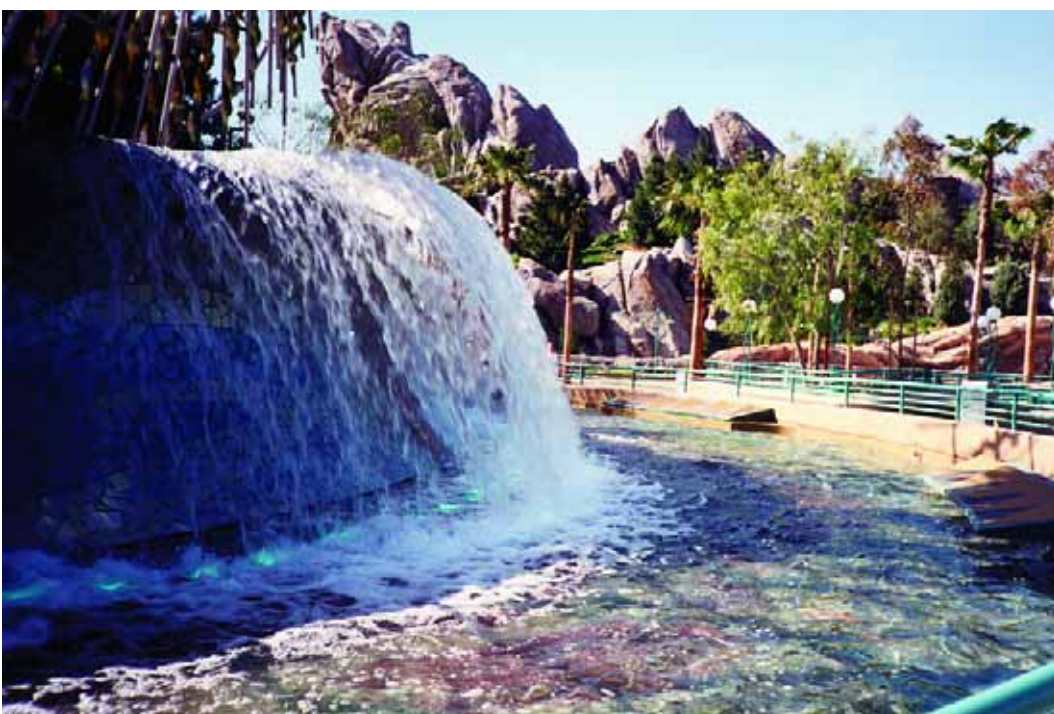
cated just behind the upper pool and looms some 60 feet above the wave, standing somewhat offset and toward the foreground from the viewers' perspective. Everything we touched – including the sun sculpture's footings, which consist of more than 300 cubic yards of concrete – had to be designed to withstand major earthquakes (an obvious concern in southern California) as well as 100-mile-per-hour winds.

The water that creates the wave flows to a series of 88 stainless steel boxes that transfer tight, sequenced sheets of water up and over the lip of a concrete wall shaped to look like a large wave breaking onto the beach. The feature is driven by four 50-horsepower pumps that create



The valve system releases water into the numbered wave boxes in a variety of programmable ways, starting the wave action at any selected spot along the line and moving in either direction. The force of the flow and the contour of the weir give the wave a characteristic curl that's familiar to anyone who has ever watched waves crashing on the shore.





Seen at eye level from any angle, the waves carry all of the symbolic energy Disney's planners foresaw in commissioning the fountain. The water rises and crashes with familiar rhythms – sounds that celebrate California's intimate relationship with the Pacific Ocean.



an aggregate flow of 8,000 gallons per minute when the wave effect is in full operation. The water runs through a 5,000-pound commercial sand filter driven by a 7-1/2 horsepower pump and is treated by a chlorine feeder controlled by an ORP system and an acid feeder monitored by a pH-control system.

Disney had a range of concerns about our plans, chief among them being what would happen if the pump system experienced some sort of total failure. Specifically, they were concerned about the possibility of the vault flooding in the event of such a malfunction.

To allay their concerns, we installed a vault-flood probe switch to shut off the main effects pumps if more than four inches of water accumulated on the floor; in addition, we distributed return check valves throughout the system and set the tops of the pump strainers exactly one inch above the lower pool's maximum water level, meaning it would be physically impossible for anything to flood on the suction side of the four main pumps even in the event of catastrophic failure. We demonstrated this system feature by running the system with all the strainer

lids off and then shut everything down completely: Not a drop of water escaped the system.

### Inner Workings

The 88 wave boxes function with the assistance of 88 inch-and-a-half valves with opening and closing speed controls. These specialty valves, made for us by Claval of Costa Mesa, Calif., are fed by four 10-inch-diameter-by-15-foot-long stainless steel header manifolds bolted together for a total header length of approximately 60 feet. The header assembly equalizes water pressure and flow to each of the valves and, in turn, feeds 88 two-inch copper lines set at six inches on center.

From below, the system resembles a pipe organ, with valves hanging from the lines like bats suspended from the roof of a cave in a staggered pattern – 44 even and 44 odd numbers. The valves were specially designed so that their bonnets hang underneath, an arrangement that facilitates service and allows for easy replacement of seals and other valve components.

The valves are programmed to open and close in sequence at intervals of a quarter second – that is, four valves per

second – which makes them sound like a passing train if you stand in the pump room while the system is running. This timed sequence creates the wave effect across all 88 boxes in such a way that the flow over the lip of the wall appears to be continuous.

The four pumps continue to run when the wave effect is off; at those times, a portion of the water is diverted to two separate three-inch valves at each end of the header, dumping water at a rate of 300 gallons per minute per valve. The pumps are kept running at all times so they never experience a dead-head condition that would effectively boil the water in the pump strainers. Moreover, this configuration minimizes noise and increases the valve and pumps' service life.

To prevent all four main pumps from coming on at the same time and creating a massive water hammer, we programmed our computer to "soft start" the four 50-horsepower main effects pumps and their 8,000 gallon per minute flows: Every time the system goes off for any reason and comes back on (whether in response to a timer, a low-water cut-

## Northern Exposure

California Adventure is unique among all Disney properties in that, because of its position immediately adjacent to Disneyland, it is the only one that is oriented northward. In fact, all of the other parks are laid out with southern exposures.

In practical terms, that meant that our fountain and the sun disk over it would, in facing north, not be exposed to direct sunshine most of the time.

The sun sculpture is made of titanium, stainless steel and magnesium finished with beautiful gold and blue alloys. With a northern orientation, the imaginers knew it wouldn't get enough natural light to conjure the glowing reflections they wanted. This led them to develop a fascinating solution out in the landscape beyond the boundaries of the fountain, where they placed six 40-foot poles topped by programmable, eight-foot-diameter sunflowers that track and move relative to the real sun and the disk's position, thus reflecting sunlight onto the sculpture. Each of the six gold sunflowers "wiggles" every 10 seconds to create an ever-moving array of sparkles.

In addition to placing a hundred 500-watt underwater lights to provide nighttime illumination for the sunburst, our work in the fountain also involved designing and installing a series of 12 iridium lights in three bunkers. These lights are mounted in hidden niches covered by special stainless steel bonnets. The dozen fixtures are mounted just above the waterline (but below the viewing area in dry bunkers) that shine through special red, green and blue lenses that allow programmers to generate over one million colors of light to play across the waves and up to the sunburst disk above.



On bright, sunny days, banks of lights in the wave fountain's basin are hidden from view. When needed, covers retract and the sun disk bathes in a special glow.

– D.W.









off or power outage), the pump at one end of the header turns on first, followed ten seconds later by the second pump and so on. This way, if there's any air in the header it will be forced to one end and out of the wave boxes with no resulting water hammer to damage any of the system's valves.

In all, the wave effect takes just over 20 seconds to run from end to end, creating a long, peeling wave that flows over the wall and washes towards a viewing area and its gently sloping 18-inch-to-zero-depth "beach."

The equipment room also features a custom 5,000-cubic-foot-per-minute ventilation system that turns over 100 percent of the pump room's air in less than a minute. (We had to demonstrate this system by firing up one of Disney's special-effects smoke pots and timing how long it took the room air to clear from the minute we turned on the fan.) We also installed custom stainless steel wall-mounted hoists to facilitate any future pump replacements.

In advance of construction, we designed the equipment room down to the most precise detail so that all of the plumbing and electrical conduit was installed before the vault floor was poured. This allowed us to bring our electrical conduits straight down from below the panel to all of our cast-in wall switches, outlets and pump housings without using any surface-mounted conduit. As it turned out, the entire system went in perfectly, precisely per plan.

### Model Mock-Up

Among the scores of custom details applied with this project, a couple of the major ones had to do with locating the suction in a large hidden niche that runs beneath the base of the wave wall.

*Along with the high-tech hydraulics and electronic controls came some good, old-fashioned finish work, from the precision concrete shaping needed to establish the wave's arc to the shimmering tile work on the wall and the beach-like details of the pool's floor. The project was about excellence on every level, down to the smallest detail.*

Originally, WDI thought to position the suction grates in the lower pool's beach area, but they didn't really like the idea of the grates being so visible to the public and asked us to find an alternative. In response, we designed a tapered, 60-foot-long bunker at the base of the wave wall that measures 30 inches front to back and 15 inches tall at the mouth before narrowing to 13 inches tall at the rear suction point. Even that very slight contour enables all of the air to roll back out before getting pulled into any of the eight suction points, thereby preventing passage of any entrained air and any resulting pump cavitation.

Of course, we'd never seen a wave pool built with this sort of suction configuration, and were justifiably interested to see if it (and the rest of the system, for that matter) would work. This was just one of several features that we needed to test and re-test extensively before the system entered the construction phase.

Reaching this point brought us to the end of our initial project stages – stages during which we'd engaged in scores of meetings with WDI engineers who, although they'd given us free rein to design the system as we saw fit, constantly hit us with questions about every single detail. The pressure was always there but was entirely constructive, forcing us to up our game over and over again and to consider and reconsider every aspect of the system's operation from a variety of angles. Ultimately, I believe that this process resulted in a truly bulletproof waterfeature.

Even with this scrutiny and spirited discussion, WDI engineers and our staff wanted to leave nothing to chance. As a result, we built a fifth-scale mock-up of the wave system that ran continuously from February to June 2000. (As we later learned, Disney has all its key vendors make models of features that are intended for their parks.) The model allowed us to test performance, confirm design intent and make certain that materials used to create the attractions looked right and would hold up over time.

The mock-up wave ran steadily for months, and along the way we subjected the floor glass and the mirrored,

Continued on page 40



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*In addition to seminars offered during the AQUA Show on a variety of subjects, SWD will be offering six 20-hour, design-oriented classes in Las Vegas, November 6-8, in the days leading up to the show:*

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*Instructor: Judith Corona*, a teacher and visual artist whose work has been exhibited in U.S. and European galleries and who is also a fellow of the Whitney Museum of American Art.

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*Instructors: Donald Gerds*, author of *Perspective: The Grid System*, and **Kevin Fleming**, BS, Landscape Architecture, West Virginia University, and principal, Liquid Design, Cherry Hill, N.J.

## Design Communication for Measured Perspective

The path to success in watershape design has to do with creating visual representations that let clients see and fully understand the potential harbored in their projects. This advanced course cultivates specific graphic-communications skills, developing competency with two-point perspective and issues of scale, proportion, grid systems, tone, shadows and more.

*Instructor: Lawrence Drasin*, an industrial designer who focuses on special-effect interiors and a long-time instructor recognized as Teacher of the Year at UCLA in 2002.

## The Vocabulary of Style: A History of Architecture, Art & Water

When you speak with prospects and clients, do you know enough to speak intelligently about art and architecture? Can you harmonize your watershapes with styles found in their homes and the artwork they love? This course stimulates these abilities with a survey of architectural history with a particular focus on water in built environments.

*Instructor: Mark Holden*, landscape architect and instructor in landscape architecture at California Polytechnic State University at Pomona and other educational institutions.

## Understanding & Designing Fountains & Waterfeatures

Fountain design is a realm in which success is about turning an understanding of hydraulics, sound, lighting, control systems and common head pressure into something magical. This course examines the principles and technologies involved in making water flow in precisely controlled patterns to achieve defined and spectacularly illuminated visual effects.

*Instructor: Paul L'Heureux*, a fountain designer and engineer with years of experience teaching designers and clients what can and can't be done with water in motion.

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*Instructor: Eric Gerds*, computer-graphics expert and professor of graphic arts at Santa Monica College.

*These six classes will be conducted in the days leading up to the AQUA Show & Conference, which runs from November 8-10.*

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specially coated ceramic tile we planned on using to extremes of chlorine and acid content to make certain they'd hold up under varying water-chemistry conditions.

Happily, both the system and its aesthetic elements performed flawlessly from start to finish. Perhaps more important, our work with the mock-up gave us lots of experience in adjusting flow rates and programming the valves. Construction began in earnest in June 2000. We completed our work by December of that year – well in advance of the park's ribbon-cutting ceremony in February 2001.

### Construction Savvy

Assembling the fountain was a process too involved for complete coverage here, but descriptions of just a couple details will offer some idea of the way things went once work began.

The edge of the 60-foot long wave wall, for example, had to be extremely precise, with tolerances of no more than an eighth

of an inch across the entire weir to ensure a smooth wave effect. The 88 wave boxes are designed to send water out and over a curved, blue-tiled wave wall that comprises 30 percent of a circle.

For its part, the mirrored face of the wave wall is curved back under the edge, thereby creating a sense of depth in the water flow and adding the familiar curl or barrel effect seen with large waves. The dimensioning was extremely precise with so little room for error that we knew even the best concrete finishers would be challenged to get things right across such a large arc.

To simplify matters for the masons as best we could, we developed a special wave-carving template in the shape of the wall's finished contour and attached it to a custom-built, 70-foot-long welded metal dolly that rolled on the floor of the top pool above the future wave. We then reestablished the true original radius point of the fountain's curve back some 60 feet behind the fountain. When the shotcrete

for the wave was installed, we pulled the wave form from left to right across the face of the wave, shaping it on two different radiuses at the same time to give us the final profile in one pass.

That seems so simple – and it was when the time came – but it took us two weeks to set everything up for that one morning. When the crew began finishing the shotcrete, everyone from WDI to the masons were amazed at how easily the wall was cut to the exact shape we wanted – and it only took them three hours to shoot the wave when they'd been thinking it was going to take three days! The difference in labor costs here more than made up for our effort in developing the template.

I have to admit that we were all proud of our ingenuity here – a sensation we felt several more times before we were done with this project.

Railing installation, for example, required another interesting twist. The original rail design was, we thought, pretty

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lackluster (although in keeping with those found throughout the park). We decided that what the fountain really needed was our own special notched-pipe design – something that would lend visual interest to what is generally an important but overlooked detail. Happily, WDI approved our design.

But finishing the railing was an issue: WDI would not allow anyone to use a spray gun on site, fearing potential damage elsewhere because of overspray. All other railings in the park had been painted with brushes that left tell-tale marks, but we wanted the sort of even sheen that could only be produced by an airless sprayer. Airless sprayers, however, require spray booths, which raised another problem because we wanted the rail to be a single, curved, seamless, 150-foot piece.

To meet the need, we set up a spray-booth-on-wheels and moved it gradually around the rails, which had already been welded and installed. We don't

know if anyone had done such a thing before, and this was another detail that took a week of preparation. When the time came, however, we were able to finish the railing in exactly the way we wanted to, and it only took a couple hours to achieve perfection.

### Details and More Details

In addition to the big features, we also came up with some smaller-scale details that were intended to make the system both durable and easily serviceable.

For example, we developed special sleeves that we placed around every plumbing penetration in the shell. We also figured out a way to hide the edge of the 40-mil PVC membrane that lines the lower pool in a notch we cut in the wall three inches above the waterline. And, among other things, we reconfigured the way the feed pipes interfaced within the back of the wave boxes so that internal turbulence was kept to a minimum – the net effect being the virtual

elimination of "seams" between the individual wave boxes.

We also recessed the wave boxes back from the wave wall's edge a minimum of one inch, thereby allowing any cut-off water to flow back into the upper pool when the wave effect shuts down – which has the added benefit of allowing for a faster, better cutting off of the wave effect. This measure will also facilitate future re-waterproofing of the upper pool: With this configuration, the operation can be performed without removing the boxes.

Since this project concluded, we've continued our work with Disney on a variety of fountains and waterfeatures, including Monster's Inc. and a wildly creative interactive fountain called "A Bug's Life," in which a massive garden hose and nozzle spray children playing in a space that makes them feel the size of insects. Hard work, but fun and interesting as well.

Indeed, we've been gratified by our



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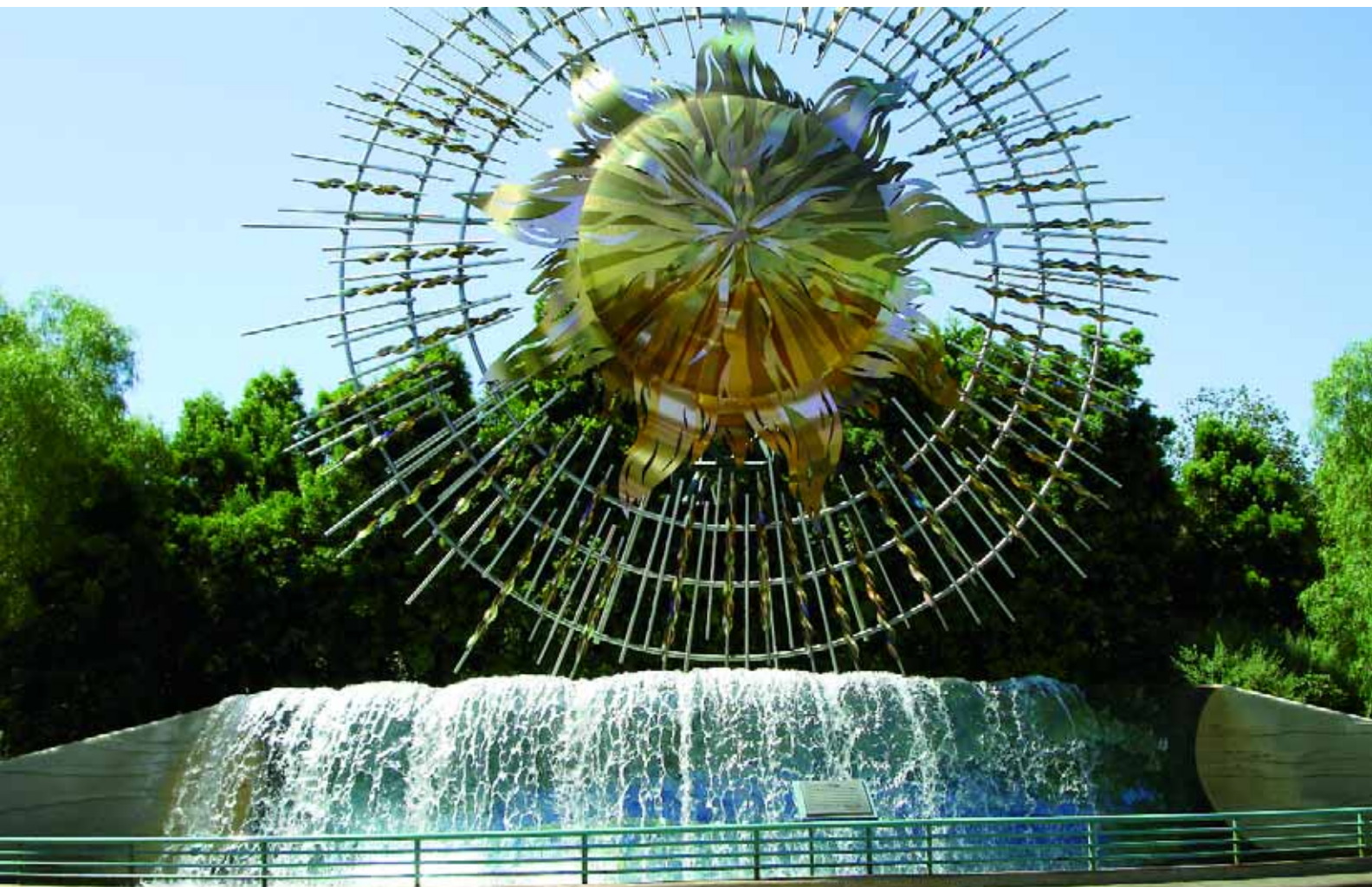
Disney experiences on every level, and Disney representatives have told us repeatedly that we have restored their faith in waterfeatures in the wake of significant problems they had with other systems in the past. It's my belief that we succeeded where others had failed because, like Disney's imagineers, we enjoy working at the highest possible level and try to build to just one standard: *excellence*.

From major design issues from model to mock-up development, from using schedule 80 PVC throughout to specifying only the most reliable of all available components, we spared no expense when it came to quality on the wave-fountain project, and we've always been willing to walk away from projects if performance at the highest level isn't what the client seeks.

In the case of this and all of our Disney projects, we've always been on the same page, no doubt about it.



As the day progresses, the metallic sun disk reflects both available and provided light and changes appearance as the day moves along. The perpetual sunshine and windswept waves send a message about enjoying the 'California Adventure' that makes the composition the perfect icon for the park.





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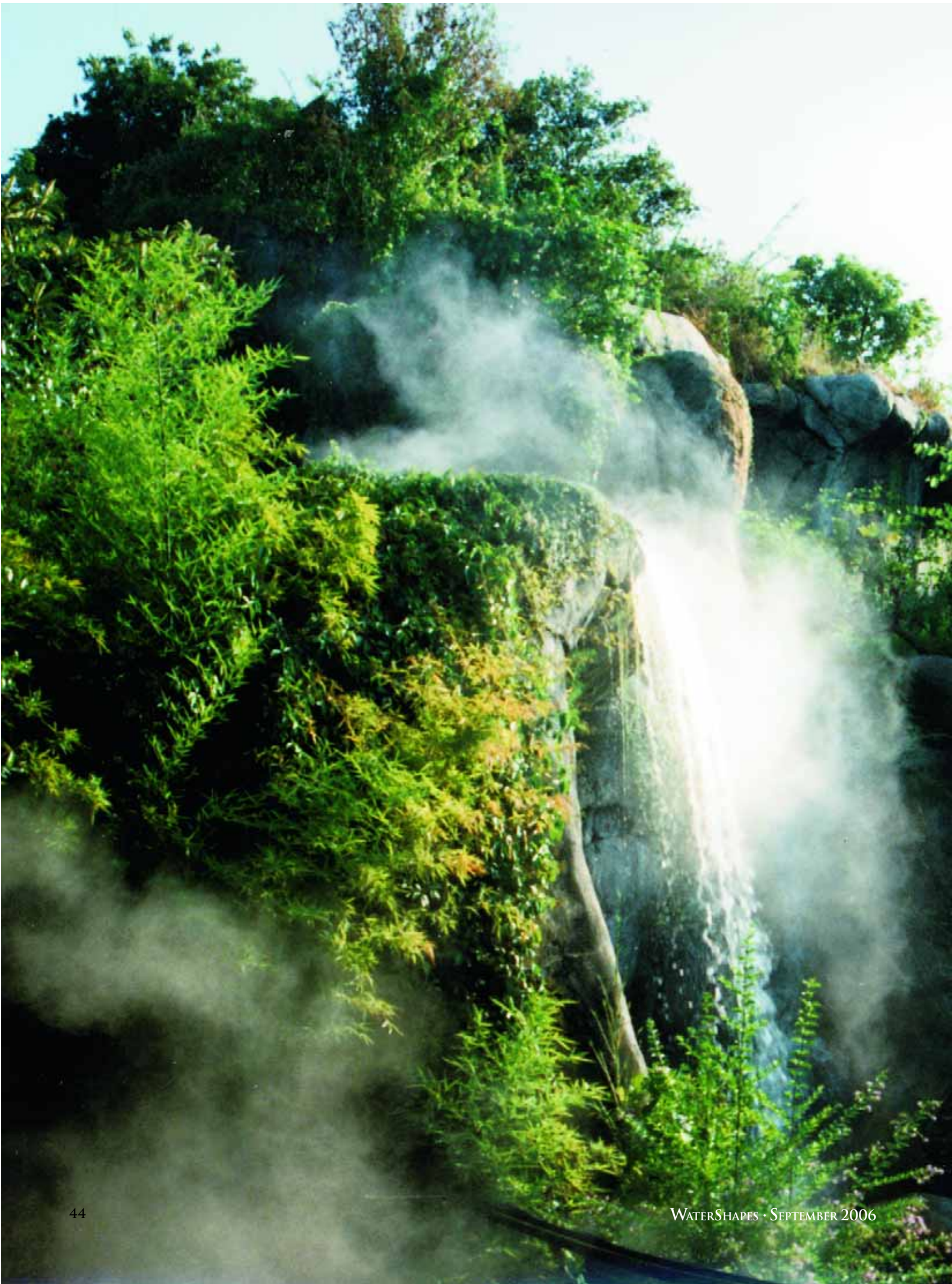
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# Banking on Fog

By John Mee

**With a history that now spans more than 35 years, artificial fog systems have found their way into a fascinating range of both practical and aesthetic applications. Here, John Mee – son of the man credited with creating the first fog system – relates the history of the technology, discusses how it works and examines the characteristics that make it a natural for a broad range of uses, including many associated with watershapes and landscapes.**

From the streets of London to the forbidding environs of horror movies, fog has always been capable of stirring our imaginations. It's the stuff clouds are made of and an enduring symbol of mystery, and it's not too surprising that enterprising people would try to figure out how to generate and use this most elemental of atmospheric vapors as a practical tool and distinctive design element.

To start our story, let's flash back to 1970, when the first-ever artificial-fog system made its debut at the World's Fair in Osaka, Japan, as part of Pepsi's revolutionary Pavilion of the Clouds.

Just a year earlier, my father, cloud expert Tom Mee, had founded Mee Industries to provide instrumentation that was to enable the government to do a better job of studying clouds and airborne pollution. I can only imagine what it was like for him to receive a call from Japanese artist Fujiko Nakaya, who asked him to develop a system that would generate a cloud that would enfold the outside of a 200-foot dome as a key element of her design for the pavilion.

Interestingly, Nakaya was the daughter of the man who had pioneered snowmaking technology, and I've always been intrigued that she wanted to make the leap from his work with atomized *frozen* water to exploit water in its *liquid* version – that is, fog.

The Osaka exhibit is widely recognized as the event that brought fog into being as an artificial matrix. As the story goes, the effect was so vivid that the local fire department responded to emergency calls moments after the system came on line: Nobody had ever seen artificial fog before, and the billows rising above the pavilion led numerous good citizens to raise the alarm.

## Getting the Vapors

For the duration of the expo and even after the novelty had worn off, the idea of using fog mesmerized a range of interested parties across a variety



of industries. Indeed, the use of fog caught on quickly and has since steadily increased, and not only with aesthetic applications of the type familiar to readers of *WaterShapes*. In fact, uses in agricultural and industrial applications have been far more widespread.

At the time my father became involved in the expo project, for example, he was already well into working on designs for fog systems intended to prevent freezing in citrus groves. Having studied clouds extensively, he knew that cloud cover allows less heat to escape the air below it and that temperatures on overcast or cloudy nights don't fall as far or rapidly as they do on clear nights.

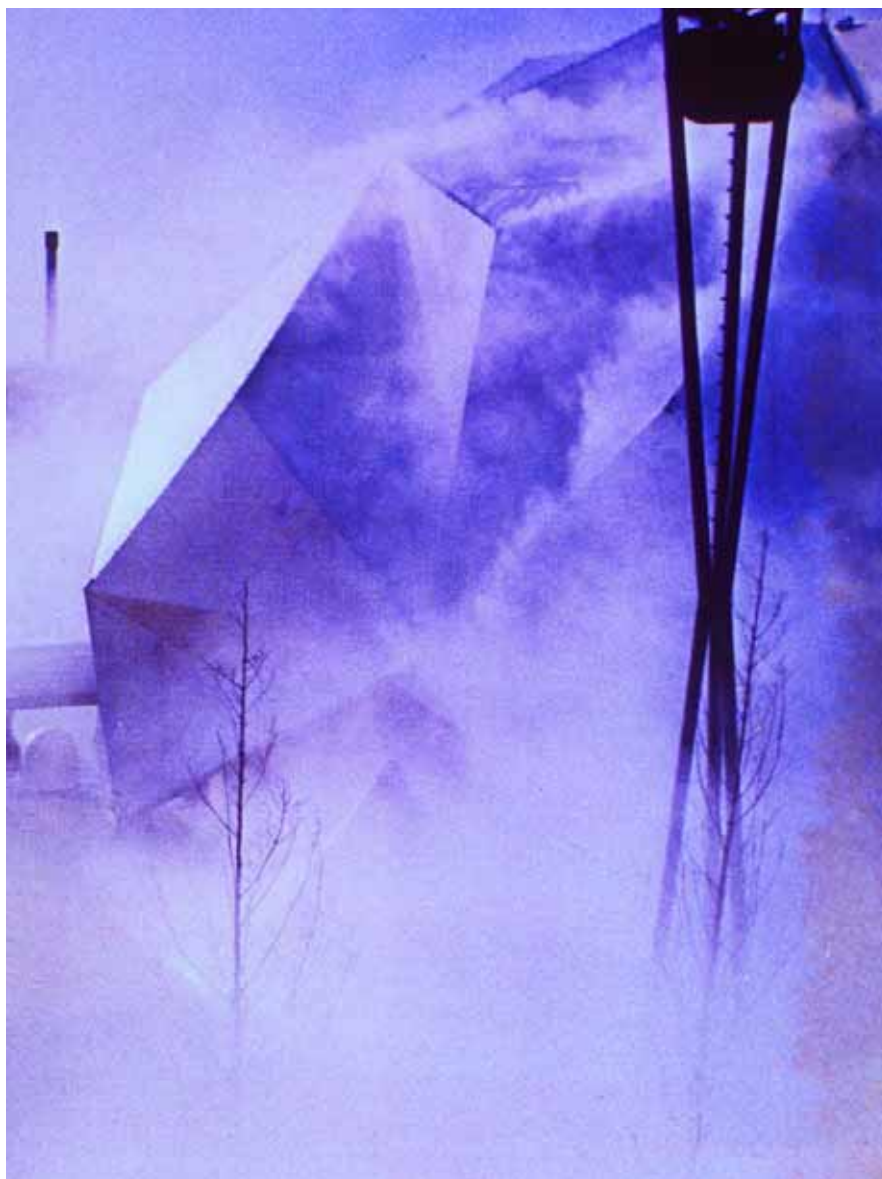
Accordingly, it made sense to him that water vapor could be used to stabilize temperatures in orchards when the risk of frost damage was a possibility. For years, of course, smoke pots had been used for that purpose, the simple idea being that the smoke would contain heat as temperatures dropped.

But my father knew that the radiant coefficients of water particles were several times more effective in retaining heat. He was also a good businessman, so he knew that a practical application such as crop protection presented a more favorable business profile than did fog's artistic potential.

Indeed, the true mainstay of the fog business ever since has been agricultural uses, followed close behind by usage in cooling electrical turbines and other large machinery and in various manufacturing processes. There's a tremendous amount of very specific science behind those applications; suffice it to say here that the flexibility of fog systems has proved a match for an assortment of key technological challenges.

The aesthetic applications of fog were all right there from the start, of course, but they were slower in developing. Before these systems came along, dry ice and smoke machines had been used in movies, television, live theater and rock concerts,

*The first-ever application of fog technology was at the World's Fair in Osaka, Japan, in 1970, at the request of Japanese artist Fujiko Nakaya, who aimed to wrap the visually evocative Pepsi pavilion in clouds.*







so there was a ready-made market for what proved to be a cleaner, cheaper option.

Where dry-ice or smoke machines require special “juice” to produce their vapor, fog machines could be hooked up to tap-water outlets and really do no more than humidify the air – which, depending upon the conditions, can be an extremely desirable side effect without any of the mess.

## Opening Doors

My father’s comprehensive knowledge of the hard science behind the generation of water vapor uniquely qualified him to develop fog systems for a variety of these “aesthetic” applications, from extremely large systems that produced huge amounts of fog to those that provided mist in extremely controlled ways.

One of the earliest (and to this day most creative) uses of fog for aesthetic purposes was for an iceberg exhibit at the Jacques Cousteau Museum in Long Beach, Calif. Our firm worked on a system that enshrouded a sculpture made of refrigeration coils with a cloud of fog that condensed on the coils and ultimately formed the iceberg.

To this day, the company continues to tackle custom systems (such as the iceberg), but we also do steady business in scores of commercial, industrial and residential settings in the form of systems for greenhouses, wine cellars, museums, laboratories of all sorts, printing plants, amusement parks and power plants.

In that larger context, our use of fog with watershapes and in landscapes has generally been a sideline business – each one more or less a custom project, but all made accessible because of the inherent flexibility and overall simplicity of the systems involved.

Once again, our first steps into this realm were surprisingly direct. Not long after the Osaka World’s Fair, my father

Decorative usage of fog was relatively slow to develop because the industrial applications were so compelling, but projects such as this one demonstrate how effective fog can be when used with artistic intent. Its ability to set moods and create a sense of mystery and discovery (while cooling the air, of course) has made it popular in residential settings almost from the start.





In places where cooling is a must (or at least a very attractive option), atomized water's ability to absorb heat and cool the air has long been appreciated both by diners in restaurants and visitors to public attractions.



was contacted by a wealthy homeowner who lived in Palm Springs, Calif. He thought the fog system he'd seen at the fair would be a perfect means for cooling outdoor areas around his home, and he asked my father to mount a fog system in his palm trees and on shade structures around his pool and patio.

Just as fog is extremely efficient for retaining warmth in freezing conditions in citrus groves, it is also well suited to cooling hot air by way of evaporation – so long as the hot air also happens to be dry. It's the same principle as perspiration and the way the body cools itself by releasing moisture to evaporate and cool the skin's surface. This is also why fountains and waterfalls have been used for centuries to cool hot areas – and why temperatures are generally cooler near large bodies of water.

The wonderful thing about fog is that it can spread that cooling effect rapidly and evenly over a relatively wide area while using relatively little water or energy. The initial residential project in Palm Springs worked so well that a number of other locals who had experienced that first system quickly wanted systems for their own homes. So although we've always seen residential uses as a peripheral market, it's been part of what we've done from the start.

## **Making Waves**

Palm Springs had a lot to do with spreading the use of fog systems for cooling outdoor areas. Word of the residential systems spread quickly, and it wasn't long before the idea reached commercial environments and things really took off.

Tourist destinations, restaurants and other establishments in desert climates discovered quickly that they could extend the time frame in which people could dine, walk or relax outdoors by deploying fog systems. For a while, the systems were mostly a novelty, but in time they effectively demonstrated to tens of thou-



sands of people how water vapor could make them comfortable when they'd otherwise be wilting in the heat.

The emergence of these applications led to the birth of a new industry segment, and today there are half a dozen companies or more that specialize in space-cooling systems. At this point, fog generators are even available through mass merchandisers and are becoming reasonably common in dry, hot areas – especially locales such as Phoenix, Ariz., where triple-digit summertime temperatures make finding ways of beating the heat essential.

The one thing that every fog system has in common – no matter whether it is for cooling turbines or providing relief from summer heat – is the water itself.

In our systems, we start by treating the water before turning it into tiny particles – that is, before we *atomize* it. This allows us to use water as it is provided locally, straight from the tap. What happens then depends on both the chemistry of the water and the nature of the application.

In many industrial operations, for example, there can be no particulates at all in the fog we create. In these applications, we run the water through a reverse-osmosis filtration system that clears away contaminants down to the sub-micron level. For less-critical uses, we employ cartridge filtration to clear particulates down to the five-micron level – basically to protect the nozzles that do the atomizing. In some of these systems, we'll line up a series of as many as ten pool-type filters, depending on the flow rate we need.

Our biggest concern is hard water, which can foul nozzles in rapid order if conditions are unfavorable enough. For most custom applications, we therefore test the water for hardness before designing a system.

### Inside View

Inside these systems, water is pumped under extremely high pressures – anywhere from 1,000 to 3,000 pounds per square inch – with the exact level being

*The nozzles of a fog system can work right alongside fountain jets to enhance visual effects, add new interest to traditional water displays and lure the public to take a long, cool look.*

## Evaporative Cooling

The reason fog cools the air when it's hot is because the water droplets absorb heat as they evaporate. How much of this cooling effect occurs is dependent primarily on a single factor: *humidity*.

Humidity is, in fact, a big deal to fog-system designers, representing a serious limitation in what we can do in given climatic regions. In dry areas, we have few problems in delivering cooling effects, but in areas in which high humidity is common, the air absorbs far less of the evaporating water because it already holds a good percentage of water in the form of humidity.

When the water can't evaporate, in other words, it can't absorb heat and the fog's cooling effect is diminished. This is why fog systems for outdoor cooling are most effective in dry places such as Palm Springs and Phoenix but offer just a fraction of that cooling potential in places such as Florida or coastal Texas, where the humidity can be extremely high.

– J.M.





## Fog and Mist

People often ask me to explain the difference between fog and mist, and I generally dodge answering because the difference isn't rigidly defined, at least in scientific terms.

Mainly, such a definition would be about the size of the water droplets – the challenge being that it is difficult to measure droplet sizes or even a range of droplet sizes in the field. Then there's the fact that those who develop and market water-atomizing systems tend to use the terms indiscriminately and haven't developed a standard terminology.

(For the record, at our company we consider water droplets below 30 microns to be fog and those above that size to be mist – and we have systems that generate either, depending upon the application.)

Oddly, the difference may be easier to describe in aesthetic terms: The small particles that comprise fog capture more ambient light and take on a smoky, white appearance in natural light or can be used with colored lights to create interesting special effects. By contrast, the larger particles of mist have more space between them and are not nearly so apt to capture light. You can see mist at the nozzle, but it disappears almost immediately as it disperses into the air.

Helpfully in descriptive terms, most of the systems mounted on shade structures or the eaves of buildings are known as "misting" systems. These do not require as much pressure as do fog systems and aesthetics are less of an issue because cooling is the main desired effect. The nozzle apertures here are much wider and the overall technical challenges less pronounced.

In effect, fog is much more opaque than mist. In going for true aesthetic effects, misting systems are seldom the solution because you need smaller particles that will linger and catch the light, just as natural fog does in floating across city lights.

–J.M.

determined by what it takes for the selected nozzle to break up the stream of water into a fog.

The orifice in the nozzles are extremely small – approximately six-thousandths of an inch. In moving toward open air, the water is forced past a tiny needle that does the atomizing in combination with the nozzle's aperture. The droplets formed in this process can be anywhere from 15 to 20 microns in size, that is, less than one-tenth the width of a human hair.

With tolerances that low and sizes so small, it's easy to understand why any particulates, scale or calcium residual might have an undesirable effect on system performance.

These systems have the virtue of being compact and visually unobtrusive, which has proved a major asset when it comes to exterior-design applications. And the range of those applications is truly limitless – everything from creating faux smoke from the stacks of locomotives at amusement parks or enhancing the ap-

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pearance of artificial volcanoes to the high-art forms of visionary sculptors, designers and artists including Maya Lin, Martha Schwartz and the previously mentioned Fujiko Nakaya.

Three decades into our experience, in fact, we've seen these systems at work in so many different settings – homes, landscapes, watershapes, theatrical settings, art exhibits, parks, restaurants, public plazas and more – that we see no true limit to what might be done or where. And fog plays both supporting and starring roles with ease in effects ranging from the subtle to the fantastic.

In recreational settings, we've often seen fog used with bodies of water, and this makes sense for two reasons: First, there's something about fog on water that's naturally evocative. Perhaps the way it conceals parts of the surface or plays in surrounding rockwork lends a sense of mystery. Second, and in a more practical sense, oftentimes the same spaces that benefit visually from fog are also venues in which the

## Most Efficient

One of the reasons fog technology has gained in acceptance and popularity is that it is inexpensive compared to the alternatives.

The two operating costs entailed in a fog system are water and electricity. The amount of water used obviously depends on the size of the system, but it's almost always nominal to the point of insignificance. Electricity is a big issue by contrast – especially these days – and it does take considerable energy to pump the water at the pressures needed to create the fog.

Compared to other cloud-generating technologies, however, fog is almost always deliverable at a fraction of the cost. Steam, smoke and dry ice have all been used, but steam brings the added cost of heating the water; smoke requires not only heat but also a special liquid solution that is much more expensive than water; and dry ice has to be manufactured, shipped and handled carefully, adding expense on several fronts.

For cooling applications, fog can even be much less expensive than air conditioning. That's a huge plus in certain industrial applications, but an unlikely option for homeowners – unless, of course, the homeowners in question happen to be amphibians.

– J.M.

cooling effects of fog are most appreciated.

## Into the Mist

Designing with fog is all about en-

compassing a few key issues that have to do with where you want the fog to be, its volume and its motion. As is the case in just about any design project, our cus-



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tom work involves working closely with clients to determine their desires and how best to meet them in system design.

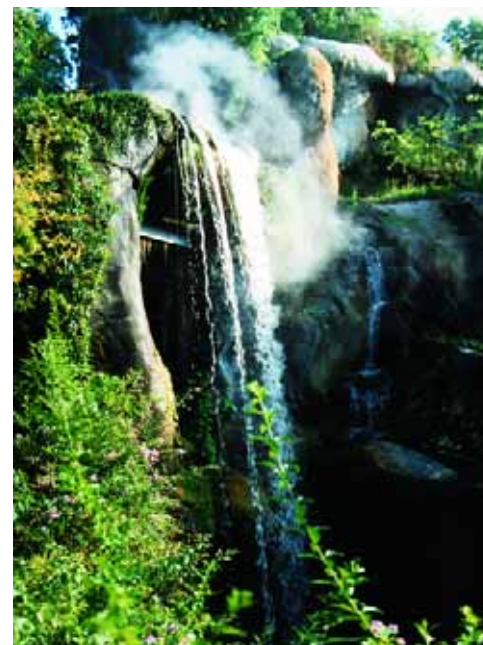
Some decisions are straightforward, but things can get tricky when clients want their fog to move in certain ways. Fog rises and falls based on whether it's cooler or warmer than the surrounding air. If your client wants it to rise for some visual reason but the project is being built in a place where the air is usually warmer than the tap water, then the effect will not work satisfactorily much of the time unless the system is set up to chill the water fed into the system.

There are all sorts of other ways to influence the way fog moves beyond governing feed-water temperature: Nozzles can be oriented with various directional qualities, for example, but even something that seems as simple as pointing a nozzle in the right direction isn't enough to guarantee a successful effect. In other words, there's a lot to consider, and it's tough to make things perfect if you aren't familiar with water vapor's basic behavior *and* with all of the techniques and technology you can use to manipulate it.

It's an advantage to any designer, of course, that the aesthetic qualities of fog speak for themselves in the same way clouds or liquid water make their statements. There's a beguiling formlessness to each that is always intriguing and intensely natural in appearance. Just as there's an interest pre-wired in the human psyche for the sound of water in a waterfall or for the reflections off the glassy surface of a pond, I'd assert that we are also naturally drawn to the sight and even the tactile sensations of fog.

That's not a tough thing to understand or put to use as a designer. What's less obvious and more surprising is just how *versatile* fog is, even if taken only as a minor aesthetic element. If you want to shroud an object to make it mysterious; if you want to draw attention to specific areas within a larger space; if you want to fool the eye into thinking water vapor is really steam or smoke, then fog is the answer. And when it's released into the air, fog dances like fire and is never exactly the same from moment to moment.

It's cool – and *cooling*. What more could we ask?

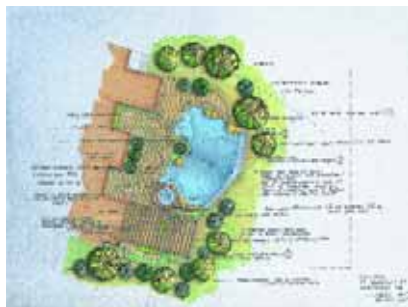


There's something about fog and mist that capture the imagination and give designers a chance to play with moods and expectations in ever-changing ways. Used appropriately, they lend a distinctive touch of drama to a sculpture of stampeding horses, for example – or an almost creepy air of mystery to a rugged, primeval landscape.





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For more than 25 years, sculptor Dale J. Evers has created sculptures that feature a broad spectrum of marine and aquatic life. In recent years, however, the focus of his work has moved from the refined atmosphere of art galleries into the world of watershape and landscape design – a shift, he says, that has energized his work and led him to a mode of design that lets him draw his cues not only from nature, but also from clients and settings.







# Alive by Design

By Dale J. Evers

The most famous artists and designers often become known for one particular style or motif. When we see the cubism of Pablo Picasso or the drip paintings of Jackson Pollack, for example, we firmly link those distinctive artistic “moves” with the artists themselves. In some cases, those associations are extremely positive and add to the artist’s or designer’s mystique and prestige – certainly the case with Picasso and Pollack.

For other artists who are less famous, however, an identifiable mode of expression will tend to lead to artistic confinement, predictability and, in some cases, needless limitation on vision and creative possibilities.

Since I began my career in the early 1980s, I’ve focused on capturing aquatic life forms in mixed-media sculptures to such an extent that my name is associated with the genre – although I’m certainly no Picasso. Indeed, in the years I’ve been active, there have been so many sculptures, statues and paintings depicting whales, dolphins and fish that the genre I love has become something of a cliché.

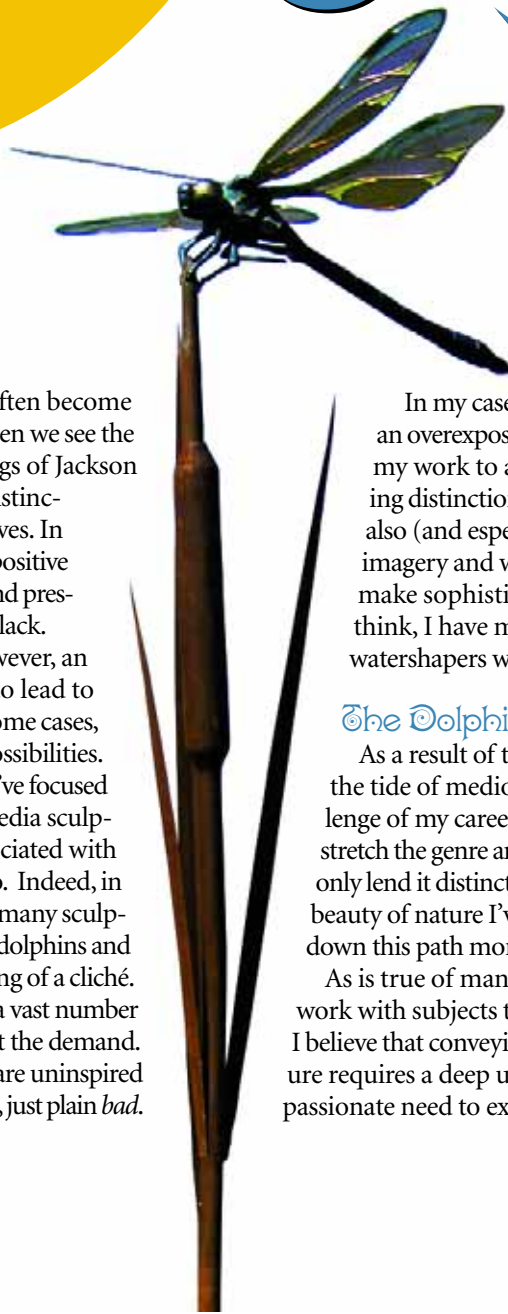
So many consumers love such images that a vast number of enterprising artists have stepped in to meet the demand. The problem is that so many of these efforts are uninspired and lack any real creativity or are, in some cases, just plain *bad*.

In my case, simply being *identified* with such an overexposed genre has challenged me to push my work to a higher level as a means of creating distinction – not just for me as the artist, but also (and especially) for clients who love marine imagery and want it to be presented in ways that make sophisticated statements. In this effort, I think, I have more than a little in common with watershapers who work at the leading edge.

## The Dolphin Invasion

As a result of this art-market reality, rising above the tide of mediocrity has become a defining challenge of my career. It has forced and inspired me to stretch the genre and elevate my work in ways that not only lend it distinction, but also capture more fully the beauty of nature I’ve wanted to portray since I started down this path more than two decades ago.

As is true of many (if not all) artists, I’ve chosen to work with subjects that relate to my own experiences. I believe that conveying the essence of an image or a figure requires a deep understanding of the subject and a passionate need to express that understanding in com-





municative, expressive and even emotional ways.

In my case, I'm an aquaphile in the extreme, and the ocean in particular has always been a big part of my life. Since I was a kid growing up in San Diego, Calif., most of my recreational time has involved marine-related activities including swimming, playing water polo and working as a lifeguard. My tour of duty in the U.S. Army carried me to the Hawaiian Islands and Micronesia and further deepened my aquatic fixation. I've spent countless hours surfing, diving and wielding fairly amazing underwater camera equipment.

I still live by the ocean, now further north in California in beautiful Morro Bay, and continue to draw daily inspiration from a lifestyle centered on the sea. My wife and kids share the same passions: All are certified divers, and we've traveled the world experiencing a range of extraordinarily diverse marine environments.

In the course of spending countless hours in and around wild water, I've had scores of close encounters with every imaginable sort of sea creature. I'm continuously amazed by the diversity of marine life, its stunning beauty and the survival dramas that take place unseen by all but those who intrude into what is for humans an entirely foreign space.

Despite the fact that we humans are land animals, the world of marine life resonates forcefully with a great many of us. For whatever reason – scientific, emotional or spiritual – sea creatures are of almost universal interest and the demand for art depicting them runs broad and deep.

What I do in my art is therefore simple: I create tight linkages between my clients and the creatures, settings and experiences they've irresistibly come to love. What distinguishes my work, I hope, is the passion I bring to the subject matter and the ways in which I make my compositions reflect and express my actual experiences in oceans blue.

### Into the Deep

My art career began, suitably enough, in Hawaii on the island of Maui. At that time, interest in aquatic and marine art was exploding and I found myself in the right business at the right time. From the start, however, I was faced with the need to differentiate my work among other (often far less expensive) products that were in many cases being created by craftspeople who had never seen their subjects in the wild.

As I see it, there's an essential link between extreme experience and the extreme execution of art. For artists who immerse themselves in the deep and swim among oceangoing leviathans, those experiences are among the most memorable they'll ever have. In my case, creating works of art that examine and celebrate my experiences and those life forms is the perfect extension of some of my most cherished memories.



The key to effective use of dolphins as the subject of sculpture is to reach beyond the clichés and find details that fully represent their strength, speed and dynamism (and, if the opportunity arises, place them *underwater*). In this way, I treat them with respect – and provide my clients with distinctive, naturalistic artworks that capture the awesome grace of these animals.





My passion for all things aquatic has infused my work with a level of detail and variety I don't see in "similar" works of marine art. Where many craftspeople focus on the most familiar subjects (whales, tropical fish and whole flotillas of dolphins), for example, I broaden the palette to include octopi, sea birds, sea turtles, sea lions, crabs, lobsters, sea horses, jellyfish, stingrays, barracudas, sharks, walruses, otters and coral reefs. Recently, I've taken to including waterborne insects such as dragonflies and damselflies in my roster of waterborne life.

Another growing point of distinction in my work is the fact that I've moved beyond being a gallery artist. This wasn't a move made lightly, given the fact that I've produced and sold more than 18,000 works of art through that channel and have built a significant audience through the years.

The fact is, I've become utterly captivated by the potential I see in directly associating my work with watershapes and landscapes in the great outdoors. While this shift has presented me with a significant list of challenges that has changed my approach to art, it has also given me a whole new set of ways to express my passion for marine life and – the key point – opened me to direct, interactive relationships with my clients and the settings they offer me.

One outcome of this change is that a great many of my pieces have become significantly larger by virtue of the fact that they are being installed in grander outdoor spaces. And because of the great variety of subjects I explore, there are lots of opportunities to find combinations of subjects that work well in landscapes and particularly well in conjunction with some type of fountain, pond, stream or pool.

### Personal Transitions

Beyond my basic sense of artistic evolution, I see the concept of participating in the creation of watershapes and landscapes as a perfect way to stretch myself and extend my reach beyond the stuffier world of galleries and art exhibitions.

In that realm, artists must live with the thought that their pieces will be sold to patrons they rarely meet or know; that they have little idea how the work will be displayed or where it will be placed; and that they will never get any helpful feed-



back or commentary from those who choose to spend their hard-earned money on a piece of art.

In that sense, working within the gallery system is all about trying to imagine what someone else might like and then creating something accordingly. For me, that was increasing a tough row to hoe.

In transitioning to sculptures to be used with various types of watershapes and/or in assorted landscapes, I found my work changing in focus simply by virtue of the fact that I was designing in response to a specific client and a certain setting with a predetermined budget.

I also found myself being energized through my contacts with other designers, including architects, landscape architects and designers, watershape contractors and interior designers. I am reveling as well in the fact that each project is completely different from the rest because the cues come not just from within me, but also (and mainly) from the clients and the requirements of the settings.

The wave I jumped onto (on both the residential and commercial fronts, I might add) carries wonderful opportunities for me and, I think, for the entire marine-art

## Aquatic Awareness

One of the things you hear a lot from artists who work in the marine/aquatic genre is that their aim is to create an “awareness about the environment” and possibly “spark a more enlightened society” that will want to preserve our oceans, lakes and rivers and the species that rely on healthy bodies of water.

To me, that’s hype and gibberish. Yes, environmental awareness is a good and noble thing. Yes, as an enthusiast about all things oceanic, I’ve been involved in my share of environmental causes. But to suggest that the creation of sculptures featuring aquatic animals will somehow change the world? Frankly, it makes me think less of my fellow artists who promote their work using this notion.

I do believe there’s a tendency to over-sentimentalize this sort of artwork – a tendency I resist with all my strength. To me, the art is dignified by nature, not the other way around: If people have a love of marine animals, they may well have a taste for this type of artwork; if they don’t, it’s highly unlikely that viewing a bronze statue of Flipper or a set of whale flukes is going to alter their points of view.

–D.J.E

genre. When I first started working with fountains, it occurred to me almost *instantly* that this was something that I liked, that I could do as a natural extension of my work and that was a great change for my business. It all makes perfect sense, and I only see it growing in the future.

Cheezy bronze sculptures of dolphins

and whales will always be with us, but by moving into the garden and working with clients and other designers, the value of creating authentic marine figures increases. The work I do expresses not only the forms of these animals, but also conveys a sense of motion. That’s the key for many of my clients – this sense that there’s



There are so many spectacular life forms under the ocean’s surface that I know I will spend the rest of my life finding unique and interesting ways to tell their stories. It’s important to me to get the details right – a knowledge that comes from many, many hours spent observing these creatures in their natural habitats.



a story behind the work. And I've been fortunate so far to work with professionals and clients who are able to see that clear and important distinction.

The stories are there deliberately. When I became interested in insects, for example, I spent a great deal of time observing butterflies and dragonflies. I probably looked like a lunatic, laying by the water for hours, staring at passing insects. But the time I invested in observation, in understanding the species I wanted to render, is what fills my creations with nuance, subtlety and a sense of story that fills the art with motion, authenticity and excitement. Once again, obsessive behavior pays off.

### Value Added

If it's not clear yet, allow me to state plainly that I love the effect this new outdoor focus has had on my work.

In the case of a dragonfly, for instance, it struck me that the perfect context for the creature was the tip of a cattail – a tableau showing the insect in a natural posture as it moves through its world. On the one hand, this is the product of my observation of nature. On the other, it comes from working with clients who express ideas about what they want and where the work will be located – factors that cannot possibly be anticipated or envisioned without their participation.

By combining my own powers of observation and experience with the ideas and settings offered by clients, what might otherwise be a hackneyed image of a dolphin has the potential to take on greater and much more personal meaning. It speaks to a memory or an emotion and draws a great deal from that background.

Through the years, I've worked hard to establish a name – a "brand," if you will – and that means something, too. It's fun being recognized for creating really cool marine art, and it has turned out to be a terrific way to make a living.

Ultimately, however, it's good for me to be near water and engaged in projects where it plays a role in transferring artistic impressions to clients and their families and friends. I'm proud to say that I capture the essence of my subjects and am enormously satisfied when I am able to help people appreciate the aquatic world just as I do.



In recent years, I've found myself applying observational skills developed under the water to dry land situations and translating these observations into sculptures of dragonflies, butterflies and other insects. All of them have unique qualities that tend to go unappreciated in casual viewing: It's an oversight I seek to correct by making large-scale impressions.



### Material Media

In my work, I spend a lot of time thinking through combinations of available media and assorted techniques for using them.

My sculptures consist of various combinations of fused, molded and slumped glass that I produce in my studio in Tijuana, Mexico; a spectrum of metals including cast and fabricated bronze, iron, stainless steel and more; and approaches that encompass everything from welding to water-jet-cutting and molding. I also use a range of finishing and texturing strategies too diverse to describe here.

One of the byproducts of moving along such a broad spectrum of options is that I am able to provide architectural materials that can be used not only in direct conjunction with an art piece, but also in other locations throughout the setting. I've created special glass panels for walls, gates, doors and windows, for example, as well as particular architectural details in metal that echo materials used in the sculptures themselves.

When it comes to watershapes, I don't design the systems myself, but I do work directly with the architect or watershaper to choose materials and overall design schemes that harmonize with the artwork. In this way, any work I do is more fully integrated into its setting and becomes a visual part of it.

– D.J.E.



# one





# for the Future

By David Tisherman



**Any backyard project that encompasses tons of stone, hundreds of square feet of glass tile, a complex waterfall structure, a large bridge, an island spa and other features focused on fun, elegance and beauty is likely to be something special. In this case, it happens to be one of master watershaper David Tisherman's most intricate achievements to date – one he guides us through in this pictorial, which captures the challenges as well as the glorious results of an enormous collaboration.**



**AS** milestones go, the project depicted in these pages has been a big one for me – and for lots of other people as well.

The grand estate with its outsized home is located in the countryside near Hanover, Pa., a remote setting that offered a set of challenges that has in many ways redefined what is and isn't possible in a whole region when it comes to watershape design, engineering and construction.

A full two-and-a-half years in the making (a period broken up, of course, by stretches in which there was no activity on site), this stands as one of the most elaborate designs I've ever executed – all in a part of the country where the pool industry isn't set up to accommodate construction at this level, either with respect to the basic construction materials or the skilled craftspeople needed to complete such a job.

A series of "Details" columns have covered all of this in depth (see the sidebar on page 65 for a complete list of those columns), so let's move on to a few final thoughts and a selection of photographs.

## Evolution

I am serious in saying that this part of the country wasn't ready for a water-shaping project on this scale, and it's a tribute to the persistence of my partner, Kevin Fleming, who managed the project through some wild times, and the willingness of numerous craftspeople from across the country who came to rural Pennsylvania to get the work done to exacting standards.

This was the first-ever project for our firm, Liquid Design of Cherry Hill, N.J., and to say we started with a mountain rather than a molehill would be an understatement. It was a tremendous challenge on all sorts of levels, not the least of which had to do with changing what everyone involved with the project thought watershaping was all about.

This is the kind of project I was told over and over again simply couldn't be done on the East Coast: The market wouldn't bear it and, besides, freeze/thaw conditions would make favorite details of mine (such as all-glass-tile finishes) virtually impossible. I don't think my motivation in tackling the job was particu-



The home that plays host to the watershape complex we developed is substantial (to say the least), looming large in the setting and always and inevitably part of our calculations in designing these spaces. At nearly 3,000 square feet, the watershapes themselves cover more area than a lot of homes, but it was our goal to select materials and control views in such a way that the water became a supporting element in the overall environment rather than its focal point.







From above – on the walkway that runs in a broad arc around much of the lower level – observers get interesting and unusual views of key details, including the large beach entry, the spa island and the waterfall that passes beneath the walkway on its way down to the pool. From this bird's-eye perspective, it's easy to perceive the balances we sought in placing large boulders (many in the six-to-ten-ton range, although they don't seem so massive in this out-sized context) and defining relationships between the water and the decks and the plantings that surround it.





larly to prove anyone wrong, but the adventures we had in gathering materials, getting them to a remote site and jockeying them toward completion could fill a book.

In retrospect, I see this project as an evolutionary step in the region's approach to watershaping. From the forming of the shell to the selection and placement of the stone, from the hunt for pipe and fittings to the quest for a technician willing and able to start things up, this was a project at a level of execution that constantly astonished other trades working on other parts of the estate project – a level of artistry and dedication to the craft of watershaping that nobody ever seemed to have encountered before.

Nothing I've witnessed throughout New Jersey, Pennsylvania and other parts east persuades me that these other contractors were being anything other than completely sincere. Kevin and I were amazed by the fact that the day we started the system up and the waterfall began flowing became a sort of informal holiday on site, with electricians, painters, carpet layers, finish carpenters and all sorts of other tradespeople coming outside just to watch.

If we needed any affirmation that we were onto something special, this unusual tribute to what we'd accomplished was more than enough.

I'm past the point of bemoaning the sad state of affairs in eastern watershaping (well, *almost*) and have spent the last couple years applying what we've learned and developed in the hills of south-central Pennsylvania to new opportunities we're finding all over the northeast. And it all flows from our having raised consumer expectations about what can be accomplished in their backyards.

### On the Ground

As for the all-tile spa, it's come through a couple of miserable winters without any difficulty, quite as beautiful as the day it was installed. At a minimum, it's my hope that this project will open more designers' eyes to use of this material – and encourage local contractors and subcontractors to acquire the training and skills needed to install it properly so I won't have to fly people in from elsewhere to







## Deep Background

As is noted in the accompanying text, this project has a long publication history in *WaterShapes*. Here is a list of past columns and a feature exploring the project in great detail:

- ▶ "Reaching for the Ultimate: Approaching the Grandest of Canvases," November 2003, page 28
- ▶ "A Rugged-Land Production: Whipping a Big Structure into Shape," January 2004, page 34
- ▶ "Island Building: Applying Gunite on a Grand Scale," February 2004, page 22
- ▶ "Rock Steady: Going the Distance for Great Materials," January 2005, page 28
- ▶ "The Perfect Fit: The Fine Art of Rock Wrangling," February 2005, page 24
- ▶ "The Art of Finishing: Final Touches for an Immense Backyard Project," January 2006, page 60

—D.T.

Moving down to deck level, the longer views show the ways in which the watershape pulls the setting together in a composition marked by grandeur, elegance and the wonderful reflective qualities of a water surface so expansive that the slightest breeze makes the surface ripple like a large pond. Down here, the project was all about managing and mastering scale and proportion – and about getting the relationships right when it came to selecting and placing stone; working with multiple elevations and points of view; and using plants of various types and sizes to soften edges and lend a broad array of colors and textures to the composition. We also enhanced reflectivity by finishing the pool's interior with a rich plum Pebble Tec finish (Pebble Technology, Scottsdale, Ariz.) that picks up colors from the surrounding rockwork





get these jobs done.

Ultimately, that's what this project has been all about: forming a cadre of skilled craftspeople who can consistently, repeatedly perform work that exceeds the highest possible expectations for quality. In this project, I think we cracked that door open and introduced large numbers of people to what must be done and the fabulous opportunities that emerge when uncompromising quality is the target.

As a design task, this project was about mastering and deploying color, proportion and line on a carefully measured scale while expressing ourselves and our ideas with great materials and superlative installation techniques. It wasn't easy by any means, and everyone involved with the project is understandably proud – not the least among them the clients, who just love what has happened to their yard.

We all worked together in smashing design constraints and breaking construction stereotypes, and the best of it from my perspective is the seal this project put on my partnership with my good friend Kevin Fleming: It's been a shared experience that will carry us well into a promising future.

## Hidden Power

Behind the wall seen in the photograph on page 67 (top) is a large room that holds the equipment that drives the entire watershape composition.

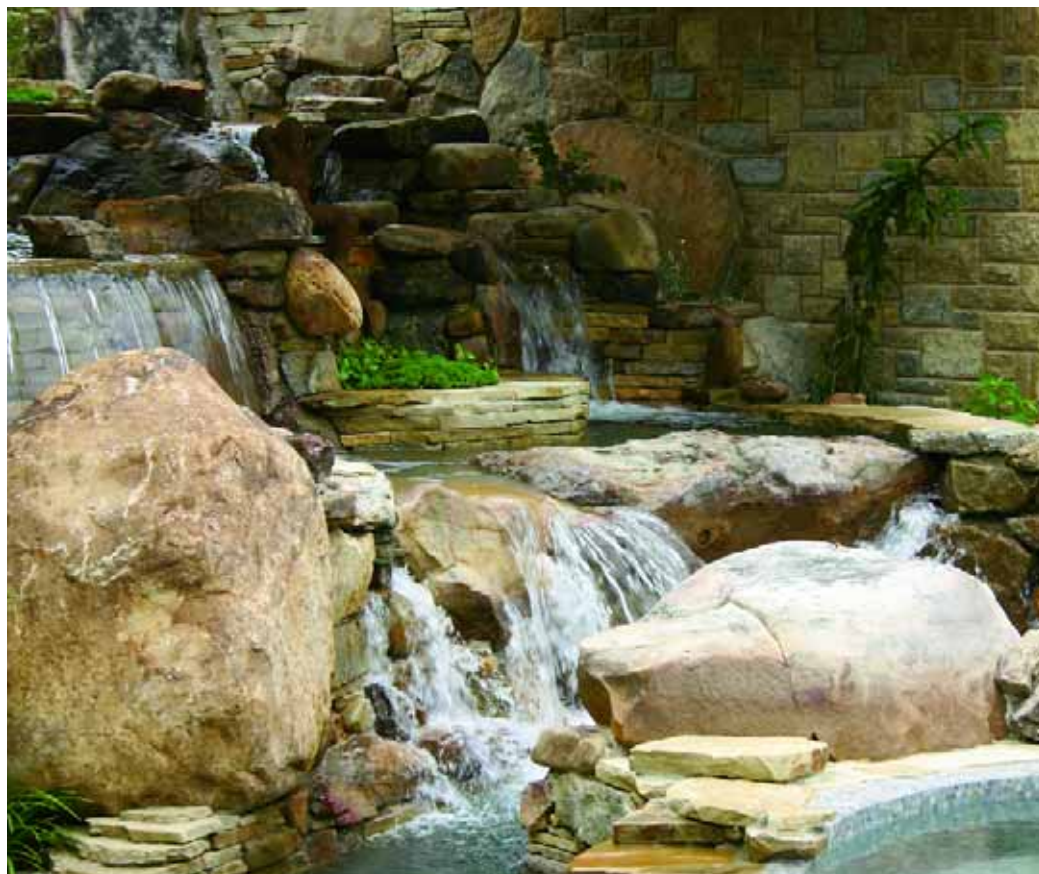
Included in the equipment set are 13 Stealth pumps (Jandy, Petaluma, Calif.), four 350,000-Btu Hi-E heaters (also Jandy), four diatomaceous earth filters (also Jandy), an ozone generating system (ClearWater Tech, San Luis Obispo, Calif.), the AutoPilot salt chlorination system (Horner Equipment, Fort Lauderdale, Fla.) and a One-Touch control system (Jandy) fully integrated with the home-automation system.

To avoid disrupting the complex paving of the walkway above the equipment room, the vents pass through the wall, mostly at a low level where they are hidden by planters and a variety of greenery.

— D.T.







Moving closer to the water, observers catch glimpses of the details that made this project so special, from the beautiful sculptures that lend interest and variety in special pockets throughout the composition to the spa's spillover and the cascades of the big waterfall structure. The spa spillway flows away from the heart of the pool – an unusual choice but one that creates a warm, sheltered place for kids to play on their own private thermal ledge. For its part, the waterfall is a veritable showcase for forms of water in motion, with sheet, serrated and white-water flows starting gently at the top and concluding at the bottom by crashing into the pool.



## WATERFALL PUMPS

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**EASYPRO POND PRODUCTS** offers large-volume waterfall pumps designed for higher-head applications and continuous, heavy-duty use. The compact pumps come in two models (with flow rates, respectively, of 8,000 and 10,000 gallons per hour) and are built of stainless steel and cast iron with corrosion-resistant aluminum impellers and double seals for maximum durability. **EasyPro Pond Products**, Grant, MI.

## POOL CLEANER

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**AQUA PRODUCTS** offers Aqua Jet, a hose-free pool-cleaning system that vacuums in water at 80 gallons per minute and directs it out the back of the unit to propel the device over any pool configuration from floor to waterline. A portion of the water flow is channeled back to the pool's surface to hydro-scrub calcium, powder, silt and sand into the intake ports for collection in a mesh filter bag. **Aqua Products**, Cedar Grove, NJ.

## LED LANDSCAPE/FOUNTAIN LIGHTING

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**BRONZELITE** has introduced Luxflo LED Systems, a full line of high-brightness LED luminaires that offer energy efficiency and long service lives as well as design flexibility. The low-voltage fixtures – fountain, in-grade, bullet and path lights – provide brilliant white light and enhanced design flexibility by alleviating voltage drop concerns. Line-voltage step lights are also available. **Bronzelite**, Littlestown, PA.

## POND LINER

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**FIRESTONE** has introduced MultiLiner RPP Geomembrane, a heat-weldable, polyester-reinforced membrane designed for use as a liner, floating cover, water-conservation measure and more. Ideal for applications in ponds and aquacultural settings, the highly flexible membrane is available in many sizes and is resistant to punctures, chemicals, ultraviolet rays, ozone and oxidation. **Firestone**, Indianapolis, IN.

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## BARBECUE FRAMES

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Concepts, Morgan Hill, CA.

AL FRESCO CONCEPTS offers Fresco Frames, a modular system for building outdoor kitchens, bars and barbecues. The system includes bartops, countertops and grill bases that can be grouped in endless configurations and work with most grills, appliances, doors and accessories. The frames accept cementboard and can be finished in any material – stucco, tile, granite and more. **Al Fresco**

## STARTING PLATFORMS

### Circle 140 on Reader Service Card



removal for storage without tools. **Paragon Aquatics**, LaGrangeville, NY.

PARAGON AQUATICS has introduced its latest starting platform. The new design combines a sand-finished, track-start top with a single-leg pedestal. The units are powder-coated and can be made to include custom logos. They also feature the company's patented taper-lock anchor system and a quick-set feature that allows for the platform's installation and re-

## DECK FASTENERS

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EB-TY offers a comprehensive line of Hidden Deck Fasteners. Designed for a range of applications with wood and wood composites of various types and dimensions (from 3/4 to 1-3/4 inches thick), the fasteners hold down deck boards invisibly – no nail or screw heads. The fasteners can be custom-made in any color, provide automatic spacing and accommodate expansion. **EB-TY**, North Branch, NJ.

## GLASS-TILE LINE

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HAKATAI ENTERPRISES offers the Ashland Series, a rustic, multi-toned, one-by-one-inch glass tile available in 17 colors. With their rough-cut edges and handmade textures, the tiles suggest Old World sophistication – but with a modern edge that makes them useful in many applications. In addition, tile mixes can be designed online using the company's drag-and-drop Custom Blend Tool. **Hakatai Enterprises**, Ashland, OR.

Continued on page 71



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## OF INTEREST

### SOFTWARE UPDATE

#### Circle 143 on Reader Service Card



STRUCTURE STUDIOS has expanded the capabilities of its Pool Studio software, adding options and expanding the Materials, Visual Features and House Décor Libraries to include a broader selection of choices for designers' backyard designs – including a new scone-effect waterfeature as well as numerous exterior-living details including outdoor sinks and fireplaces, dinnerware and more. **Structure Studios**, Las Vegas, NV.

### SATELLITE-TO-WEB CONTROLLER

#### Circle 144 on Reader Service Card



CAT CONTROLLERS has introduced CAT 5000, a satellite-based, web-enabled water chemistry controller. The device senses, controls and reports on pH, ORP, temperature, flow rate and just about any other water-quality variable that needs to be measured. Using wireless communication, data and alarms flow to a central web site accessible by any computer or PDA with internet access. **CAT Controllers**, Gaithersburg, MD.

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## HEAT-PUMP SIZING GUIDE

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PENTAIR WATER POOL & SPA has developed a heat-pump sizing program. The CD-based package is designed to identify the ideal heat pump model for a particular pool and/or spa in any climate by processing seven simple pieces of information that define the vessels' basic characteristics. This is compared to 30 years of weather data to calculate the best pump for the job. **Pentair Water Pool & Spa**, Sanford, NC.

## FLEXIBLE WATERFEATURES

### Circle 146 on Reader Service Card

HADDONSTONE has added two waterfeatures to its Arcadian line of products, both set up for design flexibility: AquaStack has a number of oval sections (as few as seven, as many as 12) that can be fitted over a copper pipe to create a variety of shapes, while AquaSource allows for choice in the arrangement of a sequence of wide, shallow bowls that gradually deliver water into a pool. **Haddonstone**, Bellmawr, NJ.



## POND TREATMENT

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JUNGLE LABORATORIES offers Pond Fizz Tabs, a water-treatment line that uses fizzing action to deliver quick, easy and effective dosages designed to keep ponds clean, clear and healthy. The pre-measured, fast-dissolving tablets include ick, fungus and parasite treatments as well as water shading, conditioning, clarifying and oxidizing formulations. Each tablet treats 50 gallons of water.

**Jungle Laboratories**, Cibolo, TX.

## DECK REVITALIZER

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RENOSYS offers RecDeck as a watertight, long-term solution to problems with existing decks. Made with a felt-backed, 85-mil PVC, the product may be applied to almost any substrate in virtually any recreational setting in which slip resistance, durability



and easy maintenance are primary concerns. Ideal for pool decks and as a covering for coping, the material comes in 6-foot-wide rolls.

**Renosys**, Indianapolis, IN.

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## PORCELAIN TILE

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**LAUFEN** offers porcelain tile in an array of colors, textures and structures. Designed to dazzle the eye with a synthesis of light, space and movement, the tiles can be used in either commercial or residential applications, indoors or out, with durability and style. The products are available in a variety of configurations from 3 by 6 inches to 24 inches square in solid and mosaic formats. **Laufen**, North Canton, OH.

3 by 6 inches to 24 inches square in solid and mosaic formats. **Laufen**, North Canton, OH.

## COMPACT POOL SLIDE

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**S.R. SMITH** has introduced Cyclone, the smallest in its line of pool slides. The low-profile unit is only 4 feet, 5 inches tall and requires a water depth of just 42 inches, so it can be positioned almost anywhere around the average pool. The four-piece kit is easy to assemble and fits into a compact box for easy storage and handling. Made of roto-molded plastic, the slide requires no plumbing connections. **S.R. Smith**, Canby, OR.

## PLASTER/MORTAR MIXER

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**MULTIQUIP** offers the Whiteman 12-cubic-foot-capacity plaster/mortar mixer, a stationary device that eliminates the axle interference encountered with tow-behind mixers. Weighing 1,400 pounds and moved easily with a forklift, the heavy-duty mixer features a 13-horsepower gas engine, a wide dump lip and retractable stabilizer jacks with height adjustments that allow for use in almost any location. **Multiquip**, Carson, CA.

heavy-duty mixer features a 13-horsepower gas engine, a wide dump lip and retractable stabilizer jacks with height adjustments that allow for use in almost any location. **Multiquip**, Carson, CA.

## SAFETY FENCE

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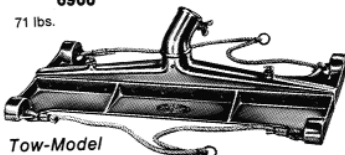
**QUAKER PLASTIC** has introduced Silent Watch Dog, a safety fence for pools. The removable barrier consists of rigid posts and 48-inch-high sections connected with latches that make it possible to enclose pools of any shape or size. The lightweight system rolls up for storage and features a weatherproof, tear-resistant mesh fabric and optional self-closing, self-latching gates. **Quaker Plastic**, Mountville, PA.

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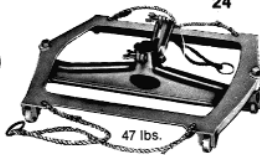


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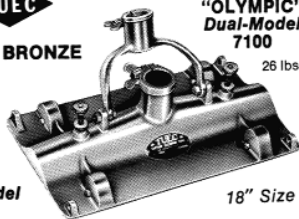


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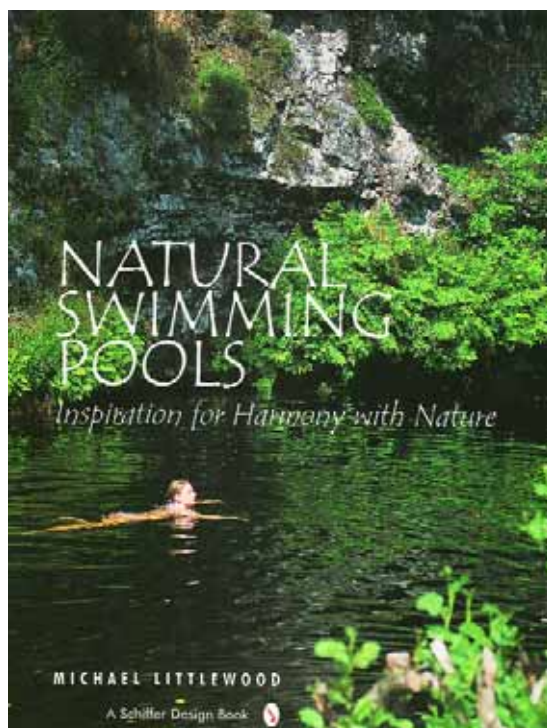
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By Mike Farley

# A Natural Transition



**D**id you know that there's a strong trend toward creating ponds that are made for swimming in Germany and Austria? That revelation came by way of a terrific book I just finished – *Natural Swimming Pools: Inspiration for Harmony with Nature* by Michael Littlewood (Schiffer Publishing, 2004).

Littlewood is an American landscape designer who moved to Europe several years ago and has since become involved in the design and installation of naturalistic watershapes that are a distinct departure from the concrete pools we encounter in the United States.

Indeed, he and scores of other watershapers throughout Europe are setting up vinyl-lined ponds that lack most of what we'd recognize as pool features or equipment, but are deep enough and big enough for swimming and other forms of aquatic exercise. And the simple fact is that their European clients seem inclined to jump into these interesting vessels with both feet.

The 250-page text is richly illustrated and if nothing else is a terrific idea book. It covers a variety of large ponds across a range of settings – including several *commercial* installations, which is something that's difficult to imagine in the United States, given the nature of standards and the involvement of health departments in such projects here.

I also found that many of the aesthetic ideas on display in these pond applications can readily be translated to concrete swimming pools, so even if

you're not into ponds at this point, the images Littlewood presents are of real interest to designers in search of inspiration. There are wonderful examples of all sorts of edge and landscape treatments as well as brilliant uses of aquatic plants and rockwork.

One of the big themes carried within the text has to do with natural water treatment: None of the systems depicted is dosed with chemical additives such as chlorine and muriatic acid, and the author offers thoughtful, substantial examples of how these systems are kept safe and enjoyable by way of natural filtration from gravel beds and the root systems of aquatic plants. There's very little mention of separate filtration and only scant information about circulation systems.

On that level, the book is more of an advocacy piece rather than any kind of technical discussion, and it's clear in the text that in Europe (at least), the "green" value system has caught on in a big way.

It's also clear that expectations for water quality there are different than they are here at home, where everything is expected to be pristine and clear all the time. Based on the text and several of the images, it's obvious that Europeans are not terribly fussy when it comes to a bit of algae here and there.

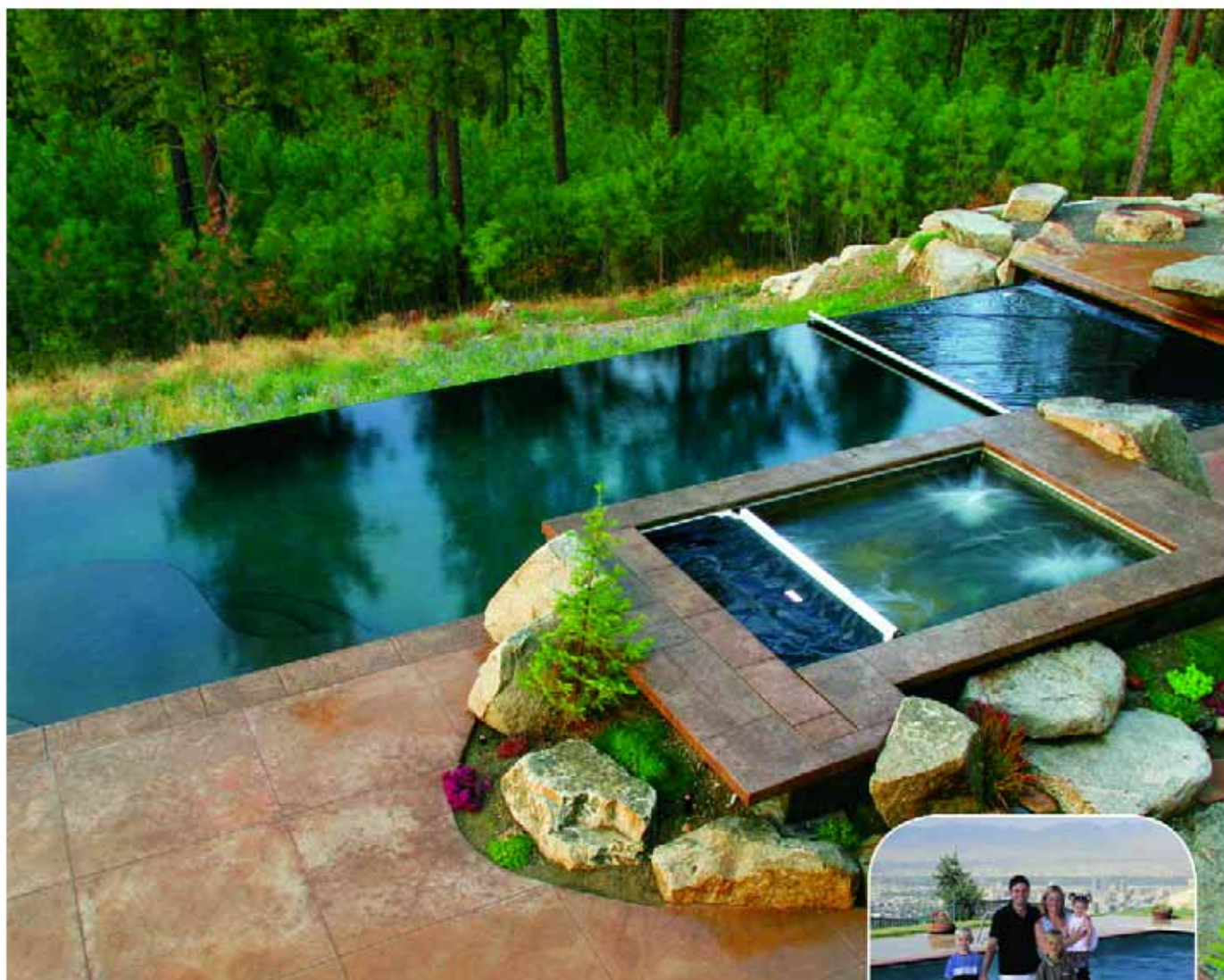
The notion of building ponds for swimming is not entirely alien to us in the United States, but it's certainly not a concept that stands at the forefront of design trends, either. Nonetheless, this book caught my eye because I know that ideas that rise in other countries (Europe in particular) tend to migrate to the U.S. marketplace in time – and I know it won't be all that long before I'm asked about "swimming ponds" by my world-traveling design clients.

This slim volume may not be the last word in technical or practical terms, but it's certainly an eye-opener that has prepared me to understand and appreciate ponds in which my clients might want to swim and play. **WS**

**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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