

Inside: Stephanie Rose on Regional Distinctions

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watershaper's point of view**

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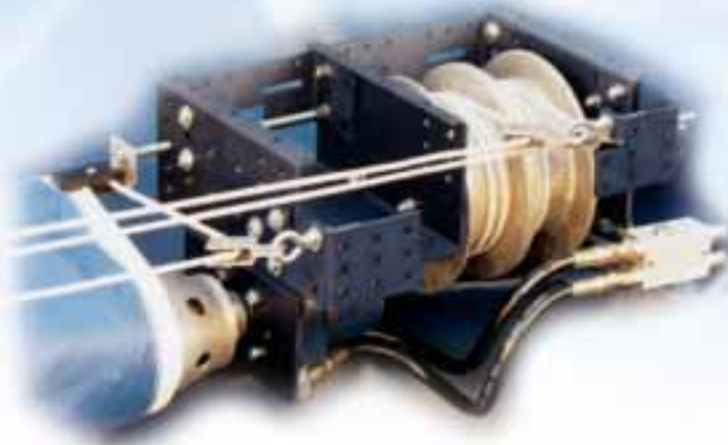
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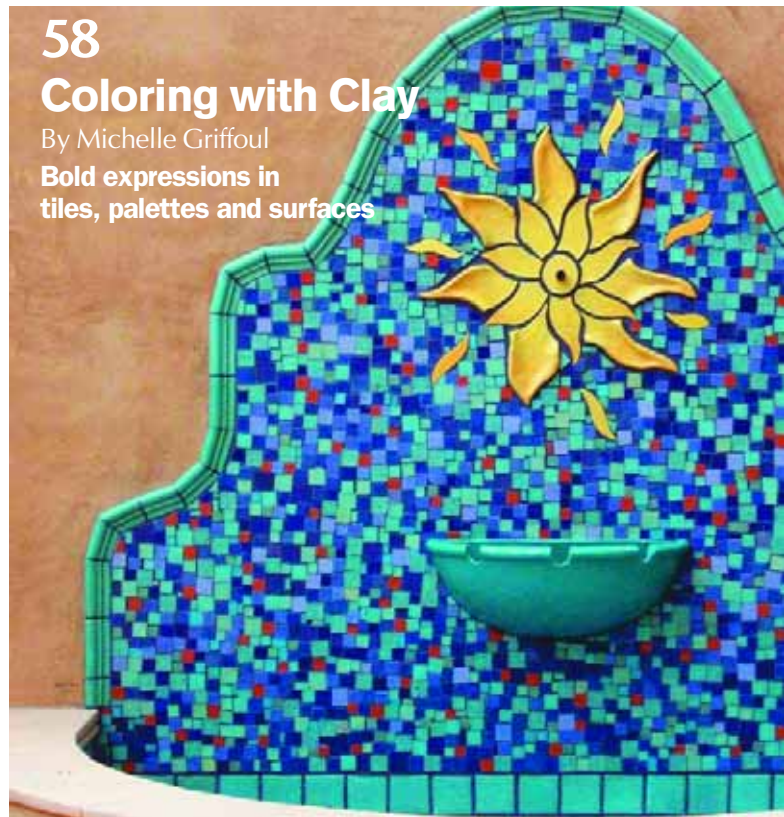
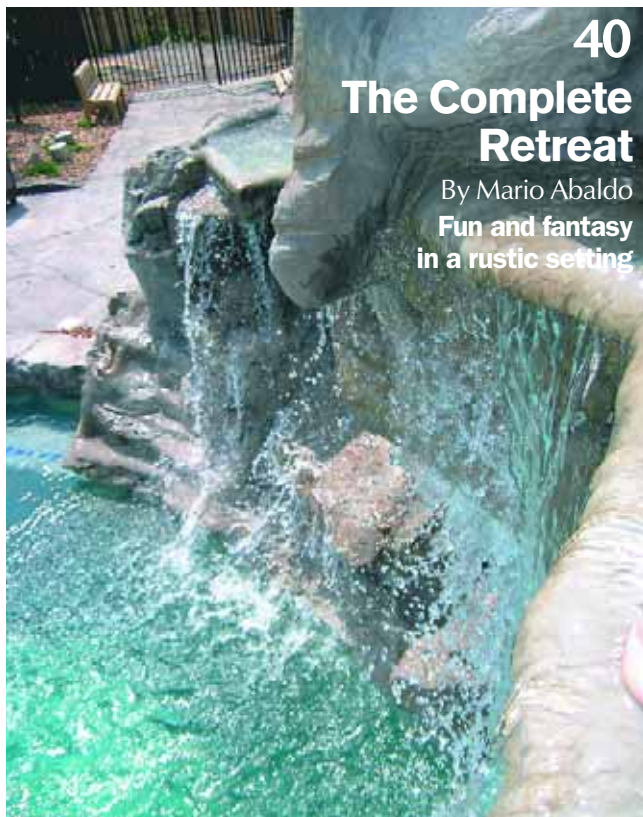
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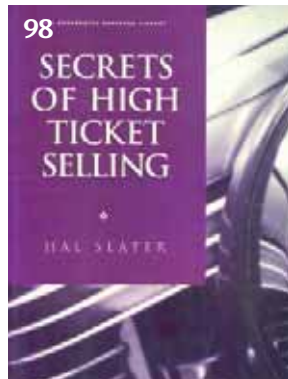
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By Eric Herman

Big Ideas

It only stands to reason that you can't have a watershape without the water, but I sometimes wonder just how much watershapers really know about the chemical compound that stands at the core of their endeavors.

We've all heard voices extolling the aesthetic, health and even spiritual virtues of water, and we certainly all understand that water is essential to life on this planet as well as its geology and natural history. We might even know that water covers about three-fifths of the earth's surface, is a worthy component of cocktail hours and picnics and can be used to generate electricity. We also might follow speculations that, someday, water may be just the thing to propel our automobiles down the road.

We may know all those big, important points about H₂O, but for all of that popular intelligence, what do most of us really know about its physical properties and chemistry? Do most of us really understand what makes water tick?

For a long time now, I've gotten the sense that many professionals in the water-shaping trades believe that the maintenance of the water that fills their products is a matter best left to service technicians or homeowners who come on the scene after they've taken the last project payment and have said their farewells.

But when you stop to consider the ways in which water can affect the materials used to construct any given watershape and its equipment – not to mention the impression that the water and its quality make on those who will be spending their time in it and around it – then it's clear that water chemistry should really be a major concern for everyone in this business. It's not just an issue for service technicians, but for *everyone* in the industry.

On page 52 of this issue, chemistry expert/long-time watershaper Jeff Freeman launches a new series of articles that will delve into the often sublime and (at times) confusing subject of water chemistry.

This time, Freeman not only tackles the overall scope of concerns related to water chemistry, but also argues forcefully that designers, engineers and builders should sit up and take notice. In doing so, he comes at the information from an entirely fresh perspective, and I urge you to approach it with similarly open eyes and open minds.



In this issue as well (on page 66), you'll find a pictorial of uncommon beauty from master watergardener Eamonn Hughes.

For some time now, I've considered him as being one on a very short list of practitioners who manage to achieve results that are virtually indistinguishable from nature. Although far too modest a gent to put it in such terms, Hughes is generous enough to explain in some detail how close attention to the patterns seen in nature can pay off with respect to achieving naturalistic results.

Even if watergardening isn't your line, Hughes' work is well worth several looks if for no other reason than it dramatically demonstrates just how beautiful ponds, cascades, waterfalls and streams can be when the work is approached with sensitivity, know-how and a bold creative vision.

To my eyes, watershaping doesn't get much better than this.

WATERSHAPES

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Mario Abaldo is founder and president of Abaldo Enterprises, a Union, Maine-based design/build firm specializing in extremely high-end, water-centered "total environments" for clients around the world. Abaldo has been involved in hands-on custom work for more than 25 years, having started a successful business as a stonemason at age 15 and declaring that he still "loves the smell of concrete in the morning." He strives to bring the latest in products and technical expertise to his clients and projects, incorporating such elements as high-tech security systems and fire-on-water effects. He also brings a diverse range of life experiences to bear in his work, from his strong academic background to his love for art and outdoor and underwater exploration. He can be reached via his company's web site: www.abaldo.net.

Jeff Freeman is director of technical services and commercial sales for Balboa Instruments of Tustin, Calif., and is also founder of Fluid Logic, an independent hydraulics-consulting firm in Upland, Calif., that specializes in complex aquatic systems. He entered the watershaping industry more than 20 years ago, working for a wholesale distribution firm. He later established his own service and repair company, then returned to the distribution business as a product representative working with swimming pool and spa builders. He has extensive experience designing and troubleshooting hydraulic systems and has taught the subject at the California Polytechnical University in Pomona, Calif.

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Interested in writing for WaterShapes on design, engineering or construction topics? Contact Eric Herman at (714) 449-1905!

Michelle Griffoul is founder and principal at Michelle Griffoul Studios in Buellton, Calif., a designer and manufacturer of highly customized tile and tile mosaics. For more than 30 years, she has thrown, pushed, rolled, torn, painted, flocked, fired, baked and in many ways stretched the acknowledged limits of clay as a material. A classically trained potter, Griffoul combines the eye of a painter with the production skills and sensibilities of a manufacturing engineer. While studying for her BA and MFA degrees, she spent a year at the International School of Ceramics in Florence, Italy. She has also staged numerous gallery shows and completed several public art commissions.

Eamonn Hughes has been designing and constructing waterfeatures in Europe and the

United States for more than 30 years. A native of Ireland who moved to Oregon in 1987, he has built hundreds of naturalistic watergardens in the Pacific Northwest and has developed Hughes Water Gardens, a 10-acre retail and wholesale nursery just south of Portland in Wilsonville, Ore., where he grows pond plants and sells a full line of pond construction and maintenance supplies. Hughes received "The Retailer of the Year 2001" award from the Oregon Association of Nurserymen, co-authored the book *Waterfalls, Fountains, Pools & Streams* (Sterling Publishing) and was a contributing author for *Rock Garden Design and Construction* (Timber Press). He has also produced a video, "Creating Your Own Water Garden," as a step-by-step guide to construction of waterfalls and ponds.




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By Brian Van Bower

Precision Planning



I operate under the hopeful assumption that all professional watershapers know that detailed, quality construction plans are crucial to the success of any project. Too often, however, I get the unsettling feeling that some contractors in the watershaping trades see plan documents mainly as a means of securing a construction permit.

Such a bare-minimum approach can lead to an endless array of problems that can be summed up simply: Plans lacking in detail leave way too many issues to chance and inevitably lead to mistakes. And because we all work in a field where things are quite literally set in concrete or stone, even small gaffes will quite often require difficult (and costly) corrective measures.

If you step back and consider the importance of detailed plans – even for an instant – it's obvious that time spent working on construction documents is always of value, especially when it means you won't need to break out the air chisel.

stitches in time

In my own firm, we are constantly ramping up the level of detail we build

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In a field where things are quite literally set in concrete or stone, even small gaffes will quite often require difficult (and costly) corrective measures.

into our plans and have literally made planning into an ongoing, forward-looking form of construction.

In other words, any time we develop a construction detail, we hold onto it and apply it from that point forward – or until such time as it is improved and enhanced by additional information. This is such a simple concept that I have to admit to being mystified that not everyone follows suit.

As for why I think this is so important, let me offer a punch list of examples that spell things out in no uncertain terms and address ways in which our plans have been able to stave off big trouble.

Before we begin, please note that all of our plans include a list of specified equipment by make and model. That list is accompanied by a disclaimer stating that no substitutions can be made without explicit, written approval. So in a bidding situation, everyone must toe the line with respect to how they price the equipment – leading to true apples-to-apples price comparisons. Second and as important, this step ensures that the right components are used for each job.

► **Controllers:** Let's assume we're including, just for sake of this discussion, a Jandy RS8 One-Touch controller on a project. Seems simple enough, but for the controller to be used correctly, I need to define who will run the conduit into the house and where the panel will be located.

All this is important because I have found,

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way too often, that this particular item gets lost in the shuffle of overlapping functions between electricians and other subcontractors who might be working on site. All we're talking about is a single run of 3/4-inch conduit — one that will become a whale of a problem down the line if you end up having to cut into

deck slabs or walls after the fact to run a wire to the remote-control panel.

So we don't stop with a simple product specification: In this case, the controller requires some small sub-panels, a special four-conductor cable and serial-port adapters that will enable the controller to interface with the home's elec-

tronic control system, should there be one. Spa-side controls also take some planning, as do light-dimming relays, extra valve actuators and, to round everything out, a surge protection device that will effectively extend the warranty on the system.

None of these items is a big deal unless one happens to be left out of the bid or is taken into consideration only when it comes time for system installation. With a lack of coverage of such construction details, small considerations can become *gigantic* headaches.

► **Colored Fittings:** It's another simple thing, but we've found that it's incredibly important to specify the color of the fittings for any project. After all, is there anything that looks worse than a white inlet fitting or drain cover against a dark plaster, exposed-aggregate or tile surface?

As sure as I'm sitting at my computer right now, if the color is left off the plans, somebody will go forth and mindlessly parlay a \$10 fitting into a gleaming white eyesore that destroys the visual continuity of the design. To forestall any such problems, we list all such components, from inlets and suction fittings to floor returns, drain covers and more, each with a specific color delineated.

► **Water Leveling:** Let's use the example of a vanishing-edge application with a trough or surge tank that's been properly sized to accommodate bather surge. Let's say further that we want to use an automatic water-leveling system in the collection vessel — an important placement distinction, as I can't count the number of times in which I've seen such systems where the leveling device is installed on the *primary* vessel, which is basically crazy because that's the body of water that should be designed to remain at a constant level anyway.

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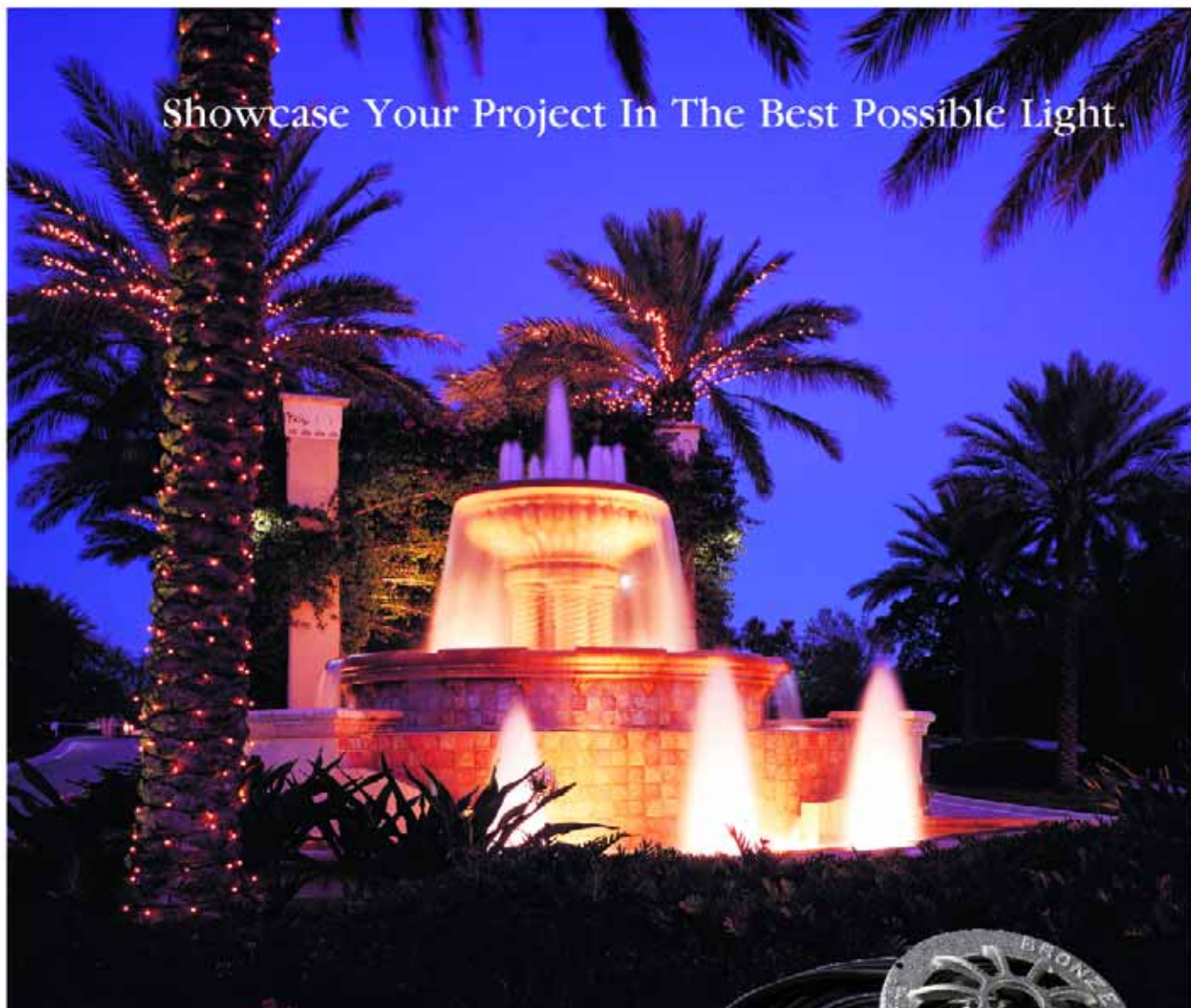

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define exact locations of equalizer lines in the basin walls and line sizes needed to accommodate the auto-leveler. We show exactly how the conduit is stubbed up for the system and how a piece of coping or other edging material is placed on top of the leveling sensors so they're not visible.

We show the conduit run back to the equipment area, spell out the distinctions between high- and low-level sensors, set the high sensor at the same level as the overflow line and define the way in which the leveling system will trigger a relay that activates a specific pump when the water level rises to the overflow level.

In my view, by the way, all vanishing-edge systems need a high-level sensor as a last line of defense to prevent dumping water out of the pool. Our plans also define vacuum-break plumbing loops on the vanishing edge's return system as the

primary safeguard against flooding, right down to the check valve's model and location. And all of this is conveyed with a diagram and spelled out in written specifications.

► **Edge Tolerance:** With any vanishing-edge or water-in-transit system, the plans must include the required tolerance of the weir. In our work, that means a tight 1/32-inch tolerance (plus or minus), something we're comfortable with because even if we're off by a hair here and there, flow over the edge won't be visibly affected.

By the same token, in our opinion, a 1/16-inch tolerance (again plus or minus) is less than adequate because even so seemingly small a difference can create uneven flow over an edge and, in the worst cases, can cause dry spots. In addition, the flow requirements and hydraulic-system design can be rendered

In my view, all vanishing-edge systems need a high-level sensor as a last line of defense to prevent dumping water out of the pool.

useless by failure to have or meet a specified edge tolerance.

► **Lighting:** Just as is the case with remote-control systems, we call out in specific details the components, conduit runs and power requirements for all lighting systems. With a fiberoptic system, for example, we note illuminator locations and work things all the way through to specifying the number of fibers required to achieve the desired ef-



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fect. With conventional fixtures, we specify exact placements and, in the case of adjustable fixtures, will describe the basic cowl or hood orientation so the contractor understands precisely what is to be illuminated.

► **Main Drains:** These days, there's a

tremendous amount of concern over safety and the importance of using split main drains to prevent suction entrapment. To that end, we specify drain makes and models and locations in every plan we do.

Specifying the type of drain is important for a number of reasons. In a spa, for example, we don't use raised

I've seen lots of plans that will call out a 'generic' ozone system with no information about the type or size – a bit of folly because such distinctions are critical in the case of ozone technology.

anti-vortex drains in the floor of the vessel where they will be kicked, tripped over, stepped on and sometimes broken by bathers. Instead, we call out vertically oriented drains in the lower walls of the spa's foot well in conjunction with floor drains covered in flat, oversized grates.

► **Sanitizing Systems:** This section of a plan entails yet another make-and-model citation accompanied, in the case of an ozone system, for example, by proper line sizes and injector locations as well as details on the size, location and configuration of the mixing chamber. The ozone will be removed in this chamber before it returns to the pool and introduces unwanted noise or aerated water that appears cloudy. We also specify a vent tube for this gas-removal chamber to carry the corrosive gas outside and away from easily damaged seals and equipment.

By the way, I isolate ozone systems in this discussion because I've seen lots of plans that will call out a "generic" ozone system with no information about the type or size – a bit of folly because such distinctions are critical in the case of ozone technology.

► **Plumbing Locations:** Our plans show close-to-exact locations of pipes in the ground. This helps ensure that the system is installed as designed, and it can also be a huge help if there's ever

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a need down the line to fix a leaking pipe. Furthermore – and this should be obvious – plans must clearly show precise locations for components such as skimmers or for return and suction lines. Amazingly, however, I often see plans utterly lacking in even this basic level of detail.

► **Spa Jets:** We leave nothing to chance when it comes to specifying the number of spa-jet fittings, their types and their locations. All too often it seems installers are willing to have homeowners go to all the expense of having concrete spas without defining such specifics about their jets.

For our part, we either define exact locations based on discussions with our clients, or we explicitly define whose responsibility it is to determine those locations during the plumbing phase. And at all times we are mindful of the fact that once the spa is shot with gunite or shotcrete, those jet configurations are not at all easy to change or correct.

► **Heaters:** We put a big note on our plans that the heater must be vented to the outdoors and that this ventilation system cannot share ducting with any other type of appliance. We further define where the ducting will run, who will install it and how the combustion-air intake will be vented from the exterior of the building.

These issues can be of extreme importance in a situation, for example, where the equipment room for the watershape is underneath the house or is somehow part of a larger structure. Believe me, unexpected remodeling jobs that come up to accommodate ventilation for a pool/spa heater do not go over well with clients!

► **Fire Elements:** I'm currently working on a project that includes a series of stainless steel torches along one side of a large swimming pool. In this case our plans define the exact products to be used,

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their precise locations and full details about the gas lines – where they'll run and what size they need to be. We also include precise information about how the elements are to be mounted.

the more the better

The above is only a partial list. Indeed, a full set of plans will include numerous plumbing details for surge tanks and perimeter-overflow system; construction details for everything from perimeter-overflow edges and gutters to outdoor kitchens and shade structures; and details as significant as a pool's interior finish or as subtle as the size of sleeves for market umbrellas.

If you're engaged in quality work, I'm reasonably confident that thorough planning is a matter of habit for you. I also suspect that, once developed, you hang onto files of your construction details and can apply them in new situations as needed.

As watershapers in the modern world, our plans should constantly be growing in both precision and specificity. After all, the less you leave to chance, the better your odds of minimizing mistakes and working at your best, project after project. **WS**

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

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By Stephanie Rose

Feeling Right at Home



My daughter and I just returned from our annual trip to visit family in Connecticut and used the occasion this time to travel all over the northeast – from Boothbay Harbor, Portland and Camden in Maine to Martha's Vineyard and Nantucket and other parts of Massachusetts as well as slices of New Hampshire and Rhode Island.

I'm never disappointed by the beauty I find in that part of the country. The landscapes are much lushier than they are at home in southern California, a fact that drives home the point that I spend most of my time in a desert.

The old-growth trees back east are beautiful and majestic, most often seen clustered in groves as part of incredible forested areas, and, overall, the landscaping is much more planned and deliberate than most of what we see at home. Indeed, the gardens are often works of art that have been nurtured for generations, and it is clear to me that gardening is more respected as a form of art in the east than it is in southern California.

The exposure to new things and the contrasts between regions always causes me to focus on the ways I think, plan and design and, I believe, enables me to add new dimensions to my work.

charting the differences

Every time I take one of these trips, I can't help noticing significant differences between east and west. I spent many years on Long Island, but since I left 16 years ago, a whole lot of botanical education has sharpened my eye and I see things that went unnoticed before.

What I find most beneficial in travel of this sort is the opportunity to get out and see the way things are done in other parts of the country. The exposure to new things and the contrasts between regions always causes me to focus on the ways I think, plan and design and, I believe, enables me to add new dimensions to my work by providing me with a perspective I couldn't ever gain by staying in familiar climes.

When I'm back east every summer, I marvel at the differences in planting styles as well as the workmanship and what people see as appropriate for the area. I once knew a man who hated the word "appropriate" and I guess I see his point, but as I've thought about what the word means in the context of planting, I see it as expressing the challenges each region has relative to climate, temperature, the length of the growing season, water resources and even history.

In southern California, for example, we can plant year 'round. Annuals that are available to us in the winter aren't ready to plant in the east until April or May (depending upon your latitude), while the herbaceous perennials we plant in Los Angeles are annuals in Nantucket. Californians have flowers blooming in February while snow still blankets New England.

Most strikingly, the majority of nurseries and gardening services in the northeast shut down entirely in the fall and don't resume business until the spring – and those that do carry operations through the winter manage to do so by

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retailing non-gardening products or offering snow-plow services. And of course, different plants grow in different regions, so what I spot as I drive around Maine or Connecticut are some plants I'm familiar with – but many more that we seldom see or use in Los Angeles.

I also couldn't help noticing that east-coast gardeners have a far more limited se-

lection among fertilizers than we do out west. I was told of concerns about chemicals seeping into groundwater and contaminating the water supply – an alien issue for me back home because southern California doesn't have much by way of groundwater resources and in fact imports much of its water from surrounding regions and states.

a careful look

What I conclude from this set of observations is the obvious point that landscaping is a completely different professional pursuit in the northeast than it is at home in southern California – and I'm certain that this is a point that can easily be extrapolated in a discussion of each of the other distinct regions across the country. (It also reminds me that I write for a national magazine and that the main critical comment I get is that my columns intimately reflect the place in which I live and work.)

From the plants we use to the masonry we build, everything looks different, is cared for differently and is designed differently. What is an "appropriate" style for one region is not necessarily appropriate for another. And all I can say is, hooray for the differences – and thanks for the lessons I can apply in my own work.

In my observation, for example, east-coast design is more conservative than west-coast design. Not to generalize too much, but there's a lot less by way of frills and wasted space than I find back home, and I attribute it to the more limited time frame for planting and caring for gardens in cooler and more northerly climate zones.

So much seems to be better thought out by virtue of being compressed into a shorter span of time. A perennial border requires careful planning and tending to reach a peak during the late Spring and Summer in New York, while southern California's gardeners have all year to bring along particular plants.

As I think about all these differences and weigh the advantages and disadvantages of working in these two geographies, I find myself envying my eastern counterparts – and wondering why I feel that way.

Actually, it's simple: The east coast has a rich history of style and a whole flock of time-honored traditions that permeate gardens and garden designs. This history and tradition set the east well apart from the west – as do the manicured, multi-acre properties with their historic plantings and protected stands of old-growth trees. There seems to be greater respect for the land and a

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heritage that reflects the Old World rather than the Wild West.

I thought about this last point a lot in the context of my recent column on preservation: *Old* in California is 1960, while *old* on the east coast is 1660: There's obviously a greater interest in the east toward preserving traditional styles and architecture than there is in the west.

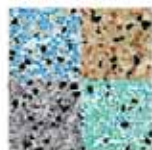
getting specific

My favorite when it comes to discussing differences in style is masonry. Granted, building codes probably dictate some of these distinctions, but I consistently noted the superior quality and appearance of the masonry walls throughout Connecticut as compared to Los Angeles.



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That's not to say we don't have good walls here, but the attention to detail I see on the residential walls in Greenwich and surrounding areas recalls the skills of classically trained English stonemasons – no visible grout lines and stones that look as though they've been there forever. So what if they take longer to build: I'd say it's worth the wait!

What's more, these fieldstone walls are perfectly appropriate to their setting. I've seen walls like these in southern California, and I can only say that they tend to look out of place, as though the wall had been imported from the east and reassembled stone by stone by folks who didn't truly have a feel for what they were doing. And then there's context: You can spot these walls all over New England, compared to the one in front of the solitary Tudor-style home that stands out like a sore thumb in the row of ranch-style homes with split-rail fences in Los Angeles.

Beyond the masonry, the most notable differences in landscape design have to do with the placement of plants in eastern gardens.

While traveling in the east, for example, I consistently saw plants placed in consideration of their mature sizes. Whereas I will fill up a border with plants that will collide with one another in a couple of years, most gardens I saw on the east coast had their plants placed farther apart.

It's as though eastern gardeners have a stronger sense of permanency in their gardens than western gardeners. It's another broad generalization, but it seems that most California gardens aren't planned in the belief that they will be there 50 years from now, while New England gardens are planned with the expectation that they will last for generations.

There is also what I would describe as considerably more formality to designs in the east. Everything seems to be based on tradition, history and time-honored practices and values with an eye to permanence. By contrast, west coast gardens seem to be more temporary – ready for digging under and replacement in a few years.

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long views

As I suggested above, I believe that the hallmark of east-coast design is the rich tradition carried by its practitioners. Yes, new ideas and plants can be incorporated, but designs are meant to last and are based on the history of the area and an attitude about longevity we don't expect to find in the many gardens of southern California.

The irony is that I think the west started out with the intention of maintaining its gardens in line with the grand traditions of the east (in fact, quite a few historic gardens survive in the area), but I think we have been lured off track by climate and year-round growing capability. It's given us a conviction that gardens are temporary and can be played with and rearranged endlessly. At a minimum, we have much of the year to play and get things looking right.

I for one would love to have clients who were willing to experiment with a greater

sense of permanency in their gardens at the expense of the quest for "lots of color." So far, however, I've found few signs that very many are willing to buck the trend and think in longer terms.

Until the tide turns, I refresh myself with annual trips to the northeast – and look forward to opportunities I have to visit other areas around the country and bring what I see back to my work in southern California. **WS**

Stephanie Rose runs Stephanie Rose Landscape Design in Encino, Calif. A specialist in residential garden design, her projects often include collaboration with custom pool builders. If you have a specific question about landscaping (or simply want to exchange ideas), e-mail her at sroseld@earthlink.net. She also can be seen on episodes of "The Surprise Gardener" on HGTV.



These classic stone walls lend senses of age, tradition and craftsmanship that harmonize flawlessly with northeastern landscapes.



Oceanside Glasstile™



By David Tisherman

A Visual Audition



Recently, I've been involved in the early stages of a project that has lent new meaning to the phrase, "seeing is believing." It came up as a result of a call from an agent for a well-heeled client who was interested in having me design and build a residential swimming pool in the Dallas/Fort Worth area.

When I arrived in Texas, I was met by the owner's agent, David, and by Marcus Bowen, a landscape architect who was part of the large project team, which, I would learn, included architects, a landscape architect, an interior designer, a lighting designer, various engineers, numerous general contractors and subcontractors, a host of project managers and several other creative and practical sorts who were on board to help the client.

As David drove us to the site, the three of us had a chance to talk about the project, and I was immediately impressed by their passion and interest in the finest details.

expansive sight

As we walked the property, Bowen ran through the basic plan and let me

I've never been on a project where so many good people have worked so effectively together without any apparent flexing of egos.

know that they wanted me to come aboard to take existing concepts for the pool area and make everything more interesting.

What they had was a program that included lap swimming, volleyball, a slide, a diving board and a large spa to be serviced by what everyone thought was a generous, 400-square-foot-plus equipment room. Everything had been designed and laid out with no clear understanding of how it would all work – great in concept but devoid of materials selections and utterly lacking in detail.

With my help, they had their program and more before long, including a vanishing edge, an expanded reflecting area, a diving rock (rather than a diving board) and numerous waterfeatures – so much complexity that the original equipment room is now being revised and enlarged to contain more than a dozen standard pumps, numerous variable-speed pumps, a half dozen heaters, a complex of filters, air compressors, control systems and computers that will drive elaborately programmed fountains and jets.

The unique thing about the approach they took to the now-4,000-square-foot pool is that no area does double duty: Where most backyard pools – even really large ones – have, say, lap lanes cutting across areas designed for diving or child's play or volleyball, this pool has been organized so each function has its own, dedicated space.

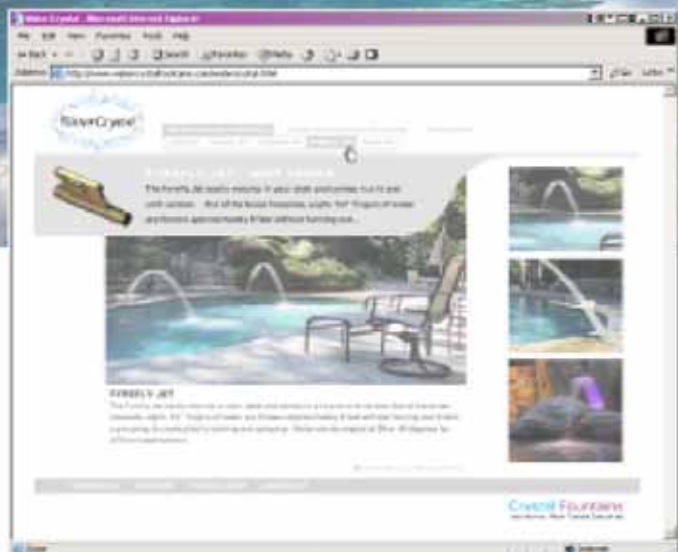
One special element of the pool is an expanse designed solely to reflect a juxtaposition of ancient and modern architecture – a set of gleaming, modern, steel-and-glass changing rooms that butt up visually against an ancient, crumbling "ruin," both placed right next to the water.

In short, the pool program has indeed become more interesting, and I saw many opportunities to add the sort of touches and details that would make it truly unique and special – some-



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thing befitting the ambitions of the client and the whole project team. And I must say that I've never been on a project where so many good people have worked so effectively together without any apparent flexing of egos.

I didn't meet the client until the second meeting, where we were joined by the full team: the architects, the interior designer, lighting designer, an engineer, the project manager and the project coordinators representing the homeowner. We talked about things in great detail, including, for instance, the places where the volleyball net was to attach to the pool and the tiniest details of finishes, colors, stone veneers and more.

blended to solid

We beat things up over and over again until I realized that the homeowner needed to see some things with his own eyes to help him sort out the mélange of ideas



This is a project in which every single possibility is evaluated carefully. In this case, mock-ups of the ruins and the changing rooms have been built to explore the relationships of these structures to the pool area, and vice versa.

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and details we were discussing. I was heading back to California and he was headed west on business, so I suggested that we get together and tour some pools.

Done deal: A few days later, I picked him, his wife and a friend up at a small, local airport for a tour that encompassed a number of my projects (several of

which have been profiled in the pages of *WaterShapes*). We walked and looked and discussed everything from my stone drain heads and spillways to special colors and materials. We visited pools with glass tile, plaster and pebble finishes to define how these materials look in real-world settings.

One of the places we visited was the all-glass-tile courtyard swimming pool profiled in the June 2003 issue – the one with the wavy edge, laminar jets and checkerboard stone/grass deck. When we arrived, the green-hued pool was partly in shade, partly in sunlight. The client took one look at part of the pool that was in the sun and said, “That’s the color I want!”

This certainly should have made things easier, but it didn’t, mainly because he went on to explain that he didn’t like the blended-tile approach because it made individual tiles stand out visibly. Instead, he explained, he wanted the same color impression to be achieved with a monochrome tile finish. He also didn’t like the way the color looked in the shade.

At that point, I knew we were in something of a bind because he wanted tile of one color to replicate an impression created by three – and it had to work in sun *and* shade.

Two weeks later, color came up during another team meeting, and we soon agreed that we needed more than printed tile guides or small samples to narrow

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sample sagas

I don’t know how many times I’ve run into people who’ve been sold critical finish materials such as tile based upon a four-by-four-inch sample or, worse yet, a printed catalog. Neither gives more than a suggestion of what the material looks like in place, and even the catalogs have bold disclaimers about their ability to convey accurate colors.

As a rule, I work with tile samples at a *minimum* dimension of 12 by 12 inches. I won’t say that’s entirely adequate for all occasions – such as the one described in the accompanying text, where the samples grew to five by five feet – but it *does* give a fuller impression of a field of color and, more important, shows how the product looks with grout lines in place.

–D.T.

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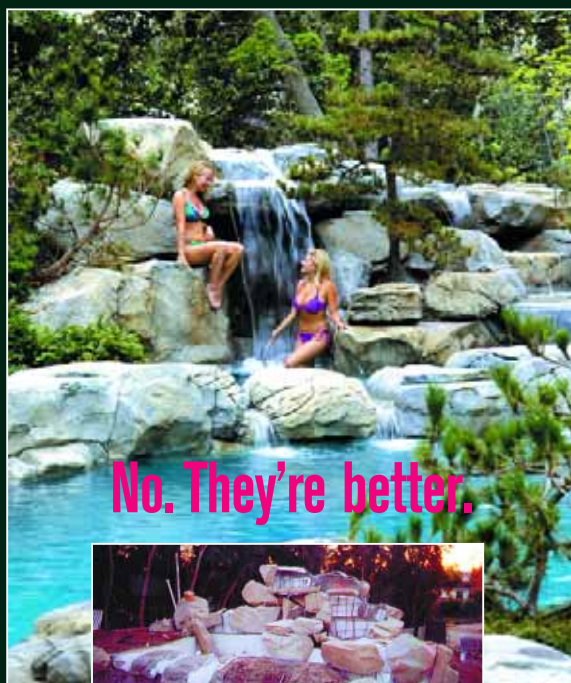
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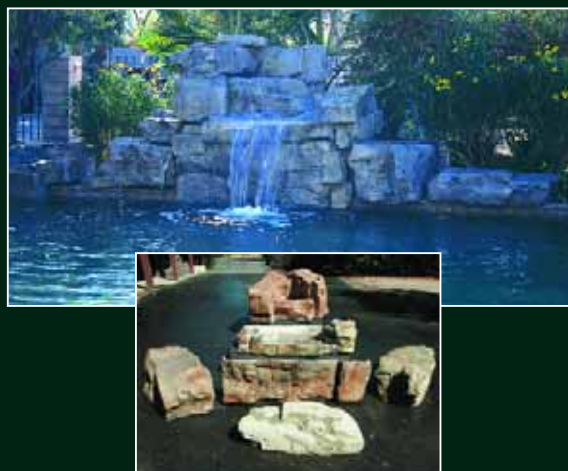
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tisherman: detail 44

our choices. I then observed that small, dry samples don't give a sense of how the color will appear submerged in water, nor do they offer the slightest clue about how a color will come across at various depths.

I explained the problem to the homeowner using the example of a pool I'd done several years earlier in white plaster with pink-tiled steps. The photographs I had with me showed the pink clearly deepening to a warm shade of lavender as the water deepened because of refraction and reflection. Continuing, I mentioned that in the project at hand, depth was to range from three to eight feet and that a similar color shift would occur.

We all decided that the only way to resolve the issue was to get



The demonstration pool made it much easier for everyone not just to visualize, but actually to see with their own eyes how different surface treatments (both tile and stone) look when submerged in up to six feet of water.



Marcus Bowen's son spent plenty of time in the demonstration pool helping to jockey sample panels that weighed up to a ton into position along the walls and floor of the pool. It's a lot of work, but it will lend an unusual degree of certainty to the final choices.

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large samples and place them in water – and we had just a week to make it happen.

fire drill

At this point, Marcus Bowen took the lead with the brilliant idea of building a temporary swimming pool strictly for the

purpose of trying out tile samples as well as stone pieces that might possibly be used on some vertical surfaces inside the pool.

He coordinated construction of a large aboveground pool – basically a reinforced plywood frame similar to the forms for a poured-in-place concrete wall. The pool ranged in depth from three to six feet and

was equipped with a pump, filter and two return lines. Bowen also set up a small viewing platform to overlook the pool.

One hitch: He couldn't find the pure-white liner we needed as a neutral backdrop for the samples. Pool builder Michael Nantz from Elite Concepts (Denton, Texas), who was at the meeting because he possibly will act as my contractor for the pool-construction project, stepped in at that point and located the liner we needed.

With the liner installed, Bowen filled the pool for the tests. It was important to have a circulation system in place, basically because we wanted to simulate the sorts of surface turbulence that affects the way a tile finish looks under water. This was a key point, because when the water moves, it creates hot spots (or what I call "stars") that lend texture to the tile surface and go a long way toward concealing grout lines.

In the meantime, he tiled several five-by-five-foot panels with a variety of teal colors – some blends, others with uniform colors. The tile comes from four suppliers: Oceanside Glasstile of Carlsbad, Calif.; Villi-Glas and Studio Line Glass Tile, both distributed by Euro-Tile of Fort Myers, Fla.; and a South African glass tile imported by Walker Zanger of Sun Valley, Calif. He also assembled stone panels, also five-by-fives, to see how submerged grout lines would look with stone types selected for use around the property.

Each sample was set up with thinset on concrete board rather than plywood (to keep them from floating). The resulting panels weighed as much as a ton, which meant jockeying them into position using either a Bobcat or a crane.

Marcus Bowen's son, also called Marcus, was our in-pool sample wrangler. Four samples could be placed in the water at any one time, and it was his job to guide the panels into place as they were lowered into the pool. Finally, once everything was ready, the entire project team gathered at poolside along with the client.

Continued on page 38



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When he arrived, the pool was half in sun and half in shade, the water was still and he expressed *complete* dissatisfaction with what he saw. Then I turned on the pump, the water started moving just a bit and the tile began to shimmer and reflect light in infinitely more interesting ways. His response improved dramatically – a 180-degree turn of mood, in fact – and we spent a long while studying the various samples and began, one by one, to eliminate tiles that didn't make the grade.

narrowing choices

At this writing, the temporary pool is empty but still in place, awaiting the arrival of more samples. We still haven't reached a final decision about color, but what we *do* know is that the client is enjoying the process immensely and certainly seems to appreciate the energy and effort that's gone into helping with the decision. We also know that, when the call is made on the tile-and-stone combination, there won't be any guesswork involved.

At this point, thoughts are leaning toward an all-glass-tile floor with cut-stone walls or perhaps ancient Chinese building blocks – but who knows? Things keep changing day to day.

Thank goodness for Marcus Bowen and the rest of the team I joined: Their passion, professionalism and abiding patience are something to behold, and it's a pleasure just working with people who see problems so clearly that solutions invariably and quickly present themselves – all in the name of getting the job done right! **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.

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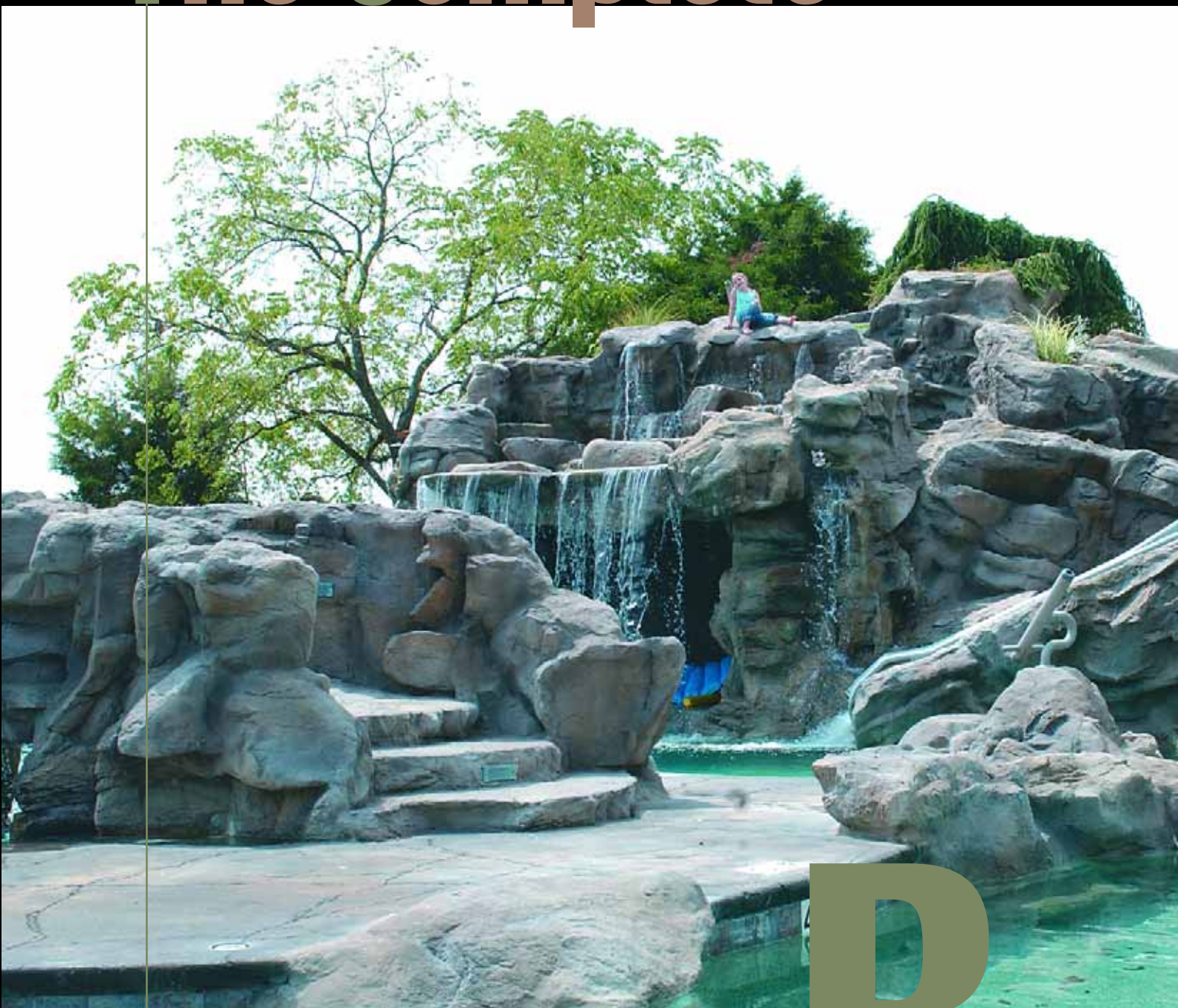
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The Complete



Set in the glorious Shenandoah Valley of western Virginia, this project called on watershaper Mario Abaldo's firm to strike an energetic balance between form, function, the needs of the site and input from the homeowners – with everything assembled atop a basic structure that had been ineptly started by another builder. Here, Abaldo shows us around the finished backyard and a variety of amenities that bring the words 'something for everyone' to mind.

Retr



By Mario Abaldo

Finishing up a project of any size is all about the details.

From the final touches on the artificial rockwork and the placing and adjusting of lights to the fine tuning of the circulation system and signing off on the equipment room, the art of fine water-shaping ultimately boils down to applying the same stringent standards for excellence that you bring to the beginning and middle of the project straight through to the end.

Of course, it's virtually impossible to complete a project of this magnitude without having to make significant adjustments and changes (or, worse, reconstructing or reinstalling things along the way). The best means of coping is to plan and install to perfection or near-perfection at each step. This is why, as an organization, we look at *every* aspect of construction as part of a grand process of making a long, smooth transition from "project" to "finished product."

It also helps, as in this case, to have a great client.

Making Great

In a perfect world, we could create plans that accommodated all contingencies and ended up being built exactly as designed, but on big projects there will always be changes and challenges that arise, and our work on a project first discussed in the September 2004 issue (page 34) was no exception.

In this case, we were hampered to some extent by the contribution of a builder who'd been on site before we arrived – but were ably assisted by a homeowner who was intimately involved (and stayed that way) from start to finish. The fact that he hung in there with us and was happy to discuss various issues as they arose gave us the confidence that comes with everyone being on the same page. Indeed, we developed a rapport that went

well beyond what we usually witness with our high-end clients.

It's interesting to consider what we might have done differently had we been involved with this project from the start.

For starters, the main thing we would have done would have been to site the project differently. Rather than place the entire structure at the top of the hill above the home – right at the property line – we would probably have pulled the entire layout down toward the house, leaving the crown of the hill as a backdrop.

This would have enabled us to create rockwork and cascades above and behind the grotto and slide structure that would have blended them in more effectively with the surrounding landscape. As it was, we had few options beyond trying to soften the profile of the main rock structure by fanning out the rockwork over a broad area and creating a series of intricate waterfalls and planting areas.

Upon further reflection, we also probably would have relocated the spa to a more forward position away from the rock structure. This would have enabled us to make it larger and more elaborate.

All of that said, we're thrilled with the finished watershape, and so are the homeowners and their four teenage and pre-teen sons, who have already made big use of the pool for entertaining their friends. And when it comes to fun, this pool really does have it all, from the slide, grotto and beach entry to the island, interactive waterfeatures, music system and colorful lighting. It's a space made for good times.

We're now working with the homeowner on phase II, in which we'll be working with the area around a new guesthouse and will extend the rock structures away from the pool area and down the hillside. There are even some speculations about creating a pond/wetlands area – and *this* time we'll be there from Day One.

Pictorial continues on page 42





AMENITIES GALORE: The features associated with the free-form pool and rock structure are uniquely dedicated to family fun, from the strategically placed water cannons (A) to the slide that passes through a dark tunnel before emerging and dropping to the water (B, C). Off to one side of the rock structure is a large spa (D) outfitted with a sound system. Looking toward the spa from the top of the rock structure, you see (just beyond the slide) a plume rising from the jumping-jewel waterfeature (E), a series of jets programmed with display routines but also set up for interactive, motion-related play (F).



G

QUIET MOMENTS: While the entire backyard seems dedicated to vigorous activity, the design also incorporates characteristics that appeal to more grown-up sensibilities and the adult impulse to seek relaxation in the great outdoors. This impression is reinforced by sculptures of leisurely pursuits from fishing (G) to sunbathing (H) and by peaceful pathways behind the rock structure (I) and spa (J).



H



Adjustment Judgment

With a project of this scope and complexity, you have to be ready for things to change as the work progresses. To accommodate this certainty to the best extent we can, we always design our hydraulics system with valves and controls that will enable us to “fine tune” the amount of water flowing through the various waterfeatures as needs and desires emerge.

We also take care in equipment selection and worry every detail of equipment-room layout with the goal in mind of making everything both easy to understand and easy to service — all because we’re well aware that it will be up to others to maintain what we leave behind.

Along the way in this and other projects, we have benefited a great deal from the technical support of various manufacturers, particularly the folks at Pentair Pool Products of Sanford, N.C., who have consistently been supportive and responsive to all of our needs, great and small.

It’s my view that if more swimming pool and spa suppliers took the time to respond more carefully to the questions, problems and needs of those of us who spent time applying products in the field, everyone in our industry would be so much the better.

— M.A.

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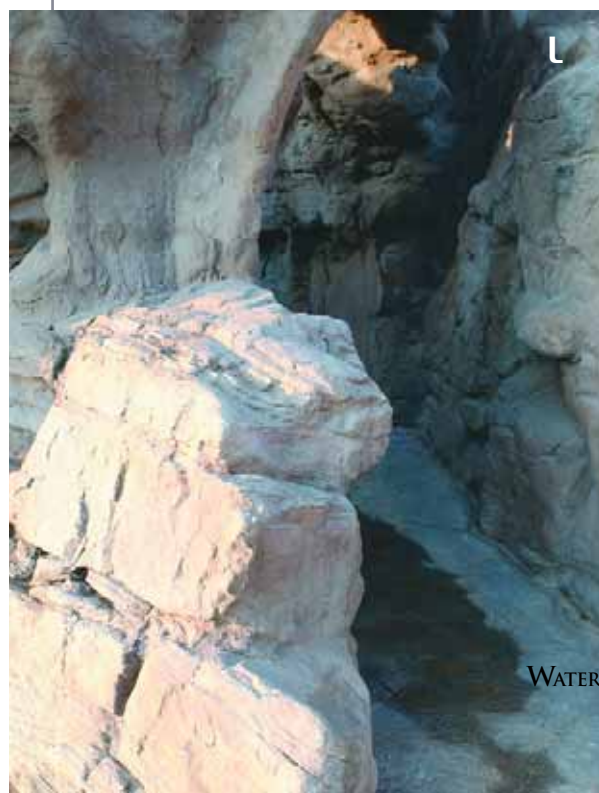


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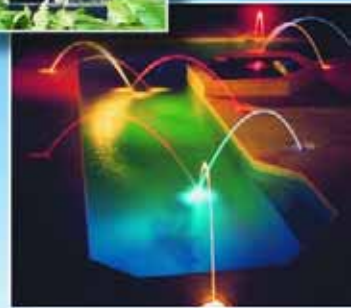
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N



O

IN A FOG: To recreate the effect of mist rising from a rustic pond, we equipped the entire pool area with fog machines that give the setting an other-worldly appearance, day or night. The effect is certainly visual (N), but there's an element of adventure introduced when the sun goes down (O), and there's no doubt that the mist helps everyone cool off under blazing summer skies (P).



P



The Platinum Standard

A retrospective pictorial highlighting 25 key projects covered in the first six volumes of WaterShapes – projects that have defined the state of the art, pushed the envelope of creativity and given us all a glimpse into the fabulous potential of the watershaping arts.

Part idea book, part tribute to design achievement and in all ways a celebration of the magazine's history and development, it's our gift to you for use in your projects to come.

**Coming in the
December issue of** WATERSHAPES



IT'S THE WATER: For all the amenities, features, sculptures, details, play elements and general exuberance of these structures, the success of any watershaping project has to do with water. In this case, we centered our efforts on setting up areas at depths and in sections allowing for various degrees of action, but given the massiveness of the rock structures, we also focused on softening the edges with lots of water in motion over the face of the grotto (Q), down the sides of the rock structure (R), and off the bridge (S) – and the treat is aural as well as visual (T) .



Good Chemistry

By Jeff Freeman

Water is a chemical compound with a variety of physical characteristics, including the ability to act as a solvent and to harbor life. For those two reasons alone, says chemistry expert Jeff Freeman, watershape designers and builders should want to know everything they can about water chemistry. Here, he begins a new series on the importance of this key subject with a discussion of why watershapers really do need to care.



Plainly stated, water has chemical characteristics that affect the longevity of a watershape and the near- and long-term ability of our clients to enjoy their experiences in and around the water.

For all the clarity and obviousness of that assertion, however, there's a marked tendency among watershape designers, engineers and builders to assume that maintenance of proper water chemistry is the exclusive responsibility of service providers who come onto the scene once our work on a project is done.

As watershapers, we build beautiful projects that become a huge part of our clients' lives. Almost invariably, they've spent a significant amount to enhance their lifestyles and enjoyment of their homes. Just as most of us wouldn't dream of building a pool, spa, fountain, stream or pond or accepting payment without installing some sort of a pump and filtration system, I'd argue that we should

never create systems that don't anticipate and accommodate the need to maintain proper water chemistry.

This series of articles will back up that assertion with a detailed look at various aspects of water chemistry and the effects they have on the products and materials we use as watershape designers and builders. After a basic overview in this installment, we'll systematically look at what we can do to make sure that the quality of the water never becomes a detriment to the beauty and pleasure we all strive to deliver.

TO GOOD USE

A big part of doing our best for our clients involves taking all of the elements of water treatment into account while we are designing and building our projects.

That includes allowances for proper filtration, circulation and skimming, which play key roles in good water quality and which we all seem to know we

must consider. Less well recognized is the fact that it also includes the need to plan for and provide the means to treat the water itself.

For starters, proper *sanitizing* makes a body of water both safe and aesthetically pleasing. You don't need to be a microbiologist these days to know that there are a variety of waterborne diseases that can assault bathers if things aren't right. And even if the water isn't unsafe *per se*, inadequate sanitizing can leave water cloudy, malodorous and riddled with algae.

At the same time, *water balance* (which I'll explain in greater detail below and in upcoming articles) is absolutely essential to protecting plaster, tile grout, exposed aggregates and faux and real rock from scaling, staining, etching or generally falling to pieces. In addition, proper chemistry also helps protect the durable performance for all the components on the equipment pad.

The trouble is, of course, that not all contained, controlled bodies of water are created equal, which means there are significant differences in treatment approaches that come into play.

In the case of swimming pools and spas and fountains, for example, the need for good chemistry is critical because people immerse their bodies in the water and will avoid water that is either murky or has an unpleasant smell. (Yes, that's even true with fountains because there's always the possibility that someone will jump in and splash around from time to time.)

On the opposite side of the scale are systems that harbor plants and fish: Here, the water-chemistry challenge requires a completely different approach – no less rigorous or important, just different.

In all cases, be it sanitizing water to keep it free of algae and harmful microorganisms or maintaining its balance to keep it from attacking cementitious materials, the designer and builder have a variety of options. The key to success, no matter the regimen you choose, is that water chemistry cannot and should not be left to chance.

IT'S THE WATER

As designers, engineers and builders of various types of watershapes, we need to recognize right up front a reciprocal relationship between water chemistry and the materials we use in our projects.

Water chemistry, for example, affects the longevity and service lives of the materials with which watershapes are surfaced, and the types of materials you choose will in turn have an effect on chemistry. Plaster, natural rock, artificial rock and tile grout, for example, can all be attacked by aggressive, mineral-seeking water – or stained or coated with scale when water slides out of balance the other way.

As a rule, the more cementitious compounds you place in contact with water, the more likely it is that those compounds will be sought by the water to the eventual detriment of the surface as well as to the stability of the pH and performance of the sanitizer. (How well the cementitious materials are sealed will have a tremendous influence on the effective aggressiveness of the water and, conversely, on the performance of the sealer.)

It's also true that the size of the body of water relative to its usage is a big factor in water treatment. Spas, for example, are relatively small bodies of water that are sometimes occupied by relatively large numbers of people. This means that chemical treatment for spas must accommodate the need for rapid

The Chlorine Scene

Chlorine is an atomic element that belongs to the *halogen* family. In nature, it is found in various chemical compounds, primarily bound up in seawater in the form of sodium chloride, or salt. For decades, scientists and chemical manufacturers have figured out ways to add chlorine to water as a sanitizer by combining it with other chemical compounds.

Regardless of how it's added, chlorine possesses several characteristics that are important to water treatment. First, it dissolves easily in water and its levels (that is, its *residuals*) are easily monitored using either chemical reagent tests or electronic monitors.

In all cases, chlorine is used up by bacteria and organic compounds introduced by bathers, dirt, pollen, leaves and animals, to name a few sources. The more of these entities that find their way into the water relative to the size of the body of water, the more sanitizer the system will require.

All chlorine compounds have an influence on pH and water balance. Chlorine is also both a *sanitizer*, meaning it kills germs, and an *oxidizer*, which means it burns up organic compounds that can lead to the formation of microorganisms or algae. We'll explore these functions more fully in future articles. For now, let's run through basic product forms used in watershapes.

w **Sodium hypochlorite:** The most commonly used and most familiar form of chlorine is sodium hypochlorite, or liquid bleach – pretty much the same stuff found and used in laundry rooms. Sodium hypochlorite is added to water either by hand, as in the “bottle at the end of the arm” method, or more reliably by a chemical feeder of some type or a salt-chlorination system.

w **Calcium hypochlorite:** This is a granular chlorine that is also widely available and can be added by hand or a chemical feeder of some kind. Like sodium hypochlorite, it is both popular and very affordable, but “cal hypo,” as it's often called, is highly volatile and must be handled with due care.

w **Chlorine tablets:** These are the familiar white tablets known commonly as trichlor and contain chlorine as well as cyanuric acid, a chlorine-stabilizing substance. (See the sidebar on page 56 for more on chlorine stabilization.) In addition to being used in chlorine floaters – a tremendously flawed delivery system – trichlor is commonly added to water in a type of flow through, in-line device known as an erosion feeder.

w **Chlorine gas:** Also known as “elemental chlorine,” this is another means of adding chlorine to water. As its name suggests, chlorine gas is pure chlorine with no additives and must be added to water using special injection systems – generally by a service specialist who uses a device known as a diffuser to add the chemical to the water. Chlorine gas is extremely toxic and can cause significant injury if inhaled, but it is also an extremely cost-effective and reliable means of sanitizing the water.

There are other options as well, including sodium dichlor (a granular form similar to trichlor) and lithium hypochlorite (similar in some ways to calcium hypochlorite, but with a more neutral pH).

– J.E.

replacement of sanitizers, while fountains may experience the presence of bathers only rarely and may only need a sanitizer level that will head off the development of algae – a different management issue altogether.

The choices among treatment approaches, however, are not always so cut and dry. And it's not helped by the fact that, in the world of water chemistry, we are inundated by information put forth by people who may be shooting from the hip, may not fully understand the issues or are spreading partially true or even untrue information based on a need to market a product or system.

In a world where it's tough to know whom to believe, it's too easy to fall in behind those with simple approaches who isolate one variable or another, treat that variable and then grossly over-generalize the way things actually work.



Balancing the water is about accommodating key chemical characteristics of the water and keeping them at levels that ease the process of maintaining a functioning, healthy watershape. Sounds simple, but it's not.

In truth, every aspect of water chemistry is tangled up with every other aspect. Chlorine levels, for example, have an effect on the pH of the pool, which in turn influences the effectiveness of the chlorine. For their part, algaecides work well in stemming the tide of a current outbreak, but the problem almost invariably returns and requires even more intrusive approaches. (It's like an addiction: A watershape develops a dependency on certain types of water treatment, and the clients find themselves on a frustrating and expensive treadmill.)

FINDING A WAY

To begin to grasp the topic in all its complexity, it's

Chlorine Alternatives

For all of its popularity and widespread use, chlorine is not perfect for all watershape applications. Concerns over its effects on water balance, its often-corrosive nature and its overall toxicity have led scientists and suppliers to develop a host of alternative products and systems.

w **Bromine:** This is another element from the halogen family that is often used in pools and, especially, spas. Bromine comes in both granular and tablet forms and is an extremely effective sanitizer, but it cannot be stabilized to resist degradation from sunlight and hence is most often used in indoor settings.

w **Biguanides:** By comparison to chlorine and bromine, this is a relatively new form of sanitizer and is based on modern polymer chemistry. Biguanide sanitizers can be added by hand or by a chemical feeder and are considered to be "gentle" sanitizers because they are not corrosive, as are the halogens. The product is good at killing pathogens, but it's not an effective oxidizer, which means it must be used in conjunction with a separate oxidizer, such as hydrogen peroxide.

w **Ozone:** A form of oxygen, ozone is an incredibly effective sanitizer and oxidizer when added to water by way of an ozone generator that transforms oxygen to ozone using one of two basic methods: corona discharge, which emulates chemical reactions in electrical storms that produce large amounts of ozone, or ultraviolet light systems, which generate ozone as well. Highly unstable, ozone lasts just a short time when dissolved in water, which means that it has to be injected constantly and should always be used in conjunction with a secondary sanitizer in pool or spa applications.

This is an expensive alternative, particularly in the corona-discharge format, but it is very effective in treating bodies of water that cannot contain chlorine for one reason or another, as in the case of marine exhibits where fish and other aquatic life forms will die in the presence of chlorine or bromine at levels that are higher than those encountered in their natural habitats.

w **Ultraviolet light:** A completely different approach to sanitizing involves exposing water to intense ultraviolet light (as compared to the less-direct approach of using UV light to generate ozone). This method kills germs but cannot oxidize organic compounds and so has become a popular option in natural bodies of water that contain plants and fish.

There's a tremendous amount of specific information about the chemical characteristics of these options, and each may eventually get an article of its own.

– J.F.

useful to break chemistry down into the two key areas mentioned above: sanitizing and water balance.

At root, *sanitizing* the water is all about providing a means for killing enough harmful microorganisms – or *pathogens*, as biologists call them – to render the water safe for human consumption. (By contrast, *sterilization* is about killing everything in the water.) In the pool/spa industry, the standards for sanitizing are based on the presumption that the water must be safe to drink, as defined by National Sanitation Foundation (NSF) Article 53.

That standard does not necessarily apply to fountains, depending upon the specific application, nor is it relevant for ponds and streams that contain life. For purposes of this discussion, however, we'll set aside biological systems and assume that our watershapes of all types are made with the idea that, at some point or oth-

er, a person will take a dip in the water and most likely will drink some of it.

It should come as little surprise in this context that chlorine is the most popular sanitizing chemical. It really is amazing stuff – omnipresent in industrial manufacturing processes, plastics and petrochemical products in addition to being a tremendously effective sanitizer in water-treatment and other applications. (The sidebars on pages 53 and 54 introduce the various forms of chlorine-based and non-chlorine sanitizers now available.)

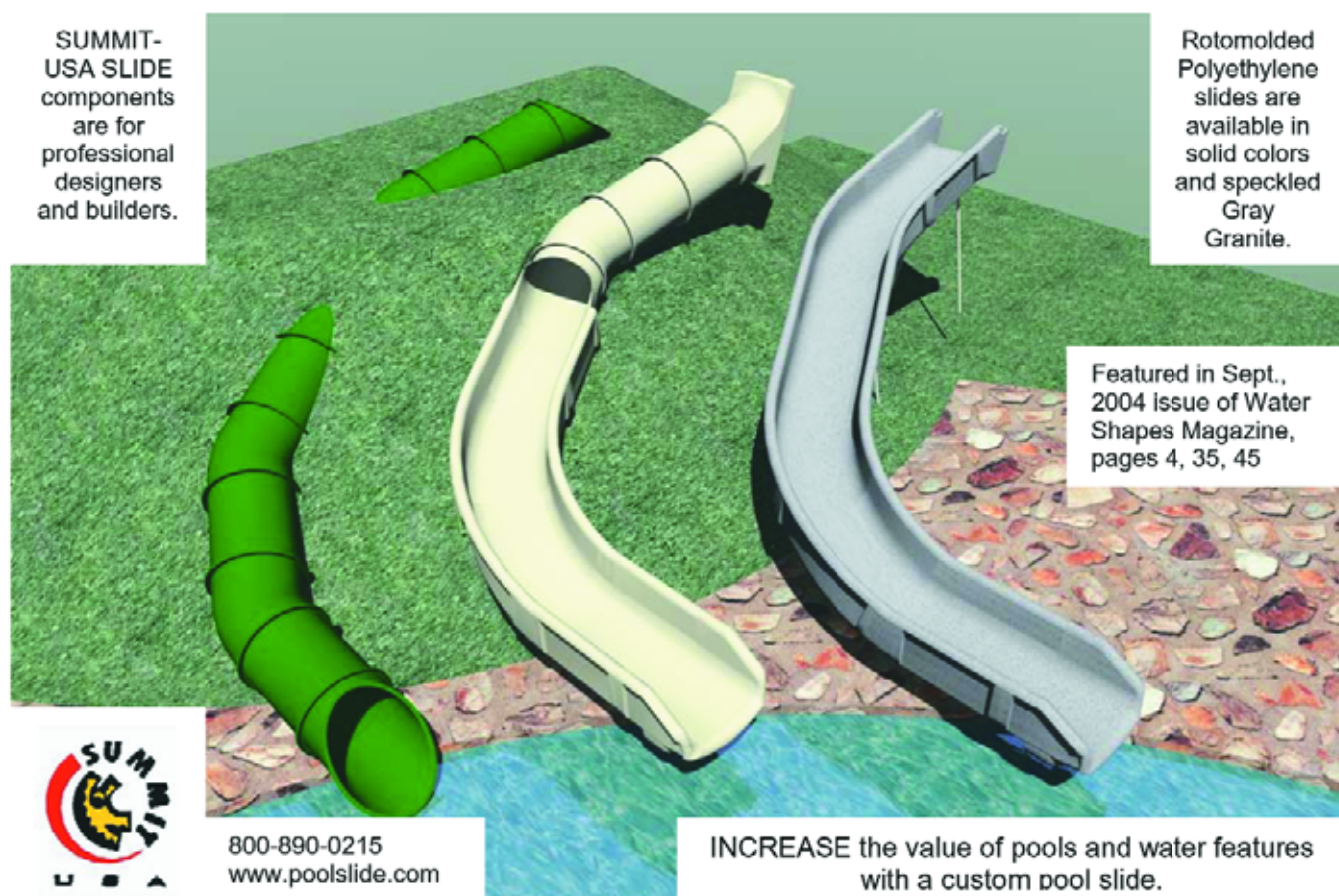
For its part, *balancing* the water is about accommodating key chemical characteristics of the water and keeping them at levels that ease the process of maintaining a functioning, healthy watershape.

Sounds simple, but it's not. We've all heard water referred to as "the universal solvent," meaning that over a given

period of time, water will dissolve almost anything. More to the point, water contains mineral constituents that will render it either acidic or basic – a factor that changes either rapidly or slowly depending upon how the water is managed.

In general, *acidic* water lacks those mineral constituents and will readily corrode or dissolve an array of materials including cementitious pool surfaces and copper heat exchangers. In other words, corrosive action is the water's way of finding compounds it needs to reach a proper balance on its own.


Basic water is just the opposite: It carries an excess of chemical compounds and will release some of those materials in the form of mineral deposits, scale or stains – and it, too, can be corrosive. Basic water is, therefore, capable of doing quite a bit of damage when it comes to interior surfaces, plumbing and equipment.



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DIGGING IN

The basicity or acidity of the water is measured in *pH*, the so-called “power of hydrogen,” which is expressed by way of a logarithmic scale from 0 to 14. The lower the number, the more acidic the water; the higher the number, the more basic. The magic digit in terms of pH balance is 7, which means that the water is neither basic nor acidic.

Sounds simple, but again it's not. Water's pH is influenced by a number of factors, chiefly total alkalinity and calcium hardness, which in turn influence each other as well as pH. As a general rule, however, the higher the levels of total alkalinity and calcium hardness, the higher the pH – and vice versa. But that's a hazardous oversimplification, because there are many possible permutations of these three factors that can lead to a wide range of balance conditions.

Also influencing pH is the water's level of total dissolved solids – that is, the

Chlorine Stabilization

As mentioned in the accompanying text, some forms of chlorine contain what is known as a *stabilizer*, cyanuric acid. This combination was developed to protect chlorine from ultraviolet-light degradation, which happens very rapidly when the sun shines on the water. In some situations, this can quickly make a watershape unsafe because of a depleted sanitizer level, and it can be costly to try to keep up with the demand.

Cyanuric acid is added to the water one of two ways, either as part of the chlorine compound (as with trichlor or dichlor) or separately (as when liquid bleach, calcium hypochlorite or chlorine gas are used).

The other major halogen sanitizer, bromine, does not at this time have a chemical mate that can stabilize it in the presence of sunlight, which is why bromine is most often used with indoor bodies of water or in those that will remain covered much of the time – as with a spa with some form of thermal cover.

—J.E.

sum total of everything that is dissolved in the water – and the levels of different sanitizers, each of which has its own pH value and influence. And then there's the fact that pH influences how well sanitizers work and for how long.

In other words, managing both sanitizing and balance – and doing it constantly, simultaneously and efficiently – is the key to success.

Water balance is itself maintained through the addition of chemicals, either an acid of some kind to push the balance in an acidic direction or some sort of buffering agent to make the water more basic. As with sanitizers, there are automated chemical-feeding systems that can be deployed to monitor and adjust all of these key chemical levels.

To be sure, ongoing maintenance of sanitizer levels and water balance will largely be the domain of whomever it is who services a given body of water.

Nonetheless, the choices that designers and builders make at the outset of a project have *tremendous* influence on what that maintenance process ultimately will be.

For example, the designer who specifies use of monitoring and chemical-feeding systems will take a long-term role not only in the approach subsequently used in maintaining the water, but will also to a certain extent dictate the types of chemicals used to sanitize and balance the water.

FINISHED FROM THE START

One more key point: Every water-shaper faces the moment when he or she fills the watershape – the most important drink of water the system will ever take. That's so because fill water comes with its own set of chemical characteristics (particularly with respect to balance) and must be treated before or immediately after it

is introduced to the watershape.

In the pool/spa industry, this event is known as the “start up,” and there are various ways in which it can be accomplished and fiery disputations about which method is best. One thing is certain: The way you introduce the water to the watershape will have a tremendous influence on the longevity of the system and especially on the completion of the curing processes for plaster, concrete and grout.

We'll jump into these areas in detail in upcoming articles. For now, the main point with which I'll leave you is this: Water chemistry is not nor has it ever been the sole province of service and maintenance people, but is also a way for the designer and/or builder to set the stage for the way the water will be treated later on. To push the responsibility down the chain is, as we shall see, both risky and potentially quite costly.



The advertisement features a large photograph of a swimming pool with a curved edge, showcasing custom ceramic tile designs. The tile patterns include a mosaic of small, colorful tiles and a border with palm tree motifs. In the top right corner, the logo for Michelle Griffoul Studios is displayed, consisting of a stylized 'M' and 'G' in blue and green, with the text 'MICHELLE GRIFFOUL STUDIOS' and 'Design & Manufacture Custom Ceramic Tile' below it. In the bottom left corner, the text reads: 'Spectrum Award Winning Custom Ceramic Tile', 'www.michellegriffoul.com', 'telephone: 805.688.9631', and 'fax: 805.688.9965'.

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A vibrant, colorful swimming pool with mosaic tile borders. The pool is filled with clear blue water. The mosaic tiles feature various patterns, including palm trees, suns, and abstract shapes in shades of blue, green, and yellow. In the background, a yellow house with white trim and a white railing is visible. The overall scene is bright and cheerful.

Coloring with Clay

For more than three decades, artist and tile maker Michelle Griffoul has pushed at the boundaries of her chosen medium. Her wildly colorful and boldly expressive works bristle with a passion for nature and a love of whimsy, resulting in a body of work unique in the realms of interior, exterior and watershape design. In this feature, she defines her distinctive approach to a classic material and takes us on a pictorial tour of her colorful works of art.



By Michelle Griffoul

I've been playing with clay for a long time — ever since 1968, when I took my first ceramics class in high school. Clay has captured my imagination mainly with its flexibility: I can carve, build with and even color it.

For years, I've sculpted pieces of tile out of stoneware and porcelain clay. The individual pieces are then combined into mosaic compositions, which, among other things, means that I'm able to create works of art that can go just about anywhere and are especially at home in and around water.

Now, more than 30 years into working with this wonderful medium as a potter, then as an art student in the United States and Italy and especially in my subsequent career as a tile artist and manufacturer, I still find myself caught up in an endless stream of ideas and possibilities.

And the stream really is limitless: In fact, whenever I look at the work I've done or see the works of others in the field, I'm always thinking of ways these expressions could become even more engaging, more exciting, more surprising and, specifically, more colorful.

Specific Expressions

When I was starting out, it always seemed to me that even fairly elaborate uses of tile I observed did not come anywhere close to exercising the medium's potential, so I took a different path and began treating the tile I was making as sculptural building blocks rather than as commodities to be taken off a shelf.

This quickly led to compositions that were far more elaborate than almost anything I'd ever seen, to the point where the output of our studio in Buellton, Calif., is now the visual key to a wide range of pools, spas and fountains as well as a variety of interior and exterior architectural applications. Today, we make hundreds of different tile pieces that are little works of art and become parts of much larger compositions.

It all starts with the clay, which we buy 12 to 15 tons at a time. From that raw material, we hand-craft every single piece of tile we use in our work and color each with glazes we've developed.

It's our sense that our tiles and compositions look so different from main-



stream products because everything we do in the studio flows from the point of view of the artist. We treat each piece of tile as its own work of art and each project as its own entity, so everything we do immediately takes on a character of its own and plays an active role in its environment.

These designs are based on all sorts of specific pieces of information – how a space flows visually, how people will move through that space and what they'll see first, the surrounding materials and architecture and, more than anything, the personality of the client – and what all of these factors collectively say about the nature of “the audience.”

We tailor our work to the space, so not all of our pieces are necessarily large – perhaps just a small medallion on a deck or a trim detail on a set of steps. But our work can also encompass an entire swimming pool and flow into surrounding structures, depending on the setting and the client.

Large or small, we always try to use the tile to make bold statements. Even a dozen ceramic leaves “blowing” across a slate floor or a patio can make a huge difference in the warmth and character of a space, as can a small school of fish at the bottom of a pool that seem to dart through the water when a breeze ruffles the surface.

Small or large, our artistic mission is wonderfully clear: We aim to bring fun to people's lives, and many of the areas in which our works are installed have that same lighthearted purpose. By adding color and texture and line, we seek to bring these areas vividly to life and make the experience of being there somehow more rewarding.



As an artist, I often cast my work with a strong sense of visual flow, with tile forms literally sweeping or winding across walls or floors to suggest streambeds or tidal estuaries or other suitable ‘habitats’ for the marine life that’s so much a part of my work.

Rebellious Ways

It's a characteristic of our work that we play with shapes that go well beyond squares and rectangles. Indeed, I've always thought that curves are the most beautiful lines in nature and that working with them in clay opened the door to an entirely new set of possibilities with tile and mosaics.

So when I first started making tile, I never made anything that was rectilinear or even close to it. Everything was some sort of organic form or had an irregular, curved shape, and I'd been at it a full ten years before I made my first four-by-four tile. I just wanted *everything* to be more interesting, so instead of cutting squares, I focused on fish and leaves and lizards and frogs.

At first, everything we did was one of a kind, which satisfied our artistic impulses. But as more and more people saw our work, increasing numbers wanted us to replicate work we'd done before – or come close, anyway. That's how we started in the tile-manufacturing business: To reproduce what we'd done, we began keeping records on the tiles we'd made and in the years since have compiled a whole line of tiles and patterns derived from original works.

These tiles are available in showrooms across the country, but our focus is still on original work and in customizing commercial patterns to specific projects. We work directly with designers and their clients and take great pleasure in getting involved in conversations that inspire clients to explore a broad range of colorful possibilities.

For me, color is the key. I love blending colors and coming up with new glazes and color combinations, and I credit my mother for that passion. When I was a child, she'd say things like, "You can't ever wear two colors of red at the same time because they don't match." She was quite conservative when it came to colors, and she passed along all these "rules" she'd

We frequently make strong visual statements with our tile, either with vibrant colors or imagery that lends warmth and character to a space. The results can be surprising and a playful source of visual delight.



been taught years before in a convent school, where I guess the appreciation of vivid colors was never high on the list of priorities.

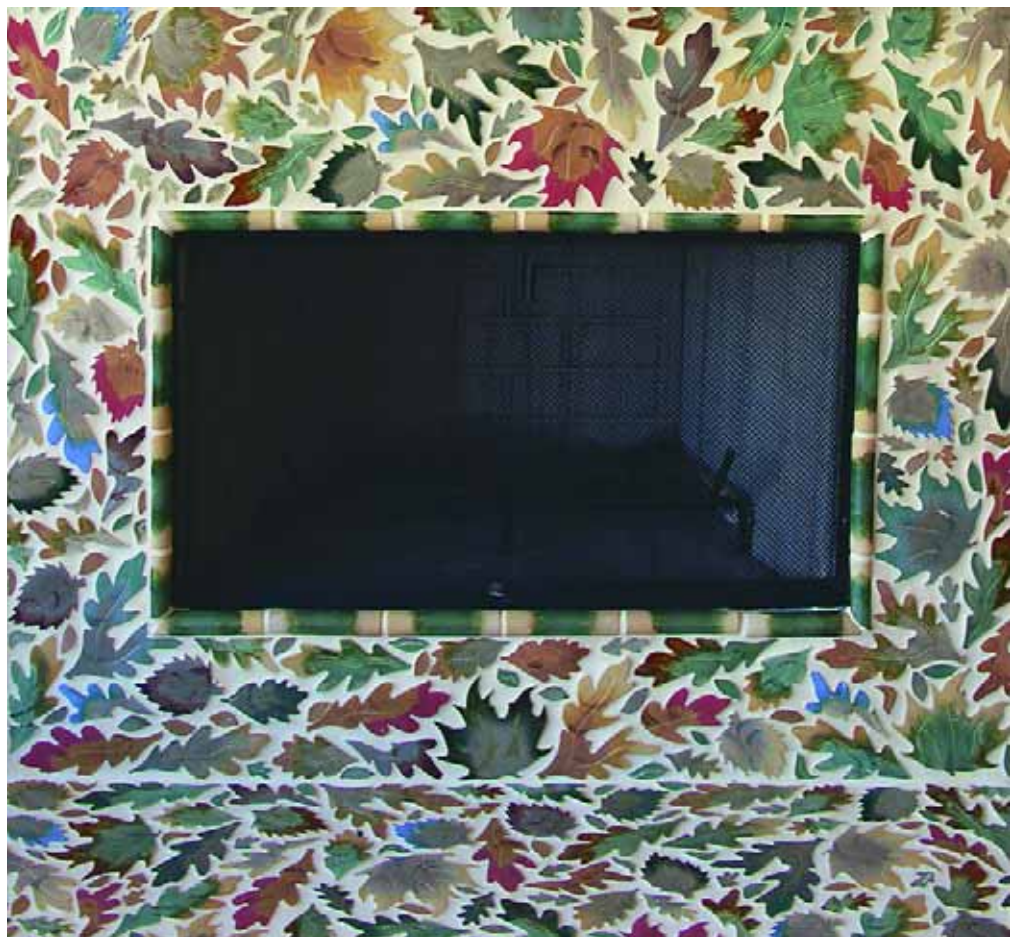
Like many children, when I began working with clay and creating my own works of art, I rebelled against my mother's precepts and started using all sorts of wild color combinations – *and they worked*.

During the early stages of my career I also became involved in weaving in a big way and started experimenting with different-colored yarns and dyes. I was so caught up in it that I would order yarn from specific breeds of sheep so that I could achieve the exact textures and colors I wanted.

Working with wool, I learned that you could blend lots of different colors in a single weave to create something completely new and different. That experience influenced the way I look at mosaics as a process of weaving together a palette of colors in single pieces and throughout a composition. It also made me passionate about glazes and led me to dive headlong into their chemistry and manufacturing.

Exploring Colors

To this point, I've formulated and tested no fewer than 5,000 different, original glazes. This work is ongoing, and we keep extremely detailed records of every glaze mix that we've tested along with the results. Today, we choose from about 100 different glazes, each the result of its own painstaking process



We develop our own glazes, so many of the colors we use are unique to our work. The palette is incredibly flexible and includes everything from the subtle earth tones seen here to the big, bold colors of marine life.



Not the First

I've always been flattered by the fact that the work we do is often compared to the wildly colorful works of architect and sculptor Antonio Gaudí of Barcelona. I actually started working in mosaic tile long before I was aware of Gaudí's amazing tile-festooned sculptures, yet I understand the comparison.

But there's a big difference between our work and that of the Spanish master in that the tiles he used were remnants obtained from local manufacturers in an unusually enlightened process of recycling.

By contrast, we make all of our own tile, so the approach is significantly different and much more controlled.

The results, however, can be quite similar in expression, in the vividness of the colors and in the visual complexity – not to mention the spirit of fun. As I've become more familiar with Gaudí's work, I've been especially inspired by his use of curved forms: Everything he did was sensuous and alive with swaying natural forms, and it has definitely influenced the work we do.

– M.G.



of trial and error.

As mentioned above, we work in porcelain tile as well as stoneware, and both work beautifully in terms of taking glazes and creating durable, watertight tile. (We also design and work with bronze tiles that we produce in conjunction with a local foundry.)

Each tile blank is glazed by hand with paintbrushes. Some of the fish, frogs, lizards and more elaborate pieces require application of eight or nine colors applied using various classic techniques, including use of layers of wax to maintain color separation.

We work with so many glazes because I like creating color palettes that have a lot of depth to them and have found that combinations of contrasting colors with subtle transitions will get the job done. We use a variety of sheens – some that reflect light, others that absorb it – and blend all of the visual elements to lend detail and interest to the work.

As wildly creative as all of this might seem, it's also very precise work. When experimenting with glazes or combinations of materials, for example, factors such as firing times and kiln temperatures are critical, with differences of ten minutes or ten degrees making noticeable differences in color. Because we need to reproduce our work with great accuracy, we maintain precise records of the chemical formulations, application processes and exactly what happens inside each of our 16 kilns.

That's an awesome amount of detail on both the design and production sides, but the result is still all about fun and coaxing a beauty that rewards closer inspection out of simple materials.

Those who see the work will immediately perceive it as fun and colorful. What we hope is that we can engage those people on a deeper level and treat their eyes to tremendous detail and variation in a work that may be composed of hundreds or even thousands of individual, hand-made pieces. Each piece has its own story to tell, in other words, and the detail is there to interest whoever decides to look more closely.

Nature and More

All the detail and creative flair in the



We don't feel compelled to use square tiles or pieces of any consistent size or shape, so the tile work has a rich texture, both visual and tactile. Again, there's a flexibility to the medium that lends it visual power.





Tile and water are truly made for one another, with the rippling liquid surfaces mirroring the fluidity of our own work with fantastically compatible colors and textures. This is why decoration of pools is perhaps our favorite project type. The project seen here is a particular point of pride: It was awarded the 2004 Spectrum Award at the Coverings Expo for creativity in tile design.

A Swim Inspired

Throughout my life, I've always loved swimming in the ocean and just about everything the seas have to offer. They feed, soothe and excite us and have inspired poets, artists and dreamers throughout the ages.

When you go swimming in the ocean, there's something intimate about being in the water that goes way beyond anything I could ever express in words. There's a thrill and excitement, a joy tinged with a certain fear of the unknown that makes every visit a new adventure. I'm aware that, as a human being, I'm not really designed to go into the ocean, so whenever I do, I always feel like I'm visiting a world that is somehow alien, yet familiar.

If I had to point to a single experience I've had that drives the spirit of my firm's artwork, it's been my time diving into the ocean and looking beneath the surface. In fact, if all we ever did were mosaics that capture marine life, there'd be enough variety to keep us going infinitely.

The experience of swimming and diving in the ocean has been so crucial to my own work that I more or less think it should be a mandatory activity for anyone who creates art, no matter the medium. But if ocean swimming is not your thing, then hiking in the forest isn't a poor substitute!

—M.G.

world doesn't mean much, of course, if the images at hand don't inspire and resonate with the viewer.

That's why, like many artists, I turn to nature for inspiration and direction in our designs – plants, fish, amphibians, birds and land animals. Some come from my own experience, but other times subjects are suggested by clients who have a specific attachment to a fish from local waters, say, or a distinctively local plant.

At the same time, we also do patterns that are purely abstract and geometrical. Some of these are intuitively created, but my suspicion is that my years of working with textiles have placed images and experiences in my brain that find their ways into my tile work. We also use a variety of found objects as images – everything from surfboards to Martini glasses or coffee mugs. On occasion, we've even composed mosaics based on

photographs of people.

Of all the project types we tackle, swimming pools are probably the most fun. From waterline tile and mosaics in the bottoms of pools to steps, decks, coping and walls, pool environments offer all sorts of wonderful opportunities. There's the obvious advantage that pools are made for fun and enjoyment, a perfect fit for the style and spirit of much of our work.

We find that it's fairly easy to get clients excited by the thought of doing more with their pools, basically because conventional use of tile in pools has been, well, both limited and rather boring. Instead of relegating tile to a waterline band, we aim to integrate the pool with its surroundings, whether it's using small mosaics on the deck to give the impression that water has splashed out of the pool and that there's now a frog sitting in the puddle, or something as simple as

picking up colors or patterns seen in the pool at various locations within the whole backyard setting.

To that end, we urge designers and clients to consider tile and mosaics as an integral part of the design process right from the start. Yes, we can work with an existing design or space, but what we can offer in those cases is limited by the fact that surrounding materials and details have already been chosen. By contrast, if tile is considered at the start, there are so many more exciting ways the material can be used to integrate visuals and tie the inside of the home with the great things going on outdoors.

Certainly, we can dovetail our work to someone else's vision, but when that vision includes vivid and exciting materials from the outset, the results are almost always among the most satisfying work we do.

Natural Patterns





By Eamonn Hughes

Widely recognized as one of the country's foremost authorities on watergardens, streams and cascades, Eamonn Hughes' watershapes in the Pacific Northwest are among the most beautiful found anywhere in the world. Here, he shares several of his favorite past projects, using them to define what it takes to achieve believable, naturalistic results with waterfalls, cascades, streams and ponds of any size, large or small, in just about any setting.



So often, design comes down to an ability to see patterns.

I first learned this from my mother, a dressmaker who had an uncanny ability to look at garments for which there were no sewing patterns and then sit down and make them from scratch. I seem to have inherited this talent, taking in a barren landscape and quickly visualizing how it will look with plants, rocks and water. For this, I am happily in her debt.

Not everyone comes across such a gift by birth, but I believe that the ability to visualize is something most any watershaper can develop through experience and by taking the time to learn the “language” of any given landscape.

This is important, because those who don’t have that experience or know that language have unfortunate tendencies to regard nature as random when the truth is quite nearly the opposite. In fact, there are almost always underlying principles of order in nature and patterns to the way nature does things, and it is our job as designers to understand and make use of them as we visualize and plan the work.

Across the Spectrum

Our firm is based in Oregon, where there’s an abundance of wonderful natural environments that raises the expectations of clients at all levels. Our surroundings effectively keep us on our toes in striving to create spaces that fit in with forested, moun-

tainous terrains laced with seemingly endless varieties of natural bodies of water, large and small.

This natural beauty is inspiring, and I’m always trying to improve my techniques to reach that almost-magical point where observers will think that the water and the landscape I’ve completed have been there forever.

My ability to visualize is critical in this process, but the work initially flows from discussions with clients who tend to carry entirely different sets of patterns and perceptions to the site. To determine what those are, I work to find out how they’re going to “live” with the garden: Will they be outside much of the time, moving through the space itself, or will they primarily enjoy what they see from inside the house? Will they enjoy the space each evening, or will it be something that draws their attention only on weekends?

Once I’ve assimilated use and lifestyle factors, I begin positioning elements in the space in accordance with their input, always keeping the surrounding environment and the features of the site firmly in mind.

These tasks differ from location to location, of course, and I’d never recommend trying to create an Oregon-style garden space in Arizona – not so much because it can’t be done, but because it wouldn’t be sustainable. Nor would I press Oregon-style elevation changes and lush landscaping on a project on the flat-



lands of Texas. Yes, it could be done, but in such places I tend to think in terms of streambeds.

No matter the location, however, all artificial watershapes do have certain things in common: In all cases, you're digging a pond or streambed or contouring a watercourse for some sort of waterfall and using a liner or membrane to contain the water. The secret to aesthetic success of the sort my clients demand is more than knowing how to contain and control the water: It's about what we do on *top* of the liner to create something of beauty – a two-pronged process.

These two prongs – selection and placement of rock on the one side and deployment of the planting palette on the other – define our work from its most dramatic features to its subtlest details. They have everything to do with how people will see and experience the water itself.

In both cases, you're working with natural

INDIGENOUS landscapes and rock formations are our points of departure in approaching projects in any given location. While we might be able to reproduce a slice of Oregon in a Texas backyard, it would hardly convey the key impression that it had 'been there forever,' nor would it be particularly sustainable.





PLACEMENT of rock is another project phase in which we pay close attention to local terrain and focus on the sort of natural patterns that result as landscapes form over time. We always avoid the studied ‘randomness’ that makes so many compositions seem ironically unnatural.

materials that are always somewhat different. As a result, the design must allow for a certain amount of variation and flexibility that, set against good, fundamental design principles, magnify your capacity to create satisfying outcomes.

Rock Steady

The arrangement of rock material in gardens is a huge topic if only because every geographical area has its own natural geological features and its own set of indigenous materials that tend to drive selection.

In Oregon, for example, rocks are available with blooms of moss or lichen, and we also have abundant supplies of rounded river rocks as well as fractured, angular stone. Even in so basic a choice, however, it must be noted that things change with time: For example, where rocks with lichen, moss and other outstanding characteristics were once readily available in lots of local quarries, those supplies have diminished through the years and we now

must look farther afield to find sources for the rocks we need.

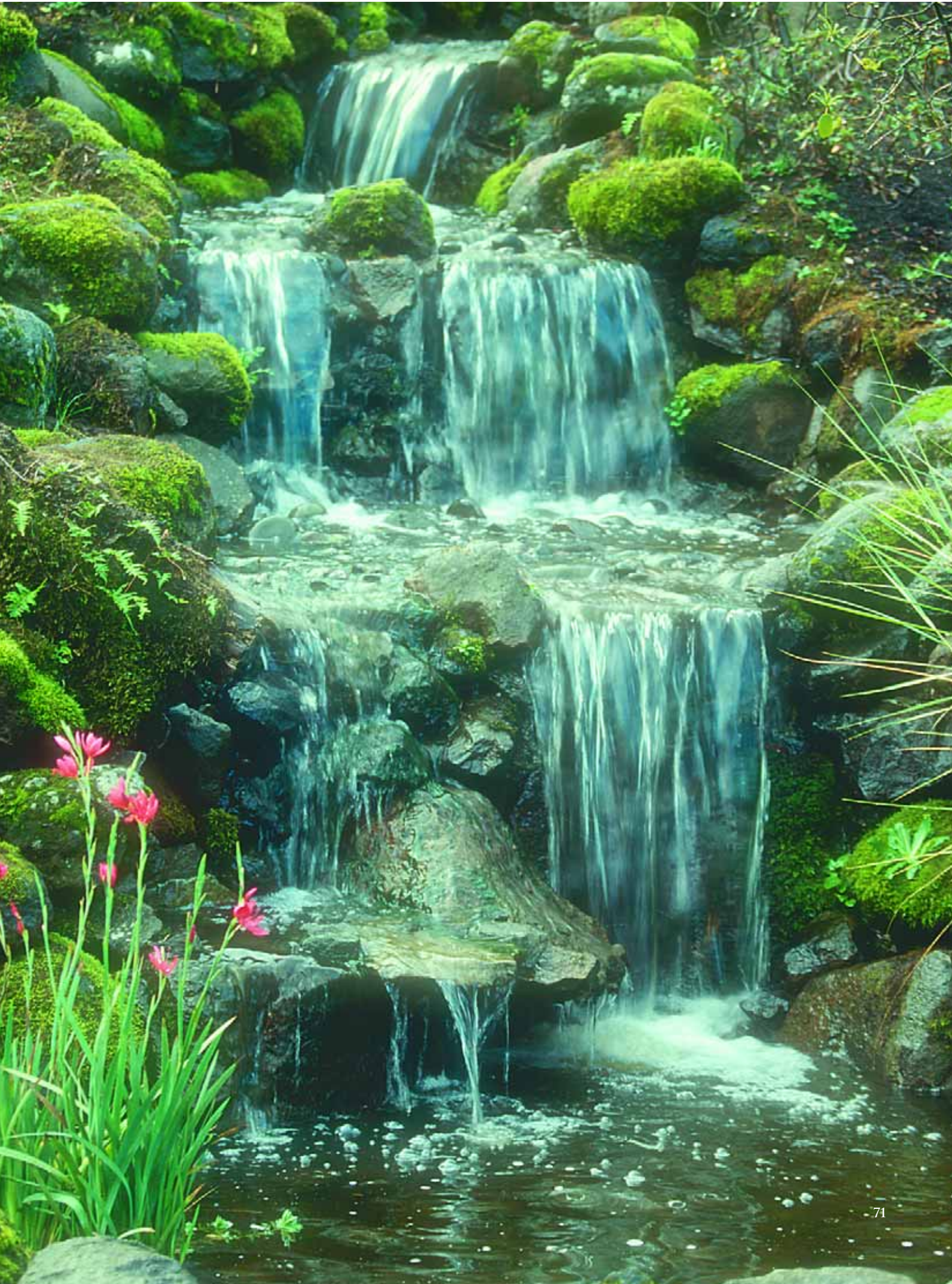
Just how far we look in making our selections is, of course, determined by the nature and demands of the design. If we’re working in a garden that’s going to have full sun all day, for example, there’s no point in using moss-covered boulders because their distinctiveness will fry off the surface in a short time. Cost quickly becomes an issue as well, because great care must be used in harvesting and transporting moss-covered boulders – care that influences the cost of the installation as well as its aesthetics.

Beyond selection (and availability), one of the keys to creating a natural-looking garden is placement of the rock – another area in which location defines the approach. In many parts of California, for example, it’s entirely appropriate to set large, flat pieces of rock at odd angles as a mirror to the seismic processes that shape the landscape. In the northwest, by contrast, landscape features are weath-

ered by rain and flooding, so the design vocabulary features visible bedrock eroded by wind and water. Local waterfalls literally carve their way into bedrock – a distinctly different look.

Some rocksetters will try to make their work appear irregular as a way to avoid an artificial look. Most often, the result is a denial of local geology and something that, ironically, will seem even more artificial and out of place.

In our projects in the Northwest, we set a *horizontal plane* in our rockwork, meaning every major rock in a given transition is on the same plane, as would happen with exposed, eroded bedrock. When the water starts flowing over the waterfall, the rock recedes into the view and doesn’t jump out at you, leaving the water as the most visible feature. If, by contrast, you set up flat slabs adjacent to the waterfall and then all of a sudden there’s one at a 45-degree angle, that upturned rock will dominate the field of view and will be seen before anything else.





This can be somewhat counter-intuitive. After all, clients spend lots of money on beautiful rock, yet we tell them our goal is to make it go away visually. Eventually they will understand what you mean – and it will be easier to do so if the rocks you select and place reflect the natural geology of the area in which you're working.

Plant Matters

Our work with plants is just as intense and complicated as our selection and placement of rocks, with a similar legion of issues to consider.

To sort things out, we separate plant considerations into two classifications: There's what we do with plants to be located in the water itself or within the rockwork of the watercourse, then there are plants that work away from the edges and blend into the surrounding area.

In a watercourse, for example, we often develop natural frames for waterfalls and cascades using plant material. We begin with taller structures on either side of the watercourse that draw the eye down a corridor to the waterfall. This is much more effective than using low, flat plants on either side in a way that disperses the observer's focus instead of concentrating it.

Outside the watercourse, we sometimes use plants to hide portions of the water from various angles to give the setting a sense of mystery and discovery. When visitors need to peek around a large tree to get a fuller view of the water, for example, you're rewarding them for looking more deeply and more intently into the setting and also drawing them deeper into the garden with their eyes and their feet.

The transition areas between the watercourse and the surroundings are complicated by the fact that there are a number of ways to proceed. We'll often choose a certain area that will be very lush, transitioning from water to dry land through bog plants and then into terrestrial plantings. We also do a lot with terrestrial plants that provide foliage that hangs over

SIMPLIFYING development of our planting plans, we divide our focus into two categories – plants to be set in the water or within the watercourse's rockwork on the one hand and, on the other, plants that move away from the water's edge and into the surrounding terrain.

rocks and may even touch the water.

As in nature, our clients and their visitors expect to see plants at various stages of growth. To that end, we generally install some mature structural plants so that the garden won't take four or five years to look complete and balance them with younger plants – especially low-profile plants that interact with the rockwork.

What's so interesting about working with natural patterns is that the way you apply them differs to one extent or another with every project you approach. The four case studies that follow define some of those distinctions, exploring projects with different design objectives and settings.

Case studies begin on page 74





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The Oregon Garden

This waterfall is located at the entry to the new Oregon Garden in Silverton. What we wanted here was to create an impression that the falls had eroded the surface all the way back to bedrock.

A horizontal plane cuts across the whole composition. Although some of the rocks are not perfectly oriented to that plane, the basic flow of shapes works visually off a single linear orientation – just as you'd see it in nature, where some of the boulders will have sheared off the face from a single plane of bedrock.

The large sheeting fall on the right features a beautiful, L-shaped rock that provides a wonderfully irregular curtain effect that gives the appearance of natural erosion. The left side of the waterfall illustrates water still in the process of eroding through the bedrock.

We used native sedges, Foxgloves and various creeping aquatic plants to soften the look of the rock and ease the transitions to surrounding vegetation and overhanging plant material.

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The yard before pond installation.

The Brown Residence

This design on the Lewis River in Washington is all about tranquility.

The clients use the cabin as a weekend getaway from their stressful jobs. The yard was originally all lawn, but now it features a pond that nestles right up against their front door. To get there, they walk along a path through a portico that takes them right along the pond. There's water on both sides – enough to start them unwinding even before they put down their overnight bags.

From the path, they look across the water at a small circular fire pit and shade structure that works as a sort of sculptural element. Stepping stones lead to that area, where they're rewarded by views of the cabin and portico as well as Douglas firs and Alders that provide beautiful reflections off the quiescent surface of the pond from all viewpoints. A small waterfall to one side offers a gentle sound of running water – all very subtle.

In this case, much of the landscape is visible through archi-

tectural structures, so we worked to create separate “pictures” through each opening as a means of fully integrating the home and its surrounding structures with the landscape. The copper roof has oxidized and blends beautifully with the verdant landscape, while the cabin's plaster was colored to match the purple-hued bark of the Douglas firs.

The pond itself has proved something of a marvel in the 15 years since it was first installed, having proved much more self-sustaining and far less of a maintenance burden than the lawn it replaced. It works because it's heavily planted and gets a great deal of shade during the heat of the day, which cuts down significantly on algae growth.

In another area of the property, we established a natural wetland that has been stocked with fish to attract predator birds to the environment. Herons, kingfishers and ospreys are now regular visitors, adding even greater interest and awesome natural tranquility to the space.

Issues of Clarity

There's a basic philosophical difference between European and American pond owners. If you go to Scotland in April and say to someone, “There's algae in your pond,” they'll look at you and say, “Yeah, so what? It's *April*.”

In Europe, most watergarden enthusiasts are satisfied to know that as summer progresses, the algae will generally disappear as part of the natural cycling of the seasons. In the United States, however, there's a near-maniacal demand for pristinely clear water – a demand we do our best to meet.

To do so, we've analyzed the causes of poor water quality and have found that fertilizer from adjacent lawns is a major contributor that can be minimized via close communication with the landscape-maintenance company. Another big issue is owners who over-stock the water with fish, thereby introducing a high nutrient load to the water.

Beyond walking our clients past those two thickets, we know that one way to achieve biological balance in a pond is to plant it heavily and use the plants to lock up nutrients. To that end,

we build planting pockets in shelves by the water's edge, covering them with a gravel “finish” that encourages natural filtration. We also try to cover as much of the margins of the pond as possible with aquatic plants that thrive under wet conditions, always keeping viewpoints in mind and tending to use plants with low profiles.

As a rule, I also try to cover a third of the water's surface with water lilies or other aquatic plants. This cuts down on penetration of ultraviolet light and provides cover for the fish from predators.

– E.H.



The main pond, with the portico in the background.



A view across the pond to the gazebo.

The wetland area.





King Residence

The situation we found when we were called to this site was a bit daunting: No more than 15 feet from the back of the home was a vertical wall.

We began our work by excavating into the expanse, pushing the slope back about 40 feet to create room for a patio. Above that, we terraced the slope, covered it with a compost soil mix and craned in moss-covered boulders. These boulders were positioned in holes and then backfilled with soil so that each was half buried, just as they all would be in a naturally eroding slope.

We built a small watercourse of delicate rivulets that cut across the slope and among the boulders before descending into a main fall by the patio area. In this case, the water falls into a hidden 2,000-gallon tank buried beneath the patio. Among the key plantings is a Vine Maple that clings to the slope to create a dramatic focal point.

This was a challenging installation because we had to get permission to access the lot above the waterfall and winch down large rock and plant specimens, including various maples, birches and pines.

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The Claremont Development

The main waterfall in this feature in Portland, Ore., is the culmination of nearly 500 feet of streambed that runs by a number of homes situated above the waterfall. Other portions of the composition offer contrast through a variety of interacting rivulets. All of the water eventually drops into a large pond surrounded by four homes that all have direct (but unique) views of the waterfall from their back patios.

We planted the falls with native rushes and sedges to soften the look of the rock and to create a transition into the surrounding landscape. We also used an Atlantic Cedar on the right to imitate the waterway visually.

Our objective here was a set of garden spaces and watershapes that would add value to every home located along the stream. This led to lots of maneuvering with the stream's course to create small rivulets at various locations or present waterfalls to specific view-points from one or another of the homes or set up water effects to create interest behind or between homes.

In this case, our work translated to dollar signs for the developer: Each home along the streambed commanded a premium, while the four homes with waterfall views went for top dollar (and were the very first to sell – within days, in fact).



Parting the Curtains

Truth be told, a perfectly uniform weir will almost always look unnatural. Just as bad, it will create a uniform, monotonous sound as the water falls straight down. You can hear the sheeting water from a good distance away, but you'd be hard pressed to call the noise relaxing, especially when you compare it to the gentle babbling of a rock-strewn cascade.

To achieve that gentler sound, we mix things up. We might have one section of the waterfall flow over a tumbling section and another that might form more of a sheet fall – an approach that works both visually and aurally. The great advantage of babbling sections is that you can “tune” them: If you're not happy with the sound the way it is, just move a few rocks around to improve the sound without disrupting the work visually.

– E.H.



POND SKIMMER/FILTER

Circle 135 on Reader Service Card



SAVIO ENGINEERING introduces the Compact Skimmerfilter, a smaller version of the company's Skimmerfilter platform. Designed to provide complete, multistage filtration at affordable rates, the device includes skimming action, macrofiltration, a UV clarifier option and biological filtration in one package for ponds up to 700 gallons and skimming for ponds up to 3,000 gallons. **Savio Engineering**, Santa Fe, NM.

LIGHTED VASE

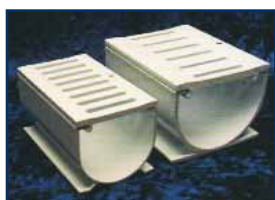
Circle 136 on Reader Service Card

FIBERSTARS has introduced a lighted-vase waterfeature with a spillway. Designed to put on a focused sound and light show, the vase can be added to an existing illuminator and comes with 45 feet of pre-attached fiberoptic cable. Lightweight and easy to plumb and install, the vase comes in two standard colors – white or tan – and features a paintable surface for adaptability to any poolside look. **Fiberstars**, Fremont, CA.



DECK-DRAIN SYSTEMS

Circle 137 on Reader Service Card



QUAKER PLASTICS offer Water Hog deck drains in 3- and 4-inch configurations. Available in white, gray or tan, the drains are made of rugged PVC and offer maximum inside areas to allow for efficient drainage. The system also features numerous fittings – 45- and 90-degree angles, side drainouts, bottom drainouts, tees and end plugs – for use in a full range of applications. **Quaker Plastics**, Mountville, PA.

MODULAR PAVERS

Circle 138 on Reader Service Card

PACIFIC CLAY PRODUCTS offers the Crown Cobble Collection, a system of paving bricks in three sizes (3 by 6, 6 by 6 and 9 by 6 inches) and four colors (Burgundy, Dark Iron Spot, Royal Saltillo and Sterling Grey) for use in pedestrian and light-traffic areas. The incremental sizing of the sand-grouted bricks allows for creation of a range of random or repeated patterns. **Pacific Clay Products**, Lake Elsinore, CA.



POND FILTRATION

Circle 139 on Reader Service Card



EMPEROR AQUATICS has combined basic sand-filtration technology with its PSP (Plastic Sinking Pellet) filter medium to offer enhanced filter-bed fluidization and solids capture in its line of pond filters. The pellets are sized to maximize debris capture, and the filter tanks are designed for minimal maintenance and increased water circulation in ponds holding up to 60,000 gallons. **Emperor Aquatics**, Pottstown, PA.

WATERFEATURE PUMP

Circle 140 on Reader Service Card

STA-RITE INDUSTRIES introduces the Dyna-Wave pump for waterfeatures. Designed for quiet operation and energy efficiency, the 1/3-hp motor runs at 1,750 rpm – half the speed of standard pool/spa motors – and is ideal for low-head, high-flow applications with small fountains or in serene pond environments. The unit also features an extra-large trap basket for reduced maintenance. **Sta-Rite Industries**, Delavan, WI.



CONCRETE RESURFACING

Circle 141 on Reader Service Card



RAFCO PRODUCTS offers Brickform components as an economical, easy-to-use resurfacing system for structurally sound outdoor concrete flatwork. The components – repair mortar for crack-filling and leveling and micro-topping for building a profile atop the repaired surface – are compatible with the company's stampable overlay materials and blush-tone acid stains. **Rafco Products**, Rancho Cucamonga, CA.

AUTOMATIC POOL CLEANER

Circle 142 on Reader Service Card

AQUA PRODUCTS offers the Aquabot Turbo T2, a robotic pool cleaner equipped with all-terrain wheels and a water-powered propulsion system. Designed for low-cost and energy-efficiency as well as one-button operation, the cleaner climbs 90-degree angles to scrub, scour, vacuum and filter pools from the floor to the waterline – including steps – without any attached hoses or pumps. **Aqua Products**, Cedar Grove, NJ.



FRACTIONAL AERATORS

Circle 143 on Reader Service Card



OTTERBINE has introduced the Aqua Series Fractional Aerators for ponds of less than an acre in size. Designed for cost-effectiveness and energy efficiency, the multi-purpose 1/4- and 1/2-horsepower aerators come with two spray patterns and recessed snap-in light pockets. The units install easily, can withstand brackish water, have air-cooled motors and operate in water that is only 14 inches deep. **Otterbine**, Emmaus, PA.

CLASSIC PAVING STONES

Circle 144 on Reader Service Card



PAVERART has introduced a new collection of designs inspired by Old World architectural elements. Designed to lend a rich, classic look to outdoor surfaces, the pavers come in pre-assembled, palletized kits in a wide variety of shapes, sizes and color combinations. There are also two-piece, full-depth inlaid units that are ideal in border treatments for driveways, walkways, pool decks and patios. **Paverart**, Swedesboro, NJ.

EXPANSION JOINT FILTER

Circle 145 on Reader Service Card



DECK-O-SEAL offers Deck-O-Foam expansion-joint filler, a tough, flexible, lightweight, durable product designed for use in pool decks and other flatwork to replace brittle asphalt-impregnated fillers. The product is available in 1/4 and 1/2-inch widths and comes with a removable portion that ensures a uniform, sealable void in the joint when it is pulled away before sealing or caulking. **Deck-O-Seal**, Hampshire, IL.

UNDERWATER LIGHT

Circle 146 on Reader Service Card



NIGHTSCAPING offers the Lilypad Litter, and underwater lighting fixture that blends into a pond setting with a six-inch, polished reflector covered with a green polystyrene "shade" made to resemble a large water-lily leaf. Designed for unobtrusive night viewing of aquatic plants and fish, the fixture provides a warm, indirect glow and comes with a standard six-foot wire lead. **Nightscaping**, Redlands, CA.

Continued on page 84

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PREFABRICATED WATERFEATURES

Circle 147 on Reader Service Card



REPLICATIONS UNLIMITED has introduced the Caribbean Waterfall Group, a new series of ready-to-install waterfeatures for use with swimming pools. Developed from real rock formations, the one-piece units range in size up to 8 feet wide and 4 feet high. There are six different models in the series, with four companion boulder models designed to be installed around the edge of the pool. **Replications Unlimited**, St. Louis, MO.

LANDSCAPE LIGHTING CATALOG

Circle 148 on Reader Service Card

KICHLER LANDSCAPE LIGHTING has published a catalog covering its professional lines of products. The 84-page, full-color booklet divides the company's products into lighting families – styles, sizes and finishes that coordinate with each other and other compatible lighting products and accessories. Highlights include new all-brass fixtures for use in harsh climates. **Kichler Landscape Lighting**, Cleveland, OH.



HEAT PUMP

Circle 149 on Reader Service Card



RAYPAK offers the model RHP 115HC heating and cooling heat pump for use with pools and spas. Designed to heat the water in cooler months and cool it down in the summer, the unit features a copper-jacketed/cupronickel-interior heat exchanger, large air coils, a durable, coated-steel cabinet, dual pool/spa thermostats, a digital temperature display and an array of LED status lights for user friendliness. **Raypak**, Oxnard, CA.

CHLORINATION SYSTEMS

Circle 150 on Reader Service Card

POLARIS POOL SYSTEMS now offers the AutoClear, AutoClear Plus and Pure & Clear automatic chlorination products formerly marketed by ClearTech Automation. These saltwater chlorine-generation system produce all the chlorine needed to keep pools with capacities of up to 40,000 gallons sanitized with none of the skin or eye irritation often associated with liquid or tablet chlorination. **Polaris Pool Systems**, Vista, CA.



WATERPLAY SYSTEMS

Circle 151 on Reader Service Card



WHITewater WEST manufactures AquaSpray activity elements, individual waterfeatures designed for smaller facilities or budgets. Model AS-901, for example, is a multi-level series of steel or fiberglass troughs in which water flows from one runnel to another, fed by a small pipe fall with an optional, interactive valve that enables participants to control the water's flow.

Whitewater West, Richmond, British Columbia, Canada.

GUTTERS AND GRATES

Circle 152 on Reader Service Card

RENOSYS offers DuraTech pool gutters and grates, including an indoor-use, all-PVC gutter system; stainless steel or PVC-covered trench gutters; and complete, stainless steel, integral perimeter supply-and-return systems. The systems come in several standard configurations – trench, open, roll-out, semi-recessed, fully recessed or deck-level – and custom options and design services are also available. **Renosys**, Indianapolis, IN.



STANDPIPE PROTECTORS

Circle 153 on Reader Service Card



NSW has adapted its extruded rigid-plastic tubes to protect standpipes for ponds and other circulating water systems. The extensions prevent standpipe blockage by trash, sticks, leaves or small wildlife by maintaining free flow through the tube's plastic mesh. They are available in 1-, 1-1/2-, 2-, 3- and 4-inch diameters for use with schedule 40 PVC pipe and can easily be cut to length for any application. **NSW**, Roanoke, VA.

SLIP-RESISTANT SURFACING

Circle 154 on Reader Service Card



NATARE offers NataTread, a slip-resistance technology for use on the horizontal surfaces of stainless steel swimming pool components where slip-resistance and sure footing are required. The surface is made by punching the underside of stainless steel panels using a special tool that does not penetrate the surface, but instead produces a pattern of small, dimple-like, non-abrasive protrusions. **Natare**, Indianapolis, IN.

DIVING BOARD FOR ATHLETES

Circle 155 on Reader Service Card



S.R. SMITH has added the Frontier IV diving board to its line. Designed specifically for adult athletes weighing up to 400 pounds, the board is made of hand-laid

fiberglass with an acrylic skin and resin roving and is intended for installation on the company's "U-style" and steel meter stands. The diving board comes in an eight-foot length in a radiant white color to complement any aquatic facility's décor. **S.R. Smith**, Canby, OR.

FLOATING POOL LIGHT

Circle 156 on Reader Service Card

CANTAR offers GlowBuoy, a battery-powered, rechargeable, self-contained pool light that can illuminate even a 20-by-40-foot pool with a warm glow. Just flip the switch and drop it in the water: The charge lasts for four hours, and the unit has no sharp or abrasive surfaces, won't yellow from sunlight or pool chemicals and is designed to withstand kids and contact with hard pool decks. **Cantar**, Youngstown, OH.



SALTWATER CHLORINATOR

Circle 157 on Reader Service Card



POOL THING offers an electronic sanitizing device that kills microorganisms, bacteria and algae in swimming pools and spas without the addition of chemicals other than common rock salt. The device mounts to the return line after the filter; as water flows by the

electrodes, salt is turned into chlorine that is compatible with all known pool surfaces at a level adjusted with the turn of a dial. **Pool Thing**, Scottsdale, AZ.

RETAINING WALL SYSTEM

Circle 158 on Reader Service Card

KEYSTONE RETAINING WALL SYSTEMS has introduced the Century Wall, a dry-stacked (but mechanically connected) system that offers a random, rugged look that's brought together by color and character. The high-strength concrete modules have the appearance of natural stone masonry and are designed for taller wall structures under heavy-load conditions. **Keystone Retaining Wall Systems**, Minneapolis, MN.



Continued on page 86

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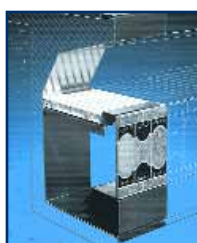


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GUTTER SYSTEMS

Circle 159 on Reader Service Card



BRADFORD PRODUCTS offers a complete line of stainless steel gutters for swimming pools. The products come in five styles for a variety of applications (four with grates, one an open-throat system); accessories and options include converter boxes for filtered-water return, recessed steps, deck drains, trough gutters, gutter-wash systems, ceramic-tile facings, gutter grates and more. **Bradford**

Products, Wilmington, NC.

EQUIPMENT CATALOG

Circle 160 on Reader Service Card

WATERWAY has published its 30th Anniversary Catalog, a 204-page book covering its complete lines of pool and spa products. The pool section includes pumps, sand and D.E. filters, chlorinators, valves, blowers, skimmers, drains, fittings and more, complete with parts lists and diagrams. The spa section features jets, falls, fittings, manifolds, air controls, filters and more, once again with full schematics. **Waterway**, Oxnard, CA.



HEAT PUMP

Circle 161 on Reader Service Card



JANDY has introduced the AE 1000 heat pump for use in heating the water in swimming pools. Standard features include a digital control panel, a titanium heat exchanger and an auto-heat system. The automation-ready device connects easily to pool/spa automation systems, automatic valve systems and remotes, and a

chiller/hot-gas defrost option is available for the 109,000 Btu model. **Jandy**, Petaluma, CA.

METAL SKIMMER LIDS

Circle 162 on Reader Service Card

SKIMMERLID.COM makes metal skimmer lids as a finishing touch for pool decks. Each lid is cast and professionally finished, with inner- and outer-ring patterns turned on a lathe for beauty and symmetry. Available in bronze or in powder-coated aluminum in four standard colors (gray, copper-vein, tan or dark brown) and many custom colors, the lids are slip-proof, groundable and secure. **Skimmerlid.com**, Pittsburgh, PA.



Continued on page 88

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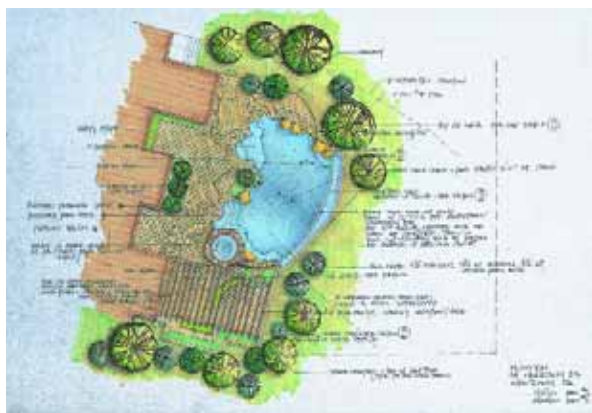
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Landscape Lighting Program December 10-16, 2005 Scottsdale, Arizona

Come spend five days and nights with lighting designer Janet Lennox Moyer and associates to learn all about the art of exterior lighting. The intensive program will include design and technical information specific to landscape lighting, design workshops and five nights of hands-on exploration of lighting techniques. Designed to familiarize participants with what's needed to create a variety of lighting effects, the workshops will feature lighting fixtures from all leading manufacturers.

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POOL-SIDE SHOWER

Circle 163 on Reader Service Card



MOST DEPENDABLE FOUNTAINS has introduced the Model 3500 SM, a foot-and-body shower tower made of natural aggregate concrete with stainless steel heads, push bars and push-bar housings. The service-access door and screws are also stainless steel, and the design features a surface-mount aggregate lip pre-drilled for attachment to a stainless steel base plate. **Most Dependable Fountains**, Arlington, TN.

SOLAR POOL HEATING

Circle 164 on Reader Service Card

SUNTREK offers a pool-heating system that warms the water with solar energy. The pool's filtered water flows to the system's panels during the daily filtration cycle, heating the pool with no additional operating cost, and can be run manually via a solar valve or automatically with a thermostat-controlled system. Panels are custom-fitted for each application and come with a 15-year warranty. **Suntrek**, Laguna Hills, CA.



LANDSCAPE PAVERS

Circle 165 on Reader Service Card



ARTISTIC PAVER MFG. offers beveled, calibrated, sand-set pavers. The beveled edges reduce trip hazards and toe stubbing; calibration provides uniform thickness to ensure level installation; and sand setting avoids the need for a concrete substrate, mortar or grout. The crack-resistant product comes in two ocean-themed looks – Sherlock and Corallock – with warm, natural earth tones. **Artistic Paver Mfg.**, North Miami Beach, FL.

ACCESSORY BROCHURE

Circle 166 on Reader Service Card

NEPTUNE-BENSON has published a four-page, full-color brochure on its line of accessories – recirculation equipment, structural components and control systems – for swimming pools, waterparks and aquatic features. Coverage includes strainers, valves, drain boxes, frames and grates, recessed steps, access hatches and ladders, water-level controllers, CO2 feed systems, filters and more. **Neptune-Benson**, West Warwick, RI.



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FILTRATION VALVES

Circle 167 on Reader Service Card



PRAHER CANADA PRODUCTS offers a complete line of valves for use in filtration systems. Products include butterfly and knife-gate valves as well as multi-position valves with six functions – filter, backwash, rinse, drain, closed, re-circulate – in either manual or automatic formats. Made of high-quality thermoplastic materials, the valves are designed for long service lives. **Praher Canada Products**, Barrie, Ontario, Canada.

LANDSCAPE LIGHTING CATALOG

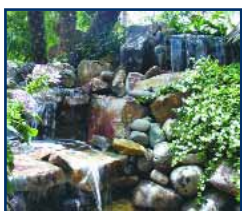
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LUMIÈRE/COOPER LIGHTING has published a 130-page, full-color catalog. Entitled "Landscape Lighting Solutions," it features low-voltage, line-voltage and H.I.D. fixtures for a wide range of commercial and residential applications. Coverage includes fixtures for accent, flood, path, step, in-ground, wall and sign lighting as well as special-purpose lighting. **Lumière/Cooper Lighting**, Peachtree City, GA.



BOULDERS AND STONE

Circle 169 on Reader Service Card



KRC ROCK supplies stone for projects of all types and sizes. Available products include landscape boulders, flag and building stones, aggregate, decorative crushed rock, river rock, decomposed granite and a variety of specialty stones in a broad range of colors, textures, shapes and sizes.

Complete design support as well as expert on-site delivery and boulder placement are offered. **KRC Rock**, San Marcos, CA.

LED LIGHTING

Circle 170 on Reader Service Card

HAYWARD POOL PRODUCTS offers ColorLogic, an LED lighting system that features five fixed colors and seven color-changing shows – 12 programs in all, easily controlled by a single switch or wireless remote. With no color wheel or moving parts, the system has noise-free operation. There is also a heat-diversion system that extends LED life, and multiple lights can be synchronized. **Hayward Pool Products**, Elizabeth, NJ.



Continued on page 92

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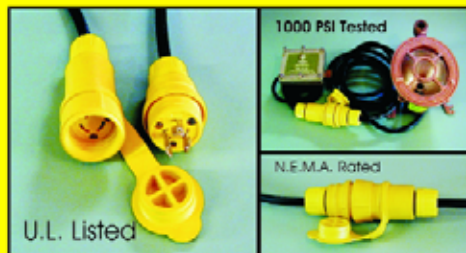
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PEBBLE FINISH

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CLI INDUSTRIES offers CrystalStones, a natural pebble pool finish. Stones are chosen for size, smoothness and luster and matched with colorfast pigments in brilliant colors for a durable, visually appealing surface. The easy-to-maintain, etch-resistant finish comes in eight standard color mixes: turquoise, stone pearl, sandy beach, onyx pearl, natural, midnight blue, gray reef and blue pearl. **CLI**

Industries, Orlando, FL.

IN-FLOOR CLEANING SYSTEMS

Circle 172 on Reader Service Card

PARAMOUNT POOL & SPA SYSTEMS has improved its PV³ cleaning and circulation system for concrete pools: the nozzle retainer now has a positive lock and can only be removed with a nozzle tool; new riser-body kits include a smooth outside body with a plaster cap and custom-sized riser pipe for a perfect fit; and the cam plate and gears in the water valve have been upgraded.

Paramount Pool & Spa Systems, Tempe, AZ.



POND LINERS

Circle 173 on Reader Service Card



FIRESTONE BUILDING PRODUCTS offers PondGard EPDM liners for ponds and streams. Tested by the Environmental Protection Agency and the American Society of Testing & Materials for safety with aquatic plants and fish, the liners are highly stable and

resist microbial and algae attack and damage from punctures, UV or ozone exposure and waterline weathering. **Firestone Building Products**, Carmel, IN.

FOSSIL-AGGREGATE TILE

Circle 174 on Reader Service Card

SEASTONE GROUP offers a surfacing material that can be used in wet or dry applications instead of tile or stone. Designed to replace natural coral, the material is made up of seashell fossil aggregates cast into tiles in sizes from 4-by-8 to 24-by-24 inches in thicknesses of 3/4 and 1-1/2 inches. Available in three colors – white, buff or gray – the material can be made with added glass or complete fossils. **SeaStone Group**, Ft. Lauderdale, FL.

Continued on page 94



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CAST ROCKWORK

Circle 175 on Reader Service Card



ROCK FORMATIONS offers Rico Rock – cast rockwork and waterfall formations for use with new or existing swimming pools. System components are made of lightweight, reinforced concrete and are mortared together for permanence. Fully modular systems come complete with plumbing, waterproofing and finish coloring, and landscape boulders, grottos and custom designs are also available. **Rock Formations**, Fontana, CA.

LOW-VOLTAGE LIGHTING

Circle 177 on Reader Service Card



CAST LIGHTING manufactures low-voltage lighting fixtures for outdoor applications. Handmade from solid, sand-cast bronze, the fixtures are nearly impervious to corrosion and physical abuse and take on a soft greenish color with age unless sealed to maintain the bronze color. Internal components and connections have been selected for durability and reliability. **Cast Lighting**, Hawthorne, NJ.

MINI-TRACK LOADER

Circle 176 on Reader Service Card

BOBCAT has introduced the MT52 mini-track loader. Designed for use on projects too big for shovels and wheelbarrows but areas too small for full-sized skid-steer loaders, the new unit offers ride-on or walk-behind capabilities and is just three feet wide for easy site access. Direction and speed are controlled by one handle, while the loader's lift and tilt functions are controlled by one lever. **Bobcat**, West Fargo, ND.



POOL DESIGN SOFTWARE

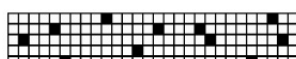
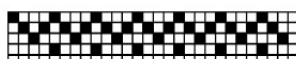
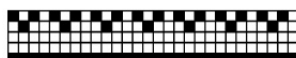
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STRUCTURE STUDIOS offers Pool Studio software to aid pool designers, landscape architects and builders in getting their clients to visualize how their backyards can look with a complete, virtual tour. Developed by a pool designer, the software creates a detailed, 3-D representation of the finished product, right down to tile and interior finishes, from a designer's 2-D drawings. **Structure Studios**, Las Vegas, NV.



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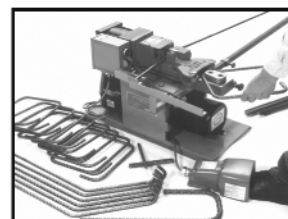


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POOL CONSTRUCTION FORMS

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SWIM-CRETE POOL PRODUCTS manufactures a complete line of aluminum forms for construction of all-concrete pools. Wall forms are available in straight and radius configurations in a range of lengths, with additional forms available for corners, pilasters (for setting skimmers) and swimouts or benches. Offset forms for stone facings or raised details are also available. **Swim-Crete Pool Products**, Shawnee, KS.

PLASTER ADDITIVE

Circle 180 on Reader Service Card

IMERYS offers MetaStar, a pool-plaster additive designed to optimize performance and provide a smooth, white plaster finish. An amorphous aluminosilicate pozzolan, the material reduces the amount of lime by-products present in the plaster through chemical reaction, thereby limiting the amount of lime that is able to leach from the surface during the curing process and weaken the plaster matrix. **Imerys**, Roswell, GA.



OUTDOOR SOUND EQUIPMENT

Circle 181 on Reader Service Card



SONANCE offers outdoor speakers in a range of styles, including the SoundHenge Pedestal enclosure and the Outdoor Planter Speaker – both designed to provide superb sound along with sophisticated aesthetics for deck, patio, porch, garden or poolside applications – and Symphony Extreme, made to weather high humidity and extreme temperatures. All are durable and have water-resistant enclosures. **Sonance**, San Clemente, CA.

NATURAL MARBLE PRODUCTS

Circle 182 on Reader Service Card

SOFIKITIS MARBLE supplies a full range of standard or custom marble products for use as coping and decking material or as an interior watershape finish. Imported from Greece and available in four basic shades, the company's imported offerings include natural-stone deck grates for use in perimeter-overflow systems as well as non-slip surface materials for use both in and around the water. **Sofikitis Marble**, Marina, CA.



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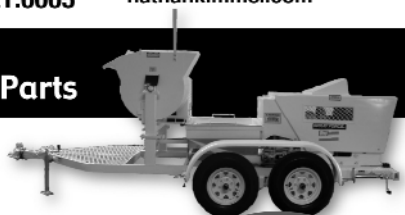
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MISTING SYSTEMS

Circle 183 on Reader Service Card



FOGCO makes misting systems for use in outdoor cooling and landscaping applications. These devices atomize water into billions of tiny droplets that evaporate in a flash to cool outdoor temperatures by up to 40 degrees Fahrenheit without a noticeable increase in humidity. They also add a unique touch to watershapes and garden areas by shrouding surfaces in a decorative fog. **Fogco**, Gilbert, AZ.

IONIZING SYSTEM

Circle 184 on Reader Service Card



CLEARWATER ENVIRO TECHNOLOGIES offers the R-40 copper/silver ion generator. Designed to control algae, bacteria and viruses in pools up to 20,000 gallon in warm climates (and up to 40,000 gallons in cool climates), the device offers economy, simple operation, a see-through electrode chamber and a weatherproof enclosure along with a test kit and 2 and 1-1/2 inch fittings. **ClearWater Enviro Technologies**, Clearwater, FL.

POOL/SPA HEATER

Circle 185 on Reader Service Card



PENTAIR offers the MiniMax NT TSI, a pool and spa heater that runs on natural gas and is equipped with a two-stage ignition system for a reliable ignition sequence and dependable flame stabilization. Other features include digital control to within half a degree Fahrenheit, lightweight insulation, non-corroding jacket construction, reversible headers and easy remote connections that need no special wiring. **Pentair**, Sanford, NC.

SKID-STEER LOADER

Circle 186 on Reader Service Card



CATERPILLAR has introduced five new B-Series skid-steer loaders, including the versatile Model 248B, which offers increased engine power and breakout force as well as improved operator comfort and enhanced machine reliability and serviceability. The lift has a capacity of 2,000 pounds and a load-sensing system that can provide high hydraulic power with the engine at low or high idle. **Caterpillar**, Peoria, IL.



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SPA-JET CATALOG

Circle 187 on Reader Service Card



ITT HYDROAIR has introduced jet models 10-4100 and 10-4100S – improved versions of its HydroJet. Designed specifically for use in concrete spa and pool construction, the jet body is available with either a threaded socket or a slip socket that accepts standard 1-1/2-inch PVC pipe. Made of clear PVC, the assembly includes an extended nozzle and works in a standard wall fitting. **ITT HydroAir**, Brea, CA.

OZONE HANDBOOK

Circle 189 on Reader Service Card



DEL OZONE has published "EZ Ozone," a booklet on ozone technology written specifically for pool builders to help them work with consumers who have questions about ozone and its applications. The 30-page, four-color text covers ozone's history, current applications, action in the water and benefits, then goes into detail on its real-world performance, with approaches to installation and sales. **DEL Ozone**, San Luis Obispo, CA.

CUSTOM BARBECUE ISLANDS

Circle 188 on Reader Service Card

NATIONAL POOL TILE GROUP offers designs and guidance for creating barbecue islands faced with porcelain tile, stucco or natural or artificial stone or brick. The islands are made using modular units for complete flexibility, working from a main grill component with stainless steel, professional-grade fixtures to a variety of extensions to fit any space and lifestyle. **National Pool Tile Group**, Anaheim, CA.



POOL COPING

Circle 190 on Reader Service Card

MARION CERAMICS offers a line of hard-fired clay coping bricks for use around swimming pools, spas and other watershapes. Highly durable and made for design flexibility, the natural-clay products are available in five common sizes and feature bullnose edges – including one style with a safety-grip detail. The complete line is available in seven colors, including Cobblestone Grey. **Marion Ceramics**, Marion, SC.



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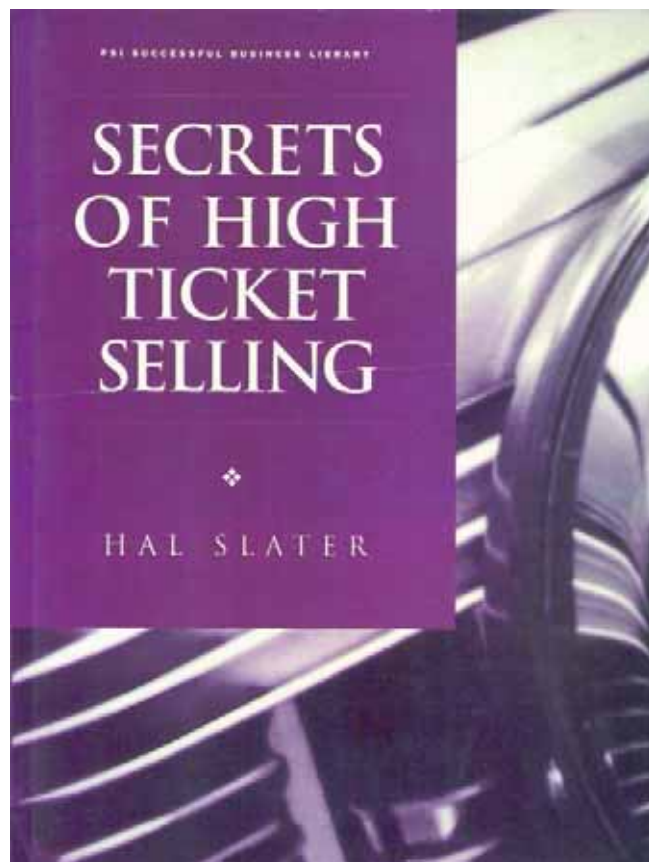
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By Mike Farley

Just the Ticket



There are those in this business who are extremely adept at selling, and I'm definitely not one of them. I get by, but it's never been my long suit by any means.

I've always admired the good salespeople I've met, and I fully accept the hard reality that to build a watershape at any level, one must sell it first. But I came up on the design/construction side of the watershaping business, and I've never found a clear way past the fact that, for me, sales has always been an area where I consistently have plenty of room for personal growth and improvement.

I know that selling is important not only because it brings business through the door, but also because it sets the stage for everything that follows as a project progresses. As practiced by real professionals, I've observed that it's much more about building a rapport rather than about extracting dollars or getting a client to sign on the dotted line.

Always on the lookout for resources that will help me sharpen my sales skills, I believe I found a good one in *Secrets of High Ticket Selling* by Hal Slater (Oasis Press, 1998). A pool builder based in San Diego, Calif., Slater has established a solid reputation for sales training, both inside and beyond the watershaping

trades. He's given hundreds of seminars on sales-specific topics and conducts a sales-training school for the industry called the Millionaire Pool Builder Program.

With experience as both a sales trainer and custom pool builder, Slater is perhaps uniquely qualified to speak to the challenge of selling watershapes. As he points out, these are often high-ticket transactions that require an approach that is (or at least should be) more refined and sophisticated than more basic types of sales.

The book is a quick read at 117 pages, but it's full of clear, concise information that I personally found to be quite helpful. He spends a lot of time on the value of understanding the client, covering the power of asking questions, listening and reading responses. There's also good advice about closing sales and a range of subtle techniques intended to pull clients down off the fence and get a project moving. (I found this particularly helpful in that the prospects who eat up a disproportionate amount of my time are those who are "undecided.")

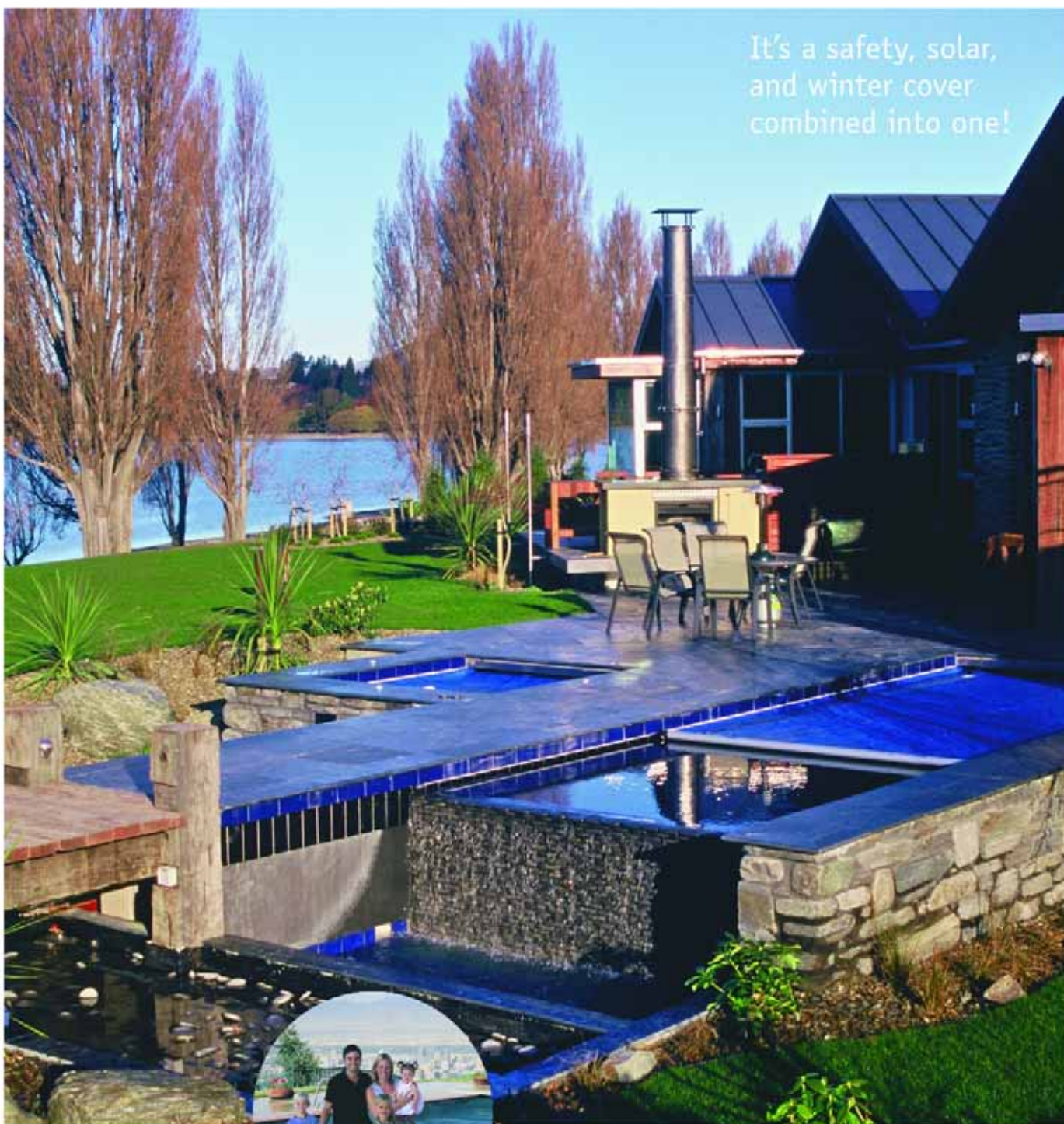
Slater writes at length about techniques for (and the power of) building a sound relationship with prospective clients and ways of avoiding awkward or transparent overtures to a close. This hit home with me in a big way because I think most of us have been subjected to salespeople who'll comment on pictures of the kids on the mantelpiece, for example, as a way of expressing a superficial interest in you. Slater explains – and correctly, I believe – that clients see right through the sham and offers advice about making connections that never seem either forced or contrived.

As helpful as Slater's little book is, I'd have to say that it's probably not for everyone. If your business is about volume, for example, his approach is probably too subtle and certainly too time-consuming. But if you work with lots of mid- to high-end clients and quality is your trademark, then Slater's rapport-based approach to top-level selling may be just the ticket for you and others in your company. **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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- Pumps
- Filters
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ALL JANDY PRODUCTS WORK SEAMLESSLY TOGETHER



The Jandy AquaLink® RS Control System manages our complete line of technologically advanced products.

The Jandy system is designed to create a carefree backyard paradise — enhancing the overall pool and spa experience by delivering performance and reliability through technology.



*Performance
Reliability
Technology*



A Bright, Clear Future with More Control

JANDYCOLORS™ POOL AND SPA LIGHTS

JandyColors™ Digital Color Blending Lights add a splash of water colors to any backyard. Ten digitally blended colors will saturate a pool and spa with color to evoke memories of far-off beaches and lush tropical islands.



EXCLUSIVE CHLORINE GENERATOR INTERFACE

The next generation AquaPure™ offers an exclusive interface with any AquaLink® RS system, bringing indoor display of salt levels, automatic adjustment to production levels, and monitoring salinity while the AquaPure™ system purifies the pool. Complete control — with the touch of a button.



AQUALINK® RS NEXT GENERATION SOFTWARE

New features link automation to many new Jandy products, such as monitoring system hydraulics to protect equipment, automatically activating a chiller, pulsing the light in a dancing laminar jet, selecting a specific color of a JandyColors™ light, and downloading settings or programs to and from a PC. These features add enjoyment and protect the investment of your customers pool and spa system.



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