

Inside: Brian Van Bower on Natural Design

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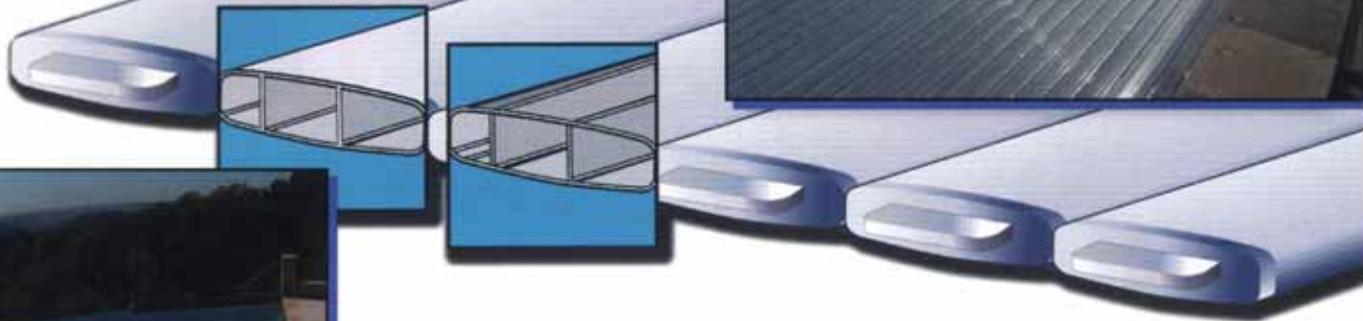
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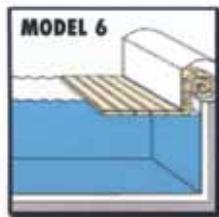
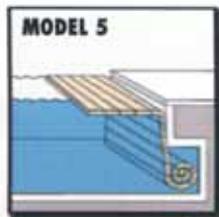
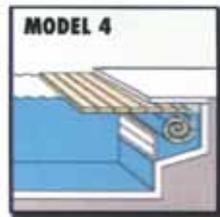
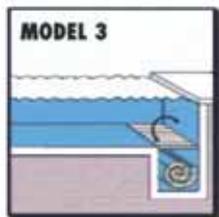
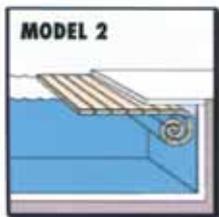
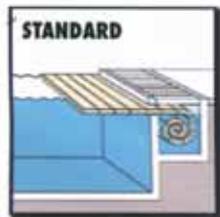
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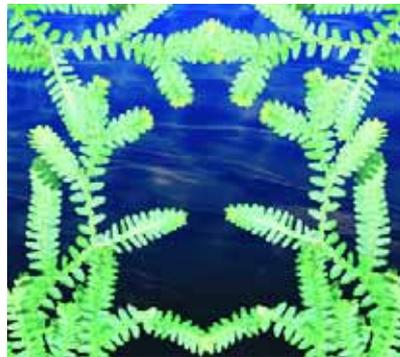
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On the cover:

Photo courtesy Ron Gibbons,
Ron Gibbons Swimming Pools, Islip Terrace, N.Y.

WATERSHAPES (ISSN 1522-6581) is published monthly with combined issues July/August and November/December by McCloskey Communications, Inc. 6119 Lockhurst Dr., Woodland Hills, CA 91367. A controlled circulation publication, *WaterShapes* is distributed without charge to qualified subscribers. Non-qualified subscription rates in the U.S., \$30 per year; Canada and Mexico \$48 per year; all other countries \$64 per year, payable in U.S. funds. Single copies \$10 per issue in the U.S. and Canada. All other countries \$15 per issue. Subscription requests must include name, job title, business location, address information and a signature and date.

POSTMASTER: Send address changes to *WaterShapes*, P.O. Box 1216, Lowell, MA 01853-9930.

Periodicals postage rates paid at Woodland Hills, CA 91365 and additional mailing offices.

Where the Action Is

Did your high school have a swimming pool? If so, you were lucky.

In my case, the high school I attended did *not* have a pool, and only now do I fully see how much I missed as a result.

My son, Brett, is currently a 15-year-old sophomore at El Dorado High School in Placentia, Calif. – a school that produced Olympic and world champion swimmer Janet Evans and has long placed emphasis on all aquatic sports. Brett plays goalie for the water polo team in the fall and is a breast-stroke and butterfly specialist on the swim team in the spring. As a result of these activities, a huge portion of his everyday life is spent in and around the water at the school's well-worn pool.

As I suppose is true of any parent whose child has found something he or she loves to do, I'm proud of Brett's accomplishments and even more thrilled by the positive effects his participation in sports has had on his life in general. As I stand on the pool deck watching his comings and goings during water polo tournaments and swim meets, it's clear to me that he and the other student athletes have been granted a wonderful mental focus and social outlet.

It's a lot of fun to watch the casual swagger their sports have given these athletes. They look great, feel great and are obviously proud they can do things in the water that most of us can only dream of doing. And when they get in the water, their level of physical skill, strength, explosive speed and agility is something to behold.

My experiences with Brett have put me to thinking about how significant a swimming pool is to a place like El Dorado High, how much I missed by not having access to the same opportunities – and, because of a recent trip I took, how the benefits of aquatic programs can come even to small communities that are willing to put thought and effort into meeting their citizens' recreational needs.

I just came back from dedication ceremonies for a new aquatics center in Sierra Vista, Ariz. The indoor/outdoor facility was built by the city for use by the town's 35,000 residents. As you'll see in the article on the project by William Rowley and Scott Mackey (page 32), this sparkling new facility is certain to be a hub of activity and interest for its tiny municipality for decades to come.

What struck me most about the facility is how much cutting-edge programming was delivered so effectively on so narrow a budget. It makes Brett's school pool look even older than it is, and the degree to which it will encourage lifelong aquatic participation makes me feel good about the future of the sports he's enjoying so much.

So while I feel as though my high school's lack of a swimming pool left me somewhere out in the cold, I'm happy that my son has had the opportunity to do what he's been doing and satisfied that I've been granted the opportunity to watch the development of the next generation of community aquatic facilities – and that I can share the good word through the magazine.

It does my heart good to know that these facilities are there, right now, for huge numbers of young people as well as for those who know that the power of water can help us all feel stronger and more alive – if not even young again, sometimes.



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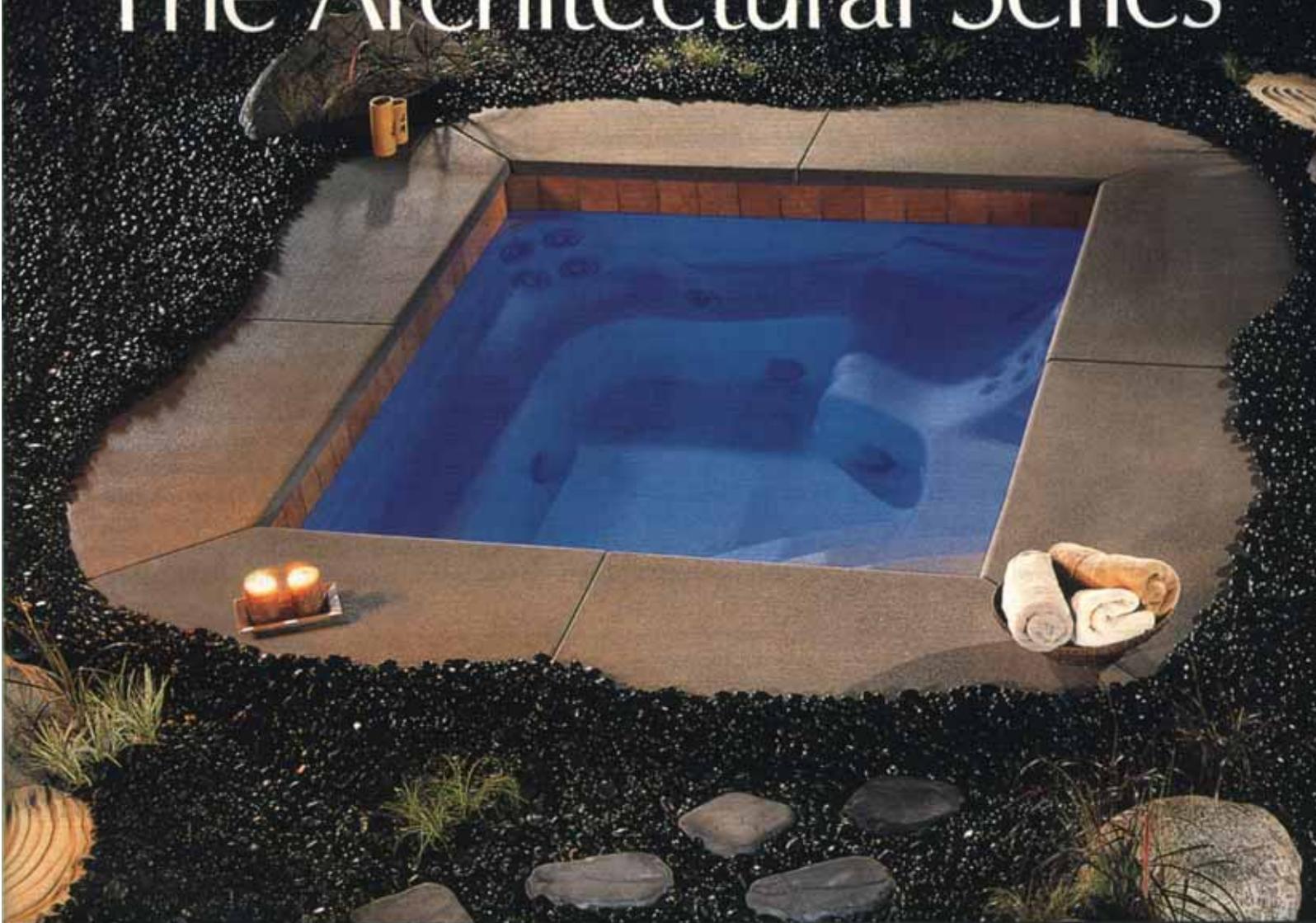
McCloskey Communications, Inc.
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William N. Rowley, PhD, is founder of Rowley International, an aquatic consulting, design and engineering firm based in Palos Verdes Estates, Calif. One of the world's leading designers of large commercial and competition pools, his most notable projects include partial designs for the competition pools used in the Olympic Games in Munich (1972) and Montreal (1976), and he acted as aquatic consultant for the design of the Olympic Pool Complex in Los Angeles (1984). His projects also have included a wide range of non-competition pools, including the White House pool in Washington, the Navy Basic Underwater Demolition Training Tank in Coronado, Calif., and the resort pool at the Hyatt Regency at Kaanapali Beach on Maui. Dr. Rowley is involved in a range of local, state and federal entities, consulting on construction and safety-code requirements. **Scott K. Mackey, AIA**, is director of architecture for Rowley International. He has



MACKEY

more than 15 years' experience in planning, designing and building aquatic-recreation facilities. Before taking on his current role, Mackey was a principal in the firm of Albanese/Brooks/Mackey PC in Tucson, Ariz., and previously served as a vice president for Durrant Architects in Arizona and as a project director for Durrant Sports in Vancouver, British Columbia, where he worked on all types of recreational facilities.

Rick Anderson has been a specialist in water-gardens, streams and ponds for 23 years. After working for many years in South Carolina and as a consultant for the past year in Nebraska, he recently returned to Ohio, where his watershaping career began. In returning to familiar environs, he says he has been pushed, prodded and inspired to continue exploring new territory when it comes to his unique brand of naturalistic water design. He's active as a designer and consultant and works



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Interested in writing for WaterShapes on design, engineering or construction topics? Contact Eric Herman at (714) 449-1996!

as the lead designer/builder in stone and water for Lake Cable Nursery in Canton, Ohio. Anderson is currently working toward the reforming of the Whispering Crane Institute, an industry think tank, and can be reached at wcicrane@sssnet.com.

Pamela Jay Pasotti is marketing director in Santa Cruz, Calif., for CMS Collaborative Inc., a company that has been prominent as architectural-fountain consultants for more than 21 years and has participated in projects ranging from The Franklin Delano Roosevelt Memorial and The National World War II Memorial to the Getty Center Gardens and San Francisco's Yerba Buena Gardens Esplanade. Pasotti joined the firm as a marketing and research specialist in 2001 after several years in the water-play industry. Through these experiences, she has developed a keen interest in people's interactions with water in both formal and playful venues.

Ron Gibbons, president of Ron Gibbons Swimming Pools in Islip Terrace, N.Y., has been in the pool construction business for 37 years. He began his career at his father's side at Paddock Welding, the first swimming pool construction company on Long Island. Nearly four decades later, Gibbons' own company, which he runs with his son Ron Jr., builds high-end, custom gunite pools for an affluent clientele. The firm has been recognized with design awards from both the National Spa & Pool Institute and NESPA. Gibbons has served as president of the Long Island Chapter of NSPI, sat on the regional board of directors, has taught seminars on high-end design at a variety of trade events and is an associate member of Genesis 3. He's also active in his community, having founded an association dedicated to the revitalization of the downtown area of Great River, N.Y., and served as commissioner of the Great River Fire Department.

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Stepping Into Paradise

What makes for a great natural-style watershape? That's a huge question – one which a great many people have devoted their careers to exploring and for which almost every one of us will have a slightly different answer.

As you will see here, my own response to the question starts with even more questions about the site, my clients and the surrounding structures and vegetation – questions I ask myself as I approach each individual design assignment and decide how far we'll be pushing toward the natural. In some cases, I come up with entire designs I'd call "natural-looking." In others, I'll use details as small as a well-placed stone or as large as a rock waterfall to come up with something that's been "inspired" by nature.

Through the years, I've designed or built dozens of projects that either mimic nature or take their lead from features found in nature. Here, I'll be taking you through the thought process I follow in developing these designs not so much as a prescription for what you should do, but instead to offer you starting points from which you can develop your own natural designs.

Natural Philosophy

From my own perspective, the designing and building of natural pools and other watershapes can only begin with an appreciation and understanding of nature. In fact, I don't really think you have any hope of mimicking nature

In my exploration of the natural world, I've always found that nature offers surprises. Since then, I've often seen that artificial work appears the most natural when it incorporates something surprising.

unless you've spent meaningful time examining its processes and studying the patterns and inter-relationships that nature reveals.

In my exploration of the natural world, for instance, I've always found that nature offers surprises. Since then, I've often seen that artificial work appears the most natural when it incorporates something surprising.

I've also noticed that executing a natural design requires careful control over a wide range of specific aspects of the project. What nature has taken eons to produce, it seems, can't be reproduced in a casual day's work, and there's a lot to be done from the design and engineering phase through to the construction and finish work – which means that careful project management is critical to success.

Above all, I've learned that "going natural" involves such a huge variety of interrelated technical and aesthetic issues that you have to head in that direction from the outset of the project. Trying to add naturalistic details as an afterthought is almost certainly a prescription for substandard and *unnatural*-looking work.

So how do you integrate the elements required for a watershape and the space around it to suggest or mimic nature? I see it as a multi-stage process in which you:

- determine how the vessel will be used
- find the shape
- select the colors
- decide what stone to use and how to use it
- make the water move
- select plant materials.

I've written on several occasions about how important it is to find out how your clients plan to use their watershape before you really get into a project, so I won't repeat myself here other than

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to say that the information you gather in your meetings with clients needs to be integrated into all of the other decisions, selections and determinations – and that the task of weaving them all together must take place before construction begins.

Finding the Shape

Bringing a natural look to a quality wa-

tershape design begins with the shape of the vessel.

Trouble is, this is hard to discuss in precise terms. We've all used the word "freeform" in discussing the shape of a natural body of water, but I don't think that's the best way to describe what we're after here. Too often, freeform pool designs involve sets of

sweeping curves and radiuses and are no more than variations on classic kidney-shaped templates – but nature doesn't often work that way and instead tends to mix things up with linear patterns and jagged edges along with the occasional radius.

What I find so fascinating in examining shapes in nature is how often you'll see a sweeping line on the crest of a bluff in a distant view that suddenly falls away into a random set of rock outcroppings or cliff faces. Whether these transitions in nature are surprising and abrupt or subtle and gentle (or both), they always seem to work.

Of course, it's nearly impossible to translate grand-scale landforms and natural contours into the confines of a backyard, which is why, as a designer, you need to balance aesthetic issues with practical factors in settling on a shape and, to an extent, let intuition and your own experience of nature be your guide.

For example, you need to balance your desire to recreate the random beauty of nature with the functionality of the space. You need to be sure that all of the elements surrounding the pool are in scale for the space and, in the case of natural pools especially; that the layout and the shape provide peripheral spaces for plantings, transitional pathways and smaller waterfeatures as well as room for decks and patios.

The key is knowing what you and your clients are after from the outset. If you've decided to aim for a completely natural appearance and want to make onlookers guess whether or not they're seeing a manmade body of water, the shape will head in one direction. If you've decided for a more stylized look – natural touches in what is obviously a built environment, the shape will tend to head in another.

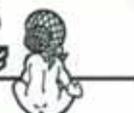
There are also projects with split personalities, where a section of the pool closest to a house will reflect its architectural form while another segment away from the structure is made to look natural. In other cases still, details and finishes of the design may be natural but are set in architectural contours. I've seen rectangular pools that look more "natural" than some lagoon pools: It all

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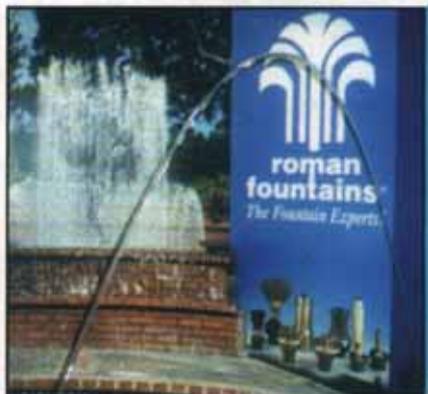
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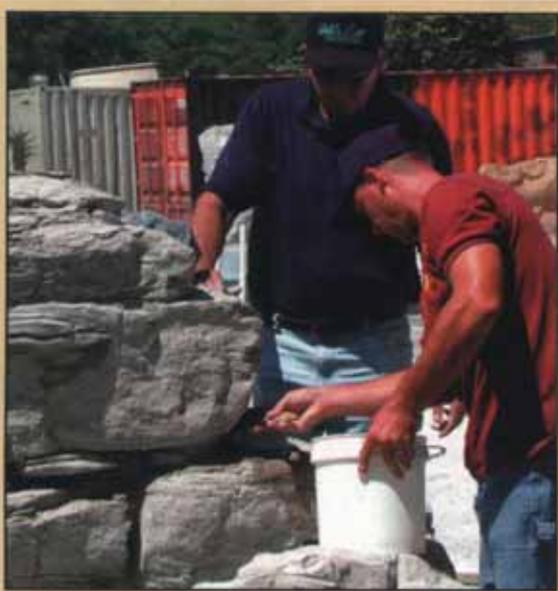


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has to do with the materials used to finish them and the landscaping around them.

Now that I've challenged any inclination you might have to shoot natural designs from the hip, let me make my basic point about natural shapes: They come in all sorts of configurations and contours and as everything and anything from highly irregular shapes to dead-straight geometries. To that extent, "shape" isn't the issue; rather, settling on the footprint for a natural pool is a matter of meshing this choice into all of the other issues to be addressed in developing an integrated, natural design.

Color Keys

The next feature that must be integrated into a natural design is color. Yes, the colors you choose should be drawn from nature. And yes, the vessel needs to blend with the color scheme of the landscape and hardscape around it. But decisions about color are never quite as simple as they might seem.

Because natural designs almost always include significant landscaping, the first color that comes to mind is *green*. This often means that stone materials and interior finishes of natural pools include greens, blue greens or gray greens. But it should also mean that you consider a whole range of complementary or harmonizing colors as well, including blacks, grays, browns, creams and various permutations and combinations thereof – all depending on the needs of the design.

So once again, it's tough to make generalizations and recommendations in designing natural watershapes. (If you've been following along so far, you should know by now that there aren't many easy choices to be made.) If you take your cue from Mother Nature, however, you can find inspiration that will help you along in the color-selecting process.

In nature, for example, you often see water surfaces that reflect the cool hues of surrounding plant and stone materials. In watershape construction, this observation will influence the selection of the interior surface and its colors as well as the colors of the surrounding stone and hardscape.

THE EXTRA STEP

In a great many natural designs, watershapes come with highly irregular shapes.

The complex contours of such vessels can require a good bit of work on the part of the structural engineers in creating precise sets of plans – and they usually work it out by breaking irregular forms down into the radiuses with which they're most familiar and comfortable.

This is wonderful for establishing the structural elements needed to execute the project, but it can lead to alterations of the actual shape you've designed. That's why I always have the engineer include a note on the plan that cites my original rendering for details in setting the ultimate shape of the pool.

– B.V.B.

In a tropical-lagoon pool, for example, this usually calls for a dark interior color to maximize reflections of surrounding greenery. But the choice may be different if you're working in the desert, where sand-colored interiors pick up surrounding tones and reflect bright blue skies. I do lots of work in Florida, so my naturalistic work tends toward dark interiors that play off the surrounding landscape of grays, blacks, deep greens, blue greens and other rich, intense colors.

Many interior finishes work well in naturalistic applications, including exposed-aggregate or polished-aggregate surfaces as well as tile, but I'm particularly inclined to go with pebble finishes in natural pools. Partly it's because I like the fact that it's a natural material, partly because I like the natural color variations they offer, and partly because the feel of the material suggests a streambed or a sandy beach. Pebbles also give me control over color, which is a key issue. I can go with a standard blend, or mix things up and develop something unique to go with the surrounding rockwork or decking.

The same utility in natural designs can't be claimed for finishes that offer up a uniform coloration, such as white or colored plaster, fiberglass or paint. It's hard to find uniformity of color in nature, and my choice will always be to use color that has texture and variability of some kind.

Hinging on Stone

Just as natural designs come in lots of shapes and colors, they also invariably feature stone. Whether real or artificial, its size, shape, color, texture and durability are all important. And just as important is the *placement* of stone and the way it's integrated into the structure of the watershape or the surrounding landscape or hardscape.

If you're lucky enough to live in an area with an abundance of natural stone at your disposal, it's likely that you'll choose indigenous materials that will tend to blend naturally with the surroundings. (This is important in making an impression on clients and guests in these regions, because it's very likely what they've seen

if they've ventured out into their local parks or nature preserves.)

Here in Florida, we don't have an abundance of stone varieties, so I truck in much of what I use from North Carolina and Tennessee. I select lots of river boulders that have beautiful rounded edges and lots of broken planes that reveal colorful graining. We also use a

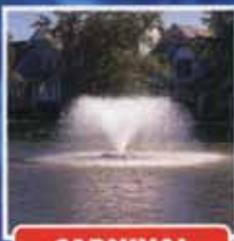
great deal of coral rock (or *oolite*): It's our indigenous stone, but because of its physical characteristics, our use of it is usually limited to flat applications on patios, steps or walkways.

Whatever you have available to you, the things to keep in mind as you select stone types and specific pieces of that stone are the aesthetic qualities (colors

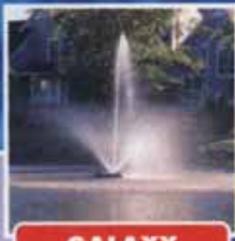
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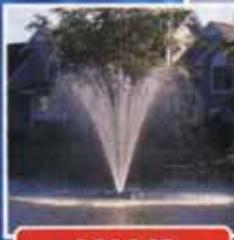




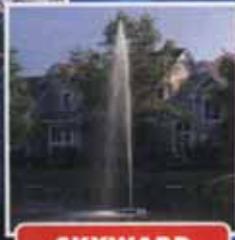
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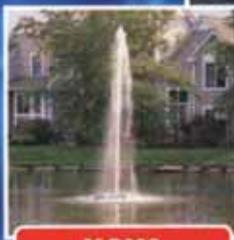
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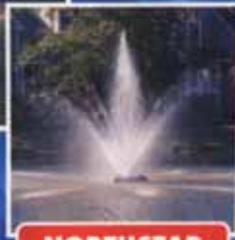
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and textures) as well as the intended function and placement.

Beyond obvious uses in waterfall structures or as decking or steps, for example, one of the most important uses of stone is for the setting up wet-to-dry transitions at the waterline. I'm a big proponent of submerging rock material to lend the work a natural look. Before

you get to the aesthetics, however, you need to know the rock will hold up well under water: Some stones are far more soluble or porous than others and shouldn't be used.

That said, when done correctly, water lapping up against rock (as opposed to a tile line) can be a true thing of beauty – and a key turning point in making a

distinctive, natural impression.

Things can (and too often do) go terribly wrong here, as with the much loathed and dreaded "necklace effect," in which a chain-load of rocks are set atop the bond beam with no attempt made to mimic natural shorelines. This most often is the result of poor planning – or of treating this detail as an afterthought.

And the truth of the matter is that even good designers and installers fall into this trap. What it takes to avoid this unnatural look is planning to set certain stones into the beam itself – which obviously can happen only with pre-planning. What it also takes is recognition that a linear pattern at the water's edge can be jarring to natural sensibilities. That's why I employ a range of strategies to disrupt the edge. (See the sidebar on page 18 for details.)

Around the Pool

One of the greatest challenges to making rockwork appear natural is figuring out ways to make it accommodate the functional aspects of the pool.

Areas for entry and egress must be flat, for instance, or gently sloped in the case of a beach entry. Here, selection of flat rock materials that make a transition from the flat stones in the pool to rounded or vertically oriented boulders outside the beam is crucial. To give ourselves plenty of elbow room as these decisions are made, we usually leave much of the area right around the watershape open for rockwork and plantings – that is, seldom will we bring the patio up to the water's edge, choosing instead to use flat stones later on to allow for footpaths and access to areas around the pool.

This brings up a key point: While pre-planning is absolutely essential to success in natural designs, there are some small, localized decisions that are best left until the construction process. What's important here usually isn't knowing that this stone will go right there, but instead that a given space will accommodate a certain item of an approximate size and color, be it a rock, a plant, a stepping stone or a garden bench.

For my flatwork, I often use a stone known as Tennessee Crab Orchard stone, a sedimentary rock that splits well

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and looks beautiful as decking or in wet/dry applications along with the river boulders I like to use. Its look gives me the ability to maintain visual continuity in all of a given project's stonework.

But I also know there are applications in which natural stone can't be used. Whether it's cost, the weight of the stone (and the structural strength needed to support it) or a lack of availability of the stone in the needed size or color, there are some instances in which artificial stone is the best solution.

When it's done well, I have no quarrel with artificial stone. In fact, I've seen many projects in which fabricated panels are truly believable and integrate well into natural designs. But for every true artisan out there creating wonderfully credible structures, there seem to be several more who just don't get it right.

Suffice it to say that when you use artificial rockwork, quality makes all the difference. To my mind, if you can create or commission artificial rock structures that fool the eye (and clients are happy with the result), then there's no problem.

When I need to use artificial stone, however, I try to the greatest extent possible to minimize the chance for discordant visual effects by blending in as much natural stone as I can. Once again, the placement, shapes and sizes of the stones – how they're integrated into the design – will make or break the effect.

A final point about rocks: Rarely do you see them completely exposed in nature. Mostly they are submerged in the soil or draped

STONE WORKS

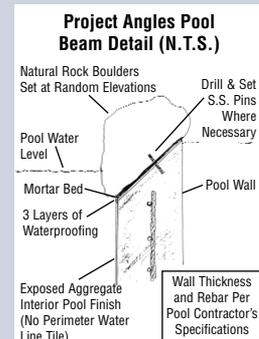
Varying the size and shape of stones along with irregular placement at the water's edge is only part of the battle in creating natural looks.

As mentioned in the accompanying text, I also often use an angled-beam detail to accommodate placement of special stones at the waterline. In doing so, we're able to place stones of varying sizes and at varying heights atop the bond beam with a more natural look. We also avoid the obvious presence of grout or mortar by inserting stainless steel bars into individual stones to tie them to the bond beam – labor-intensive but visually appealing. In addition, we create a variety of shelves inside shells

to accommodate large, partially submerged boulders.

Installing flat boulders completely submerged in shallow areas, such as beach entries can be another way to effectively conceal the edge. I also love the look of flat stonework used below the waterline for steps or thermal ledges or as transitions to dry areas.

– B.V.B.



in plant material, and an important part of "selling" the natural look of rockwork (real or artificial) is thinking them through as true landscape elements.

Setting up planting spaces among rocks and abutting rockwork with earth will help here. Another good idea is setting up visual echoes of rocks near or within a watershape at some other point in the yard to create the impression of recurring natural formations or random distribution of material in the environment.

The Attraction of Motion

Now we come to making the water *move*.

Absolutely, this is among the most important elements in a natural-style pool: The sight and sound of moving water lends key sensory elements to the design and can be used to great effect. In fact, when it comes to believability, this may well be the determining factor.

All too often, however, this is where projects reveal their artificial origins. I cringe just to think about all the projects I've seen where there's a stack of rocks built up right next to a pool to create a waterfall. Much like the hideous necklace effect, this volcanic approach to waterfall design is the death of naturalism.

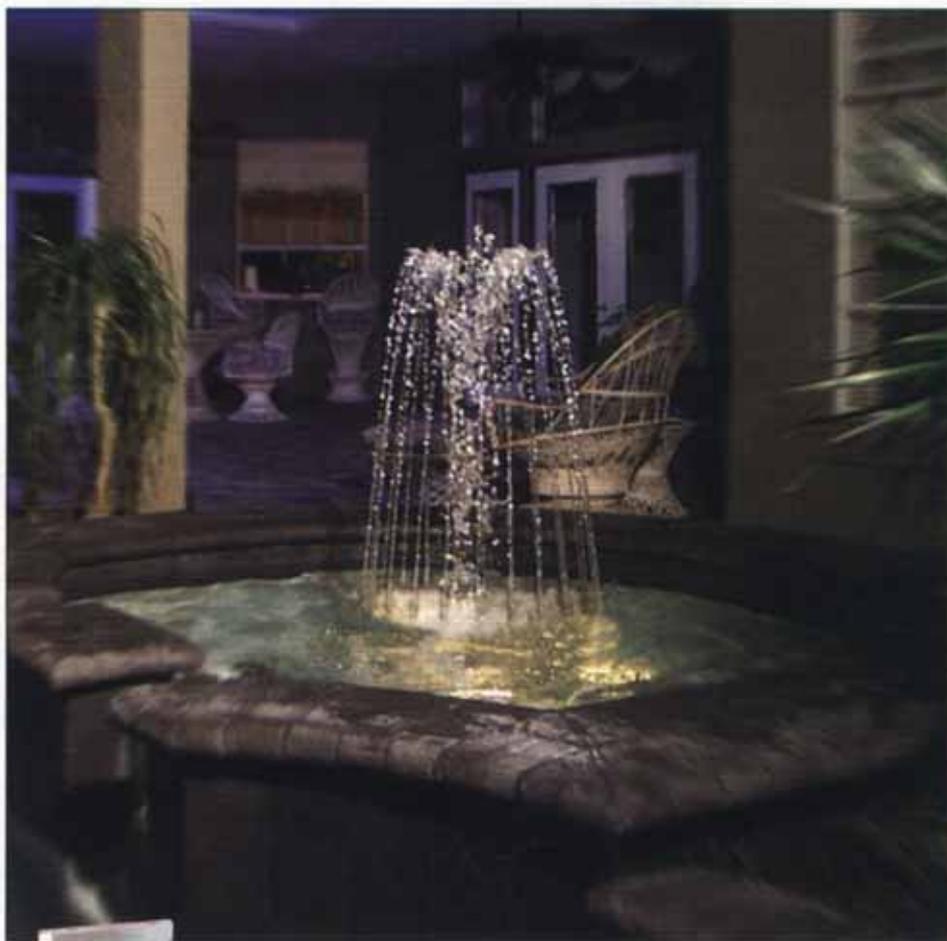
If you're blessed to have elevation transitions in the lot's natural topography, then you can and should use that to your advantage in creating a waterfall area. Here in Florida, things are generally flat as a pancake, so we often end up importing soil and building up an area of the yard to create slopes and transitions that support water effects. By gently sloping the grade, you can introduce plants and rock elements around the waterfall so that it doesn't look as though a rock structure has popped up out of nowhere.

If that's not possible, then you're probably better off setting aside the waterfall in favor of a small stream that flows into the water, perhaps transitioning vertically over no more than a couple of inches.

Before doing so, however, you need to integrate your thought processes with what your clients want. If it's about visual appeal and soothing sounds, then

you can almost certainly get by with a smaller flow of water and modest changes in elevation. But if the clients want a grotto with a rush of water powerful enough to give them good massages, then you need to plan on a large rock structure and figure out ways to integrate its height and massiveness into the surroundings.

Quite often, the waterfalls I see are too big for the application. In nature, water effects are often quite small and modest, and you often find them in surprising places. With that in mind, I see nothing wrong with adding a waterfall that is little more than a small flow from a fissure in a carefully selected piece of stone. Even this simple



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flow can have a dramatic effect on the overall design.

Another shortcoming I often see is the result of thinking that falling water should fall into water. In nature, however, we see water cascading onto stone more often than not, so I believe in directing all or part of the flow of a waterfall onto a rock surface: Not only does it vary the sounds

you hear, but it also adds visual interest to the composition.

In addition, it's very important to conceal the origin of the water's flow and to slow that flow down — something Bob Dews wrote about at length in *WaterShapes*' April issue (see "The Hidden Source," page 50), so I'll save a few words here. Whatever you do, please avoid the

sin of having a visible pipe belching water at the top of a waterfall!

Natural Companions

This brings us to the final set of considerations that must be integrated to achieve good natural design: If you can't figure out the plants, you need to find someone who can!

With waterfalls, for instance, I've seen situations where it looked as though the watershaper didn't want to obstruct the view of the beautiful rockwork with any plant material. That's a mistake, however, because adding plant material introduces areas of shadow and dappled light that add a strong natural feel to the work. The same holds true all around the yard: Naturalistic watershapes need plants, usually lots of them, to carry off the design.

Lots of pool builders, myself included, have come late to thinking about plants. That's why I've developed a good rapport with an expert who works with me in developing planting plans.

If you're lucky enough to possess that skill yourself, then I'm sure you recognize how critical plant selection around water can be, not only from an aesthetic standpoint but also with respect to maintenance. The layering and intermingling of trees and tall plants with ground covers and flowering plants is an art form that lends much-needed credibility to naturalistic settings.

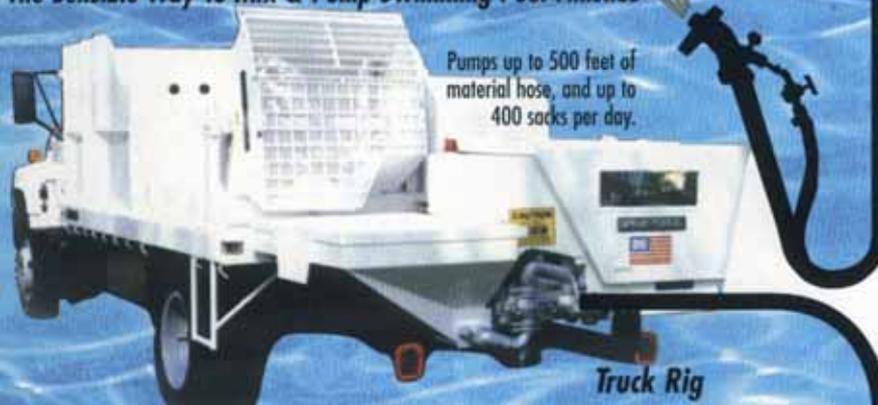
The bottom line with natural designs is that there's so much more to them than meets the eye. And that's appropriate, I'd say, because the ultimate effect of a beautiful naturalistic design is that someone entering the space won't notice all the hard and careful work that went into creating the scene. **WS**

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

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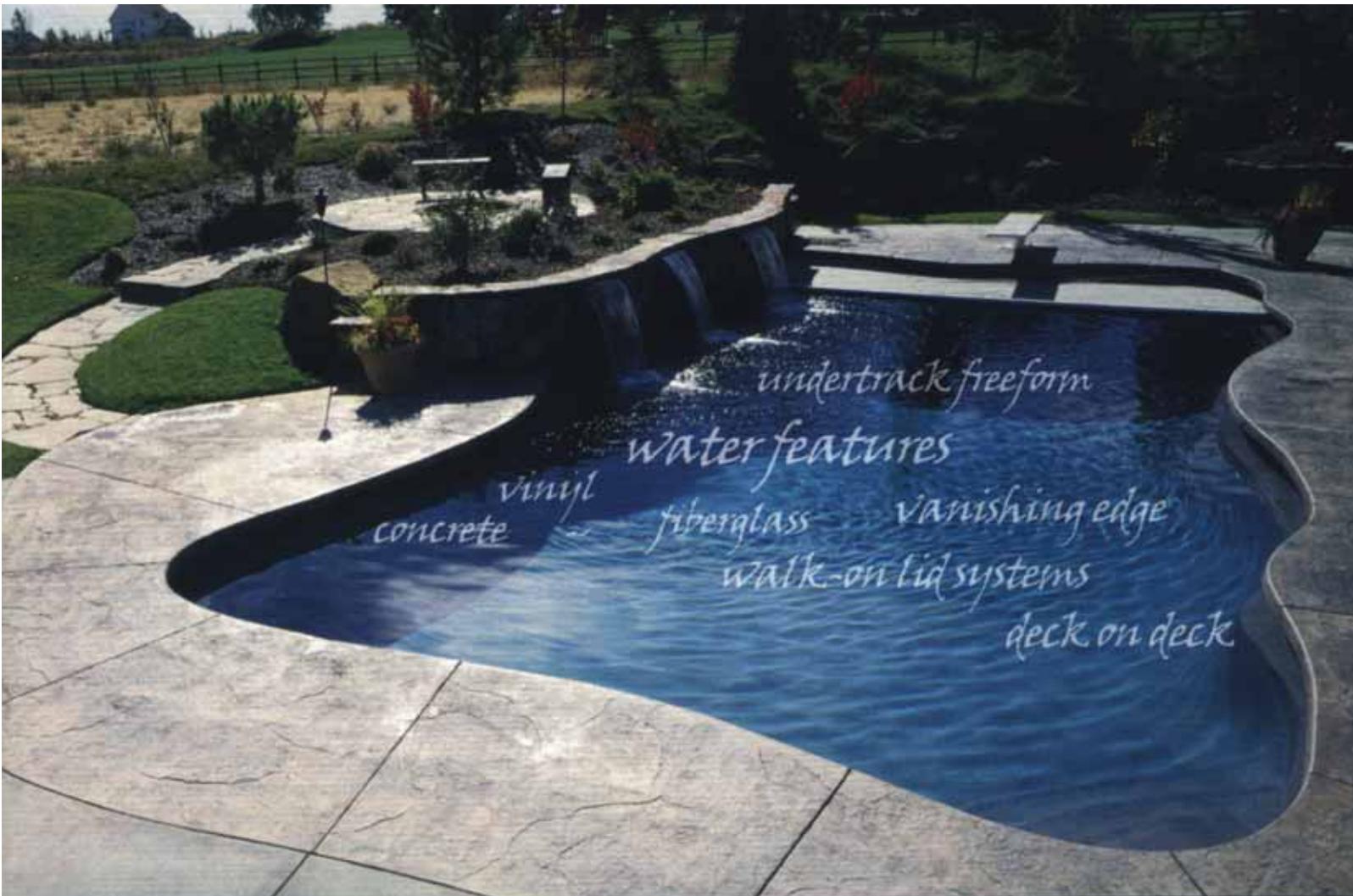
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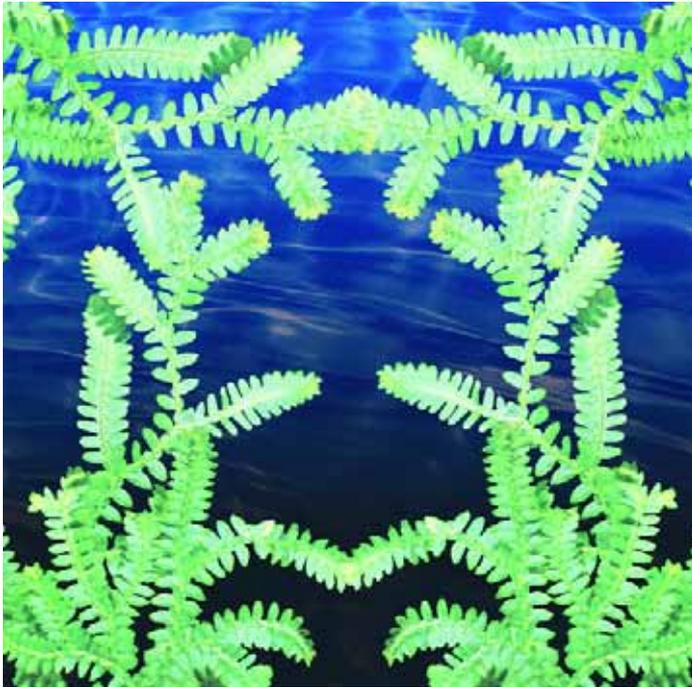
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The Fern Factor

Very often when I'm selecting a plant palette with a client, I'll hear the words, "I hate ferns."

I'm not sure what it is about these botanical beauties that evokes such a visceral reaction from people – except maybe that they were overused in floral arrangements during the 1970s and '80s? I'm not sure what's going on here, and if any of you know a solid reason for this dismissal, please educate me!

For my purposes, ferns are one of the most versatile plants available. They typically prefer partial to full shade, which is quite useful and makes them great fillers in woodland areas where nothing else seems to grow – although you should probably amend the soil if you place them in a shady area where no other plants have prospered.

They range in texture from extremely soft to quite coarse, allowing them to be used in a variety of styles and settings, and they also come in a wide array of colors and sizes. Ferns such as the Cinnamon Fern, while not readily available, even have great fall color, while some others come in wonderful shades of bronze, gray, blue and more.

The bottom line is that there's a fern for almost every design.

As much as I love them, ferns are like any other category of plants in that using them alone will result in a boring or flat design.

Around the Water

The key point to remember with ferns and watershapes is the fact that these plants do best in shadier locations. Most will burn when placed in full sun, leaving unsightly brown foliage.

That usually excludes them from use around swimming pools designed for sun-worshippers, particularly when you consider reflections and added heat off the water. At the same time, it makes ferns an ideal choice for areas around woodland streams, ponds, brooks and other well-shaded watershapes.

As is the case with grasses, ferns can be planted up against any watershape. Some varieties are specifically suited to growing in water or swampy conditions. They easily obliterate the edge of a pond by draping over its lip and can even survive dipping into chlorinated water without creating chemical nightmares for service technicians. As humidity-loving plants, they are also great for interior atriums – especially ones with watershapes that keep the air humid.

As much as I love them, however, ferns are like any other category of plants in that using them alone will result in a boring or flat design. As always, you need to mix textures to create a balanced overall appearance.

Microlepia ferns, for example, have a softer texture and grow to three or four feet tall and about five feet wide – perfect for mixing with azaleas (medium texture) and agapanthus (coarse texture) for a woodland feeling. Placed among larger-leaf plants, these ferns also support a tropical feel.

In most cases, for example, you'll find that the typical green, soft-textured fern works well in setting off other plants: It'll tend to blend into the setting rather than stand out as the focal point.

With more unusual varieties, such as those with variegated, bronze, gray or bluish foliage, ferns definitely *can* be used as the focal point – so long as you don't overwhelm the design by overusing them. Remember: When incorporating *any* plant that is capable of standing out on its own, keep balance in mind and err on the side of using fewer plants of that variety.

Fern Options

I probably receive every plant catalog known to modern man, and typically I find that the ferns available from them aren't grown by the average nursery.

I can't tell you how many times I've spotted a fern in a catalog that's the perfect specimen to complete a design, only to find my nurseries don't have it and can't get it from any of their growers. (They've even had the nerve to laugh at me a few times when I've asked for a particular fern over and over again – as is the case with the Cinnamon Fern.)

I have found, however, that once I start asking for a particular plant, it seems to be available in the nursery three to five years later. It's a function of supply and demand: If a fern's in the catalogs, more designers will see it and ask for it, making it lucrative enough for the nurseries to carry it.

You can, of course, order whatever unusual varieties you want from the catalogs. The only problem I've encountered in doing so is that the plants are generally quite small and only slightly established. You therefore have to take your chances and buy plants with the thought that you'll have to care for them more closely than those you might buy from a local nursery. Sometimes, it's worth the effort.

Aside from the suggestions I'm about to give you, I urge you look through the shade houses at your local nurseries. Each one carries different varieties, and you never know what gems you might find hidden away under other plants.

As opposed to other plant categories (such as grasses), my fern picks are fairly limited and lean toward tried-and-true varieties that seem to do well in every garden in which I've ever placed them. As always, I'm in Southern California, so remember to check with your garden guides to see if these are appropriate selections for your climate.

❑ **Microlepia Fern.** As far as I know, this plant doesn't have a common name – although it is, without question, the easiest and best-looking fern I've had the pleasure of planting (particularly in my area).

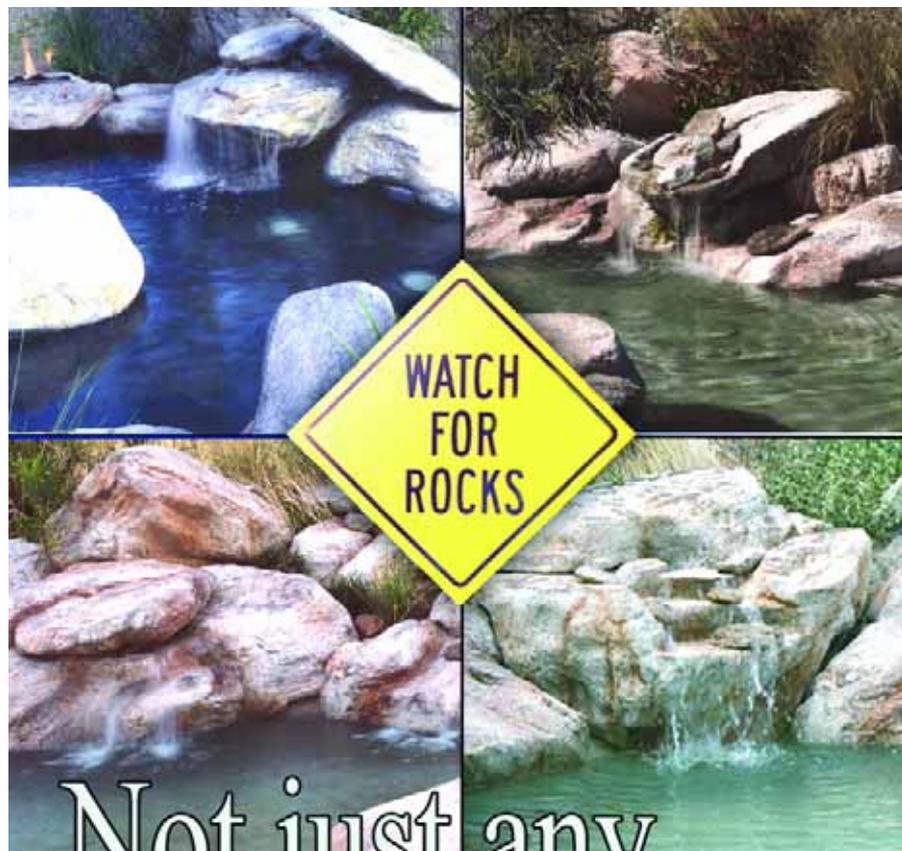
It does best in mild climates placed in

partial or full shade. I have one specimen in my yard that is four feet high and five feet wide and after eight years even does well in drought conditions. It's a great, soft-textured filler that adds dimension to any design and occupies shadier spaces without overwhelming its neighbors.

❑ **Asplenium bulbiferum** (Mother Fern). For smaller spots, I love using this

fern. It's great for borders, growing no more than four feet high and about as wide although you see them more commonly at about two by two feet.

Mother ferns are more temperamental than *Microlepias*, requiring a rest period from fall to spring – meaning it will have a more deciduous appearance during that time. So plant it in a location



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where it's surrounded by foliage that will hide it in winter – or try it in an interior atrium, particularly one with a water-shape that will provide it with ample humidity.

❑ **Polystichum munitum** (Sword Fern). This fern was quite extensively used from the 1960s through the 1980s, and it's the perfect choice for bordering a wood-

land watershape. It has a more upright appearance than *Microlepias* or *Mother ferns* and will not drape over, which means it won't help much if you're trying to soften the edges of a pool or pond.

Its biggest drawback is that it spreads by underground runners, so once it takes over an area, it's hard to control or remove without major excavation. For that reason, I

would avoid placing it in a border where it has the opportunity to choke out neighboring plants. Its underground runners might spell trouble for pond liners, but they're not strong enough to break through a gunite shell or concrete decking.

❑ **Woodwardia fimbriata** (Giant Chain Fern). One of the larger varieties of ferns, this is quite similar to the *Microlepias* and is well suited to bordering ponds, brooks and streams in woodland settings. This is also one fern that can take more sun if it's placed in a wetter environment.

❑ **Adiantum** (Maidenhair Fern). These ferns require more care than *Microlepias* and *Woodwardias*, but they're worth it: Their soft leaf appearance and gentle form are a great addition to any design.

Typically growing only one to two feet tall and about as wide, these are also particularly well suited for interior atriums with watershapes – they thrive on the humidity. I don't recall ever seeing a terrarium in the '70s that wasn't planted with one of these.

❑ **Dicksonia Antarctica** (Tasmanian Tree Fern). I have a hard time with these ferns. They're great when they get to about four or five feet tall and can be underplanted, but when they grow taller than that (which is what they want to do!), all they are is trunks that take up ground space.

True, they *do* provide nice shade for lower-growing plants, but in my mind, they provide few aesthetically pleasing reasons for leaving them in place – and, in fact, I find that most clients ask to have them removed at some later date. They *are* slow growers, however, and I would consider using them with the understanding that you might need to replace them down the line. **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 this season in six new episodes of "The Surprise Gardener," airing Tuesday evenings on HGTV.

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Quality Really Is Job #1

Of all the things I've learned in my work as a watershape designer and builder, one particular point stands out: When it comes to ensuring quality results and a project's success, there's absolutely no substitute for good supervision!

I say this knowing that most job sites run by people in the pool industry are inadequately supervised if they're supervised at all. Yet experience shows, time and time again, that while complete, professional plans are part of success and that great subcontractors are essential, constant oversight is *the* absolute necessity. And when good supervision is paired with open communication and a detailed understanding of clients' needs, everything is in place for success on all levels.

I've mentioned this all before, of course, but it bears particular emphasis in approaching the kind of project I've been discussing in the last two "Details" columns. My clients built a magnificent, architecturally significant home right next to a thoroughly mediocre pool, and in "remodeling" it, I'm well aware of the standards they've set and the quality they want to see radiating from every step of the construction process.

My steady presence on the job site assures my clients that all is going as we have

When good supervision is paired with open communication and a detailed understanding of clients' needs, everything is in place for success on all levels.

agreed and according to plan. At the same time, it gives my subcontractors ready access to information they need to do the job right the first time through.

Plumbed Perfection

Last time, we looked at demolition and our work up to the point of framing a new wall for the old pool. This time, we'll move past forming to look at plumbing, steel and guniting – points in the process where the "guts" of the installation are being developed. As is true with all other project phases, precise execution here is critical – and our success is, in the case of this project, the direct result of my supervision of every detail.

To refresh your memory, we're rehabilitating an old, rectangular pool that was completely out of scale for its surroundings. In so doing, we'll be working with a rich palette of aesthetic touches later on, but for now we're doing the hard work of reshaping the vessel by narrowing its width, raising its floor and adding a large spa.

As the new wall and the spa were being formed, my plumber was busy re-plumbing the entire pool – including a new skimmer and main drains, six return lines, suction and bleed-off lines for the waterfalls, lines for the other waterfeature effects and a stub for a pool sweep. We pressurized all these lines to 40 psi per local building codes.

As this was happening, we also added new gas lines for a Laars High-E 350,000 Btu heater and set gas lines for a barbecue and an additional water heater for the home's interior.

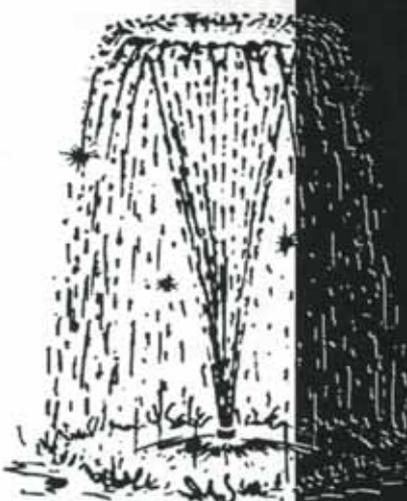
As I've never hesitated to admit, my colleague and Genesis 3 partner Skip Phillips has taught me most of what I know about hydraulics in the past six years. Even though many of you see me as a relentless know-it-all and an arrogant, elitist pig, I'm never ashamed to say that hydraulics wasn't my long suit until I met Skip. I don't want to chase this tangent any further than to say there's nobody in any of the watershaping trades who can't benefit from education!

Skip beat on me until I accepted the fact that pipes and filters are generally undersized and that pumps are typically oversized—basically creating systems that can't work very well and that are indeed doomed to fail sooner rather than later.

The industry at large has fallen into these deplorable practices because so many of us (and I'll include myself here) do not come to the job with an advanced understanding of hydraulics. Applying what I now know, however, I use 3-inch suction lines, 2-1/2-inch return lines and



The key to marrying the new wall to the existing pool structure involved overlapping new and old steel between them in both directions. We worked with the engineer's plan in creating a network of rebar that makes up the new pool's bond beam (A).



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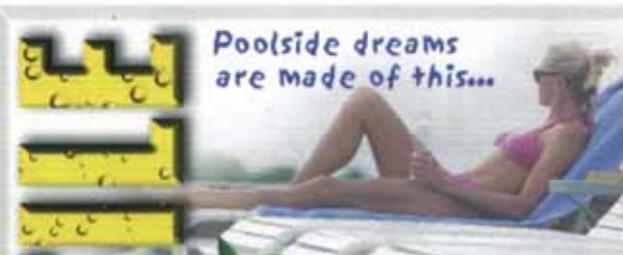
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split main drains (for safety). (As another aside, it bears mentioning that if you really understand hydraulics, the suction-entrapment issue usually goes away.)

Lapping Steel

As was mentioned in April's "Details," we removed the concrete from the old bond beam for not less than 24 inches where the new wall intersects with the old shell. With the old steel exposed and cleaned, we tied the new wall's beam of six new #4 bars (1/2-inch diameter) into the old shell's beam and bent the old steel over into the new wall – a "44-diameter lap" my structural engineer specified to securely tie the new wall into the old structure.

Behind the curtain of new steel, we'd already built a formed wall of two-by-four construction braced with all the heavy-duty kickers it took to make the wall *completely* stationary. We lined the inside of this form with plywood – no button board or anything else that might

flex or move. We also line our plywood with Masonite or plastic to make stripping easier; in this case, we used plastic.

As work went ahead with the steel for the new wall, we were also setting up the steel for new benches that stretch along the length of the pool closest to the house. As I've mentioned before,



We doweled steel into the old floor, using hydraulic cement to secure the rebar in place (B). There was plenty of drilling involved by the time we finished setting up the new wall, the pool-length bench and the grid for the new floor (C).



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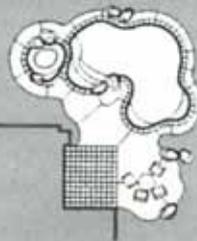
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all my benches are formed with steel, never from concrete alone – and *absolutely* never with rebound. In my book, people who try to save money by using rebound for anything in a pool are asking for trouble – and cracking. It's substandard construction, and it should not be tolerated.

We also formed up a new spa in the shallow end of the pool where the old entry steps had been (see the sidebar on page 31 for details on this part of the project) and prepared for raising the pool's floor by as much as five feet in the deep end.

To raise the floor, we doweled new steel into the existing pool floor and locked the bars in place with hydraulic cement. Per the engineering plan, we used #4 rebar at 18 inches on center both ways (OCBW) at 12-inch elevations, creating multiple curtains in the deep end. All of this steel is required to prevent shrinkage and cracking and to give the floor of the pool the structural

strength it needs.

Before shooting the pool, we filled the bottom with poured concrete – stopping about eight inches shy of the last curtain of steel. That gap was to be filled with gu-

nite when the time came to shoot the new shell and spa.

Shooting the Shell

Once the plumbing was in place and



With the forms, plumbing, steel and newly raised floor all in place, it was time to shoot the new wall, floor and spa (D). We never use rebound: Getting rid of it isn't any fun (E), but it's required for sound, quality construction.

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the steel had all been tied, it was time to apply the gunite. It was a pretty straightforward shoot – nothing radical by way of configurations and just my usual tight tolerances. In all, we used approximately 32 cubic yards on the shell – not including all the concrete we'd poured to raise the floor.

Once the pool had been shot, we let the shell hydrate for 14 to 18 days. This is important because gunite, like all concrete,

gains approximately 80% of its strength in the first 14 days after application – and picks up the remaining 20% of that strength very gradually for the next 100 years or so.

The more water is present during hydration, the stronger the gunite will be, so we keep it wet: We set up hoses around the pool and turn them on and off periodically ourselves – or set up solenoid valves to get the job done. At this point,

the electrician came on site and set all the conduits for the pool lights, control systems, landscape lights, the outlets needed for the barbecue – and anything else that required electrical connections.

Once the gunite had set, we stripped the forms and dropped 45 tons of clean, 3/4-inch crushed rock as backfill behind the new wall. On top of that, we added a layer of compacted fill to bring it up close to grade.

Now the fun starts. **MS**

Next time: a look at setting the stage for the aesthetic details that will make this installation a knockout.

With the forms stripped and the new spa and wall firmly in place, we backfilled the obsolete section of the old pool – and set the stage for an amazing transformation of the pool, its yard and the entire setting (F).



David Tisheman operates David Tisheman's Visuals, a design and construction firm based in Manhattan Beach, Calif., with offices in Marlton, N.J. He is co-founder and principle instructor for Genesis 3, A Design Group, which offers education aimed at top-of-the-line performance in aquatic design and construction.

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A SPA ON THE SIDE

I build spas for comfort as well as looks.

In this case, the clients wanted a large spa added to the pool – a 6-1/2-by-9-foot rectangle. That worked for me, because unless otherwise requested by the client, I believe that spas should be approximately 50 square feet and at least 6 feet wide to accommodate two people sitting across from each other without banging their knees. No problem here on that score.

The spa is elevated 20 inches above the pool surface and sits partially in front of the old retaining wall. The wall (which we'll discuss in much more detail in an upcoming issue) sits atop the original pool's bond beam, and we wanted to keep it as a key architectural feature. We could have lowered the wall to reduce its visual weight, but instead we raised the level of the spa to make the space seem less confining. In addition, the back wall of the spa itself is 17 inches thick – a comfortable seat that will give us a generous surface for showing off the spectacular tile we'll be using.

The spa itself will have 16 jets, with eight for back therapy, four calf jets and four floor jets for foot massages. These jets have been set up on two separate manifolds with two booster pumps and two blowers – one system for the back jets, the other for the calf and floor jets. I use two systems to add flexibility to the jet settings: Splitting the function of the jets in this way enables the homeowner to enjoy multiple jet effects.

With the booster pump on, for example, the user gets a light application of hydrotherapy action. Kick on the blower and it's much more active. With 3-inch suction lines moving the maximum amount of flow, we're able to create a great deal of turbulence – again, giving the homeowner a variety of massaging effects from subtle and soothing to dynamic and active.

By the way, I love foot jets and build them in for clients whenever I can. After all, one of the best things in the world is a good foot massage, and what could be better for enhancing the spa experience?

– D.T.

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*By
William
Rowley
&
Scott
Mackey*

A New Oasis

Photo by Justin Levesque — Sierra Vista Herald





The Sierra Vista Aquatic Center is a dream come true for a remote desert town with just 35,000 residents: The brand-new facility includes an unusual competition/wave pool along with an array of other features typically found only in more populous areas. In this feature, William Rowley and Scott Mackey of Rowley International describe what it took to create a facility that's already transforming the lives of the town's young – and young at heart.



it's one of those places you really have to see to believe. Part indoor waterpark and part competition facility, the Sierra Vista Aquatic Center is owned by the town of Sierra Vista, Ariz., a desert community of approximately 35,000 retirees and military families located near the sprawling Fort Huachuca army base. That's about 50 miles south of Tucson – and about as remote as a town can get.

Known locally as “The Cove,” the aquatic facility represents the town's commitment to its citizens' quality of life and a nod to the potential that recreational water has to transform a community. From start to finish, the project took about four years and cost about \$6.7 million, all paid for by the city.

Designed by Tucson architect Scott Rumel, the basic facility was built by Lloyd Construction under the management of construction supervisor Leon Davis. Tucson pool builder Mark Ragel of Patio Pools set up the various watershapes, while our firm, Rowley International Inc. of Palos Verdes Estates, Calif., took care of the aquatic design and engineering.

The facility opened in February 2002 and in its short life has already hosted a number of swim competitions and offered hundreds of families a wonderful place to exercise, play and relax. It's truly a unique facility – one that is sure to enhance the lives of thousands of athletes and local residents who'll be passing through its doors for years to come.

MULTIPLE USES

From the start, the city leaders who spearheaded the project were intent on squeezing as much flexibility and functionality as they could into the design – no small challenge considering the modest budget with which they'd started.

They wanted it to accommodate competitions and provide a place for children of all ages to play. They also wanted it to provide a hydrotherapy resource and swim time for the town's large population of retirees. And all of these functions were to be housed in a natatorium not much larger than those with much less ambition.

The central feature at The Cove is a 25-yard, eight-lane competition pool separated from a sprawling, fan-shaped, beach-entry pool by a submersible bulkhead. When the bulkhead is raised, the rectangular pool can be used for competitive or lap swimming, while the beach-entry area simultaneously serves the needs of those who want to wade, soak or splash.

The real action starts when the bulkhead retracts into the pool floor and a four-chamber wave system generates surf that flows the length of the main pool before lapping onto the beach. The main pool's capacity of 425,000 gallons makes for some real excitement as the waves pass through the 10,500-square-foot pool and head for the shallows.

Added fun comes from special areas set up around the facility, including a small shipwreck-themed slide that transitions from the beach area into a large shallow pool housing an 8-foot-high umbrella that doubles as an interactive waterfeature. Next to this “kiddy area” is a 750-square-foot hydrotherapy pool. Outdoors is a diving pool equipped with a pair of one-meter boards and a three-meter board.

Finally, there is a 120-foot waterslide tube to one side of the indoor facility that uses 6,300 gallons of water. Users gain access to the slide on the inside



The key to the pool's multi-function performance is a long, movable bulkhead that rises from a position flush with the pool floor to cut the main vessel in two. With the bulkhead up, the facility is ready to host competitions and/or lap swimming. With the bulkhead down, the vessel becomes a wave pool that pushes water the length of the main pool and up onto the fan-shaped beach entry.

The scale of the bulkhead itself is impressive, as could be seen when it rolled up on a stretched flatbed (A). Well before that day, the slot had been prepared (B), complete with a circulation system designed to keep water from stagnating. With the bulkhead lowered into place, work on the rest of the main pool continued in both directions (C).



of the facility, but the slide itself coils outside the building before dumping sliders into an indoor splash trough. The slide is made of a translucent blue material to enhance the indoor/outdoor experience and features automatic motion sensors that signal when the flume is clear and when it is in use.

The entire facility covers 36,000 square feet and includes beautiful offices, locker rooms and sprawling decks. The building's exterior is finished with blue and green tiles and stucco in a tasteful, modern style. The roof is fitted with skylights and the sides are mostly sliding-glass doors that take advantage of the bright desert sun and warm temperatures. All that glass also allows for spectacular views of the surrounding mountains.

PROGRAMMED FOR PEOPLE

We at Rowley International were brought into the project in 1998, and the process was fairly typical. We went through all the initial phases, including preliminary design, schematic design, design development and construction documents, before shifting gears into the bidding and construction phases. In all, the preliminaries occupied about two years, with another two years devoted to construction, debugging and, finally, the grand opening.

We were in luck in all stages because the Sierra Vista facility is loosely based on an aquatic facility in Lake Havasu City, Ariz., that offers a similar range of functions and features. The architect consulted with the officials at Lake Havasu City about adapting some of the multi-use features in Sierra Vista



and so had a much clearer idea of what was involved than he would have had without such a model.

But there were also some key differences between the two facilities. While both feature indoor wave pools, Sierra Vista also has an outdoor diving pool as well as a shallow-area configuration not found in Lake Havasu City. Those distinctions aside, where the Lake Havasu City precedent most came into play was in helping the Sierra Vista team streamline the process of programming for the new facility. This process involved the parks and recreation department and local school officials as well as persons representing local retirees – and each group had sets of needs it wanted met.

One result of this process, for example, was the inclusion of a large therapy spa fitted with an enormous access ramp to ease entry and egress from the warm water. It also resulted in placement of the therapy pool adjacent to the kiddy-pool

area so that parents and grandparents relaxing in the warm water could keep their eyes on small children playing nearby.

The kiddy area also drew lots of programming attention that led to installation of both the water umbrella and the shipwreck slide. At 18 inches deep, this play area is connected physically to the larger beach area, so when the wave machine is operating there's a small amount of residual water movement that adds interest and a bit of excitement to all-out child's play.

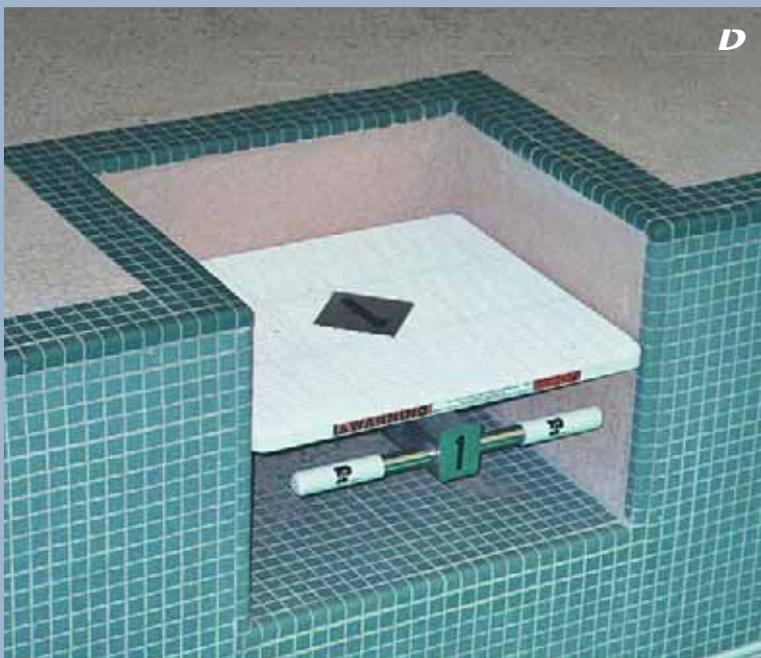
When you consider all of the programming details, from the water effects to the locker rooms, concession area, office facilities and sprawling deck areas, the city has created a marvelous facility on a shoestring budget. And they're not finished just yet: A second waterslide was designed into the project but was set aside because of fiscal constraints. It may take a while, but everyone's confident the second slide will be installed and operational within a few years.

A Submersible Boundary

Separating the beach area from the competition pool is a highly unusual submersible bulkhead. It disappears underwater into a cavity flush with the bottom of the pool so as not to create any obstacles for the wave-generating system or suffer any damage as a result of the wave action.

Built by Natara Corp. of Indianapolis, the system is something like a submarine in that it contains a series of ballast tanks that are filled with pressurized air from a nearby 24-horsepower compressor. When filled with air, the bulkhead rises on its runners and is locked into position. When the air is released through a valve box on the nearby decking and the chambers are flooded, the bulkhead slowly lowers itself back into its niche in 12 minutes.

– W.R. & S.M.



The fact that the main vessel functions as both a competition pool and wave pool made for some unusual configurations in the gutter system and in the way we set up diving platforms and other fixtures. With the pool's side walls raised to contain the waves, for example, the diving stands had to be inset below deck level (D). And to avoid obstructions along the side, ladders had to be recessed into the walls (E).



FULLY EQUIPPED

There's a lot going on inside this facility, a fact that motivated us to design high-caliber systems to keep it all operating efficiently for years to come.

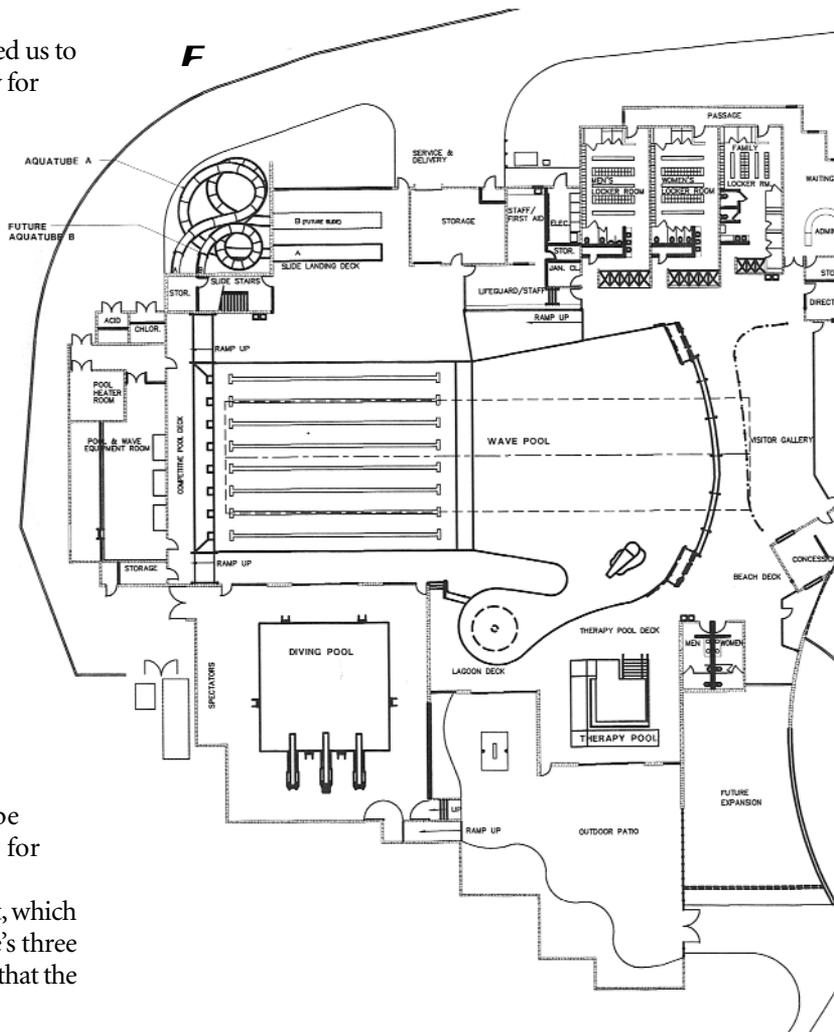
The water, for example, turns over every five hours through 12-inch plumbing at safe, easy flow rates of 6 feet per second. A grated gutter system in the main pool features a distributed array of drain locations (for safety), and there are multiple in-floor returns.

The water itself is polished by 11 high-rate sand filters made by USFilter and treated with liquid chlorine delivered to the site by Hasa Chemical. The water is monitored with Strantrol ORP controllers, and Lochinvar was our source for two gas-fired heaters that crank out 2.9 million Btus between them.

None of the above is unusual for large aquatic facilities, but because the competition pool doubles as a wave pool, there are certain atypical design elements.

For starters, the submersible bulkhead (described in the sidebar on page 35) is unlike any such unit we've ever been involved with. It required, among other things, unusual construction of the pool floor to create its niche as well as placement of special drains in the niche to prevent stagnation of water beneath the bulkhead. In addition, a flat shelf in the shallow end of the pool adjacent to the bulkhead's location was set up so the bulkhead can be moved aside. This feature allows ready access to the niche for cleaning.

The competition pool ranges in depth from five to eight feet, which isn't all that unusual, but because of the wave function, there's three feet of freeboard *above* the waterline to deck level. This means that the



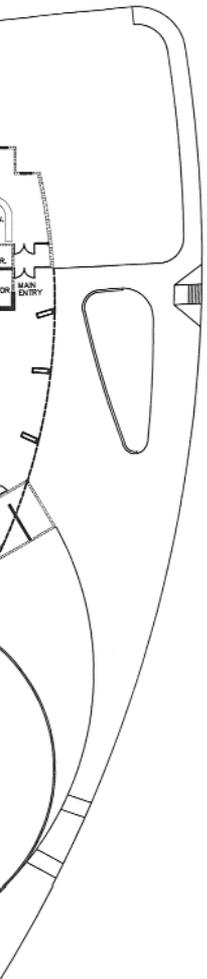
Making Waves

The wave-making system, supplied by Great Wave of Ashland, Ohio, consists of four large fans that push air into four chambers located below the starting blocks in the competition/wave pool. The chambers are full of water when the pool is static; when air is forced into the chambers, the water is suddenly and forcibly displaced into the pool via special grates located at the bottom of the deep end's wall.

The system is programmable and can be used to create eight different wave patterns according to sequences of air being forced into and out of the four wave chambers. The wave forms as the pool's depth rises from eight to five feet and then dissipates, fanning out onto the beach entry at the far end of the pool.

—W.R. & S.M.





The facility indeed has something for everybody, as this schematic overview shows (F). With the bulkhead down, a set of chambers just beneath the diving stands use air power to make the waves (G). The rolling motion carries water and bobbing bathers the length of the pool before fanning out across the beach entry – with a little side channel transferring some of the wave action to the kiddy pool (H). Within eyeshot of the kiddy pool is the hydrotherapy spa (I), wrapped in a ramp designed to carry wheelchair-bound bathers into the water. On the opposite side of the facility, older kids congregate at the waterslide.

The entire facility, indoors and out, is absolutely the product of its community's desire to meet the needs of all its citizens, young and old – and to do so in such a way that they can all come together in one space at one time.



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When you consider all of the programming details, from the water effects to the locker rooms, concession area, office facilities and sprawling deck areas, the city has created a marvelous facility on a shoestring budget.

starting blocks for racing (which need to be 30 inches above the waterline) had to be recessed into the pool wall.

It also means that the gutter system, so essential for competition swimming, had to be grated in order to prevent injury from limb entrapment during wave-machine operation. The gutter is unique also in that it stops and starts around the pool at the location of ladders that were inset to avoid protrusions into the pool that might pose hazards during wave-pool operation.

Ultimately, this means that we had to create a manifold behind the gutter system to connect the gutter segments and hydraulically balance the flow through the system. We also used traditional skimmers in the kiddie area because of the shallow water depth, which saddled us with a hybrid set of hydraulic features that all had to be aligned for flow into a main chamber that was upsized to compensate for sudden surges from either bather load or wave action.

KEY COLLABORATIONS

Clearly, executing the construction of a facility of this complexity took a great deal of cooperation and coordination among the architect, the general contractor, the city, the watershape contractor and our firm.

It bears mentioning that we were fortunate in working with Mark Ragel and crews from Patio Pools of Tucson and with Tom Guifrida from Patio Pools of Sierra Vista. They were brilliant in devising on-site construction solutions for tricky issues, including the forming and building of the niche for the bulkhead, the installation of the extensive plumbing system and the layout and rigging of the equipment rooms.

We also appreciated the professionalism of Leon Davis of Lloyd Construction. Despite problems with equipment and material deliveries as well as hurdles set up by late changes made by the architect

and the city, the general contractor was able to keep the project moving and on schedule.

The cooperation we received from city and state building officials in plan review and approval phases is also something for which we all were grateful. Given the unusual nature of the facility and the variety of its programming needs, access issues and safety considerations, the many inspectors who came on site to review our progress were both efficient and cooperative.

In all our years of designing commercial aquatic facilities, it's safe to say we've never been involved with a project that called for working so many activities into such a compact space with so tight a budget. We are very pleased to have been part of the project – and satisfied to know that the wonderful people of this remote desert community will have a tremendous place to relax, exercise, compete and play for generations to come.

Why Outside?

A number of people have asked why the diving pool was installed outdoors when everything else is accessed from inside the Sierra Vista Aquatic Center. The answer is simple: It was done that way at the request of the city to keep the ceiling height down.

With the diving pool outdoors, it was possible to keep the ceiling height of the natatorium at 24 feet. If the diving area had been set up indoors, that height would have needed to jump 10 feet higher – a necessity that would have busted the budget.

So now, the diving pool is accessed through several large sliding-glass doors off the pool deck. The diving boards are located on the south side of the 40-by-40-foot pool so that the sun will never shine right into divers' eyes.

– W.R. & S.M.

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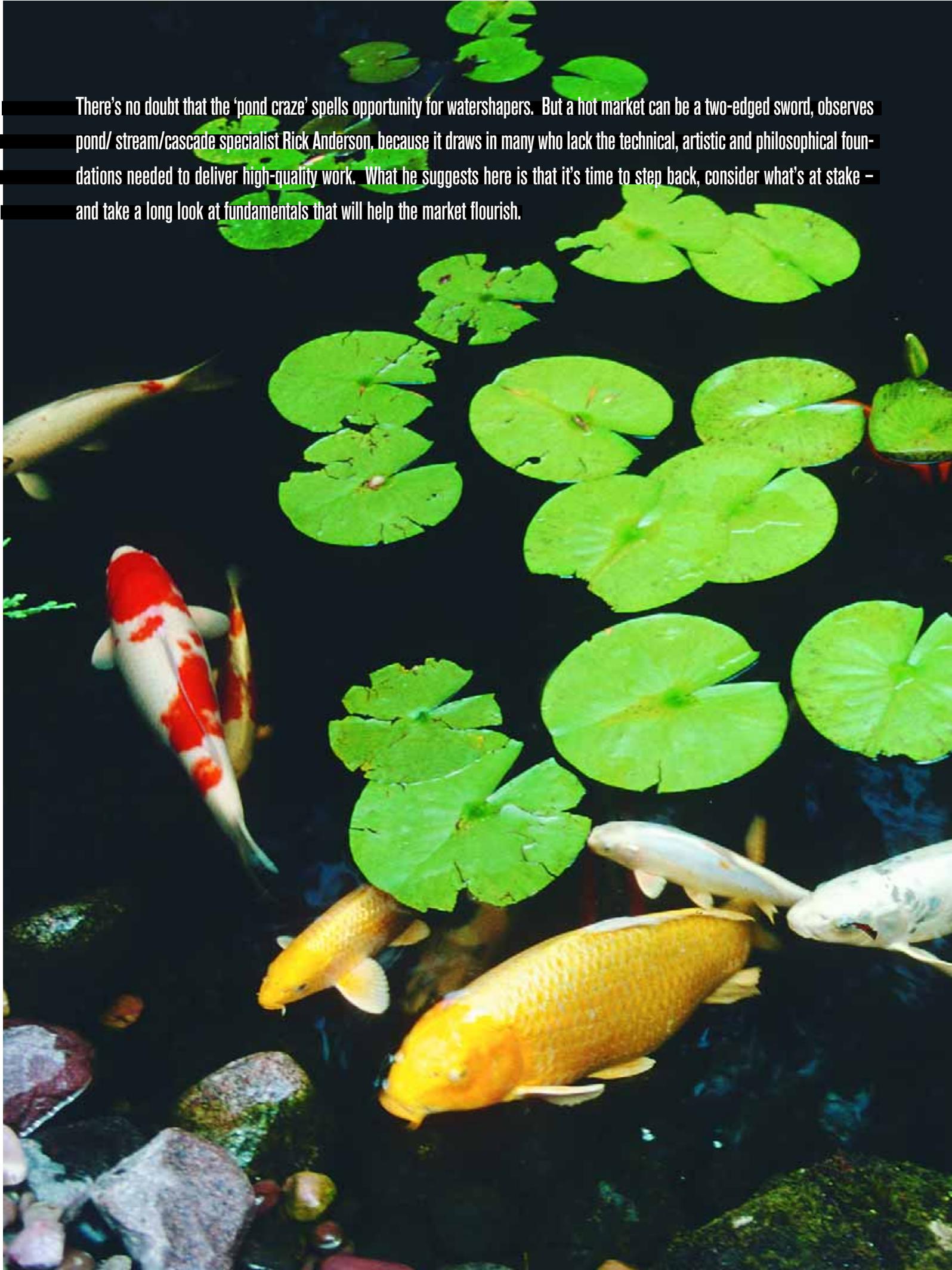
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There's no doubt that the 'pond craze' spells opportunity for watershapers. But a hot market can be a two-edged sword, observes pond/ stream/cascade specialist Rick Anderson, because it draws in many who lack the technical, artistic and philosophical foundations needed to deliver high-quality work. What he suggests here is that it's time to step back, consider what's at stake – and take a long look at fundamentals that will help the market flourish.





P
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Perfection

By Rick Anderson

“If we did all the things we are capable of doing we would literally astound ourselves.”

– **Thomas Edison**

The watergardening business has exploded in North America in the past few years – so much so that it’s easily the fastest-growing segment of the water-shaping industry.

This wave of interest in naturalistic watershapes means that hundreds of people new to the craft of pond and stream building are now out there, working on all sorts of residential and even a few commercial projects. Some of these are landscape contractors working with water in a significant way for the very first time. Others are pool contractors who’ve taken up watergardens as a new sideline. I’ve also heard about pool technicians and gardeners who’ve set aside their t-poles or lawn mowers to get in on the trend.

And it *is* an easy business to get into, with the result that quality is all over the map. Some of these watergardeners are good and a handful are truly excellent, but others are not so good, and far too many are doing truly horrendous work of the sort that says bad things about the future of the entire marketplace.

If there’s a silver lining, it’s the fact that so many watershapers have jumped in without giving much thought to what’s really involved in the work that it’s easier for those of us who focus on quality to make headway: It means that you can become the market leader by distinguishing yourself for excellence in design, construction and service – which is the subject of this article and a few that will follow.

Stepping Up

If you've read *WaterShapes* for a while, you know that this magazine brings much more to the table than how-to information and pretty pictures. At a more profound level, the magazine is about collective ambition: Most of us who contribute to these pages want to see others in the trade not only succeed, but also push their potential to its maximum.

Personally, that's what I want for every watershaper out there. I'm not writing this because I want everyone to rush out and start digging holes for backyard ponds or ditches for streams. Instead, I have the highest hope that those of you who step into the watergarden arena will do so with the idea that the best and only way to do it is to perform at the highest possible level.

I challenge you, in other words, to challenge *yourself* to create residential watershapes that are second to none. I want you to conceive and install ponds, streams and waterfalls that will be admired by your competitors and loved by your clients. I want you to elevate the art form

in your area and strive for greater and greater creativity and beauty. I want you to be so good at what you do that anyone competing with you has to get better and rise to your level just to stay in business.

To meet that challenge, you need to understand what's required. If you don't have complete command of the facts, you must know where to get the help you need with respect to specific technical issues and, ultimately, understand how to set up and encourage life-sustaining water systems that look clear and clean and are relatively maintenance-free.

Yes, this has already become a highly competitive field, but as I say, it's not the top-flight designer/builders who worry me. It's those who do inadequate and mediocre work – those who drive down the public's perception of natural watershapes by leaving their clients with ugly installations, impossible-to-maintain water and strings of sorry excuses.

You know the drill: One unhappy consumer tells the story to ten or more other consumers in a torrent of ill will that takes

"There is no such thing as perfection. But in striving for perfection, we can achieve excellence."

– **Vince Lombardi**

years and years to correct, if it indeed can ever be salvaged. But it's not hopeless at this point: The "pond craze" is still in its earliest stages, and if we act now, we all may be able to avoid the worst of the growing pains.

The Starting Point

The most important "first fact" I want to talk about is you and your people.

Any great pond design/build company must have a strong leader who knows that the only way to do exceptional work is to be passionate and learn everything there is to know. Never in the history of humanity has anyone left anything behind that's worth a damn if he or she was only putting in the time – and great natural watershapes are no exception.

If you're the person who calls the shots in your firm, you must have the com-



Studying the way things work in nature and having a sensitivity to the way rocks and plants appear in the natural terrain is crucial to designing and installing ponds and streams that seem to have been there forever.



To get things right in your projects, you need make your installation crews see things with your eyes – and with your own level of dedication to quality. That's the best way to ensure that a project such as this vanishing-edge pond makes the impression you want it to make.

mitment and determination to strive for greatness and true artistry, and only you know if that's inside you or not.

But no one is an island, and around you there must also be a team of dedicated installers. I was once asked if, as an employer, I had to be the most knowledgeable person in my company concerning pond building. The answer is no, not necessarily – but if the owner is *not* the guy, the achievement of excellence requires that someone on staff needs to be the power behind his or her throne.

As is true of all watershaping endeavors, pond building is often a trade of subcontractors and/or in-house craftspersons. As a company leader, you need not know everything there is to know about each and every sub-trade you hire, but you *do* have to be the person on the job with the greatest commitment to quality – a commitment that's so strong that others will be compelled to become part of that quality. And if you have a business that runs several crews, without question you'll need to have someone else on site who shares your level of knowledge, commitment, passion and pride.

If you run only one or two crews or do most of the work by yourself with one or two other people, then your hands-on knowledge of every aspect of the process

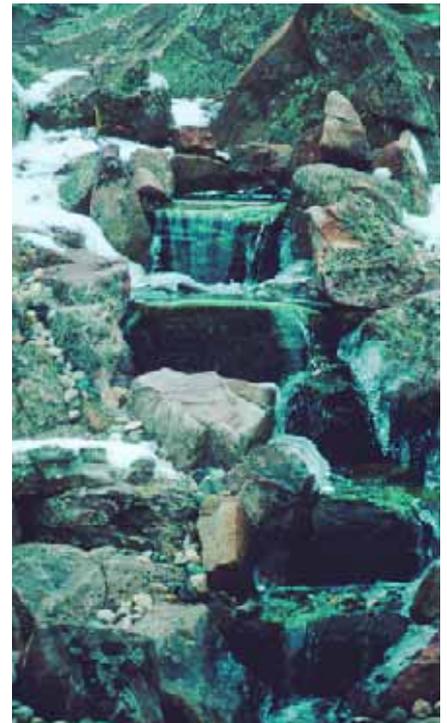
will need to be even greater. Whether your operation is large or small, in other words, the key to success is on-site management by a knowledgeable person who understands and is determined to deliver the desired results.

The point here is that, unless you are the sort of person who goes it entirely alone, people are your most important asset. It's an obvious point, but nonetheless is something that bears mentioning: I've seen a thousand or so pond and stream installations at various stages of completion, and I can tell, just by looking, that the workers in the hole or slinging the boulders are all too often regarded with little more concern than would be accorded a shovel.

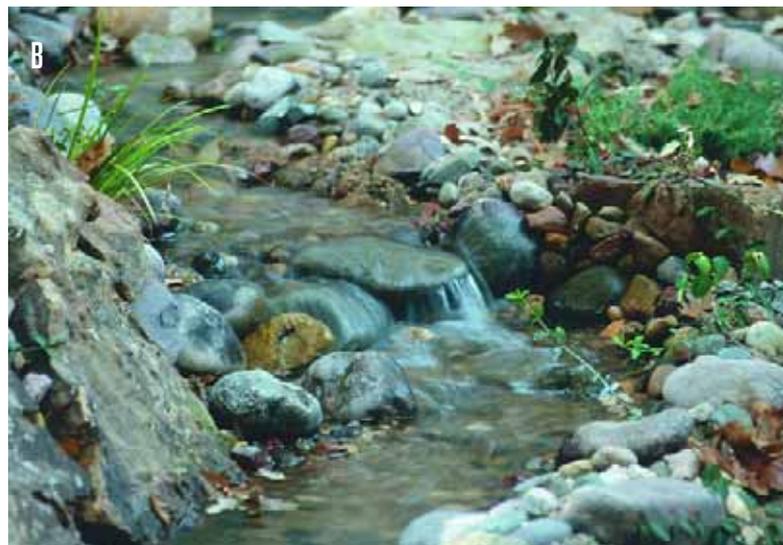
Regrettably, what I see too often is unskilled, uncaring labor led by supervisors with only partial knowledge of project parameters – and that's a huge, overwhelming problem. Your people want and need the right tools, the right training, and the right frame of mind. Most of all, they need true leadership.

Getting Ready

As you lead your company into the pond business, you need to ask yourself whether you and your staff are truly ready.



Looking at the big picture is a key success factor in pond and stream design. By placing extra stone outside the actual waterfeature, for example, you help *sell* the scene. Yes, it takes more time, effort and thought, but this is what you need to do to push yourself to a higher level – and raise the bar not just for yourself but for those around you as well.



While you strive for complete mastery of your art, you sometimes have to take what comes – as was the case in this project, where my client decided after I was gone that what the stream really needed was some lighting fixtures (A). I take satisfaction in the fact that the bollards disappear (B) when you take close-ups!

Are you all ready to dig the hole, roll out the liner, attach the skimmer and upper reservoir, fill it all in with rock and gravel, create waterfalls and streams, add plantings and leave the site clean and looking good? Can your team do it in a reasonable amount of time while leaving no leaks or tears in the liner?

Do you all understand the importance of watertight attachments, secure pipes and the small practical issues that can make a huge difference – things as simple as making sure not to lean shovels on the liner? Do you and your people know what's required in terms of plumbing, pumps, electrical connections and safety?

Do you and your people understand what is involved in designing and installing a truly *naturalistic* watershape? Do you know how to avoid a “volcanic” pile of rocks with unnatural-looking water being dumped from a pipe? Do you know enough to avoid the dreaded “necklace” of stones around the pond's edge? Do you even know exactly what the “dreaded necklace” is?

Looking at it from a more positive perspective, do you and your people have the ability to use stone in a way that is pleasing to the eye? Do you all know where or how to find, price, move, assemble and create with stone? What about aquatic and terrestrial plants? Do you know enough about fish to introduce them safely to that watershape you're making?

Suffice it to say, preparing to build great ponds means knowing a great many things, each of which is a large topic unto itself that deserves detailed examination and study. For now, however, let's get technical and set the scene by looking at what I see as the five most critical elements of a quality pond:

❑ **The mechanical skimmer:** In a pond, the skimmer housing contains a pump that generates the flow of water. Water is pulled in through the skimmer opening and surface debris is captured in a mesh “catch” that protects the pump from debris. The development of these mechanical skimmers has revolutionized the way we look at and build ponds, allowing us far greater system flexibility and serviceability.

❑ **Biological filters:** Biological filters are indispensable in ponds and other natural watershapes that contain plants and fish. These upflow filter reservoirs typically contain several layers of “bio-mats” and lava rock and offer watershapers a convenient means of managing water. They've also revolutionized the way in which ponds are serviced and maintained: Particulates are filtered out and colonies of beneficial bacteria develop, performing a range of natural chemical processes that are crucial to maintaining healthy living conditions for plants and fish.

❑ **Bacteria:** This the most misunderstood aspect of pond science. I'm not a microbiologist, but I have learned from experience that a healthy bacteria field in a well-balanced pond will deny algae its food source, rid the water of potentially harmful nitrates and lead to better water quality and clarity. Enzymes created by certain bacteria will prevent the formation of unsightly string algae.

❑ **Rocks and gravel:** If bacteria is the most misunderstood part of pond science, then the issue of rocks and gravel is the most controversial. I am among those in the pond business who argue that rock and gravel should cover the bottoms and sides of all natural waterfeatures. I'll discuss both sides of the issue in a future article, but for now, suffice to say that I've never see a stream or a pond in nature that has a liner showing.

❑ **Plants and fish:** To a large extent, the presence of living organisms is what gives watergardens of all kinds their natural charm and enduring beauty. What's needed is a proper mix of plants and fish stocked in balance with the size of the pond. There's a great deal to discuss here about the distinctions between designing for koi or goldfish, for example. In addition, pond builders need an understanding of submersibles, floaters, marginals, oxygenators and deep water plants – and we'll help by providing definitions and plant lists.

By properly applying these five technical essentials, you can build a watergarden of almost any size and keep it flowing



The fact of the matter is that modern pond and stream systems make it possible to create scenes that honestly mirror the real thing. What it takes to achieve this level of excellence is an understanding of what those manmade systems can do – and using them in ways that make our clients happy.

with healthy, easily maintained water. What's missing from this list (and something I've written about before in *WaterShapes* and will come back to again) is a sixth essential – the highly subjective, much misunderstood and hard-to-learn matter of *aesthetics*.

Set for Success

A step beyond anything you can do on

your own to set your company up for success and develop the fundamental skills you need to install great ponds and streams, you always need to consider the consumer's point of view.

This is doubly difficult in the case of ponds, because they're new and most homeowners don't know enough about them to ask the right questions or make well-informed decisions about what they

Listen Up!

As pond designers and installers, we can learn a great deal by paying attention to consumer complaints. In fact, it's often not until clients realize that they don't like something that we can truly determine what it will take to make them happy.

Consider the following list of common pond-related grievances:

- ❑ "My pond is too small." As highlighted in the accompanying text, consumers often say that if they had it to do over again, they would have asked for a larger body of water. As a guideline, you should build no pond smaller than 11 by 16. My favorite starter size is 12 by 19.
- ❑ "My water is green." Nothing upsets homeowners more than poor water quality, which is why the five technical issues I describe in the main text are so important. These elements all work together to create desirable water conditions for plants, fish and (lest we forget) our clients.
- ❑ "I'm tired of cleaning the pump intake." You should never hear this remark again in your life if you are installing mechanical skimmers in which the pump is housed. With these skimmers, the intake is safe from debris.
- ❑ "My filter doesn't work." In this case, the customer is actually telling you that the pond needs some sort of up-flow filter and a good bacteria field as well as proper water circulation. Get rid of those in-line filters that are too small, complicate the plumbing, and need too much attention.
- ❑ "My fish are dead – or dying." As excited as your clients get when fish are introduced to the system, it's easy to see why they get so agitated when their new pets die. If you follow the "five essentials" defined in the accompanying article, you will have a healthy, balanced, chemical-free pond – which leads to happy, healthy fish.

– R.A.

want. (Too often, they only come to these realizations after the fact.)

There's one complaint you can count on: The big issue among new pond owners is size – or rather, the lack of it.

Typically, larger ponds are somewhat easier to maintain than smaller ponds, and they also can contain greater numbers of fish and plants. Although you should resist the temptation to oversize ponds to the point where they're out of scale with their surroundings, most experts say that upsizing a pond whenever possible usually yields the best results – and a happier clientele.

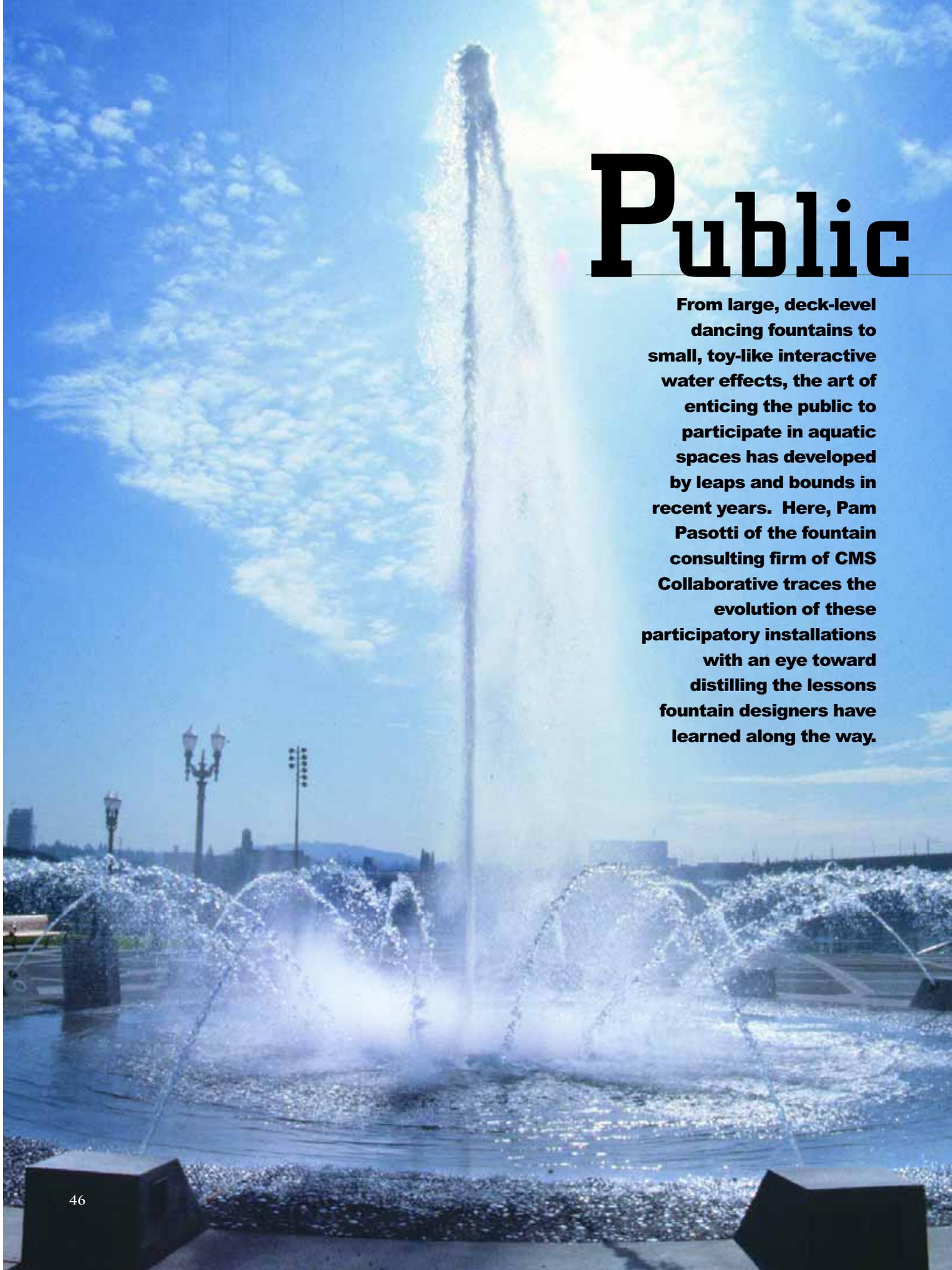
To apply some numbers here, I set a minimum size of 12 by 19 feet for my own ponds. At this size, the system can easily accommodate a nice waterfall of 2-1/2 or 3 feet in height that runs along the 19-foot axis. That span is important because it lets you develop decent berms to flank the falls on both sides – thus alleviating the aesthetic problem of the waterfall looking like a pile of rocks in the middle of the backyard. It also gives you the opportunity to build decent berms *behind* the falls and stream to lend a welcome sense of depth to the landscape.

If you step back and look at the seven factors we've covered here, from mechanical skimmers through to aesthetics and size, they all relate back to what the onlooker actually *sees* when he or she approaches your work. Great watergardens look great because the designer/installer has balanced the full range of critical elements to create great looking water that effectively mimics nature.

This article has been the first in a series about how I would like you to look at your methods of designing, creating and building ponds and other watershapes. When all watershapers reach for higher levels in how we do the work, we are all better for it. Michelangelo said it best: "The greatest danger for most of us is not that we aim too high and miss it, but we aim too low and reach it."

And *that* is what it's all about.

Next time: A closer look at the five technical essentials and what it takes to make ponds work well for the long haul.



Public

From large, deck-level dancing fountains to small, toy-like interactive water effects, the art of enticing the public to participate in aquatic spaces has developed by leaps and bounds in recent years. Here, Pam Pasotti of the fountain consulting firm of CMS Collaborative traces the evolution of these participatory installations with an eye toward distilling the lessons fountain designers have learned along the way.

Participations

By Pamela Jay Pasotti

People don't usually have trouble with boundaries and will honor requests to "Keep Out," for example, or leave certain doors to "Employees Only."

But there are also cases where we generally take issue with limitations on behavior whether stated or implied, and I can think of no better instance in which this takes place than with water in public spaces.

Despite designers' best efforts over the years to make it clear where bathers are welcome and where they are not, the public has steadily defied boundaries by trespassing into waters that were never directly designed for human interaction. In fact, you might say that formal, decorative fountains are a forbidden fruit from which many of us have taken the occasional bite.

During the past two decades, watershape designers have looked very specifically at the irresistible urge we have to touch water in an effort to shape all-new boundaries between public nuisance and design nuance. Along the way, we've learned which elements offer a deliberate, positive signal – a real "permission to play" – and are now wielding this power of interactivity to create and define a broad range of public spaces.

A Sense of Participation

CMS Collaborative works primarily with architects and landscape architects, participating in the conceptual design process as well as in producing mechanical and electrical contract documents for fountains.

For more than 20 years, CMS has been the consultant of record for architectural projects ranging from the monumental (such as the Getty Center's Gardens, The FDR Memorial and The National World War II Memorial) to more intimate, "participatory" displays in civic and commercial settings.

While most of the latter have been designed with direct and sometimes *obvious* invitations to interact, the way the public has actually chosen to participate has provided many surprises (and design lessons) through the years.

That learning curve has kept us on our toes for years now, and I've selected several CMS projects here to represent different points in the process. Before we get there, however, there are three generalizations we need to keep in mind:

- The most obvious indicator of a permission to play is a

zero-depth or deck-level surface. (It's not unhelpful that this is also a significant first step toward compliance with the Americans with Disabilities Act.) Where the water appears to emerge from and flow over the "same surface" as the surrounding pedestrian area, there are no perceptible physical or visual barriers.

We see these designs in many public spaces these days, and wherever they are, we see kids and even adults spontaneously interacting with the water. These fountains provide a natural gathering place for people, and the ability for parents to enjoy watching their kids play while they stand back and stay dry creates an environment where most everyone can enjoy the scene.

- The next clearest permission to interact comes with installation of a pathway or stepping pads over, across or along a pool area. Such pathways invite the public much closer to architectural or more formal waterfeatures than might otherwise be observed only from a distance. In the same vein, you can accomplish this by simply creating a seat wall around the waterfeature that allows people to dangle feet or dip hands into the basin.

Neither of these approaches offers as explicit a permission to play and interact as does a deck-level fountain, but nonetheless they signal to one and all that the ability either to get wet or to move into intimate proximity of the water is part of the design intent of the watershaper.

- Scale and the immediate venue are also fundamental when announcing the amount of participation you are encouraging. Formal designs, for instance, are usually less inviting from a *tactile* standpoint, and the larger and more "powerful" they get, the more imposing and forbidding they become (although one might find older kids or adults in these displays). Smaller fountains are by nature easier to approach, friendly in ways that grand fountains never will be.

To be sure, you can mitigate formality on any scale by setting up access points that encourage onlookers to come nearer, or you can set up a range of moving water elements that are visually engaging. This display sequencing and programming may not create a fully tactile environment with the largest fountains, but it can generate interest that pulls and sustains the viewer's interest.

Lessons



Photo by Perron Collaborative

Learned

Designer: Robert Perron, Perron Collaborative, Portland, Ore.
Project: Salmon Springs Fountain, Portland, Ore.

In the 1960s, the city of Portland, Ore., initiated a process of downtown urban renewal. As part of the project, renowned architect Lawrence Halprin designed several large displays – fountains that were not specifically intended for public interaction, at least not in the way that we now interpret it.

But that never stopped people from getting wet in them – and the city has been surprisingly permissive about it, considering that the fountains weren't designed for public participation and the risk of injury was perceived as being fairly high.

In 1985, Perron Collaborative was approached by the Portland Development Commission to design a new fountain for the main entrance to the Tom McCall Waterfront Park. Based on the city's experience with its existing fountains, Bob Perron knew the public wouldn't keep away – so he decided to encourage their participation.

As Perron says, "If people are going to get into the fountain anyway, let's give them the fullest possible experience within the budget and make it totally accessible to all abilities and desirable to all age groups. Let's make it part of the celebration of life, so people can feel permission to do what they want to do, as opposed to having to follow restrictive rules."

What the city got were tens of thousands of people enjoying the waterfront park and embracing Perron's fountain as part of their daily routines. Kids and their toys, bicycles, wheelchairs and dogs get in on the interactivity – and even the occasional bride and groom tie the fountain into their festivities.

Perron's approach includes an additional design layer that makes the urban interactivity even more interesting: The waterfeature is programmed to reflect the rhythm, mood and pace of the surrounding downtown area. At 6 a.m., the fountain starts its day in a quiet mode, shrouded in a low cloud of mist. At 7:30 a.m., as the work day ramps up the energy level downtown, the fountain comes to life with more active sequencing – and by 9:30 a.m. is in full swing.

The fountain is programmed to provide a distinct "event" every half hour that reflects what's going on around it – the lunch hour's bustle, for example, or mid-afternoon calm, the return of rush hour, or after-dinner playfulness. At 12:56 a.m., one last vertical geyser from the center jet signals bedtime, at which point the fountain shuts down – as though gathering energy for a new day's exertions.



Photo by Randy Shelton

From the start, the design for Portland's Salmon Springs Fountain was about inviting the public to get involved with the water. Beautiful and imposing enough to be thoroughly enjoyed from a distance, it's also a delight for anyone who doesn't mind getting soaked.



Photo by Perron Collaborative

A Point of Civic Pride

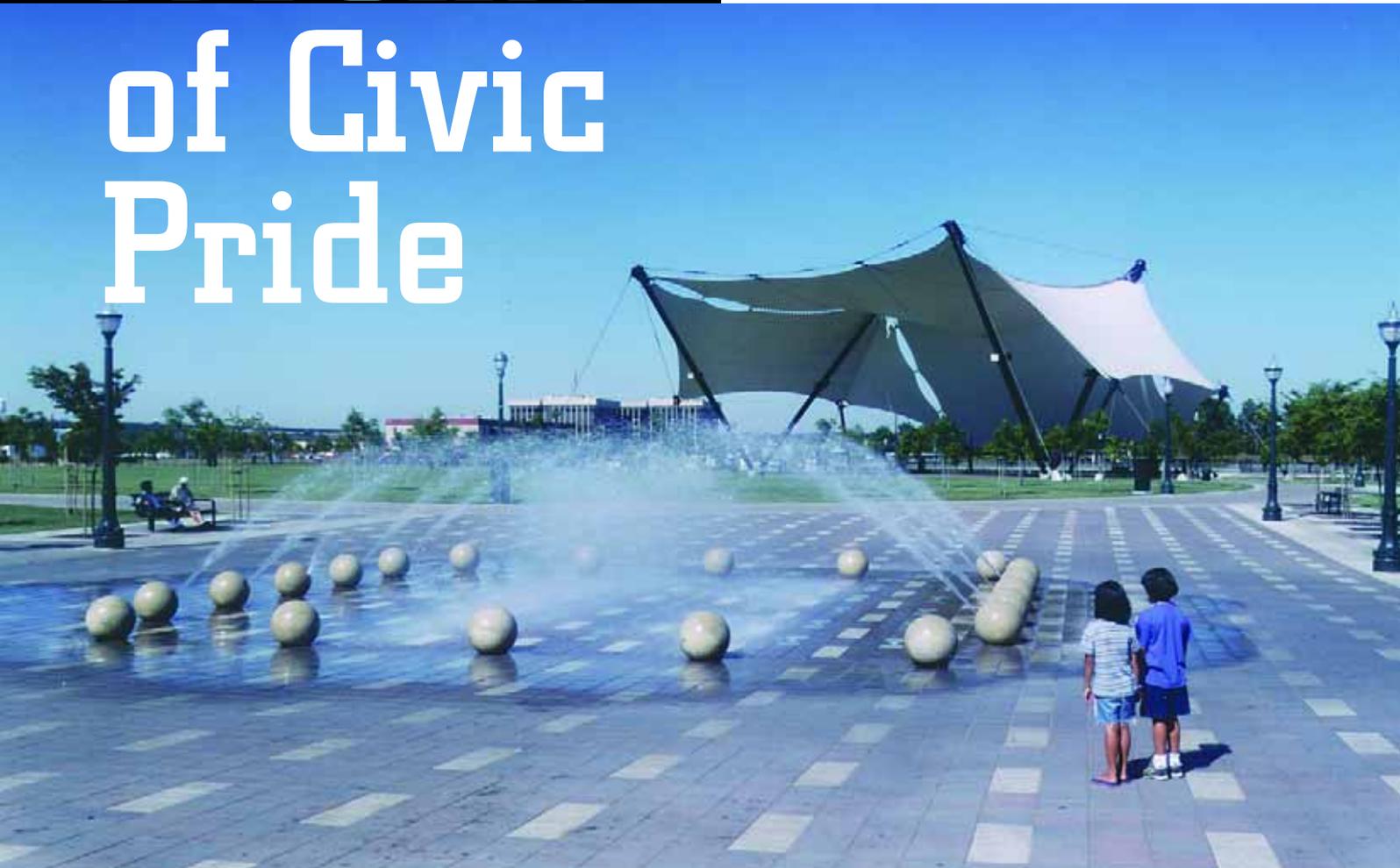


Photo by Mark Schwartz

Even its designers have been surprised by how powerful a magnet the Weber Point Fountain has been for the revitalized Stockton waterfront. Day and night, the fountain puts on a show that attracts visitors from all over the region.



Photo by Harold Holland



Designer: Manuela King, Royston Hanamoto Alley & Abey, Mill Valley, Calif.

Project: Weber Point Fountain, Stockton, Calif.

The city of Stockton, Calif., had spent years trying to revitalize its downtown area, but nothing had seemed to work. Ideas would fall through, key businesses moved on or failed, leadership would change hands – and the opportunities that emerged all seemed to lose momentum and get shifted to one back burner or another.

Finally, city officials took a big step and hired the firm of Royston Hanamoto Alley & Abey to develop a strategy for Stockton's entire waterfront – which most agreed was the key to a broader downtown revival.

All of the options the firm presented had one point in common: The intent was to lure the public to the site to see some sort of special feature at a central gathering place. Eventually, planners decided on a participatory watershape – a form of cool, free entertainment that would give people relief from Stockton's long, hot summers.

After design approval, however, the city hit a budget crunch and dropped the waterfeature from the project. Royston Hanamoto Alley & Abey strongly encouraged the city to find a way to include the fountain, arguing that it was *the* crucial ingredient needed to draw people downtown. After much wrangling, the mayor found the funding to proceed with the fountain – and a huge local success story is the result.

According to project designer Manuela King, "We knew how large we wanted it to be and that we wanted fog, vertical jets and arching side jets. We knew that we wanted the jets to range from low mist to a 10-foot vertical jet. Then we laid out a preliminary sequencing with about a 15-minute pattern programmed by CMS."



Photo by Harold Holland

What King, the design team and city officials didn't know, however, was just how compelling an attraction this sprawling fountain would be. It is indeed a magnet for downtown, and the entire merchant community benefits because visitors need something to eat and want to buy from surrounding businesses.

Harold Holland, the city's project manager and a strong advocate for developing the fountain, is especially pleased by the way the community has taken new pride in its waterfront. He says that the fountain "has been so popular that the city had to hire staff to watch over things and to keep people from being overly enthusiastic – such as too much running or jumping off the bollards, for example. We punish these and other 'inappropriate behaviors' with a 'time out.'"

"In three years," he adds, "there have been no major injuries, and vandalism has never been a problem. It's a peaceful sanctuary: Everyone's out to have a good time and nobody wants anyone else to ruin it."

Mixing It Up

We at CMS Collaborative have learned through the years that the setting has a lot to do with the ways in which interactive watershapes are used by the public.

The accompanying case studies show what happens when kids have access to the water, but the truth of the matter is that children aren't always a factor. Some years ago, for example, we assisted architects at Skidmore Owings & Merrill in the design of a large, sequenced display for a formal setting at London's Canary Wharf development.

The display runs through a number of interesting sequenced events, the pool is raised to seat-wall level above the plaza, and the site functions as a gathering place – but just about the only onlookers here are well-dressed businesspeople who wouldn't dream of running through an interactive deck-level fountain!

Those who visit the fountain are there to escape the confines of the surrounding office buildings, but few children ever come near – an absence that makes it difficult for adults to invent an excuse to jump in.

Nonetheless, the mist, the sounds and the simple opportunity to touch the water's surface provide an alluring connection to the natural world even for people too dignified to indulge the impulse to get wet.

This is a continuum of possibilities we've found fascinating in our design work. And it's made all the more interesting by the observation that, even though it is the demand for tactile contact that has driven the latest generation of fountain design, people don't really even need to touch the water to interact with it on a profound level.

– P.J.P.

A Spectrum of Possibilities

Designer: Bill Burton, Burton Landscape Architecture Studio & Gallery, Solana Beach, Calif.

Project: Irvine Spectrum Entertainment Center, Irvine, Calif.

The premise behind the development of the Irvine Spectrum Entertainment Center was to give the city a “town center” – something that had always been lacking in the city’s vast collection of planned neighborhood developments.

As befits that ambition, Irvine Spectrum is not at all a traditional shopping mall: Businesses face inward toward a central plaza, and the focus has always been on entertainment, including a 20-screen movie house as well as restaurants, game arcades and outdoor kiosks. (Now in the fourth of five construction phases, Irvine Spectrum is beginning to add more retail space – but is also adding a carousel and Ferris wheel.)

When the complex opened in 1998, the concept of a participatory fountain was relatively new, at least outside the context of a waterpark. And although designer Bill Burton could clearly imagine how such a fountain would fit into a retail/ shopping center or public park, he recognized quickly that the demographics for *entertainment* centers skew to a younger and much more energetic set of patrons.

As Burton puts it, “We wanted the fountain to be an invitation,” he says, “but we didn’t realize it would be such a big one!” Early on, in fact, not-unreasonable concerns were voiced about rambunctious behavior that centered on the fountain. The arrival of parents with children dressed in bathing suits was another surprise, and the sheer intensity level of play on the part of older children was a legitimate safety issue.

The kids were having lots of fun, for example, climbing on top of the squirting turtles and diverting the arching water onto the sidewalk and café patrons. The original design offered spout trajectories that were more aesthetically pleasing, but reducing the flow of water from the turtles helped keep the peace.

Similarly, it was noted that although the fountain’s surface met minimum friction co-efficiency standards, the designers weren’t anticipating that anyone would be taking flying leaps in the area. There were a few minor injuries before it was thought to place a few large planters strategically around the perimeter of the fountain to block the running starts.

There was one last (and critical) change to the designers’ original intent: The fountain was designed with a zero-depth entry because the management wanted to be able to turn off the fountain and use the plaza to host special events – meaning that cars had to be driven over the area. It was soon apparent that the fountain plaza would never be used in this way, as it had already become far too valuable as an interactive playground – and the social heart of its community.



Photo by CMS Collaborative, Inc.



Entertainment has always been the order of the day for visitors to Irvine's unofficial town center, and young kids have taken a particular shine to an interactive fountain that's just the right scale for their lively brand of fun.



Photo by Tom Lamb

Photo by CMS Collaborative, Inc.



Safety First

Safety and common sense are watchwords when it comes to designing participatory fountains. Here's a safety punch list we at CMS Collaborative follow on all projects:

❑ **Stream height:** Solid stream jets are great for moderate heights and velocities, but for greater heights, the use of aerated jet streams creates a robust visual effect while delivering less of a physical punch.

❑ **Slow build:** Sequenced jets that reach up to eye level should ramp up slowly rather than burst on with a surprise.

❑ **Surface features:** Keeping jets flush with the surface and minimizing hole diameter to under 1-1/2 inches will limit catch-points. And even in pools with standing water, suction fittings or sumps or transfer fittings need to be carefully considered: Anti-vortex or other fittings protruding from pool floors can injure feet, so flush sidewall fittings are preferable if you expect people to jump in the pool. In addition, any suction fitting cover must be absolutely secure and vandal-proof. (In many cases, we set up redundant and permanent barriers *behind* a surface cover or grating to be on the safe side.)

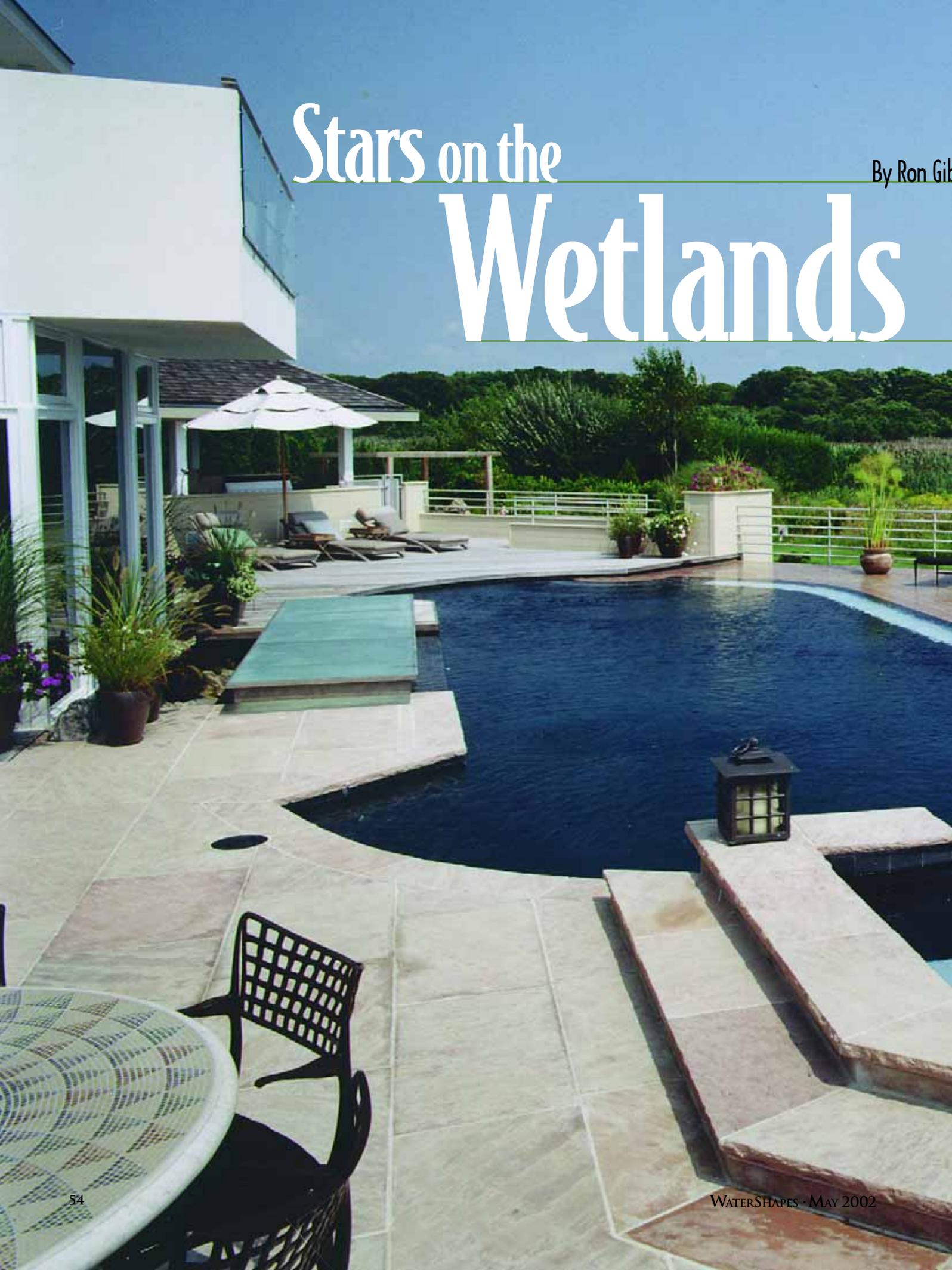
❑ **Electrical safety:** Underwater lighting must strictly follow the National Electrical Code and all relevant local codes. In addition, fountain fixtures in zero-depth pools should be mounted below a surface lens or grating to prevent direct contact with the fixture. (There are now several approved submersible/dry fixtures approved for fountain use that work well in this sort of situation.) And even though they are legal in most fountain installations, we *never* specify freestanding fixtures with exposed underwater cords.

❑ **Public safety:** As with any standing water, you must be concerned with toddlers who might drown and must be certain not to impede lines of sight of those who are supervising their children. As is true with any public water, you also have a potential health problem with bio-waste. As a result, we often set up fountains with recirculated, treated water – along the lines of public swimming pools.

– P.J.P

Stars on the Wetlands

By Ron Gib



bbons

If there was ever a project that underscored the notion that 'backyard swimming pools' aren't what they used to be, this one by Ron Gibbons Swimming Pools of Islip Terrace, N.Y. is the perfect choice: Built with a dizzying range of functional and aesthetic features, the project was the combined effort of a client whose budget and ambitions were well matched with the talents and resources of a gifted designer/builder.

It was one of those projects that demonstrate just how beautiful and exciting swimming pools and spas can be.

The clients started by asking for something unique that would make creative use of lighting, hydraulics and sound – something that would maximize and extend the modern styling of their home while making the most of spectacular views available along the shore at Westhampton Beach, N.Y.

Their confidence in our capabilities and creativity set the tone for the entire project and let us step well beyond the ordinary in our thought processes. This trust was in fact the cornerstone of a great relationship, and the positive rapport between all parties that developed as a result was crucial in bringing everything to completion.

The result is one of the most fascinating amalgamations of design features and details I've ever seen. It's not every pool that deserves to be called a work





The furnishings on the far side of the pool are actually standing on a fully wetted beach entry that flows to the vanishing edges. Not only does this give bathers a cool place to relax, but it also brings out the depth and rich colors of the Misty Rose stone decking and provides fantastic reflections for those lucky enough to take a seat in the spa.

of art, but we think this one exemplifies what can happen when you literally “reach for the stars.”

Anything and Everything

In dimensional terms, this is just your average backyard swimming pool. It measures an unspectacular 900 square feet in surface area and has a depth varying between 3-1/2 and 8-1/2 feet.

In every other way possible, however, this is one for the record books. By the time the design was complete and the plans had been approved, the project included the following list of appointments:

- ❑ A 700-square-foot wet beach area covered in a Misty Rose stone and featuring its own in-floor cleaning system
- ❑ A 60-foot love seat with soft, waterproof, translucent cushions
- ❑ A raised spa that includes a cascade pump, dual booster pumps, a computer control system and dedicated filtration and heating
- ❑ A sheet waterfall over a stainless steel weir beneath a glass bridge

- ❑ A five-sided vanishing edge off the beach entry with lighted stainless steel rails riding above the edges

- ❑ A custom, nearly invisible trough/gutter system and surge tank

- ❑ Dual filters and heaters and an automatic high/low pump control

- ❑ A polished marble dust interior

- ❑ Underwater speakers.

Then there’s the topper for the whole deal: 2,250 fiberoptic point lights set in the pool floor and spa benches to mimic a starry night sky.

When you add it all together, it’s an elaborate blend of form and function that’s tailor-made for a beautiful high-end home finished in cedar siding with huge windows overlooking the pool. The beach areas and the illusion created by the vanishing edges enable the homeowners to lounge in cool water during the summer while enjoying spectacular wetlands vistas that surround the property.

Wet Ground

Of course, this *is* property set among the

marshy tidewaters of Long Island, so the first step in the construction process involved dewatering the site. To that end, we set up an array of 6-inch suction lines around the site to gain control of the ground water.

The trick here was containing the discharge water, which could *not* be pumped into the nearby bay or into the protected tidal wetlands that surrounded the property. Instead, we used a pair of 2-1/2-horsepower pumps to transfer the water into aboveground concrete rings installed over gravel bases. These rings temporarily contained the water, enabling us to build the pool while staying in compliance with all local environmental codes.

With the water table more or less under control, we excavated the pool and the footings for the outer wall of the structure. The cage we set up used big steel – lots of 1-1/2-inch bars. This was interlaced with a fairly complex circulation system, piping for the underwater speakers and the cascading waterfeature as well as a fully loaded spa.

All these details were time-consuming

Water flowing over the vanishing edge doesn't cascade into the conventional trough. Instead, it flows down walls clad in Misty Rose stone and into a custom gutter system that directs the flow to a 1,100-gallon surge tank.

enough on their own, but when you consider what was involved in setting more than 2,000 fiberoptic lights in the floor (see the sidebar on page 58 for more information), it's easy to understand why we set up the dewatering system to function efficiently for several weeks as we prepared to shoot the pool with gunite.

The beach entry also took lots of time and effort, mainly because it also served as the main stretch of vanishing edge at its outer edge. It's supported by poured concrete walls that extended to below-grade footings 12 inches thick at the frost line. A now-submerged gunite slab spans the gap between the outer edge and the pool's bond beam.

At the base of the vanishing-edge walls, we installed a custom gutter system that directs the flow over the edge to a 1,100-gallon surge tank via gravity-fed, 6-inch PVC lines.

Locating the surge tank proved to be one of the most difficult parts of the job. Because of the high water table, we had to locate it at precisely the right elevation: Too high and the gravity feed wouldn't work; too low and the tank would float

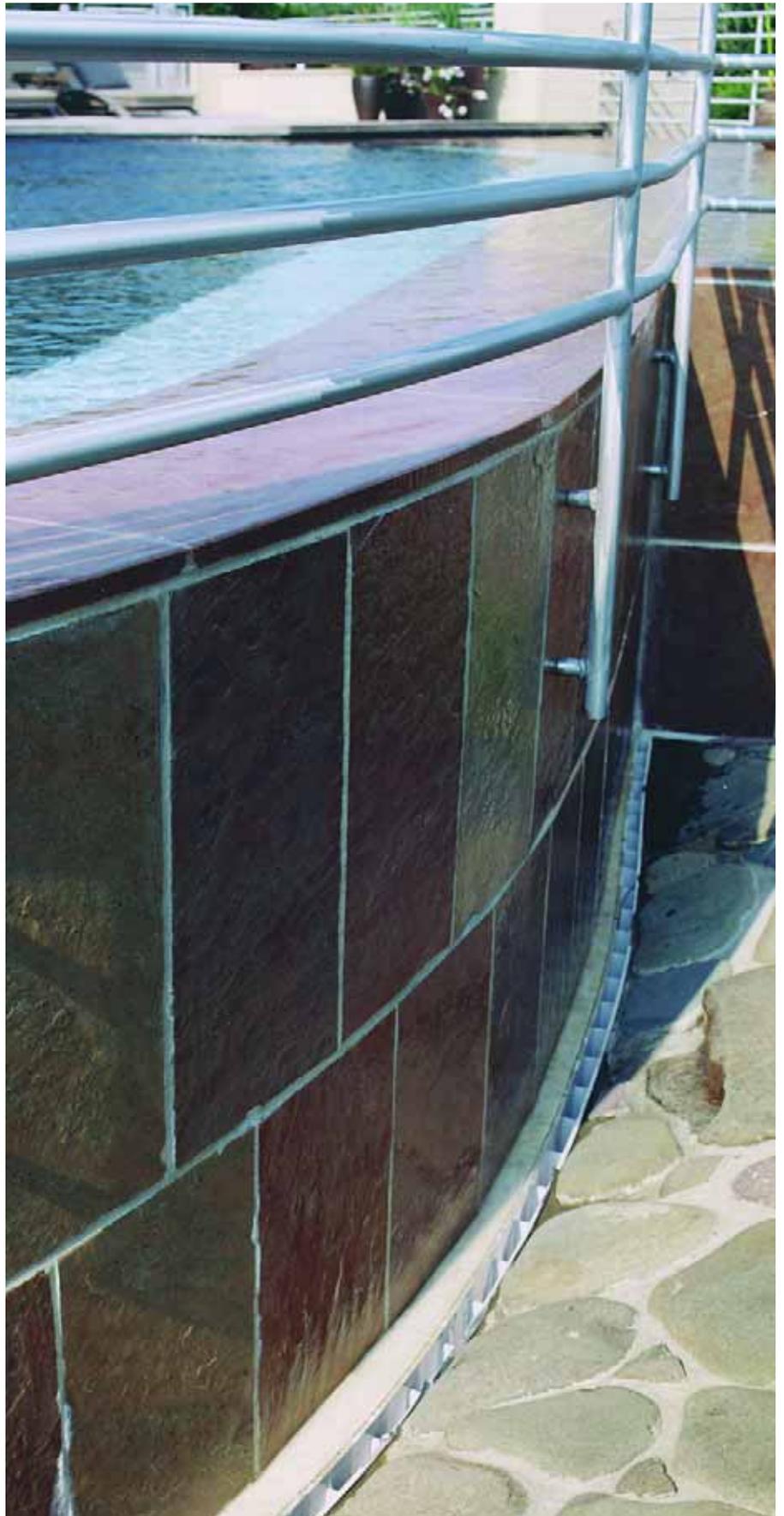
Spa Magic

No expense was spared in creating a state-of-the-art spa for this project.

In addition to the fiberoptic lighting described elsewhere, it also includes eight whirlpool heads, two booster pumps, a blower, spa-side remote controls and benches covered with translucent cushions.

As you sit in the spa, there's a beautiful view of the surrounding wetlands, complimented by rich reflections across the wet-beach area.

—R. G.



out of the ground on the subsurface water. It took a while, but we finally hit on just the right level and set the tank in place.

Key Details

Once the plumbing and lighting runs were in place along with the outer wall of the vanishing edge, the gutter system and, finally, the gunite shell, the project became a matter of dealing with layer upon layer of aesthetic detailing.

We started by installing Misty Rose stone on the outer facing of the vanishing edges, across the surface of the wet beach area and around much of the pool as its coping. This stone blended nicely with the beautiful (and durable!) teak decks that were to surround much of the pool. Because the beach area is four feet above grade, we also installed a Moderne-look stainless steel railing – lit with fiberoptics to add yet another unusual visual dimension to the project.

The interior surfaces of both pool and spa are custom blends of white Portland cement, marble-dust aggregate and three hues of colored crystal aggregates, all

hand-troweled into place around the fiberoptic lenses. Two days after plastering, we carefully buffed the surface with power sanders to expose the subtle blend of marble and these colored aggregates while leaving the lights as untouched as possible.

On the house side of the pool, a 6-foot-wide stainless steel cascade (made by Custom Cascades of Temecula, Calif.) directs a sheet of water out of the swimming pool. Surmounting this detail is a glass bridge that joins the main wooden decking area to the stone spa deck. The bridge itself is a thick, sandblasted glass whose soft, rich texture harmonizes beautifully with the materials on both sides.

The far edge of the pool is unusual as well. In fact, one of the most interesting features in a project filled with lots of interesting features is the set of translucent cushions used to increase bather comfort while sitting on the 60-foot love seat and spa benches.

These cushions are filled with the same saline mixture that's used to manufacture breast implants and are attached to the plaster surfaces using Velcro stripping



Lighting the Night

The idea of dotting the floor of the swimming pool with 2,250 fiberoptic point lights came right from the homeowners, and we were more than happy in helping them bring their vision to life.

They were so involved, in fact, that they mapped out placements of all the lights themselves, creating a pattern that's meant to appear as though stars are falling out from under the glass bridge and tumbling into the deep end.

The lighting system, which was provided by Fiberstars of Fremont, Calif., uses individual cables coated with epoxy to protect the fibers from chemical attack that might result from being directly mounted in gunite. The lenses for the system are generally about four inches apart throughout the pool, which required great care on our parts in the application of the marble-dust finish – especially during the polishing phase.

Once we were finished with the floor lighting, we moved onto the 60 fiberoptic lights located in the love seat and spa. These were standard lights, each installed in an inlet fitting, and every blessed one of them had to be plumbed, set and leveled. It was all very labor intensive, but we made it all happen on schedule.

In all, the lighting system includes 11 illuminators in four separate locations.

– R.G.





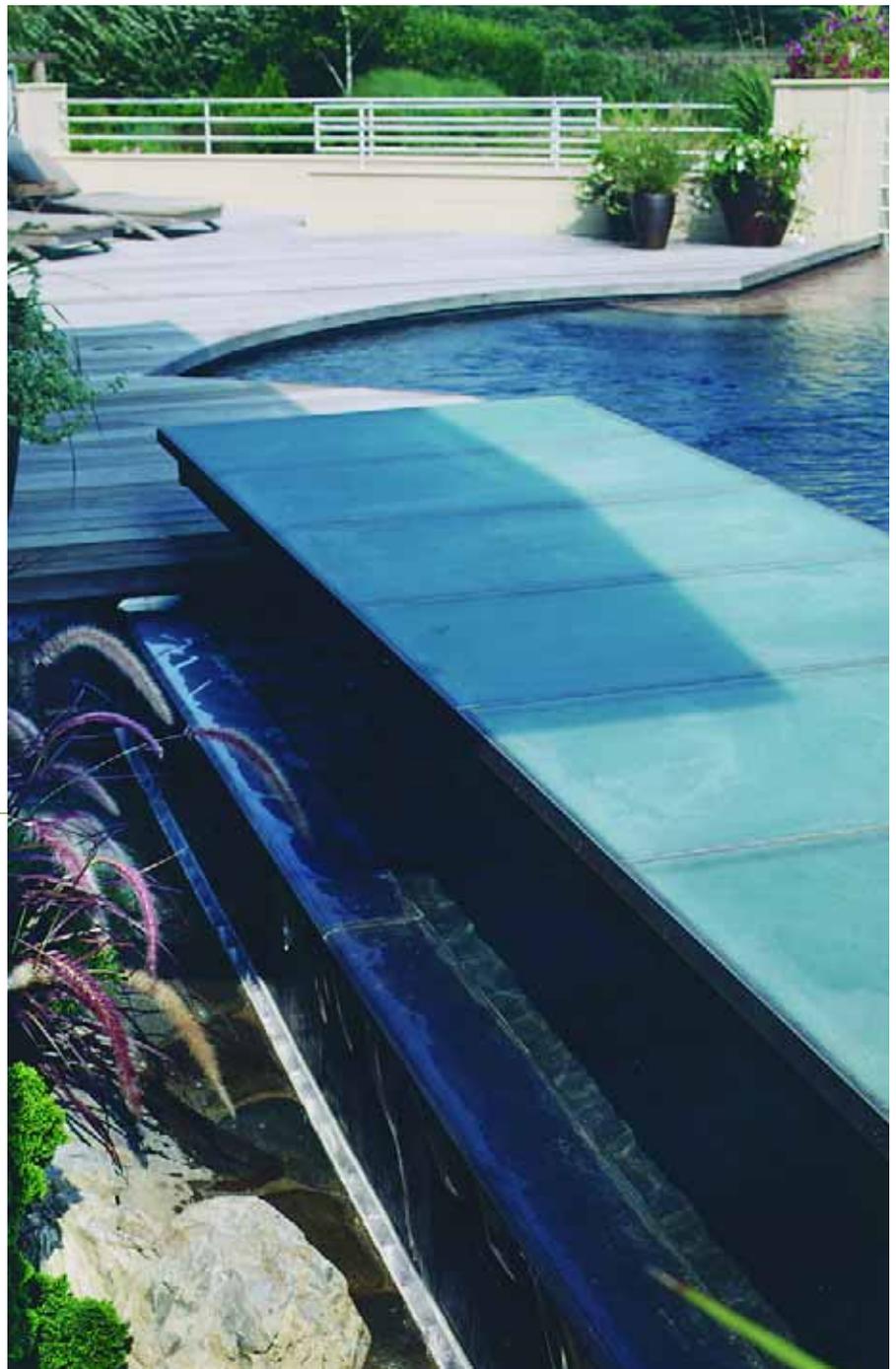
epoxied directly to the plaster finish. You notice these cushions at night in particular, when the fiberoptic lights shine through them and add a sense of surprise and novelty to the setting.

Finally, the pool includes two special underwater speakers installed in wet-niche fittings. This enables bathers to listen to music piped through speakers that surround the pool and decks: They can jump into the water and keep on moving without ever missing a beat.

Pride of Ownership

Obviously, it's not every day that you run into a client with so much ambition – and the budget to match. It simply wouldn't have worked if the clients hadn't been involved in the decision-making process from the start: Close communication and steady interaction were critical as we discussed all of these features and how they would all come together.

The results speak for themselves, and with no small measure of pride I must mention that the project won a Best of Competition medal and an Outstanding



Achievement Award in the Northeast Spa & Pool Association's design awards program and a Special Judges' Award in the National Spa & Pool Institute's national design awards competition.

It's all well and good to hang plaques on walls, but the true satisfaction from this project comes from knowing that we produced a truly beautiful watershape – and delighted our clients in the process.

This glass bridge is a favorite detail on a project filled with great ones. It provides easy access across the water while offering the perfect visual link between the large expanse of teak decking and the stone surfacing that reaches over to the spa and beach entry. The spillway tucked behind the bridge and next to the big back windows serves up yet another visual treat.

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February 1999 (Vol. 1, No. 1)

Tisherman on working in difficult soils; **White** on edge treatments; **Lacher** on expansive soils.

April 1999 (Vol. 1, No. 2)

Hopkins on designing with large rocks; **Hare** on basic hydraulics; **Straub** on shell curing.

June 1999 (Vol. 1, No. 3)

Phillips on water and decks; **Parmelee & Schick** on soils and geology; **Anderson** on water sounds.

August 1999 (Vol. 1, No. 4)

Anderson on stream design; **Adams** on community waterparks; **Gutai** on spa hydraulics.

October 1999 (Vol. 1, No. 5)

Holden on aquatic-design history; **Mitovich** on dry-deck fountains; **Tisherman** on site geometry.

December 1999 (Vol. 1, No. 6)

Finley on Japanese gardens; a roundtable on pools and landscape design; **West** on color rendering.

January 2000 (Vol. 2, No. 1)

Hart on designing for model homes; **Zaretsky** on retaining walls; **Chapman** on hydrid pool finishes.

February 2000 (Vol. 2, No. 2)

Hersman on lighting design; **Macaire** on faux-rock installations; **Andrews** on glass mosaics.

March 2000 (Vol. 2, No. 3)

L'Heureux on project management; **Long** on steel cages; **Forni** on installing and maintaining lakes.

April/May 2000 (Vol. 2, No. 4)

Schwartz on garden access; **Anderson** on stream-

beds; **Nantz** on watershapes and architecture.

June/July 2000 (Vol. 2, No. 5)

Holden on fountain-design history; **Bibbero** on large stones; **Anderson** on making streams work.

August 2000 (Vol. 2, No. 6)

Tisherman on basic shapes; **Lucas** on watershapes for wildlife; **Ryan & Medley** on the vertical axis.

September 2000 (Vol. 2, No. 7)

Davitt on designing for small spaces; **Altwater** on the importance of aeration; **Hetzner** on sheet falls.

October 2000 (Vol. 2, No. 8)

Lampl on natural design; **Anderson** on finishing streams; **Rubenstein** on kinetic water sculpture.

Nov/December 2000 (Vol. 2, No. 9)

Arahuete on John Lautner; **L'Heureux** on stretching laminar flows; **Benedetti** on satellite surveying.

January/February 2001 (Vol. 3, No. 1)

Holden on a retro-look design (I); **Fleming** on upscale approaches; **Gutai** on pump technology.

March 2001 (Vol. 3, No. 2)

Moneta & Farley on site-specific design; **Benedetti** on fiberoptics; **Alperstein** on golf-course water.

April 2001 (Vol. 3, No. 3)

Jauregui on inspired clients; **Dirsmith** on frosty fountains; **Tisherman** on deluxe finishing.

May 2001 (Vol. 3, No. 4)

Reed on sculpture gardens; **L'Heureux** on sequenced water; **Brandes** on restoring riverfronts.

June 2001 (Vol. 3, No. 5)

Winget on fun-inspired waterforms; **Holden** on survey formats; **Schwartz** on classic stonework (I).

July/August 2001 (Vol. 3, No. 6)

Rugg on pond basics (I); **Ruthenberg** on perimeter overflow; **Schwartz** on classic stonework (II).

September 2001 (Vol. 3, No. 7)

Rugg on pond basics (II); **Urban** on energy savings; **Pasotti** on interactive waterplay.

October 2001 (Vol. 3, No. 8)

Tisherman on hilltop views; **Hagen** on natural stream work; **Schwartz** on classic stonework (III).

Nov/December 2001 (Vol. 3, No. 9)

Straub on Kansas City's fountains; **McCloskey** on the Getty Center; **Tisherman** on Fallingwater.

January 2002 (Vol. 4, No. 1)

Phillips on Hearst Castle's watershapes; **Bower** on the Raleigh Hotel pool; **Roth** on Katsura Rikyu.

February 2002 (Vol. 4, No. 2)

Marosz on project integration; **Moneta** on spa-edge details; **Affleck** on sculpture and water.

March 2002 (Vol. 4, No. 3)

Holden on a retro-look design (II); **Morris** on wild water; **L'Heureux** on fountain lighting (I).

April 2001 (Vol. 4, No. 4)

Oliver on multi-level flows and transitions; **Gutai** on pump basics; **Dews** on hiding headwaters.

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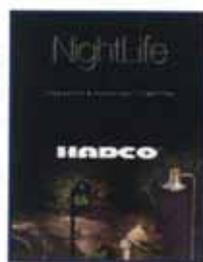


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LIGHTING CATALOG

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HADCO has published Nightlife, its catalog of commercial-grade landscape lighting systems. The 108-page, full-color booklet covers 12- and 120-volt systems and offers guidance in applications and lighting techniques before illustrating all of the products the company manufactures, including accent, step/deck, underwater, inground and path lighting as well as transformers and accessories. **Hadco**, Littlestown, PA.



WATERFALL SYSTEMS

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ROCK FORMATIONS offers literature on RicoRock structural waterfall systems. The 24-page, full-color booklet describes the basic waterfall system before featuring panel systems used to create a range of water effects from small, 3-foot waterfalls to much larger structures that incorporate slides or grottoes. The booklet also displays boulders, flat castings, veneers and custom-fabricating capabilities. **Rock Formations**, Fontana, CA.

FREEZE-PROTECTING CONTROLLERS

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INTERMATIC offers Freeze Sentry, a control mechanism designed to be used in conjunction with timing or switching devices to protect pool, spa, waterfall, fountain and waterfeature equipment and systems from freeze damage. The mechanism fits into control boxes and activates the pump and/or heater when the air temperature drops below a level set with a user-adjustable thermostat. **Intermatic**, Spring Grove, IL.




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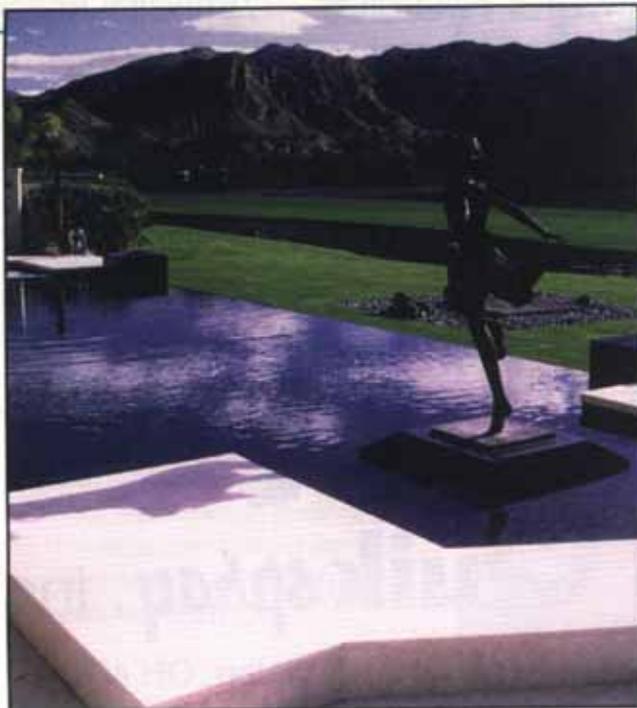
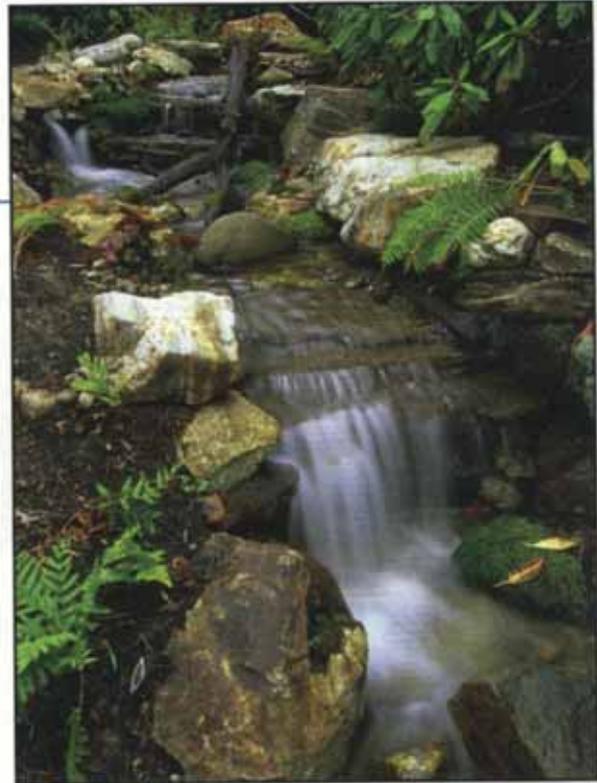
This fall, David Tisherman, Skip Phillips and Brian Van Bower are hosting two very special Genesis 3 events: The group's first-ever Pond School and the latest in the series of increasingly popular Level I Schools.

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Miami, Florida

Genesis Pond School

An in-depth exploration of the art and science of pond design, this program begins with an inspirational look at history by renowned designer Anthony Archer-Wills before moving on to discussions of practical issues of ecosystem management, biological filtration, concrete vs. vinyl lining and more. Open to all applicants, the course also features presentations on plants, water quality and the care and feeding of fish.



November 6-10, 2002

Morro Bay, California

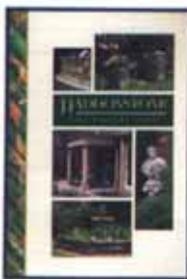
Genesis Level I School

The flagship school in the Genesis 3 program, this school focuses on design, engineering and construction of watershapes, drawing techniques and the Genesis 3 philosophy. Open to all applicants, this is the access point to advanced Genesis Family programs and demonstrates what it takes to operate at the highest level of expertise – including up-close and personal familiarity with the lifestyles of high-end clients.

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STONWORK AND GARDEN ORNAMENTS

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HADDONSTONE has published a 156-page, full-color catalog on its garden ornaments and architectural stonework. The catalog starts with information on the 31-year-old company, available finishes, materials of composition and custom services before detailing products ranging from urns, troughs, sundials and bird-baths to pool surrounds, fountains, temples, roundels, steps and coping. **Haddonstone**, Bellmawr, NJ.

PRE-CAST WATERFALLS

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URDL'S WATERFALL CREATIONS has introduced two new fiber-reinforced concrete waterfalls. Molded from natural rock formations, WF 16T and WF 22T are pre-cast with the appearance of granite and can be ordered in any of several colors. Designed for use with swimming pools or ponds, they come pre-piped

and with or without a submersible recirculating pump. **Urdl's Waterfall Creations**, Delray Beach, FL.

EIGHT-PORT CLEANER VALVE

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CSI-CARETAKER SYSTEMS introduces the Ultraflex fluid-distribution valve. Designed to assist the company's Caretaker 99 in-floor pool-cleaning system in cleaning more effectively and quickly than ever before, the valve features eight 2-inch ports and a programmable controller capable of operating cleaning systems with smaller pumps and shorter run cycles for greater energy efficiency. **CSI-Caretaker Systems**, Scottsdale, AZ.



LANDSCAPE LIGHTING SOFTWARE

Circle 107 on Reader Service Card

KICHLER LANDSCAPE LIGHTING has released imaging software for landscape lighting. The system allows for easy insertion of preset lighting patterns into landscape scenes to create realistic nighttime lighting effects. The company's entire fixture catalog is included, along with a voltage-drop calculator, on-screen tutorials, and automated generation of bills of materials and pricing. **Kichler Landscape Lighting**, Cleveland, OH.



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shower fixtures and artificial Queen, Cycas and Royal Coconut palms. The palms are roto-cast from live palms for a completely natural look. **Tropical Expressions**, Point Pleasant, NJ.

PEBBLE POOL FINISH

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ULTRA POOL COATINGS offers Pebble Plus, an attractive, durable, colorfast and chemical-resistant plaster mix for use in all types of swimming pools. Easy to clean and maintain, the finish is designed with a unique chemistry that en-

sures its physical and mechanical performance. It comes in six distinctive colors – White Mist, Sandy Coral, Ocean Blue, Black Pearl, Sea Breeze and Golden Reef. **Ultra Pool Coatings**, Woodbridge, Ontario, Canada.

JOINT SEALANT

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W.R. MEADOWS has introduced Sealtight Deck-O-Seal 150, a two-part, pourable joint sealant and self-leveling sealing

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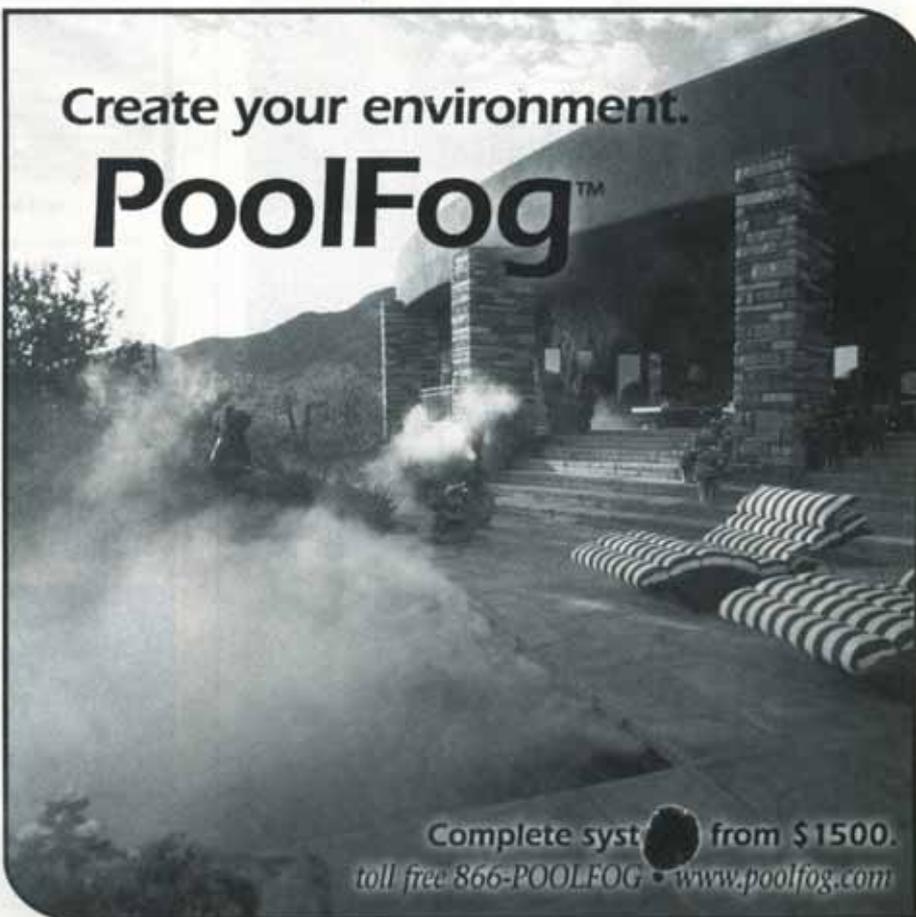
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DECORATIVE TREE GRATES

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NEENAH FOUNDRY CO. offers a complete line of decorative tree grates. Made of cast iron and designed with apertures that can be expanded to accommodate tree growth through the years, the grates come in square, rectangular and round configurations or in combinations of standard shapes. They are also available with removable sections so sub-grade lighting fixtures can be used. **Neenah Foundry Co.**, Neenah, WI.

FIBEROPTIC LIGHTING

Circle 112 on Reader Service Card



SUPER VISION manufactures fiber optic lighting systems for watershapes. Products in the line include underwater point lighting, perimeter side-glow lighting and a range of fixtures for the illumination of decks, waterfeatures and landscapes. The light emitters provide light in colors from subtle (Ocean Deep Blue) to intense (Lime Green) and can rotate through colors or be set to a favorite. **Super Vision**, Orlando, FL.

FILTER MEDIA

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NORTHERN FILTER MEDIA INT'L has published a booklet on its line of filter media products. Discussions cover the roles of anthracite media in turbidity reduction, diatomaceous earth in removal of particulates, filter sand in creating superior filter-bed characteristics, support gravel in setting the lower strata for filter beds and zeolite in the absorption of organics. **Northern Filter Media Int'l**, Muscatine, IA.



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DIVING BOARDS FOR RESIDENTIAL POOLS

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S.R. SMITH has introduced Glas-Hide diving boards. Made with cantilever stands for residential swimming pools, the 6- and 8-foot boards are designed for moderate to heavy use and feature embossed, acrylic-laminated skins that resist marring and provide slip-resistant, sanded tread surfaces for safety. The bases are powder coated for durability, and the boards come in white, marine blue and tile blue. **S.R. Smith**, Canby, OR.



INTERACTIVE PLAY FEATURES

Circle 117 on Reader Service Card



EMPEX WATERTOYS has announced the availability of Aquatons, whimsical waterfeatures specifically designed for applications with no standing water in which small children can interact with flowing water. The devices, which can be operated by sequencing controllers and come with a lifetime warranty against rust, have no moving parts and offer the simplest kind of interactivity. **Empex Watertoys**, Uxbridge, Ontario, Canada.

Uxbridge, Ontario, Canada.

BATTERY-POWERED METERS

Circle 118 on Reader Service Card

BLUE-WHITE manufactures the Digi-Flo F-1000 series of flowmeters. The battery-powered devices require no electrical hookups, feature corrosion-resistant sensors and come in three versions: a rate meter, a flow totalizer and a combined rate meter/flow totalizer. All units are calibrated at the factory, so no programming is required. The housings are made of weather-resistant ABS. **Blue-White**, Huntington Beach, CA.



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6633

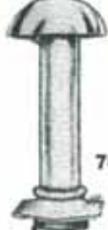


4742



6630

STANDPIPES



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HIGH-PRESSURE CONCRETE PUMP

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PUTZMEISTER has introduced model BSA 2110 HP-D, a high-pressure, trailer-mounted concrete pump specifically engineered to handle jobs extending up to 800 feet from pump to outlet. The unit features a 21.2 cubic foot hopper and runs at 3,190 psi to move a maximum of 143 yards of concrete per hour. The pump comes in diesel and electric versions and the trailer has heavy-duty tandem axles. **Putzmeister**, Sturtevant, WI.

COLOR WHEEL CONTROL

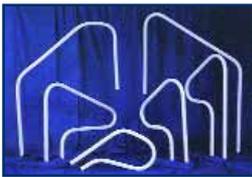
Circle 120 on Reader Service Card



PENTAIR POOL PRODUCTS offers SAmSTART, a system designed to work with Compool Cp3800 series systems to control the company's Spectrum Amerelite (SAm) pool and spa lights. The lights roll through an almost infinite number of color combinations or freeze on a preferred color. The new controller makes the process automatic, saving homeowners the bother of resetting the system. **Pentair Pool Products**, Sanford, NC.

POOL RAILS

Circle 121 on Reader Service Card



SAFRON offers pool rails in a variety of standard and custom colors. The non-conductive, rigid vinyl plastic is impervious to pool chemicals and UV degradation and will not pit, rust or ever need paint. The low-maintenance rails and matching fencing systems are always cool to the touch, come in a number of standard configurations (custom designs are available) and include six-year warranties. **Saftron**, Miami, FL.

TUBE SLIDES

Circle 122 on Reader Service Card



AQUATIC & SITE TECHNOLOGIES has added the Otter to its line of tube slides. Using the company's SafetyTube design, the system requires only three feet of water and features dual-level handrails to accommodate kids of all sizes. No water activation is required: A wet bathing suit does the job, making this semi-portable slide perfect for backyard or commercial pools. **Aquatic & Site Technologies**, Portland, OR.

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WATER SHAPES

MINI HYDRAULIC EXCAVATORS

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CATERPILLAR has introduced two compact-radius hydraulic excavators. The 303CR and 305CR deliver large working ranges (to depths of nearly 11 and nearly 13 feet, respectively), zero tail swing, exceptional versatility, ease of operation and serviceability. Both diesel-powered models feature a swing boom that enables the machine to dig and work against walls and other obstructions. **Caterpillar**, Peoria, IL.

TELESCOPING ENCLOSURES

Circle 124 on Reader Service Card



AQUA SHIELD makes enclosures for pools and garden rooms that open and retract on wheels and parallel tracks that run the length of a pool or patio. Available in high- and low-profile models for residential or commercial use, they run in widths from 10 feet to as much as 50 feet and in lengths from 14 feet up to 125 feet. Extruded aluminum arches hold the twin-walled polycarbonate glazing. **Aqua Shield**, West Babylon, NY.

LANDSCAPE LIGHTING CATALOG

Circle 125 on Reader Service Card



KIM LIGHTING has published a catalog on its 12- and 120-volt products for landscape applications. The 132-page, full-color booklet covers product design and offers product-family and application indexes before highlighting the company's comprehensive lines of accent, path and in-grade fixtures. It also offers a photometric guide and information on options and accessories. **Kim Lighting**, City of Industry, CA.

VALVES FOR POOLS AND SPAS

Circle 126 on Reader Service Card



FLO CONTROL has published a brochure on its line of check, air and ball valves. All units are made of PVC and come in a range of configurations with fittings and adapters that make them suitable for all applications. Several types are available with clear plastic bodies for easy inspection, and many feature removable bodies for easy inspection and cleaning. Valve screens and unions are also available. **Flo Control**, Burbank, CA.

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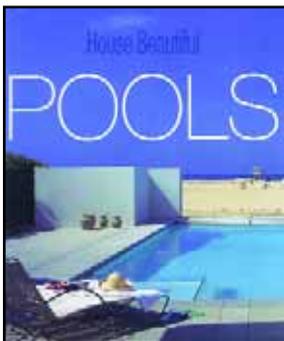
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Pooled Resources

Books dedicated specifically to swimming pools are of immediate and obvious utility to a great many watershapers. I've found valuable ideas from such publications through the years – despite the fact that much of the time their content is aimed at consumers rather than professionals.

One thing that has disappointed me in many of these pool-focused publications is that the pool industry itself is not very well represented. Instead, what you usually see is the work of landscape architects, architects and other designers. In many cases their work is beautiful and deserving of attention, but the general exclusion of the work of top-flight pool builders means that a great many of the world's finest watershapes are not to be found.

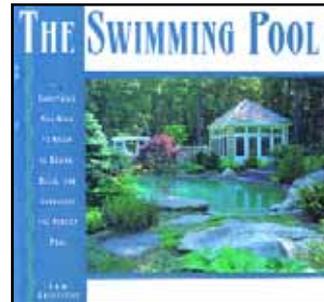
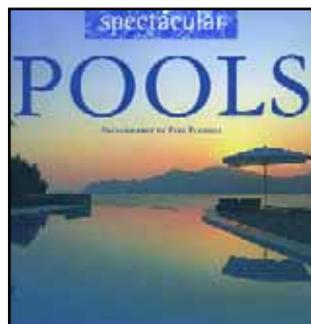
Despite this deficit, even a quick look at these swimming pool books yields interesting ideas and information:



☞ *House Beautiful Pools* (compiled by the editors of *House Beautiful* magazine and published by Hearst Communications in 2001) is a well photographed and illustrated book that does a nice job of covering a broad range of ideas having to do with how the chosen pools fit within their overall environments.

The text is broken into three sections: pools for swimming, which is mostly about rectangular and lap pools; garden pools, meaning projects surrounded by lots of planted material; and pools built primarily for entertaining, which are seen alongside cabanas, expansive decks and beautiful patios. The styles here range from natural to ultra-contemporary, and there's a nice geographic spread to the coverage.

☞ *Spectacular Pools* (written by Francisco Asensio Cerber and published in 1999 by Hearst Books International) divides its treatment of residential swimming pools into four categories: natural pools (a term used very loosely); pools with historical lineage (including Roman and Moorish touches); architectural water (meaning structures built within or close to surrounding architecture); and water geometry, which shows how balance, shape, symmetry and various other factors enter the design process.



☞ *The Swimming Pool* (written by Tom Griffiths and published in 1994 by Simon & Schuster) goes into the planning, construction and care of swimming pools. He includes

discussions of such factors as site selection, working with prevailing winds, dealing with sunshine and such basics as encompassing views, setting orientations and determining access.

There's lots of good information here about equipment selection and where to put it, drainage issues, finish choices and basic service and maintenance – sort of a handbook for prospective pool owners that's of benefit to designers who aren't as familiar as they should be with the working details of a swimming pool.

☞ *The New American Swimming Pool: Innovations in Design and Construction* (edited by James Grayson Truelove and published by Whitney Library of Design in 2001) offers 40 case studies of swimming pool projects designed by landscape architects. In each case, there's a discussion of the pool's basic specifications, materials, plantings, lighting and equipment – a good store of technical information supported by nice photography.

I'm a bit disappointed here by the fact that the book has an apparent bias toward rectangles, which if nothing else makes the book's subtitle a bit ironic. There are, however, some very nice projects here, including a few vanishing edges, a few indoor pools and some above-grade pools. **MS**

Mike Farley is a landscape architect with more than 20 years of experience and is currently a design/project manager for Leisure Living Pools of Frisco, 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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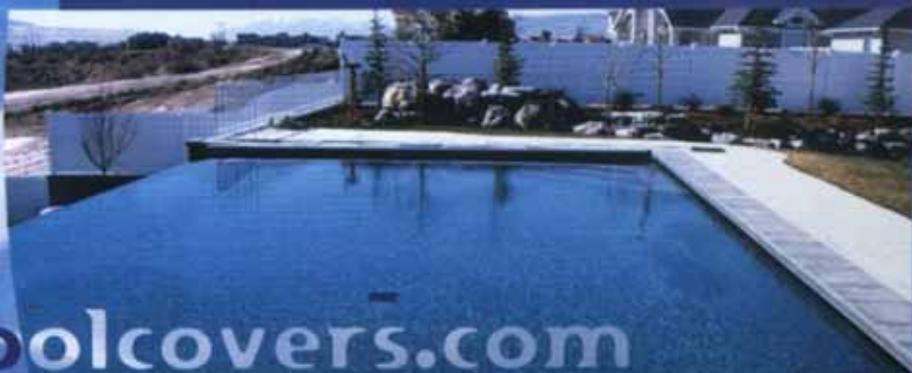
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