

Inside: Stephanie Rose on Ground Covers

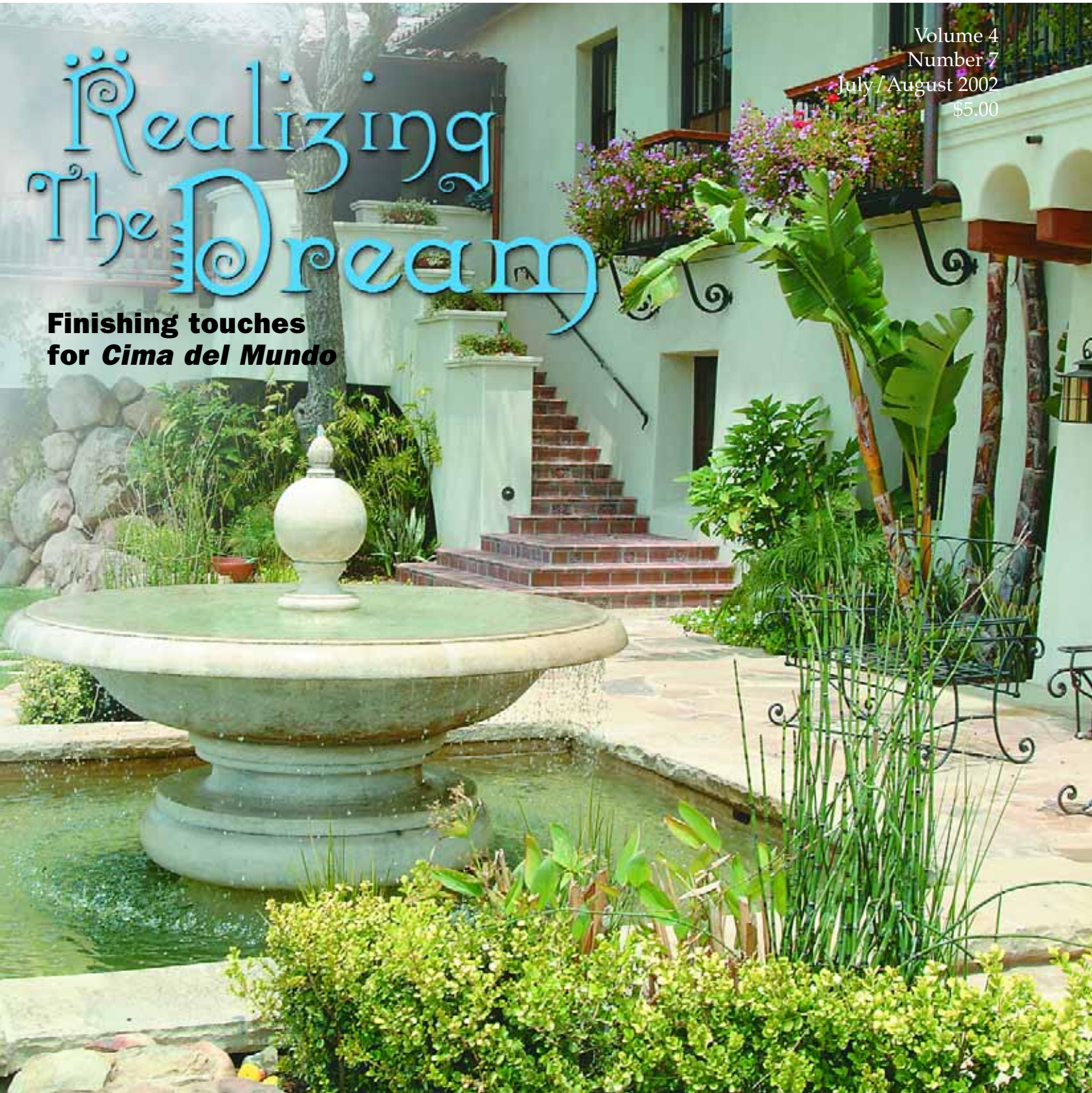
# WATER SHAPES

Design • Engineering • Construction

Volume 4  
Number 7  
July / August 2002  
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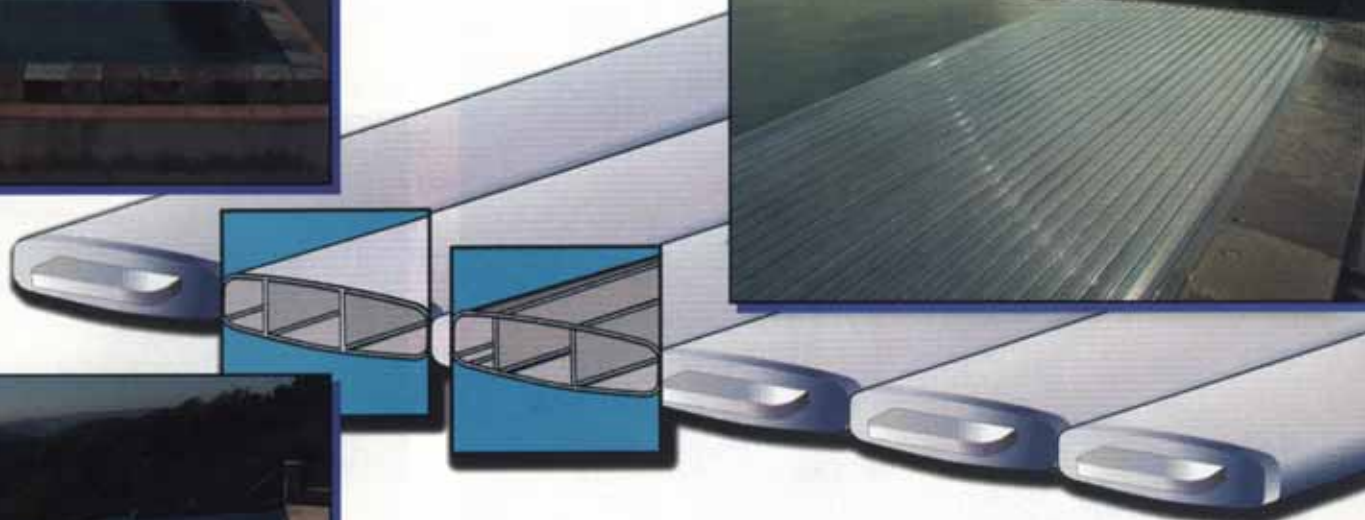


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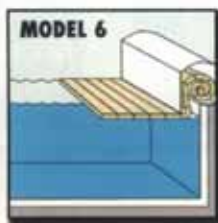
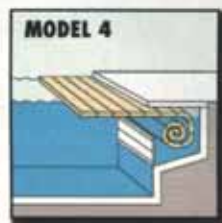
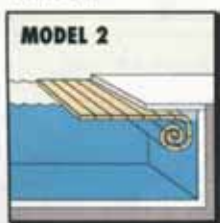
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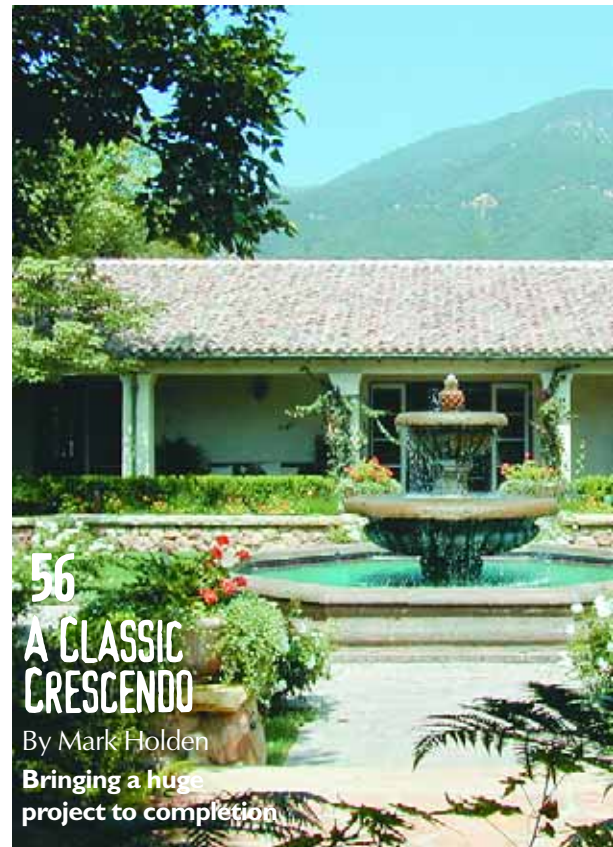
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## FEATURES

### 34 FIELD OF STREAMS

By Clayton Varick  
Imitating nature in  
a mountainous setting



### 56 A CLASSIC CRESCENDO

By Mark Holden  
Bringing a huge  
project to completion

## COLUMNS

### 6 STRUCTURES

By Eric Herman

**A role for passion  
in creating great art**

### 10 AQUA CULTURE

By Brian Van Bower

**Taking your  
act on the road**

### 18 NATURAL COMPANIONS

By Stephanie Rose

**Stabilizing slopes  
with ground covers**

### 24 DETAIL #19

By David Tisherman

**On drainage and  
controlling the flow**

### 74 BOOK NOTES

By Mike Farley

**A look at work  
beyond familiar shores**



10



18

24



## DEPARTMENTS

8 IN THIS ISSUE

68 OF INTEREST

70 ADVERTISER INDEX

70 OF INTEREST INDEX

**On the cover:**  
Photo courtesy Mark Holden,  
Earth Patterns, Fullerton, Calif.

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44

## CORE VALUE

By G. Bruce Dunn

**Quality, profit  
and mid-range pools**



## Right from the Start

Back in June 2000, *WaterShapes* publisher Jim McCloskey and I traveled to Montecito, Calif., to have a look at a project being installed by our friend Mark Holden. Just the drive up the long private road from sea level to the top of the mountain clued us into the fact that this would truly be something special.

Within minutes, in fact, we knew that *Cima del Mundo* would yield fantastic copy and images for the magazine. The classically inspired design was to include a luxurious pool and spa, elegant stone fountains and gorgeous landscaping – along with a level of period detailing so fine that it's uncommon even for projects at the extreme high end.

In many ways, Holden's work at *Cima* embodies exactly what we've always sought to explore in *WaterShapes* – water so expertly designed, engineered and constructed that it truly qualifies as a work of art.

In all, Holden has written three substantive features for us on the project, with the third and final article – a pictorial entitled "A Classic Crescendo" – appearing in this issue on page 56. You might notice that this grand finale is expansive even for a publication known for running heavily illustrated articles. It seems appropriate: There's so much to cover!

These beautiful images of *Cima*'s extraordinary watershapes and exterior spaces stand as a tribute to years of hard work and dedication to excellence. As Holden discussed in his previous two articles on the project (January 2001, page 32, and March 2002, page 30), the beauty that's now so powerfully evident was made possible only by precise execution of a detailed design program underpinned by rigorous site surveying, soils testing and structural engineering.

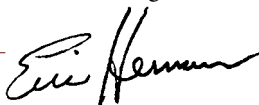
It was also possible only through his ability to apply classic design elements in a modern setting as well as his dogged on-site supervision of every aspect of the job – from the construction of the elaborate retaining-wall systems and the structure beneath the swimming pool to the painstaking procurement of appropriate hardscape materials and the precise placement of plantings large and small throughout the property.

In other words, the work at *Cima del Mundo* is the result of passionate professionalism at each and every turn.

Holden is the first to admit that he was fortunate to land such an enormous project and to work with a client who was uncompromising in his insistence on sublime beauty. But such luck, as they say, is the residue of hard work and of the fact that Holden has sought to elevate his craft at every opportunity. Indeed, this is a perfect example of how education in design and engineering, coupled with great care in the real-world application of construction techniques and technology, are not simply lofty ideals that make interesting fodder for magazine articles and columns. Rather, they are tangible realities that transform careers – and spaces large and small.

Certainly, you don't have to work on projects of this size and scope to walk on the high road toward excellence in watershaping, but you *do* have to work hard to make the marks of quality an indelible part of your business. When you follow the trails blazed by Holden and other leading-edge watershapers, the trophy projects are much more likely to follow.

While waiting for *Cimas* of your own, you watershapers who strive to improve your craft have the satisfaction of knowing that you're giving the work every ounce of your skill and talent. That's what "doing it right from the start" is all about – and is what has made following the progress of *Cima del Mundo* a rare delight.



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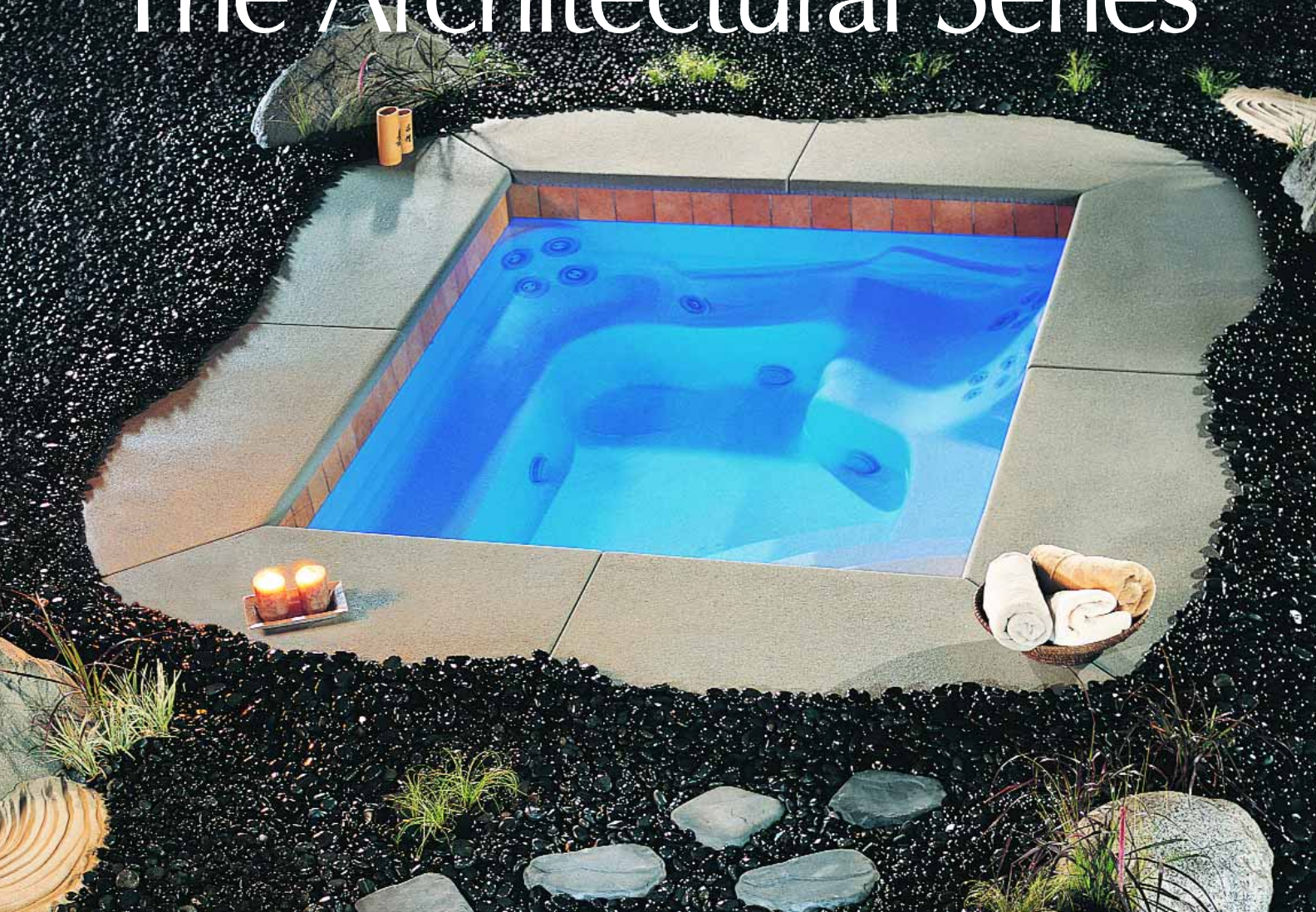
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**Clayton M. Varick** is a project manager with Land Expressions LLC, a landscape architecture and construction firm based in Mead, Wash. A graduate of Washington State University, Varick grew up in the landscape business and worked for his father's firm, S. Varick Landscaping, in Seattle. That experience, coupled with his bachelor of science degree in Landscape Architecture, has enabled him to progress quickly at Land Expressions. At 26, he is manager of the company's Water Division, where attention to detail and dedication to the work have made him a valuable member of the company team.



DUNN

**G. Bruce Dunn** is owner and president of

Mission Pools of Escondido, Calif., a swimming pool and spa construction firm with satellite offices in Salt Lake City and St. George, Utah; Temecula and Lake Forest, Calif.; and San Jose Del Cabo, Baja California, Mexico. He holds a Bachelors of Science degree in engineering and business from the California Polytechnic State University at San Luis Obispo (1971) and is a graduate of Harvard University's Graduate School of Business OPM Program (1992). Among his many business and community activities, Dunn has served as chairman and director of the International Master Pools Guild; as chairman of the California Swimming Pool



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Educational Council; on the board of governors for San Diego County's Boys and Girls Club United; on the advisory board for the San Diego Wild Animal Park; and on the boards of directors of two regional financial institutions. Established in 1960, Mission Pools employs 190 people and has built more than 11,000 pools, spas and waterfeatures for residential, commercial and municipal clients. The firm has won more than 800 industry awards for excellence in design and construction.

**Mark Holden** is a landscape architect, contractor, writer and educator specializing in watershapes

and their environments. He has been designing and building for more than 15 years and currently owns several companies – including Earth Patterns and his latest venture, HoldenWater, a water-oriented design/construction firm based in Fullerton, Calif. His businesses combine landscape architecture and pool construction, and he believes firmly that it is important to reach beyond traditional barriers between the two trades and get back to the age of the “master builders” as a means of elevating standards in both. Holden works toward that goal as an instructor for Genesis 3 Design Schools and also teaches at California Polytechnic State University in Pomona as well as other educational institutions.

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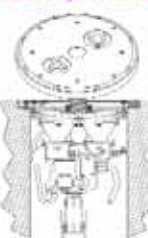
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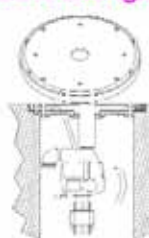
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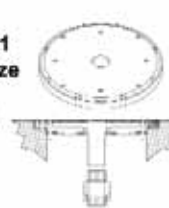
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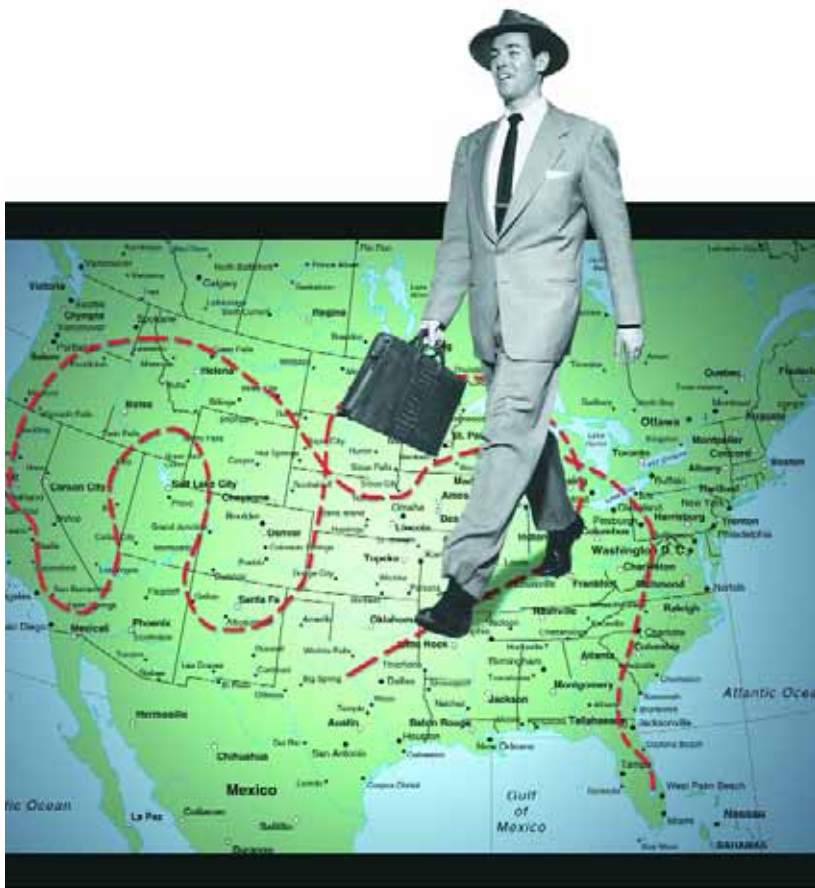


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## On the Road

**W**orking outside your home region is exciting stuff. It opens you to a broader and often more dynamic arena for doing business and lets you work with new sets of clients and their architects, landscape architects and designers. The projects are typically interesting and often unusual, and you can make a good dollar while reaping the personal benefits that come with travel to faraway places.

On the one hand, being in demand for long-distance projects represents a measure of success in your business and shows the high degree of confidence others are willing to place in your skills. The simple fact that clients are willing to pay you to fly to their hometowns so you can participate in their projects speaks volumes about you as a professional. On the other, however, playing the game at this level also comes with elevated expectations for your performance and a certain level of risk on your part that says you must be fully prepared to meet the challenge.

In other words, no matter whether we're talking about day trips by car or by plane, overnight forays to other parts of the country or even extended trips abroad, working "out of town" spells opportunity – but only if you're prepared to deliver the goods once you arrive.

### Travel by Design

Although the majority of my watershaping jobs are still within about a

**People ask me to travel not because they want me to drive a backhoe or shoot gunite; rather, they've seen my work or heard about it from friends and they want me to apply what I know in their backyards on a conceptual basis.**

hundred miles of my Miami home, the work I'm doing beyond local bounds is becoming a larger and larger part of my business each year. At first, these projects were few and far between, but as time has passed and I've grown as a watershaper, I've begun experiencing a sort of snowball effect where one new long-distance job leads to another.

Almost all of these opportunities have come by way of some sort of referral. In fact, to this day my primary means of "promotion" has mostly to do with kind words from satisfied customers along with my involvement in Genesis 3 and a certain level of interest generated by my web site. I've never considered deliberately promoting services outside my area; instead, these projects have come as a natural outgrowth of things I've been doing to support my industry overall and my own work in the South Florida area.

Another fact of the matter is that this work is mostly about design. People ask me to travel not because they want me to drive a backhoe or shoot gunite; rather, they've seen my work or heard about it from friends and they want me to apply what I know in their backyards on a conceptual basis.

I take this increase in jobs in far-flung places as a sign that watershape design is becoming more important to greater numbers of architects and their clients. In that light, people who start out their careers with an emphasis on design – architects, landscape architects and landscape designers – are more likely to find this out-of-town work than are those who've come at watershaping from the contracting side of the business.

This all makes sense, because information technology is making the world shrink for designers. The work can be done anywhere there

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are phones and faxes and modems, and it's not terribly expensive or impractical to bring in a designer from a distant location to work on a given project. Just the same, when clients or architects are willing to absorb that expense, it invariably means they're serious about achieving something special.

The tough thing for the watershaper

is that this sort of work is unpredictable. These projects emerge on their own schedules, and there's really nothing you can do to force the action beyond doing well when you're called into service. It's like anything else: The more you work on this level, the more likely it is that you will continue to do so. The community of architects and

high-end clients is relatively small, and you can rest assured that the word about capable watershapers travels, fast or slow.

In my own experience, for example, one thing has certainly led to another. I'm now working on my third project on the island of Bermuda, and two more are in the offing. For my current project, I was contacted by an architect in Bermuda who had received my name from a state-side architect. For the two prospective jobs, I was contacted by a subcontractor who was working for a client building expensive homes on spec, complete with elaborate swimming pools.

### Prepared to Respond

Even a few years ago, I would never have imagined setting up a niche on that beautiful Atlantic island – but as opportunities have come my way, I've been ready to make the most of them. In each case, the contacts grew from the client's desire for quality watershape design – and that's almost invariably the case when I've been called on to take my show on the road.

But there's more to succeeding in far-away places than being a good designer. You need to be ready to do what comes and react quickly to opportunities as they arise.

I attribute my own growth in this arena in part to my dogged policy of returning all phone calls as soon as possible. And when I do speak with someone directly, I always approach the situation with an open mind and open ears, because I never know where these contacts will lead.

**It's like anything else: the more work you do on this level, the more likely it is that you will continue to do so.**

Sometimes, the projects are straightforward; other times, they're unusual or elaborate. Either way, what I've run into over and over with these projects is a client looking for something truly beautiful and exciting. My current project on Bermuda, for example, will be the island's first

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perimeter-overflow pool.

I'm also preparing to work on a project in Chicago that calls for an unusual indoor/outdoor pool. What we're envisioning in this decidedly non-tropical climate is a single vessel divided into indoor and outdoor portions by a retractable acrylic panel that can be raised out of sight, lowered to water level in summer-

time to keep bugs outside and lowered all the way to the floor in winter so the exterior portion can be winterized while the indoor portion stays in use. There are lots of details to be worked out with this one, but I'm confident that the engineering and materials can be worked out to everyone's satisfaction.

Roadwork can also mean participating

in large-scale jobs in which other architects and designers are already involved. As I've discussed before in this column, this requires a high level of confidence in your own abilities as well as flexibility and basic people skills.

I've been in situations where I've been asked to correct problems with existing designs, for example, and I've felt a certain level of resentment of my role on the part of other members of the "design team." These situations can be intimidating and require a great deal of self-confidence and presence of mind to achieve positive outcomes.

**Roadwork in which other architects and designers are already involved requires a high level of confidence in your own abilities as well as flexibility and basic people skills.**

When you get right down to it, participating in projects that take you out of your usual environment means you need to have a lot on the ball in terms of your own know-how and your ability to communicate. And one more thing: Once you *do* become involved in an out-of-town project, you need to set up a fee structure and contractual relationship that makes sense for both you and your client.

### Dotted Lines

You can approach fee structures in any number of ways. For most jobs, I quote a per diem fee for a site visit, plus all expenses. With others, I propose a fee for doing all the work without ever going to the site. (Either way, my design fee is separated from incidental expenses I incur, including travel, the cost of long-distance calls and overnight shipping, among other things.)

In the (rare) no-visit scenario, the contract is very similar to the one I use for jobs close to home, with the exception that I define what I need up front with respect to site plans, soils reports, architectural drawings and other information I'll

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use in developing a design.

To be sure, projects of this sort are much less common than those that involve a site visit, but they do rise up from time to time. For example, I once designed a project in Bolivia without actually traveling there. It was a complicated job with a multilevel swimming pool and a complex set of associated water-features, and a whole lot of what I did was structurally associated with the house itself. The existence of detailed architectural drawings made this project possible, sight unseen.

In most cases, however, the clients and I will opt for at least one site visit – and I much prefer working this way. There's really no other way to get a feel for the client, the setting and surrounding environment unless you go there in person.

When these trips arise, it's necessary to be ready with a site-visit fee that will make the trip worth your while. After all, time spent traveling to projects is time away from home and family – and away from the office where you could be working for other clients.

I separate this basic fee from any travel and accommodation expenses that might be incurred because what it costs to fly to a particular location can vary quite a bit depending on the time of year and how far ahead you make your arrangements. If the client wants a flat rate for my visit that includes everything, I'll set an advanced-purchase constraint so I know I won't be losing money as a consequence of having to book a flight or a hotel at the last minute.

In any case, my quotes include a clear description of what my services will and will not include. I start with a "file origination" fee as well as a fee to cover meeting time with the client – to review concepts, select materials and polish the design – and something to cover the time involved in creating plans and drawings. In situations in which I'm not sure how long things will take, I'll offer quotes for return visits and/or an hourly rate for work I do at home that goes beyond the scope of the initial site visit and design preparation.

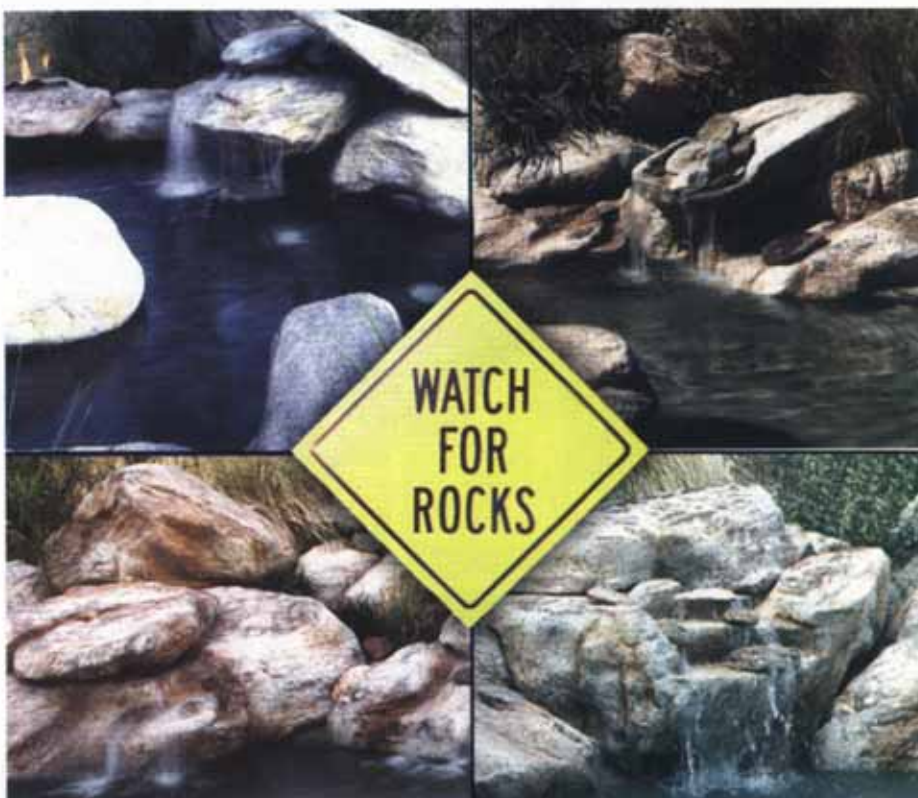
In some cases, clients or their architects

will want me to generate a quote for staying involved in the project after the design is complete, whether it's performing site inspections at key points along the way or helping to hire contractors (if any are to be found locally; if they're not, I've set up fees for those rare occasions when I've had to bring in my own subcontractors to perform certain tasks).

### Pre-Flight Check

Any way you slice it, to be successful in working away from home, you need to make sure that you're paid for your time – which usually means pulling what you do apart in more ways than you'd ever have to do in thinking about the usual cross-town job.

When you work outside of the United



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States, for example, there are lots of basic issues to consider: Is your passport in order? Are there restrictions on the work of non-resident foreign nationals? Are there local customs that should be considered in client and contractor relations? Are there features of local business or social protocol you need to know about? Will you need an inter-

preter? Do you need inoculations against various exotic diseases?

For all that, the biggest issues you need to settle before you travel to faraway places (even within the United States) are more of the internal/personal variety. Specifically, you need to be sure you're not getting in over your head. Not everyone has the skills required to

operate at this level, and if you don't have supreme confidence in your design and practical skills, you probably should think twice about going on the road because some lofty expectations will be coming along for the ride.

You can't just wake up one morning and decide that you're going to start designing jobs at geographic remove from your usual space. It takes patience and the careful building of a portfolio and reputation. It also takes an awareness that you never really know where these projects come from, so you need to pay attention to every client you serve because he or she may lead you to someplace entirely unexpected.

You also need to know the ins and outs of collaboration, because these contacts often introduce you to projects that are already in progress with entrenched design teams. In these cases, you're usually being brought in to solve problems, which means that you have to be resourceful and know where to go to get product, material or engineering issues resolved.

And when you *do* land a job that's beyond a comfortable day's trip from home, you're almost sure to find yourself in situations that will be challenging, exciting and (we all hope) professionally satisfying. If you've spent your career developing your knowledge, skills and confidence, such trips will certainly become part of your ongoing water-shaping adventure.

In my experience, I've found the road to be a wonderful place to ply the watershaping trade, but it's one that requires the very best I have to offer. In that respect, working far away from home isn't much different from designing watershapes for your neighbors down the street. **VS**

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

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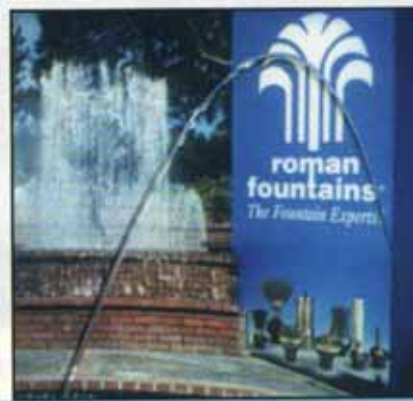
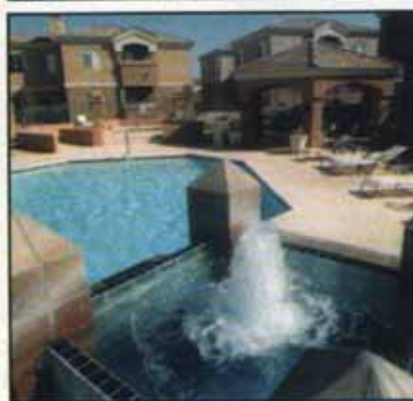
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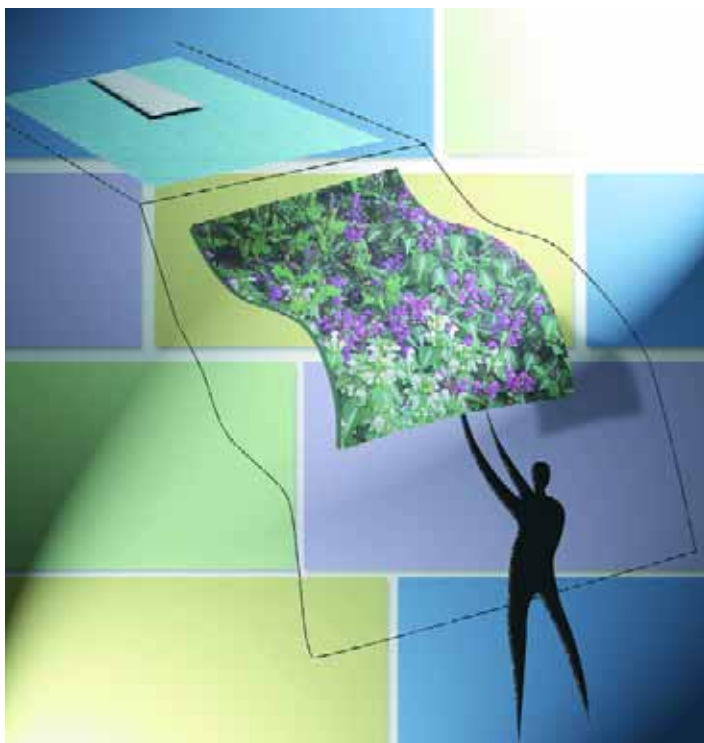
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## Covering Ground

Last time, we talked about planters, terracing and a couple other techniques for stabilizing slopes and making them look great as backdrops or foregrounds for hillside or hill-top watershapes. We left for this column the important discussion of what to plant in these spaces.

In making these suggestions, I'll discuss soil-binding plants and other ground covers that contribute specific desirable qualities to landscape settings. My reasoning is simple: Although sod is a great ground cover and is certainly versatile, I believe that having a broader and more decorative palette to work with will do a much better job of inspiring the design process.

It's important to note that almost *any* ground cover will slow soil erosion. In making your selections, you need to consider site specifics, including the angle of the slope, the nature of the soil, and the potential for large chunks of earth to fall away under excessive moisture conditions. After determining those features, you'll be ready to choose a ground cover that has the correct soil retaining/binding qualities for your particular slope.

The list below includes both clumping and trailing varieties,

**Sod is a great ground cover and is certainly versatile, but I believe that having a broader and more decorative palette to work with will do a much better job of inspiring the design process.**

with clumping plants preferred where you need to keep things under control – and trailing types when you're working in larger areas and aren't afraid of them taking over. (As usual, please consult a local garden guide to determine if the variety you're considering is trailing or clumping and, as always, check with your local nursery for varieties that grow best in your zone.)

❑ **Ophiopogon** (Mondo Grass). I've used the standard, dwarf, and black varieties of these, and each is useful in different situations. The standard variety is great for large areas where you want something taller than grass that will tend to discourage foot traffic. The dwarf variety works best in areas where you simply want to cover the soil and see a flat, textured surface. Plant both of these varieties close together for full coverage. Save the Black Mondo Grass for more ornamental purposes: It doesn't grow into a thick, covering mat.

❑ **Campanula** (Bellflower). The "poscharskyana" variety of this plant makes a good shade/ground cover and has nice lavender flowers, but it looks weedy after the flowers fade. I prefer the "muralis" variety, which makes a nice green clump and sends out individual flowers that fade away quietly when they're done. (Note: This is *not* a great slope stabilizer but can be used in combination with other plants that get the primary job done.)

❑ **Liriope** (Creeping Lily Turf). After a recent column, one of you pointed out that this is considered a trailing plant. My experience, however, is that it acts more like a clumping plant. Either way, Liriope is a great ground cover where you want something a bit taller – but not so tall that it obstructs the view of upslope plantings. It's a grassy plant with small, lavender flowers and comes in various shades of green as well as variegated selections. It adds nice texture to a slope, especially when placed next to a lower-growing, leafier ground cover.

Continued on page 20



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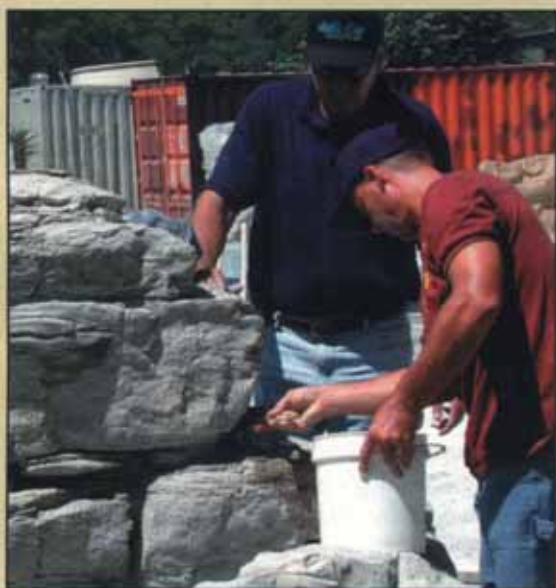


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## NATURAL COMPANIONS

❑ **Bamboo.** There are several low-growing varieties of bamboo that work well as ground covers – particularly in Asian-style gardens. Be very careful if you're considering a trailing variety, however, and be sure to place a root barrier around the area you want it to occupy. Once it spreads into your other plantings, it's difficult to eradicate.

❑ **Fragaria chiloensis** (Ornamental Strawberry). This plant will grow just about anywhere – so much so that it's considered a weed in some locales. Many people appreciate its aggressiveness and the fact that it tends to thrive where nothing else will. It has small (but attractive) white flowers and fruit that looks like strawberries (hence the name), but I wouldn't recommend biting into one.

**You need to keep the degree of the slope in mind and avoid asking plants to do the impossible. If the slope is suitable, the process boils down to finding plants that will bind the soil properly.**

❑ **Ivy.** Without question, if you're looking for a ground cover that will stabilize a slope, requires extremely low maintenance and makes a solid green cover, ivy is your plant. Yet it is also without question one of the most hated selections in the entire plant kingdom. It's often said that after a nuclear conflagration, the only survivors will be cockroaches and ivy. Taking that as a testimonial to its hardiness, you can choose among a number of varieties to satisfy your needs – and not all the solutions are entirely disagreeable. Needlepoint ivy, for example, is perfect for smaller areas, while *Hedera canariensis* is a familiar choice in many areas.

❑ **Pachysandra.** This plant is used mostly in cooler areas and is a wonderful ground cover if your clients want something their neighbors usually won't have. It has a dark-green tone that looks great next to something lime green or gray, and it also serves as a great cover for spent bulbs. (After the bulbs have faded, simply tuck the yellow foliage under the pachysandra and wait until they pop up again the following year.)

❑ **Ice Plants.** As with the ivies, you have many options when it comes to ice plants. The most common varieties, however, are not tremendous soil binders – nor are they necessarily the most attractive choices. I prefer varieties such as Rosea Ice Plant, which blankets many of the hillsides above Santa Barbara and in spring-time turns the slopes a deep magenta color that's visible from anywhere in the city.

❑ **Lamium maculatum** (Dead Nettle). This is one of my favorite ground covers, and it has the worst common name possible. Despite that grim fact, I particularly like the "Beacon Silver" variety, with its variegated leaves and delicate pink flowers – three

colors in one plant. Don't look for this ground cover to hold a slope, however, as it's best suited for smaller and flatter areas.

❑ **Lysimachia nummularia** (Moneywort). This plant has light green leaves with tiny yellow flowers – although it tends to get darker in the shade. It has proved quite successful for many of my clients by staying low (under six inches) and covering quickly on both slopes and flat areas.

❑ **Osteospermum fruticosum** (Trailing African Daisy). This plant covers a large area quite effectively, but you can tell by another common name for this plant – “Freeway Daisy” – that some people don't hold it in very high regard. The most interesting fact about this plant is that the flowers open up purple on the first day and fade to white the second day. It's great for a hot, full-sun environment, although it tends to look rangy and weedy during its non-blooming periods.

❑ **Sagina subulata** (Irish and Scotch Moss). These plants are great ground covers for Asian-style or contemporary gardens. They tend to stay quite flat, making nice backdrops or foregrounds for other plants. I particularly like the Irish variety with its lime-green tone. Both can handle full sun or partial shade and stay within three or four inches of the ground. These plants are also champs when it comes to keeping up soil moisture: They're so dense they retard evaporation.

❑ **Soleirolia soleirolia** (Baby Tears). One of the most trusted and widely used of all ground covers, this plant isn't a soil binder, but it can cover a shady slope beautifully. Small plugs cover rapidly, keep the soil moist while lending a soft appearance to an area and cover soil that would otherwise be bare and highly evaporative. One of the other advantages to this plant is that it springs back fairly quickly when you walk on it (although it's not suitable for high-traffic areas).

❑ **Zoysia tenuifolia** (Korean Grass). This plant stays low, covers thickly and is widely used in Asian-style gardens. It has the unusual habit of “buckling,” giving it a bumpy appearance. If well watered, it looks good in warmer climates year 'round – but it also tends to die off in clumps, which can sometimes look unsightly. Despite its drawbacks, it's

great for achieving a meadow look on large slopes.

❑ **Junipers**. With so many different varieties to choose from, junipers are quite versatile – particularly if you can find clients with a craving for a '60s-retro look. Check on the different varieties to see which do well in full sun or partial

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shade. You'll find quite an array of heights, ranging from a few inches off the ground to a few feet. I recommend sticking to the low growers: The larger varieties tend to become woody underneath, even if well watered.

❑ **Bougainvillea.** Most people think of bougainvillea as growing on walls, but it also comes in a ground-cover variety. Plant this prickly ground cover in an area where you won't need to tend to other plants – or where you want to keep people out. Bougainvilleas tend to thrive in drier conditions, which cuts down on watering, but be careful: It can become a fire hazard when allowed to build up too high. (You can avoid this issue by urging clients to keep plants trimmed within a couple feet of the ground.)

❑ **Trachelospermum jasminoides** (Star Jasmine). This plant is well loved in the California area for its fragrant Spring

blooms. It's very easy to grow, and the only drawback I can think of is the milky sap it puts out when trimmed. Keeping it pruned within a foot of the ground will avoid woody buildup. Star Jasmine also covers arbors and posts very well.

❑ **Rosmarinus** (Rosemary). I hated this plant as a child because we had it in our front yard and I was constantly being shoved into it by my older brothers. Not only did the woody undergrowth hurt, but I also hated the smell it left on me. Now older and more mature and no longer living with my brothers, I love having this reliable ground cover in my front yard both for fragrance and for cooking purposes.

❑ **Ceanothus horizontalis.** This is only loosely termed a ground cover, although it is clearly classified as such and is great for large, steep slopes. It shrouds the hillsides around Carmel, Calif., very effectively, for example, binding the soil

and offering small, attractive, blue blooms.

❑ **Festuca rubra.** I've seen slopes covered with this for years and have often thought about planting some on my slope. This is the ultimate in meadowy-looking ground covers, swaying in the breeze and giving a very soft feel to any setting. If you're working with a great slope that you want to cover quickly and easily, hydroseed this grass on it – I'm certain you'll love the look! **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](mailto: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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For all of this ingenuity, however, we sometimes don't do a very good job. When our efforts to control the elements fail on a large scale, we witness catastrophes that change people's lives and the course of entire societies. Even on a smaller scale, our inability to outwit the elements can lead to tremendous property damage, high maintenance costs and amazing homeowner frustration.

The problems are compounded for us in the watershaping business, because the most common of the damaging, corrosive, erosive forces in nature is the water we seek to contain – and those forces are at their strongest and most unpredictable in the forms of precipitation and ground water.

Not to short-change the destructive power of fires, earthquakes and tornados, but water does more by way of constant, consistent, inevitable damage than anything else: It has the unique ability to cause a great deal of damage all at once in the case of a flood or torrent, or it can destroy things slowly and imperceptibly over time just by being there.

The most common of the damaging, corrosive, erosive forces in nature is the water we seek to contain — and those forces are at their strongest and most unpredictable in the forms of precipitation and ground water.

### Soggy Bottoms

When it comes to watershaping in residential settings, we see all sorts of mistakes and errors of omission related to runoff and ground water that can lead to a wide set of serious problems.

We see decks and pools set at elevations and angles that make sense for the pool and deck – but direct all runoff right into the house. We see yards designed without any consideration of how the soil will interact with and direct the water; we encounter leaching problems in concrete structures; and we find situations where water runs down a slope or is transferred via subsurface bedding planes to attack the outside of our gunite structures.

In dramatic fashion, we also see ground water percolating around the shell of a pool with so much pressure that the pool will literally pop up out of the ground. We find slopes that bring tens of thousands of gallons of water down onto a site that hasn't been prepared with drainage control of any kind.

When reviewed as a laundry list of possibilities, it seems like common sense that these would be things that will have been considered and dealt with for every successful project. But controlling the water outside the pool takes more work and costs more money – and it becomes an easy “oops” when a contractor is trying to squeeze a few extra dollars of profit out of a contract.

In many cases, in fact, the installation of an adequate drainage system will represent a large line item in a budget – and



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too easy a place to cut costs with the idea that it's just "somebody else's problem" – namely, the client's. Sad to say, but there are actually contractors in the United States who do not use drains of any kind – or do them so poorly that the homeowner may as well call in the bucket brigade every time the skies turn gray.

I bring this up because drainage is a major issue in the project we've been watching in the past few "Details" columns. It's a beautiful composition with all sorts of interesting aesthetic elements – and none of it would be worth a soggy damn if we allowed nature to take over every time it rained.

When I was brought into this backyard – a narrow strip of flat land at the bottom of a very steep slope – it was eaten up by an oversized pool and a concrete deck that ran about six feet wide around three sides of the vessel. In all, there were about 550 square feet of nasty-looking concrete with just two drain heads. What's more, the pool itself lacked any overflow system of any kind.

It was not a good situation.



I have a simple philosophy when it comes to drains: Use lots of them! In practical terms, they minimize any potential problems posed by runoff. In aesthetic terms, they enable me to set up flatter decks that have greater visual appeal.



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## Multiplication

The way I see it, the original builder was at least lazy and probably negligent. If you understand the way water works and are familiar with the basic physical phenomenon of drainage, it's plain to see what was really needed back there to keep the decks looking their best and the drainage system working properly.

In purely aesthetic terms, you want to set up enough drains so they don't create dramatic highs and lows in the deck. Look at it this way: If you visualize a series of lines that connect a given set of drains and start with one at a high point, then move over eight feet to a slightly lower point, it's very difficult to see the highs and the lows across that surface.

But if you put a drain every 40 feet, you'll see this huge, obvious and unsightly depression – the “funnel effect” that characterizes too many decks. And regrettably, that's how it's usually done, and *certainly* how it was done originally on this project. There was no understanding of

how water flows and how the pitch of the surfaces influenced the visual impression the decking would make.

Codes that function in many areas require a 2% pitch (that is, a quarter inch per foot) – enough to make the water flow as a sheet. A deck doesn't have to be very large for even that small degree of pitch to become obvious and visually dramatic. But if you use multiple drains and shorten the distances between drain heads, the deck will appear much flatter and subtly more appealing to even the casual observer.

Unfortunately, to save money most contractors just pitch the water away from the pool across drainless decks. This

The steep slope behind these walls rises more than 100 feet above deck level, meaning the runoff from even a light rain can pose problems if anything should happen to the system of swales the city has installed to protect a number of hillside properties. This is why we spent so much time working behind the walls. That space is the key to our own runoff-management system.



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works to keep water from flowing into the pool. But when it flows off the edge of the deck, that water will at first find its way into the ground where it will saturate the soil and cause it to expand – expansion that can eventually make the deck rise or move, resulting in unevenness or cracking. And when the soil can absorb no more, the water flows across the surface surrounding the deck to threaten homes, flood landscapes and make everyone even unhappier.

My rule of thumb: “Use drains, and lots of them!” On this project, for example, we went with drains every eight feet or so and are in complete control of any water that flows over the deck. These drains are all connected to a lateral pipe that runs to the street, with each drain head and each plumbing run carefully set at the proper level and pitch to ensure that the water will always keep flowing, out and away.

### Slippery Slopes

Deck drainage is an issue with just about every project, even on the flat. But things obviously get more complicated when you're dealing with runoff from slopes, as was the case for the project we're covering.

In fact, this project presents some real challenges: First, we were dealing with an existing retaining wall that cut into the base of the slope. Although it retained the soil adequately, it had not been designed to deal with runoff. Second, all along one side of the property runs a large swale, a V-shaped culvert that belongs to the city and is located in a “public



The existing wall did an adequate job of retaining soil, but we needed to do a good bit, at its base to make it a fully functioning part of our runoff-management and drainage system. Digging in and installing a French drain with a one-foot gravel pack at the base of the wall was the first step.

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## DETAIL 19

utility easement" (or PUE).

The swale was intended to handle the water flowing across and down from a number of nearby properties higher up on the same hillside and, as designed, handles something approaching 95% of the water on the slope. What had happened through the years was that the remaining 5% had a tendency to flow around the retaining wall, across the deck and into the pool – which, as mentioned above, had no overflow system. There were also erosion issues, so the water entering the pool tended to be muddy.

In a region subject to heavy seasonal storms and periodic El Nino rains, this was an ongoing headache that needed a solution.

Before we could start on new retaining walls and our own drainage system, we had to renovate a portion of the existing swale that had settled and was now too low in a six-foot segment right at the base

of the slope. When it rained, water would pond in this depressed area, disrupting the flow to the street and stagnating after the rains had passed.

One of the first things we did was remove this portion of the swale and re-install it at the proper elevation and pitch. This step took care of the stagnant water and dramatically reduced the volume of runoff that could find its way to the deck. Now we added new retaining

Atop the French drain, which will take care of any subsurface water accumulating at the base of the slope, we built a small swale that will take care of any surface runoff that reaches the wall. The swale itself is connected to the drainage system. All the water will flow to the street.



### WHEN DRAINS DON'T DRAIN

I don't see drains and drainage as casual parts of my designs.

In past columns, for example, I've discussed ways to avoid having white-vinyl drain heads interrupt decks by perforating decking stones instead (January/February 2001, page 28). And in this column, I discuss an entire drainage system that was integrated into my planning from the first stage of the project.

It's important to bear in mind, however, that just because someone uses drains, it doesn't mean those drains will work. Indeed, they often don't.

The fact of the matter is that drains take effort. They have to be excavated to the proper depth. You have to make sure there's enough fall to the street or whatever approved drainage point you're using.

Do you need to be an expert? It can't hurt, but at a minimum you need to have real expertise at your disposal if you want your water-shapes to perform and your clients to be happy.

— D.T.

walls that flank the existing wall on both sides, set off with small gaps that provide a visual offset and great shadow lines.

When we excavated for the new retaining walls, we over-dug by about two feet into the slope and excavated the soil immediately behind the existing wall. This gave us room to install French drains and gravel packs that would handle any water percolating up from the ground. It also gave us an area where we could install our own swale to handle water flowing down the surface of the slope.

### Making Ready

We sealed the backs of both the new walls and the existing wall with two coats of Bituthene (or BT), a waterproofing material similar to roofing tar. Next, we set down



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## DETAIL 19



The pool's overflow line is another important component of the drainage program. This slot configuration is much less likely to clog with ordinary debris than the usual round, one-inch drain lines you find on pools.

a continuous sheet of nylon-mesh fabric on both sides and the bottom of the excavated space before adding a foot of gravel. Then we installed a four-inch perforated drain line (with the holes facing down).

We surrounded the pipe on all sides with a minimum of one foot of clean, 3/4-inch crushed gravel, then pulled the fabric up and around to create a big gravel pack with the French drain in the center. Any water that percolates up behind the walls will flow into the pipe, which runs to a lateral pipe that connects to the deck-drain system and flows to the street.

Atop the gravel pack, we set a compacted fill blanket and, over that, set forms for our own small concrete swale to handle any water that might flow down the hill. The back of the retaining wall will act as freeboard for the water: When it rains, the water will run down the hill with a great deal of force, jump the swale, hit the wall, then fall back into the swale for transit to the street.

Water does fall directly from the sky, too, so there was one last component to be added to the drainage-control system: the overflow line we placed at the waterline of the pool. Made by Overflo in Los Angeles, it's a four-inch drain line compressed at one end to a one-by-four slot aperture. It's visually unobtrusive and, unlike most one-inch piping used for the purpose, it won't plug easily with the usual debris.

The bottom of the overflow dictates the maximum water level in the pool. In this case, the overflow is installed relatively high on the pool wall because I want the water level to be as high as possible. When the water rises to that level, the overflow is just another lateral connected to the main drainage line that flows out to the street.

To be sure, none of these measures are overly complicated or difficult – but they *do* require a basic understanding of pitch and grade as it relates to drainage. Yes, they add to the cost of the overall project, but what these things save in terms of potential damage is truly immeasurable.

Proper drainage may not be the sexiest of all possible details, but it might just turn out to be one of the most valuable when the rain begins to fall. **VS**

**David Tisherman** operates David Tisherman'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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# Field of Streams

The watershapes for the Colony at White Pine Canyon were intended to mimic nature as closely as possible. That's not an unusual goal, says Land Expressions' project manager Clayton Varick, but it was one made more difficult by three factors: a tight schedule, the need to work at very high altitudes – and the fact that the surroundings being imitated were the staggeringly beautiful slopes of the Wasatch Mountains above Salt Lake City.

**Landscaping** has to be something special to harmonize with the amazing natural surroundings of places such as we encountered with the Colony at White Pine Canyon: Set on 4,000 acres near the famed ski slopes at Park City, Utah, the resort/homestead project was to have watershapes second to none when it came to their natural beauty.

Indeed, water was central to the entire plan. We at Land Expressions of Mead, Wash., were engaged by the developer, Iron Mountain Associates of Salt Lake City, to execute an 830-foot stream, a 34-foot cascading waterfall and a sprawling quarter-million-gallon pond. All of this came along with an array of natural plantings, pathways, a 500,000-gallon water tank surmounted by a five-acre meadow, and a guard shack made from rocks, sod and a fallen tree.

Projects of this sort don't come along very often – and when they do, they call for creativity, preparation and planning on a grand scale. In this case, it also meant working at (literally) breathtaking altitudes and in a small window of opportunity between snow seasons – all while infusing the work with intricate detail.

Here's a look at how it all came together.

By Clayton Varick

## Big Sky

The whole world became aware of the rugged beauty of the Rocky Mountains during the 2002 Olympic Winter Games. Our project was in a valley adjacent to Park City's slopes, which served as a venue for many of the Games' alpine skiing events.

The area gets a lot of snow, but during its brief summers the area's rolling meadows, stark rock outcroppings and stands of majestic pines and aspens emerge on a huge scale. Making our work fit within these surroundings meant using all-natural materials on a similarly grand scale – and quickly!

In doing so, we had a lucky break right away: The property's ski runs and infrastructure were also under construction at the time we came on site so we were able to pick and choose from a vast amount of rock and plant material that had been excavated and scraped away to shape the ski runs.

The client also asked us to use large stones that were available at a landslide area located on the property at an altitude of 9,300 feet. To access the area, the owner built roads and supplied an excavator and trucks – and we pulled out tons of a sandstone material that conveniently wanted to break into large flat pieces, typically six or seven feet in diameter and about a foot thick.

This mostly flat, pink-hued material was wonderful for covering ground space, which is important in such a large project. In fact, we had so much material available that it was much easier than it would have been otherwise to maintain natural appearances while creating a variety of points for human interaction with the water. In all, we pulled out and used approximately 2,000 tons of this stone.

Working so high up, however, meant that we had to execute the entire project between late-season snows that stopped in June 2001 and ear-



**The Birth of a Stream:** Setting up the 830-foot streambed was basically a matter of being methodical once the course had been set (A). First the 30-mil liner was moved into place (B), then, after the channel had been lined with concrete, the major stones were positioned (C). Once the largest rocks had been mortared, cobble and gravel were added (D) – not quite ready for water, but close.

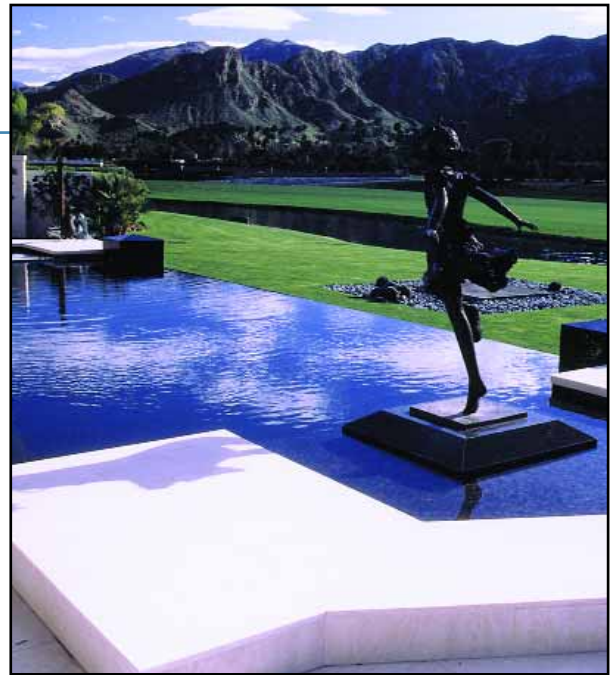
## How Good Do You Want To Be?

### Genesis 3 Schedule, Fall 2002

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.

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.



December 4-8, 2002  
Toronto, Ontario, Canada  
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E



ly-season flurries that blew in during August. It also meant that we were constantly adjusting and readjusting our vehicle's carburetors so they would operate at the high elevations.

Throughout the project there were, at times, up to seven working on site, including stone-setting artist Max Slater, a specialist whom we often turn to when we want things to look as natural as possible. As mentioned above, the scale and the timetable required us to have a thorough game plan in place well before we started.

But as anyone who has worked on naturalistic projects knows well, most of the aesthetic work can only be done on site during excavation and especially in placement of the stone material – and that was certainly the case for this project. We'd prepared overhead plans that gave us a

F



**A Sense of Scale:** We're not often asked to install 250,000-gallon ponds, and the scale of the work is admittedly a bit intimidating. The structure under construction in the back is plenty big, but it's made to seem smaller by the extent of the excavation (E), and the memory of hand-dragging the liner to fill the gap is one we won't soon forget (F). Ultimately, however, structure and pond came together in a beautiful overall composition (G).



rough idea of what went where, but our work of mimicking the natural look of the indigenous plantings and rock outcroppings all took place at ground level and in a compressed time frame.

### Flow-Through Integrations

The design included a long stream that winds its way along the main entrance to the property before terminating in a large pond next to the facility's gatehouse and sales office. A central waterfall provides vigorous cascades next to the road; the outflow is routed beneath the road before it, too, flows to the main pond.

In approaching our tasks, we had to be keenly aware of the fact that the valley in which we were working includes nat-



**Suddenly Green:** Once the watercourses were set, we needed to re-establish the meadow and plant the areas surrounding the stream on both sides. We accomplished this with a combination of wildflower sod and by hydroseeding the area with native grass (H). The result was a carpet of greenery that soon looked like it had always been there (I).



ural drainage year 'round, to the tune of 40 to 60 gallons per minute.

We knew we'd need to accommodate and use that flow in and out of our own watershed system. To that end, water is collected in a huge sump upslope of the landscaped area before being released into a series of ponds next to the development's post office. The natural runoff supplements the stream's pumped flow of 400 gpm.

The stream, waterfall and pond were formed using a 30-mil liner that was set and then covered with concrete. (The bottom of the pond was subsequently covered with a foot-thick layer of sand.) We ended up using more than 25,000 square feet of liner, some of its sections so large that we had to move them into place using a crane.

In concept and basic operation, water systems such as these are mechanically simple. On the stream, for example, a 20-horsepower pump moves water from the main pond to the basin at the top of the stream through a single, six-inch plumb-

ing line. Gravity does the rest as the upper pond overflows into the streambed. Similarly, a 25-hp pump and a single eight-inch line handle the flow for the waterfall.

The complexity of the installation comes in managing scale and jockeying the schedule while simultaneously working to infuse all of the work with the level of natural detail the client required. Much of what we were doing on various sections of the project moved forward at the same time, all of it with constant input and feedback from the owner.

### Going with the Flow

The stream crosses a gentle slope, dropping about 70 feet along its 830-foot course, which gave us a nice interval to work with in creating cascades as well as meandering areas, riffle and ponds that will eventually serve as homes to fish. Still, containing and controlling the huge volume of water needed to wet 830 feet of stream with that much slope brings challenges with it, no matter how fortunate

the existing lay of the land.

So we dug in, methodically excavating gentle banks where we knew we could carefully obliterate the transition from streambed to the surrounding landscaping using a mixture of stone, sod and plants. The detailing took a great deal of time: We spent days selecting stones for the transitions and banks of the stream. Some of the material came from the ski slopes; other pieces were collected at the landslide area, while more came from surrounding fields.

The flat planes and sharp contours of the sandstone material were crucial in creating natural-looking access points to the water as well as easy transitions at the edges of the streambed. We also used a tremendous amount of crushed rock. The fines created a gravel/silt slurry that allow the stream to form its own "natural" transitions and banks.

In addition, we hauled in large amounts of fallen timber and plant material, which we dropped into the streambed and had allowed to flow and



### A Sod Story

The guard shack set adjacent to the pond and waterfall is most unusual – and invites quite a rush of visual interest at the entrance to the property.

*Rustic* was the watchword: It looks like something an old trapper might have occupied in the long-gone days before these mountains became the playground of vacationers and skiers.

The most unusual thing about the unique structure is the deadfall tree lain across the top. (We'd originally selected an even larger tree but discovered that it had begun to rot.) Rockwork and plantings on its walls, along with the sod and rocks on the roof, completely mask the block structure within.

– C.V.



J



K

**The Big Drop:** The waterfall drops 34 feet in a hurry – and the liner was so large and awkward that the only way we could get it in place was to use a crane (J). The moment of truth came after all the boulders had been set and we tested the system for the first time (K). Once we made some adjustments, the cascade was ready for close-ups (L).

lodge themselves in random spots and patterns. Much of the plant material placed along the edges and adjacent to the stream had been removed from the nearby ski slope. Loose stones and large boulders were randomly placed outside the stream's banks to create smooth transitions to the surrounding meadow.

The majority of the stream flows through the meadow area beneath which the 500,000-gallon water tank is buried. Once basic construction was complete here, the meadow and stream banks were planted using wildflower sod and by hydroseeding with native grass.

### Crashing Success

The project's other great feature was the waterfall.

Set adjacent to the road, the water crashes down to a catch pond, then exits to a catch basin that feeds a culvert system (beneath the road) and then flows down gently to the main pond. The effect is one of driving over a natural stream, and the sounds of cascading and rushing water mask the traffic's noise while conjuring a distinctly natural mood and ambience for residents and visitors who enter the facility.

The waterfall was set up with broad

“plateaus” for large rock formations. There are two pools at the top of the waterfall, and they're set at different elevations to enable us to vary the way that water is introduced to the rock structure. The liner was covered with 40 cubic yards of fiber-reinforced concrete that ranges from four inches to a foot thick.

Using a crane, the majority of the rock was set in three, 12-hour days. All of the large structural boulders were locked in place by gravity. Once in position, we pumped concrete into the spaces behind the rocks to ensure an impermeable substrate that will aid the



L

direction of water flow.

Feathering the edges was the trickiest part of waterfall construction, basically because everything was close enough to the roadway that any flaw would quickly become apparent. We used a combination of small and large rock pieces mixed in with small areas of planted material. As we had done with the stream, we also introduced deadfall timber, gravel and fines to maintain the same sort of natural look.

On the downslope side of the road, the flow from the waterfall emerges from the culverts in a series of gentle cascades that lead to the main pond. There's a pathway between the sales office and the guard shack, and we set up a 10-by-4-foot stone to create a bridge at one spot along this route.

### Convergence

As has been mentioned at several points, both the stream and waterfall flow into the large pond.

Although it's a relatively passive component of the plan, the pond is critical to the overall success of the project because of the tremendous sense of tranquility it lends to the environment. It reflects the radiant Utah skies as well as the surrounding forests of pine and aspen while brilliantly mirroring the plantings and flowers that line its banks in spring.

To complete the natural effect, we created shelves just above and below the waterline that enabled us to set sod and rock material that soften the water's edge. We deliberately used a light touch in our planting so that shores wouldn't seem overburdened with plant life – a basic mix of cattails, water lilies, reeds, water celery and a variety of flowering plants and various grasses.

Pulling off so ambitious a project in so compressed a time frame was challenging to say the least, but the results were both gratifying and rewarding – and exactly met the owner's charge that we were to mimic the natural beauty of White Pine Canyon. In addition, the outcome earned a Grand Award in commercial landscape construction from the Associated Landscape Contractors of America – another point of pride in what stands among our firm's best work in shaping naturalistic settings.

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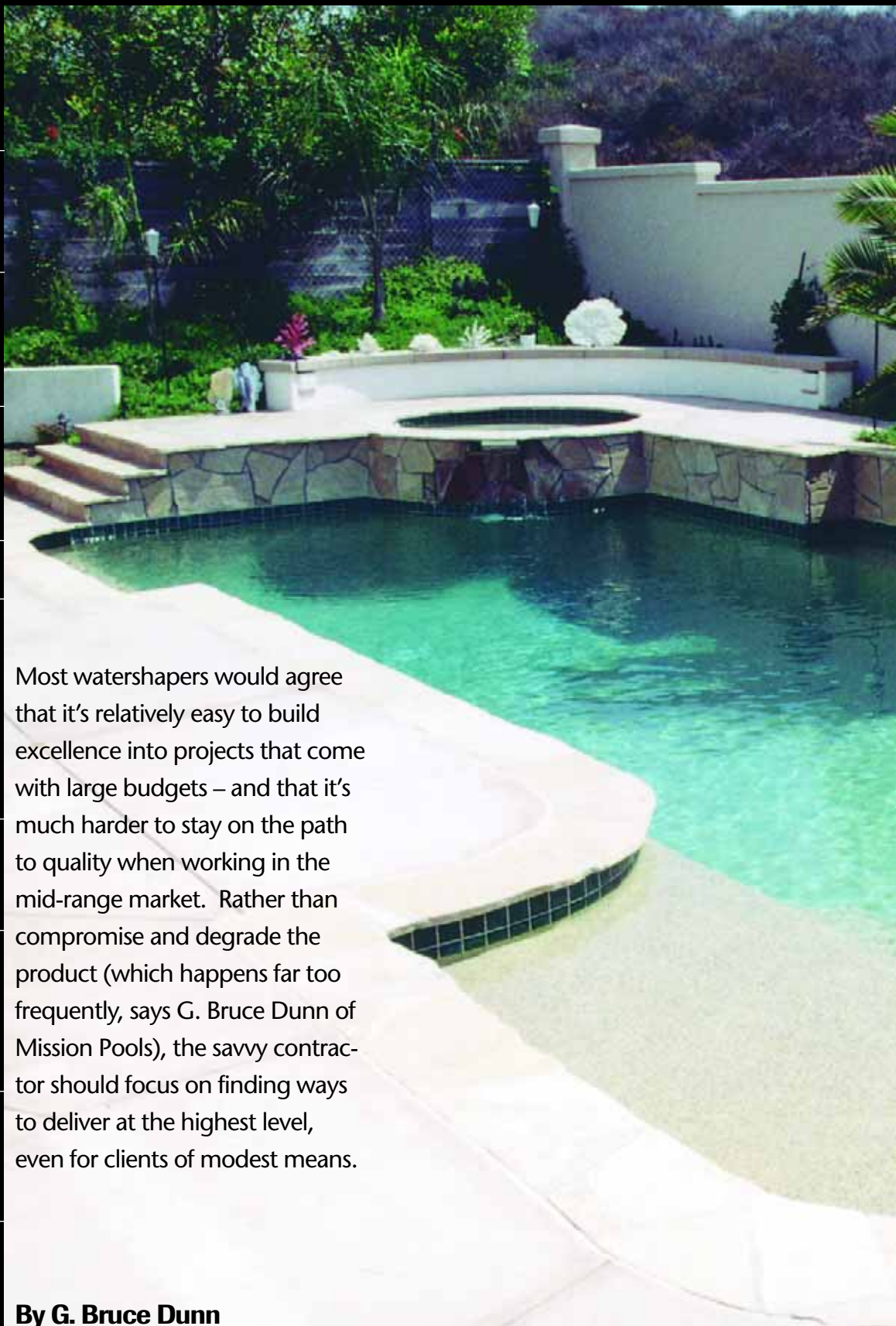
**V**

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Most watershapers would agree that it's relatively easy to build excellence into projects that come with large budgets – and that it's much harder to stay on the path to quality when working in the mid-range market. Rather than compromise and degrade the product (which happens far too frequently, says G. Bruce Dunn of Mission Pools), the savvy contractor should focus on finding ways to deliver at the highest level, even for clients of modest means.

**By G. Bruce Dunn**



**To**

my way of thinking, even a so-called *average* swimming pool is a wonderful thing.

It's a product we place in a backyard for the long haul, a product that provides an ongoing recreational experience, operates reliably, enhances lifestyles and adds to property values while offering quality family benefits. With that in mind, I firmly believe that we as an industry must collectively make the decision that there's no place for second-rate construction.

"Bargain construction" doesn't work in our industry simply because of the expectations of the people making the purchases. Even for mid-range or mid-level pools, you're still talking about consumers spending tens of thousands of their hard-earned, after-tax dollars.

In our market in Southern California, for example, in-ground gunite pools with attached spas, decking and some modest landscaping go for a minimum price of \$30,000. That's good money – and these consumers want and deserve maximum value in exchange, which leaves no room for an inferior product. Just the same, competition among builders of mid-range pools can be fierce and there are a number of competent builders challenging you for "the sale" daily.

It's the same old song: To stay in business, you have to compete on price. Or do you?

### **Making Commitments**

As a firm that's been in business for more than 40 years in a highly competitive marketplace, we at Mission Pools have reconciled the need to remain competitive on the one hand with the need to provide quality products on the other. We've made it work by combining an understanding of our margins and what it takes to remain profitable on the one

hand with the application of our experience while maintaining a set of quality standards for our products on the other.

These are equations that will work a bit differently for every company working within the watershaping world. No matter which balances are struck, we all have to strike them in our own ways. And these issues of profitability and quality are, of course, *huge*. To get a handle on them, let's start by stepping back to look at the big market picture.

Products such as backyard swimming pools and spas, which is what we mostly

their children and grandchildren.

This long-term commitment is based upon optimism and confidence in the future – and none of that meshes at all with short-term approaches to installing our products!

When you consider the weight of that decision and how it relates (or *should* relate) to the quality of the product, we quickly see that doing things such as under-sizing the plumbing, cutting corners on the basic structure or leaving out what really should be standards for every system (such as lights or properly sized

of what is basically a mechanical, engineered system. If you provide this long-term, quality recreational facility for someone's home, you should be paid for your efforts. In other words, you *should* earn a profit.

What I find amazing is that, all too often, people in this business come up with a set of operational balances that minimizes or eliminates the ability to that profit – while keeping them from delivering a quality product. Of course, no one will *admit* to using that as an overt business strategy, but this in fact is what's happening.



**Our consumers are making very deliberate choices when they decide to buy our pools and spas for their families. They've decided to underwrite a lifestyle they've chosen for themselves and their children and grandchildren.**

build in distinction to other kinds of watershapes, are attainable in this country largely because of the combination of our wonderful work opportunities with an extraordinary banking system – a system where wages become bank deposits which support loan requests that turn into purchases that enhance lifestyles. No wonder our system is the envy of the rest of the world.

Our consumers are making very deliberate choices when they decide to buy our pools and spas for their families. Their choice to allocate a portion of their monthly income over a period of many years for the broad set of benefits they seek to attain through pool and spa ownership keeps us in business. Put another way, they've decided to underwrite a lifestyle they've chosen for themselves and

equipment) is ultimately a dead-end road.

As a result, any discussion of quality as it relates to pools and spas should begin with the categorical rejection of a degraded or compromised product. That is simply all there is to the discussion.

By the same token, taking on the responsibility of delivering a quality product is a huge commitment on the part of the contractor. In my view, it's a commitment that takes place not only in the short period in which construction happens, but also for all the years the vessels are filled with water – and regardless of warranty periods.

### **The Rub**

To my mind, any quality builder ought to be willing to provide substantial warranties and services needed to take care

It's happening every time we hear contractors say that they need to keep pushing prices lower to meet the competition. But when you back up and look at the product in terms of costs and margins, it's easy to see why working with reduced pricing leads nowhere in a hurry.

For the purposes of discussion and illustration, let's strip a pool down to its bare essentials – no bells, no whistles, no spa. In my market area in Southern California, any reasonable and fair analysis of this product shows that you're never going to drop much below the \$20,000 mark, and I suspect the same is true in most other markets.

I'd suggest that any contractor anywhere would be hard pressed to run a company and a business if he or she isn't making at least a 20% gross profit above

direct costs. With these barebones, \$20,000 pools, that's \$4,000. You might think to yourself that if you go out and sell 100 of these projects, you'll be making some good money – but that's when you need to stop and consider what comes out of that four grand!

Everyone's business is a little different, so the money will get split up in various ways, but there are some things we can say will be on the punch list for sure – including leases, utilities, phones, office supplies, wages, insurance, vehicles, fuel, maintenance and more. One item that comes

depreciation, a *very* real charge against gross profits that typically hits hard when equipment is replaced. And an absolutely important cost to the project is supervision. Even if you supervise all of your jobs personally, your time has a cost associated with it including your benefits and vehicle expenses. And if you hire someone to do it for you, quality supervision cannot be purchased at discount prices!

### **Narrowing Margins**

When you stop and think about it, you have to accomplish a great deal with that

Assuming this holds up for much of the pool business, that means that the company building a \$20,000 swimming pool stands to make a slim \$1,000 on the project. That's all you have left when you've met the commitment to quality construction and customer service required by consumers spending what they see as a significant amount of money.

I don't care how good you are at watershaping: It's not that difficult to spend some of that \$1,000 for anything from weather problems to installation problems on even a basic project. You may

**To my mind, any quality builder ought to be willing to provide substantial warranties and services needed to take care of what is basically a mechanical, engineered system.**



out of that profit margin, for instance, is advertising. This is a huge variable: Some companies do very little advertising, while others live by it in one or more of its forms – cable-television ads, print ads, direct-mail marketing, community participation or charitable works. If nothing else, you're in the Yellow Pages, which at a minimum has a substantial cost.

A significant item can be warranty costs – those things that aren't covered by a product manufacturer but that you still have to go out and take care of for the client. In our company we call these "completed pool costs" and spend money underwriting a "Craftsman Tool" type of all-inclusive warranty that says, "If it's broke, we'll fix it. And if we can't fix it, we'll replace it."

Then there are "non-cash" costs such as

gross profit margin. And if you're being realistic, you have to cover it *all* at values that are realistic to your marketplace. When you get done with that exercise, I would suggest that even the best of contractors don't make more than 5% to 6% – and that's *before* paying taxes.

I acknowledge that in an industry such as this one, with all the variability resulting from local climate and economic conditions, it's awkward to make blanket statements about what a given company should and shouldn't be making. Interestingly, however, when you look at a range of business models – restaurants, manufacturing concerns and all manner of service industries – it's amazing to see how often the real, all-things-considered net profit margin falls somewhere in the 5%-to-6%-pre-tax range.

work like crazy to nail every detail square on the head, but when you work in the real world, things happen. At this barebones level, it means your "profit" can disappear in a heartbeat.

And even if you get by without making too many mistakes, you're still going to see changes in costs for items such as fuel, insurance, wages, taxes – the list goes on and on. In our area, for example, we recently saw a quarter-cent increase in the sales tax – and had dozens of projects on the boards that did not include an increase that will cut into our margin on those projects. That's the real world, and it's all part of being in business.

As pressure increases on the gross-profit end, it's natural to start taking a look at the "other" 80% and at your direct costs. This encompasses expenses related to sales

compensation, permits, excavation, steel, plumbing, forming, concrete, coping, tile, plastering, start-up materials and everything else. With a \$20,000, barebones pool, you have \$16,000 to spend.

Some costs, such as permits or engineering, just cannot be altered. What happens beyond these types of costs is a walk on the razor's edge, and all too often the response is a quest to build at bare minimums or to find corners to cut – and not in the fat but in the muscle of the pool's construction, including steel, plumbing or equipment.

If you build enough pools and you compromise in these construction phas-

es, to someone trying to push an extra dollar or two toward the profit column, but what happens when there's a structural failure of some kind? The potential cost of correcting a catastrophic situation is practically limitless, and I guarantee it's going to eat away at the bottom line far more dramatically than putting in additional steel ever could have. Basically, steel is cheap and provides insurance against structural problems that can literally destroy a reputation and, potentially, one's business.

In one way or another, you're going to find similar long-term-benefits vs. nominal-short-term-gains with just about

that are too numerous to mention including consumer satisfaction and sales referrals. But cut corners and you may find trouble in ways that are too abundant to predict.

Unfortunately, we all know that the pressures of competition tend to create an atmosphere in which clear thinking becomes distorted and cutting corners starts to make sense through this distortion. Those pressures form a rationalization for pulling back on quality, but the truth of the matter is that the margins on these low-budget projects may be just too hard to hit and the competition really only serves to push you over the edge



**The smart path is clear:  
Build the structure above  
minimums, plumb the pool  
correctly, specify equipment  
of the proper size and, in  
general, don't skimp and cut  
corners to save a few dollars.**

es, I suppose you'll make a little bit more short-term money – or so the story goes.

### **Nothing but Problems**

Trouble is, these sorts of compromises will eventually result in problems. And it's not a matter of *if* they will: It's just a matter of *when*.

Consider the steel that's used in swimming pool and spa shells. We all know (or should know) that the design of a gunite shell is based on minimum engineered construction schedules. Yet we all know that there are people out there who save dollars by building to that bare minimum. Hey, it's buried in the ground and virtually invisible – so who's going to know the difference?

This compromise might make sense

every aspect of the pool's basic construction. Savings from under-sizing the plumbing, for example, will be swamped by the cost of replacing failed equipment and the anger of the client who has to live with a noisy pump and high energy bills. We see similar problems with improperly sized or poorly installed equipment sets, poorly applied finish materials – you name it, those short-term savings end up being bludgeoned by the long-term liabilities.

The smart path is clear: Build the structure above minimums, plumb the pool correctly, specify equipment of the proper size and, in general, don't skimp and cut corners to save a few dollars. Put a different way: Build the product properly and you'll have a positive result in ways

into a mode of doing business in which you do nothing but invite more problems.

This is why the lower end of the market is so unstable, so volatile. The ultimate solution is to find ways in which you're not competing on price.

### **Happy Feet**

This, of course, is far more easily said than done.

In our market, for example, we inevitably watch the price-war mentality well up from some contractor or other in the pre-season – the late-winter/early-spring months. This is when you see salespeople moving around between companies in a process I affectionately call "happy feet": What happens is a new person will sign on with a company and immediate-

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ly do whatever it takes to get business going and start the dollars flowing.

That person is going to be as aggressive, competitive and, yes, as *cutthroat* as is necessary to bring in some commissions. There is no thinking about quality or consideration for the long-term ramifications of discount selling. He or she is simply trying to earn a buck. (You also see this sort of “action” with companies on the brink of collapse as they do whatever they need to do in order to generate cash flow, even if it’s not *profitable* cash flow.)

I know there are people in this world who will argue that it is an acceptable

argue that in doing so, we’ve doubtless sent some people to the competition – to which I say, good riddance! In fact, I’ve found that when you establish a firm line of pricing that supports quality, most of the prospects you lose are those who are looking to fight and argue over every nickel and dime – the same people who will drive you crazy with their consistent expectation of more and more for less and less. And you do this just so you can say you built one more pool than your competition?

In other words, there’s no true downside to sticking to your vision if that vi-

counted, the new buyer believes that bargaining is expected as part of the sales phase of buying a pool – which may be driving away those who might have been good, quality-minded clients for your firm because of a sales reputation you may have created by consistent discounting. I truly believe most prospects don’t enjoy the mud-wrestling mentality associated with discount-selling techniques.

Looked at objectively, what we have here is a vicious cycle – and a frightening concept for me as a businessperson. In the real world, I’m held by competition to a fair margin, and that’s a fact I accept.



**Fighting price wars for ‘entry-level’ projects is akin to being lured to the rocks by the Sirens’ song: It sounds good in the moment, but following your impulse is a prescription for ruin.**

business practice to sell products at cost, simply for the sake of establishing cash flow. That loss-leader mentality may work in retailing, but it’s never made any sense to me in construction because the second you look at your business with a long-term view, you see that working for no profit will always catch up with you in unpleasant ways.

Fighting price wars for “entry-level” projects is akin to being lured to the rocks by the Sirens’ song: It sounds good in the moment, but following your impulse is a prescription for ruin. There can be no personal satisfaction in giving away your talents and your production.

Through the years, we at Mission Pools have learned that you need to know your costs and be willing to take a firm stand on both price and quality. Some may ar-

sion is to build only quality. Wouldn’t you really rather compete on a quality level without bargain-basement pricing?

### Where It Counts

A quality swimming pool for a mid-range client may not have all the bells and whistles and sizzle you’d like to build into it, but a quality product will still have what it takes to be highly functional and reliable for years into the future while providing fun for the whole family. And for all that time, it will reflect well on you and your company.

This is a personal decision we as contractors all have to make about how we want to be perceived by our customers, our employees, our competitors and even ourselves. Unfortunately, in a competitive world where the product is too often dis-

By the same token, as a businessperson I’m held by my commitment to my clients and the product itself to maintain a standard of quality that does not waver. It’s what I do to ensure my company’s integrity and reputation in our various markets.

For our firm, quality in terms of swimming pool and spa construction can be broken down into a number of specific categories:

❑ *Excavation:* We dig the pool so it has the appropriate depths and contours for the desired use pattern. Whether it’s a lap pool, a diving pool or a game pool, we dig it to maximize utility and create the dimensions and lines required by the design.

❑ *Steel:* We implement steel schedules that are designed to sustain structures that



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**There are no practical upper limits to what tile, coping and interior finishes can cost, but when we're talking about mid-range pools, it's likely that these features won't be the most expensive of the available choices.**

are going to support our lifetime structural warranty.

❑ **Plumbing:** We treat the veins and arteries of the pool with respect, creating velocities and head pressures that are congruent with the specifications of the equipment. That means appropriate sizing, and it also means proper placement of equipment relative to the pool as well as installing sufficient numbers of returns and suction points for operation and safety.

Our area's plumbing subcontractors

charge by the foot, and you can directly see an increase in cost per foot based on the size of the pipe that makes it tempting to downsize here. But if you study pump curves, head pressures, friction losses and velocities, then you know there is only one right way to size valves and fittings and put the puzzle together in a way that makes everything work. If you don't do it that way, the system will never function properly and your client will be stuck with it.

❑ **Gunite or Shotcrete:** There are many

different opinions on appropriate shell products, but gunite and shotcrete have very specific mix designs that provide installers with shell structures that have particular levels of strength relative to given engineering requirements. This is an area where I really wonder why anyone would ever opt for a minimum installation schedule.

❑ **Electrical:** Control systems, switch locations, the use of time clocks and installation practices in absolute compliance with the National Electric Code (and

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all local codes as well) are absolutely essential to quality pools and spas. In a mid-range pool, this may mean we won't be installing a high-end, low-voltage control system, but it *does* mean that we're giving the customer a basic level of convenience and an ability to control the system – and the ability to upgrade and add more sophisticated controls in the future. In addition, proper grounding and bonding along with proper use of conduit and electrical boxes are all important for safety and the service life of the system.

❑ **Lighting:** Certainly, you can spend a great deal of money on lighting, but in terms of a baseline, we believe all pools should have *some* form of lighting that enhances the use of our product.

❑ **Aesthetics:** There are no practical upper limits to what tile, coping and interior finishes can cost, but when we're talking about mid-range pools, it's likely that these features won't be the most expensive of the available choices. Whatever the cost, however, they should be installed

## Standing Up for Quality

We at Mission Pools have always believed that quality and profitability are completely compatible, and we have been fortunate through the years to have that belief reinforced by our membership in an organization of like-minded contractors.

Indeed, I've always enjoyed the fact that when it comes to issues of quality and construction, my fellow members of the Master Pools Guild are at the top of the poll. Proper structural engineering, sound hydraulics and top-flight construction practices are a given with these companies.

The Guild has 90 members in the United States, Canada, Mexico, Australia and Spain. For more than 35 years now, members have been selectively recruited based on their skills and ability to bring high levels of craft to the Guild while sharing methods, techniques, material uses and successful business practices through member discussions.

In an industry that has been plagued by substandard operators in so many segments, I'm proud to belong to this organization because of the standard of quality maintained by its membership. Additionally, we are motivated by the level of competency within the Guild's membership to continue our company's improvement and keep raising the "bar of quality" for our production.

—G.B.D.

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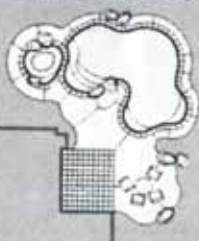
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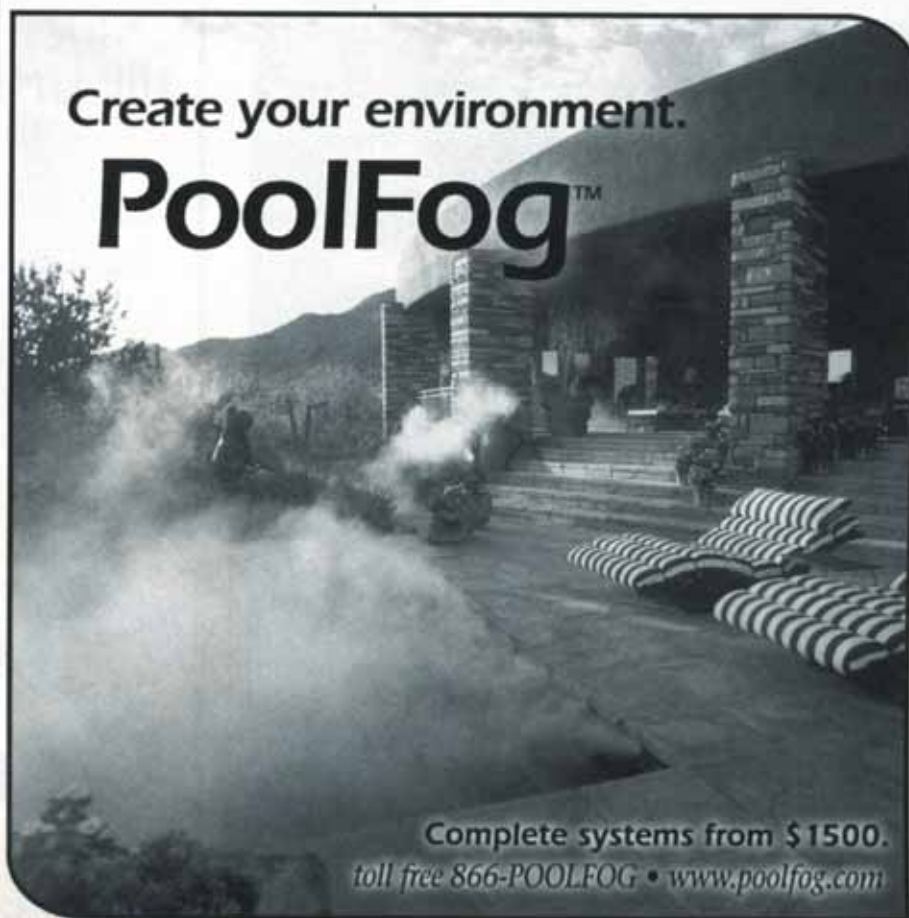
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**Hitting the mark means that clients will be more likely to have positive experiences with their investments, which means they'll be more likely to reflect positively on their decision to purchase a pool and spa and therefore will direct referrals to your business.**

correctly and to last. This is where you "dress for success": Marrying your coping, decking, tile and plaster materials with crisp, clean, quality standards will ensure your project's success.

□ **Start-up:** This is a significant item that contractors often ignore or cut from the process. The fact is, a pool needs to be filled and its chemistry managed as the system comes on line, and it needs to be handed off to the homeowner as well with clear and informative instructions – as many times as necessary!

We go through a step-by-step checklist that prepares the homeowner to use the system, enjoy the pool and know what to do if something goes awry. This means taking the time to answer questions, providing information on safety and maintenance and generally being available for clients when they need advice or encounter difficulties.

### Set for Success

If you're already building a quality product, the list above probably seems fairly obvious. But if it sounds in any way unrealistic, then I suggest it's time for you to rethink the way you're doing business, because your competition is about to eat your lunch.

These are all places where quality cannot be sacrificed for the sake of profit. Hitting the mark means that clients will be more likely to have positive experiences with their investments, which means they'll be more likely to reflect positively on their decision to purchase a pool and spa and therefore will direct re-

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errals to your business.

Experience has shown us that even the most basic pool or spa provides a great deal of excitement to homeowners who are proud of what they have. When the system is designed, engineered and installed based on a quality standard, there are fewer things to distract them from the pleasures of the aquatic experience.

Personally, I don't believe that getting the lowest price possible is the fundamental urge for too many people interested in having pools of their own. Bargains may be nice when you're shopping for groceries, but they surely don't fire the imagination or make for much by way of personal inspiration when it comes to pools and spas. Our clients look at the purchase with a long view toward the pleasure it will provide for years to come, and so should we.

The bottom line is that there is no real secret to building quality in the mid-range market: You simply have to hold your ground on key issues, especially when competition heats up. In our business, for example, we won't install a pool or spa that is compromised in ways we know will hurt the product and/or our business over the long haul. If a client isn't willing to pay a price that enables us to provide quality, then we don't get the contract. It's as simple as that. After all, who cares about the number of pools you build: You can't build them all and probably don't want to!

In all candor, it's hard not to know when you're fudging: Most of us know quality when we see it, and we all should certainly know when we seek to create it.



**Bargains may be nice when you're shopping for groceries, but they surely don't fire the imagination or make for much by way of personal inspiration when it comes to pools and spas.**

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For most of the past four years, landscape architect/contractor/watershaper Mark Holden has devoted much of his professional energy to the creation of magnificent settings for Cima del Mundo, a grand estate high in the hills of Montecito, Calif. In two previous articles, he wrote about the nuts and bolts of the multi-phase project. Here, he steps back and offers a pictorial celebration to mark its completion.

By Mark Holden

# Classic Crescendo

"Project of a lifetime" may not be enough to describe our work at *Cima del Mundo*.

If you'll recall, the hilltop home had experienced many changes since its original construction in 1925, including service as a makeshift monastery as well as a stretch of years in which the property was abandoned and allowed to go almost disastrously to seed. In all its history, however, the estate has never been through as much by way of transformation as it has in the past four years.

*Complete* is the best word to describe what that transformation



has been with respect to restoration and upgrading of existing structures and the addition of formal landscaping. But another word comes to mind in surveying the look of the just-completed project: *authentic*.

Everything about the place looks and feels as though it could have been part of the original construction, right down to the period brass sprinkler heads we used (where they were plainly visible) in preference to modern plastic pop-ups. Everything that's been done is true to the home's Spanish Colonial roots and the inspiration of architect Myron Hunt, who designed the original house in the 1920s.

Projects on this scale – with generous budgets and clients concerned with achieving true excellence in design, artistry and craft – are precious few in number. All of us who have been involved have a sense of privilege in having been asked to participate in the project. We're also proud of what we've accomplished, somewhat relieved that our work is done – and satisfied to see the re-birth of this beautiful property become a reality.

#### ROOTED IN TRADITION

As is the case with so many significant designs, *Cima del Mundo* is rooted in the classics. In this case, the estate's lineage can be traced across nearly 1,000 years to Moorish Spain.

The home itself is in the Spanish Colonial style that was so popular in Southern California in the early years of the 20th Century. *Cima's* architect, Myron Hunt, was a major proponent of this revival and, along with others including landscape architect A.E. Hanson, built or influenced the construction of homes in this courtyard-centered style over much of Southern California.

In our work on the estate, we went to the roots of Spanish style and introduced echoes of the Moorish architecture found at Cordoba, Spain. Our octagonal courtyard fountain, for example, is borrowed directly from Moorish design principles, and the runnel connecting the fountain/spa with the swimming pool can be found in its great original form at the Alhambra.

We see it as our responsibility as designers and builders to recognize situations in which such motifs can be used effectively and appropriately. If there's one lesson that stands above the many others we took away from this project, it's that using, adapting and recognizing our design heritage makes us better and more creative in developing built spaces.

Without our sense of that history, we wouldn't have known where to start – and certainly would have been in no position to meet our client's prime design directive: "Make it look like it was built in 1925."

# The Gatehouse.





The entrance to *Cima del Mundo* features a small stone structure that once served as the Manor's gatehouse. The client wanted on-site lodging during the renovation and decided that the 1,000-square-foot cottage would be the perfect temporary home.

What we found was a shell: The building had been stripped and was a rat-infested wreck – and we had just 60 days to design and complete its renovation to make it ready for a party the client was planning. What followed were 30 days of design work and site preparation chased by 30 days of harried construction – which left us a single day to pretty the grounds up for their premiere.

Fortunately, the existing oak trees provided a beautiful canopy under which to work. We brought in ferns and flowers

at full size to create an “instant forest.” We also diverged a bit from historical accuracy here – basically because 1920s planting plans tended to be a bit dull and also because we *were* pressed for time – and spiced things up with a few non-native plants, including fuchsias, hydrangeas and azaleas.

The single watershape – a small, cast-concrete fountain – was installed in the back to highlight the axis running through the house and into the back yard.

With our client out of the country, we were flying blind – but his last request before leaving was for the most comfortable landscape he had ever experienced. In response, I think we produced our best work to that date – and prepared ourselves mentally for moving up the hill to the manor house at *Cima*.



# The Courtyard.

As we found it originally, *Cima del Mundo* was a beautiful, courtyard-centered home that had an empty space at its core. In fact, the courtyard was a wasteland where the home really should have found its physical and emotional heart.

As a result, our first task on top of the hill was to graft a heart onto the scene – a magnificent core that would bring a sense of unity, vitality and joy to the overall experience.

Now the courtyard and its central fountain are the first things you see when you enter the front doors: The home's inner gallery sets a dark frame for the sun-filled space, and the sound of water can be heard from every one of the home's upper-level rooms.

This inner realm served as a touchstone for the rest of the project and set the stage for all of the design elements that followed. In fact, the pool, main lawn and front entry all feature design concepts and finish materials that proved themselves first in the courtyard.





## A Grand History

Myron Hunt, the architect and designer responsible for *Cima del Mundo*, is best known for his more public projects, including the venerable Rose Bowl in Pasadena.

He was the son of a nurseryman who followed his study of architecture at the Massachusetts Institute of Technology with another year of study in Italy, where he absorbed principles of Moorish and Spanish architecture as translated and expressed in the work of the designers of the Italian Renaissance.

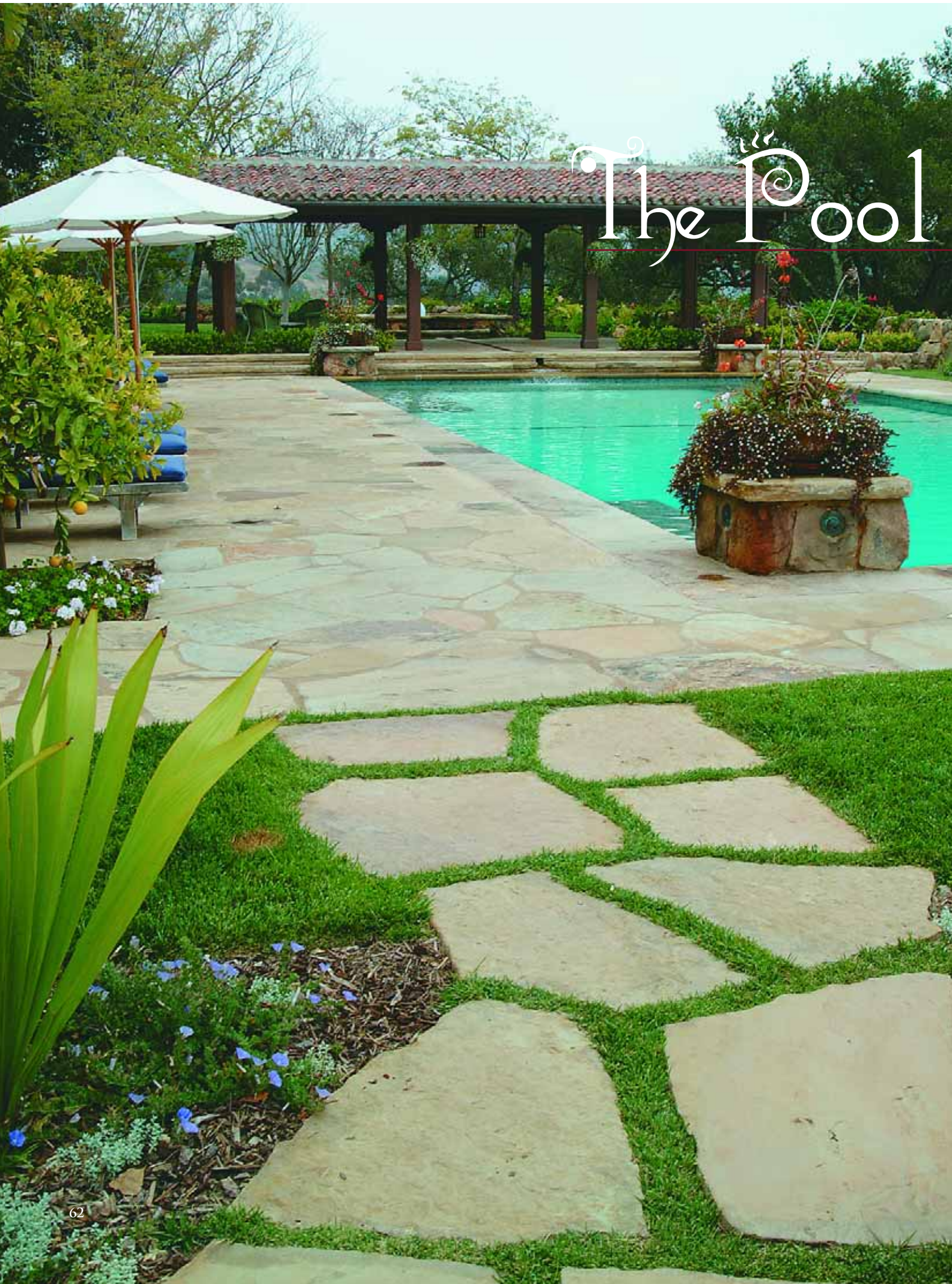
He returned to the United States and began his career in Chicago before moving to Los Angeles in 1903. In the following years, he designed the Rose Bowl as well as the Huntington Library in San Marino, the Ambassador Hotel in Los Angeles and a range of other projects that have withstood the test of time.

He met Lora J. Knight, wealthy widow of a Detroit auto manufacturer, and designed *Cima* for her in 1924. When completed, the home played host to the era's social elite: Charles A. Lindberg once landed his airplane on a field in the front yard – a visit documented on film now in the possession of the Smithsonian Institution.

Today, Hunt's plans for *Cima* and early photographs of the site are available through the University of California at Santa Barbara – an archive that proved invaluable to us in understanding both Hunt's basic concepts and the unusual construction methods we ran into in the course of restoring the home and upgrading its utility systems. We even found unused designs for stone benches, gates and garden elements that inspired some of our work on the hilltop.

–M.H.

# The Pool



# Fountain/Spa.

As we saw in our last visit to *Cima del Mundo*, preparing the setting for the swimming pool and spa involved taking extreme measures to make sure those watershapes would stay right where we put them.

Preparing and retaining the slope and setting up the system of piles and grade beams took many months, and it's something of a shame that all of that hard work is no longer apparent to the casual eye. Indeed, the only things that visitors will see are subtle watershapes that subtly influence perception of the primary feature of the space – the view.

The view is truly the estate's crown jewel, and we organized the entire space to maximize the enjoyment of it. Perhaps the discerning eye will see the Spanish Colonial and Moorish touches that run from the home and down across the pool and fountain/spa area, but the awe comes from looking past anyone's "work" and partaking of the seemingly limitless vistas to the horizon.







## An Appreciation

As a watershaper, I have devoted a significant portion of my life to creating the dreamscape at *Cima del Mundo*, but my fondest memories are less about the place than about the people I met and relationships we developed along the way.

Through four years of the project, hundreds of people from all different trades and professions were assembled in a circus of environmental design and construction that literally blows people away when they see it today and hear our stories about it.

To have been instrumental in such a production has been deeply rewarding. I can say with all honesty that this was the job of a lifetime, and my only professional wish is to be a part of another such project – one that has the same level of devotion to detail and the same level of dedication to excellence that marked everyone who came to work at *Cima*.

– M.H.



The



# Main Lawn.

The main lawn area was constructed using the same engineering methods as the pool area, with modular retaining-wall blocks assembled to support approximately a half-acre of lawn. This sets the foreground for the hill-top's most dramatic view of Santa Barbara and its harbor – and at the center of this foreground is the “Bel Air Fountain.”

The limestone fountain is a reproduction to within an eighth of an inch of a fountain that our client particularly loves in a courtyard at the Bel Air Hotel in Los Angeles. The fact that it was hand-carved in Italy from our measured drawings is quite a story, but the most miraculous technical detail about this watershape is that we had to locate the equipment almost 350 feet away, where it's tucked in a subterranean vault with the pool equipment. To pull this off hydraulically even with the fountain's modest flow requirements, we had to install four-inch suction and return lines.

A significant factor in this space was the fact that the architect never foresaw any use for this steeply sloped space, so there were no appropriate “back doors.” Given the two-foot-thick walls on the home's lower level, cutting new portals was no small task, but now there are three that open visual and physical access to the backyard.

One borrows architectural elements from one of Santa Barbara's best known and most highly regarded structures, the County Courthouse. Another includes a triple set of French doors that allow easy access from the lawn to the Brunswick designed and installed bowling alley. A third allows access to the “pool bar” and changing rooms.



## Inside and Out

Although this and my two previous articles on *Cima del Mundo* (January 2001, page 32 and March 2002, page 30) might make it seem as though all the work happened outside the home, the fact is that our work on the interior was as painstaking, challenging and rewarding as our work outdoors.

Restoring all the teak flooring, revitalizing all the intricacies of the architectural woodwork, putting a classic 1920s Brunswick

bowling alley back in working order, refitting a 20-odd seat screening room, refurbishing massive fish tanks and recapturing the glory of countless period fixtures – the project had something for every trade we could think of.

What made it all work was an uncompromising commitment, inside and out, to quality at the highest level.

– M.H.

## WALL SYSTEMS

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PYZIQUE WALL SYSTEMS makes a versatile, single-stone system that has the look of multi-stone projects. The flat, 25-pound stones are easy to handle and, because they have two faces, can be used to build retaining walls, freestanding stone fences, steps, posts, lawn edges and much more. All of the stones are tumbled to produce a natural, "antique" appearance. **Pyzique Wall Systems**, Jefferson City, MO.

## MULTI-POOL CONTROL SYSTEM

Circle 102 on Reader Service Card



ACU-TROL PROGRAMMABLE CONTROLLERS offers a Mini-Program-System (MPS) on its AK200 pool and spa controller. The controller uses 44 different programs to determine which relays, alarms and pagers should be on or off and allows for remote computer control of up to three pools

for chemicals, motors, lights, heaters, backwashing, water leveling and more. **Acu-Trol Programmable Controllers**, Auburn, CA.

## POOLSIDE BASKETBALL

Circle 101 on Reader Service Card



S.R. SMITH has introduced its new Swim 'n' Dunk basketball game. Designed for use in the shallow end of inground pools, the structure features two 1.9-inch-diameter stainless steel uprights with a competition-quality acrylic backboard and regulation rim. Great for one-on-one as well as team use, the system meets the growing demand for pool games integrated into the pool itself. **S.R. Smith**, Canby, OR.

## WATER SLIDES

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SPECTRUM AQUATICS manufactures the Hercules water slide, a system with wrap-around tubes and water-spray lubrication. The unit comes with a three-year structural warranty and rises 6 feet above deck level with one, two or three flumes. All stairs and the top landing's surface are slip-resistant. The 27-inch-diameter tubes are polyethylene and come in three colors: red, yellow or blue. **Spectrum Aquatics**, Missoula, MT.



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## COATINGS TRAILERS

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## ANTI-VORTEX SURFACE ADAPTER

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**WATERWAY PLASTICS** has introduced an Anti-Vortex Finish Lip Ring. This new component holds finishing materials in place on the company's standard drain lids. Available in six colors, the ring enables the contractor to match the drain's appearance to that of the pool's interior finish for a more polished, professional look. **Waterway Plastics**, Oxnard, CA.

Continued on page 71

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## ADVERTISER INDEX:

|    |  |
|----|--|
| 6  | Advanced Aquaculture Systems (pg. 28)  |
| 2  | Air-O-Lator (pg. 21)                   |
| 3  | Aquamatic Cover Systems (pg. 3)        |
|    | Aquanetics Systems (pg. 53)            |
| 34 | Aquatic Eco-Systems (pg. 72)           |
|    | Aries Enterprises (pg. 53)             |
| 7  | Artistry in Mosaics (pg. 73)           |
| 10 | Castart by Naturescapes (pg. 15)       |
| 5  | Colorado Lining Co. (pg. 68)           |
| 8  | Cover-Pools (pg. 25)                   |
| 11 | Coverstar (pg. 12)                     |
| 26 | Dura Plastic Products (pg. 32)         |
| 13 | Fountains for Pools (pg. 31)           |
| 16 | Genesis 3 Schools (pg. 37)             |
| 12 | International Pool & Spa Expo (pg. 51) |
| 55 | Kasco Marine (pg. 22)                  |
| 63 | Macalite Equipment (pg. 26)            |
| 57 | Meyco Products (pg. 75)                |
| 1  | Natare (pg. 69)                        |
| 4  | National Pool Tile (pg. 31)            |
| 14 | Nightscaping (pg. 13)                  |
| 62 | Oase Pumps (pg. 19)                    |
| 61 | Pacific Clay Products (pg. 30)         |
| 58 | Pem Fountains (pg. 9)                  |
| 49 | Pentair Pool Products (pg. 11)         |
| 15 | Pond Care (pg. 55)                     |
| 9  | Pond Supplies of America (pg. 68)      |
| 30 | Pool Cover Specialists (pg. 33)        |
| 45 | PoolFog (pg. 53)                       |
| 66 | Praher Valves (pg. 8)                  |
| 20 | Quikspray (pg. 54)                     |
| 54 | Rain Drop Products (pg. 54)            |
| 51 | Regal Plastics (pg. 72)                |
| 59 | Rock Formations (pg. 29)               |
|    | Rock & Water Creations (pg. 20)        |
| 48 | Roman Fountains (pg. 17)               |

|    |  |
|----|--|
| 67 | Roman Fountains (pg. 55)               |
| 22 | Saffron Pool Rails & Railings (pg. 73) |
| 53 | SGM (pg. 23)                           |
| 24 | S.R. Smith (pg. 49)                    |
| 35 | Spray Force Mfg. (pg. 14)              |
| 47 | Sta-Rite Industries (pg. 76)           |
| 42 | Standard Bronze (pg. 52)               |
| 52 | Stegmeier Corp. (pg. 16)               |
| 32 | Sundance Spas (pg. 7)                  |
|    | Transtec (pg. 69)                      |
| 65 | United Elchem Industries (pg. 69)      |
| 50 | Universal Tile Co. (pg. 52)            |
| 69 | W.R. Meadows (pg. 27)                  |
| 56 | Waterway Plastics (pg. 2)              |

## OF INTEREST INDEX:

|     |  |
|-----|--|
| 100 | Pyzique Wall Systems (pg. 68)              |
| 101 | S.R. Smith (pg. 68)                        |
| 102 | Acu-Trol Programmable Controllers (pg. 68) |
| 103 | Spectrum Aquatics (pg. 68)                 |
| 104 | Perma-Tech Industrial Coatings (pg. 69)    |
| 105 | Waterway Plastics (pg. 69)                 |
| 106 | Pentair Pool Products (pg. 71)             |
| 107 | Hadco (pg. 71)                             |
| 108 | Aqua Vac Systems (pg. 71)                  |
| 109 | Haddonstone (USA) Ltd. (pg. 71)            |
| 110 | Paramount Pool & Spa Systems (pg. 71)      |
| 111 | Kichler Landscape Lighting (pg. 71)        |
| 112 | Dura Art Stone (pg. 71)                    |
| 113 | WET Institute (pg. 71)                     |
| 114 | Universal Pool & Spa Tile (pg. 72)         |
| 115 | Astral Products (pg. 72)                   |
| 116 | Zodiac Pool Care (pg. 72)                  |
| 117 | Northern Filter Media Int'l (pg. 72)       |
| 118 | Clearwater USA (pg. 73)                    |
| 119 | Mayco Concrete Pumps (pg. 73)              |
| 120 | Coverstar (pg. 73)                         |
| 121 | L.M. Scofield Co. (pg. 73)                 |

## COMMERCIAL PUMPS

### Circle 106 on Reader Service Card



**PENTAIR POOL PRODUCTS** has published literature on its C-Series of high-performance commercial pumps. The pumps come in five models from 5 to 20 horsepower with single- or three-phase motors. The four-page brochure includes performance and efficiency curves as well as schematics, specifications and information on standard features and materials of construction. **Pentair Pool Products**, Sanford, NC.

## ROBOTIC POOL CLEANER

### Circle 108 on Reader Service Card



**AQUA VAC SYSTEMS** offers the Tiger Shark pool cleaner, a robotic device that automatically "reads" the size and shape of the pool and programs itself for efficient cleaning patterns. Each suction-side unit features an easy-clean cartridge filter, an adaptive seek control, a 75-gpm suction rate, a five-hour work cycle, a 24-volt motor unit and a two-year factory warranty. **Aqua Vac Systems**, West Palm Beach, FL.

## PRESSURE-TEST PLUGS

### Circle 110 on Reader Service Card



**PARAMOUNT POOL & SPA SYSTEMS** offers pressure-test plugs for use with its in-floor pool-cleaning systems. The new plugs install easily into the cleaner heads on the pool floor and can be pressurized up to 50 psi. Developed to allow for blowing out construction debris one line at a time, they can also be used to keep debris out during refinishing and for winterizing plumbing lines. **Paramount Pool & Spa Systems**, Tempe, AZ.

## POOL WALLS FOR FOUNTAINS

### Circle 112 on Reader Service Card

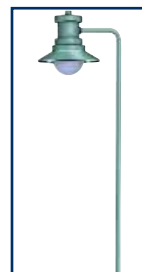


**DURA ART STONE** makes pool walls for use with a range of fountains. Typical pool configurations include Roman-style and quatrefoil forms as well as circles and squares. Pool configurations and drawings (complete with field dimensions) are required. The walls are available with three standard profiles or can be custom-made. Several special pool copings are also available. **Dura Art Stone**, Fontana, CA.

## DECORATIVE PATH LIGHTS

### Circle 107 on Reader Service Card

**HADCO** has introduced SPL4, SPL5 and SPL6 – decorative, low-voltage path lights made of solid brass (with the exception of the stainless steel shade on the SPL4-N or the copper shade on the SPL5-N). The fixtures are provided in natural brass or are chemically dipped to achieve the patina of an oiled-bronze finish. No tools are required for re-lamping, and all fixtures come with a 20W T3 halogen lamp. **Hadco**, Littlestown, PA.



## CLASSIC STONE FOUNTAIN

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**HADDONSTONE (USA) LTD.** manufactures the Eton College Fountain (Model C3600), a three-tier structure the company first made to replace the badly deteriorated original. Three ornate pedestals support decorative shell bowls, with the top bowl surmounted by a naturalistic bud-shaped spout. The lowest shell is 37 inches wide; the overall height is more than six feet. **Haddonstone (USA) Ltd.**, Bellmawr, NJ.



## ACCENT LIGHTING

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**KICHLER LANDSCAPE LIGHTING** offers Model 15397 accent lights for high-end landscapes. The machined, die-cast aluminum or brass fixtures include heat-resistant glass fully sealed to allow for up-lighting or downlighting applications, with angled glass allowing for easy water run-off. The fixtures can be used with either 35-watt MR11 or 50-watt MR16 lamps. **Kichler Landscape Lighting**, Cleveland, OH.



## MODULAR CARTRIDGE FILTER

### Circle 113 on Reader Service Card

**WET INSTITUTE** offers Modufilter, a high-performance, modular cartridge-filtration system for pool and spa applications. Available in sizes from 180 to 400 square feet, the systems include cartridges with extra wide and deep pleats to ensure low maintenance and long filter cycles as well as a balanced-flow design to maximize filtration efficiency. The stainless steel tanks come in tan or gray. **WET Institute**, Piru, CA.



## POOL AND SPA TILE

Circle 114 on Reader Service Card



Universal Pool & Spa Tile, Northridge, CA.

UNIVERSAL POOL & SPA TILE offers a catalog on its full line of tiles for pools and spas. The 20-page, full-color brochure highlights various lines that offer the appearance of slate or stone in many patterns and textures as well as tiles printed with such forms as camellias, angel fish, shells and more set in subtle relief on the surface. Glass tiles and mosaics are also available. **Universal**

## AUTOMATIC POOL CLEANERS

Circle 116 on Reader Service Card



the clean trap. The device includes few moving parts and comes with a two-year warranty. **Zodiac Pool Care**, Pompano Beach, FL.

ZODIAC POOL CARE offers Mars HP, an automatic, pressure-side pool cleaner. Designed to clean a 15-by-30-foot pool in less than three hours with no hang-ups, the unit collects large debris (such as oak leaves and acorns) as well as fine debris (such as sand) in its large-volume, easy-

## SAND FILTERS

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ASTRAL PRODUCTS offers the Millennium line of sand filters. The heavy-duty, one-piece HDPE filter tanks are molded without joints or weldings, and the laterals feature a 360-degree, full-flow design. Units are supplied in three basic configurations (with or without pumps) with six-way selector valves. They come in three sizes with filtration surfaces from 1.6 to 2.64 square feet. **Astral Products**, Jacksonville, FL.

## ALL-NATURAL FILTRATION MEDIUM

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NORTHERN FILTER MEDIA INT'L manufactures Zeobest, a 100%-natural filtration medium. The product meets NSF Standard 50 and features a large surface area that filters particles down to 3 microns. In addition, the material has a high ammonia-holding capacity that reduces eye burning and odors - which leads to lower chemical use, fewer backwashes and lower costs. **Northern Filter Media Int'l**, Muscatine, IA.

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## SALT CHLORINATORS

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CLEARWATER USA makes the LM Series of salt chlorinators. The device sanitizes pool water with a set-and-forget control system and also automatically manages its own self-cleaning cycles. In addition, there's a superchlorination function that can be activated at the touch of a button to boost chlorine levels to compensate for heavy bather loads or periods of high temperature. **Clearwater USA**, Phoenix, AZ.

## PLASTER-PUMPING RIG

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MAYCO CONCRETE PUMPS has introduced the MG-30, a rugged, reliable, highly efficient system for application of plaster and pebble finishes. Powered by a 35-horsepower diesel engine, the unit is available in a pump-only model or as a combination pump/mixer – with both mounted on the same trailer. Both models are designed for high volumes, low maintenance and long service lives. **Mayco Concrete Pumps**, Carson, CA.

## COVERS FOR VANISHING-EDGE POOLS

Circle 120 on Reader Service Card



COVERSTAR offers automatic pool covers intended for use with vanishing-edge designs. Each project will offer numerous mounting options, so early consultation with the supplier is important. In general, these applications use underguides on one side of the pool and topguides or flush deck guides on the sloped side; water passes under the suspended cover guide on its way to the collection trough. **Coverstar**, Provo, UT.

## CEMENT TOPPING

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L.M. SCOFIELD CO. makes Texturetop, a cementitious topping with improved workability and higher strength in a wide range of attractive integral colors. Designed for surfacing and texturing interior or exterior concrete, the fast-setting product comes in stamp-grade and stencil-grade formulations and offers abrasion-resistant surfaces with excellent moisture and freeze/thaw resistance. **L.M. Scofield Co.**, Los Angeles, CA.

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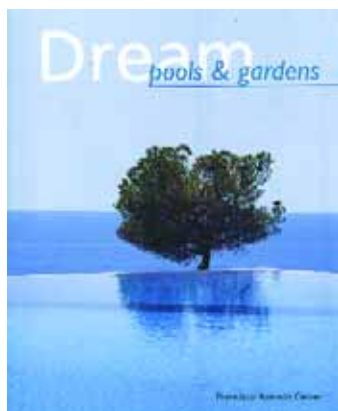
## A View from Abroad

It's a simple fact: There are real differences in the way designers and builders do things in different parts of the world.

This is particularly true for swimming pools and other forms of decorative water: In some areas, for example, the focus seems to be mainly on the water and on details associated with the water-shape itself. In others, the focus seems to be less on the water and more on the surrounding details, such as decks, walls or architectural features.

Whichever way it goes, it's always beneficial for designers to expose themselves to the work of watershapers from around the world. The best way to do this, of course, is to travel and see these projects for yourself. But if you're like me, you may not have the time or the resources to travel extensively – at which point reading becomes the next best thing.

Here's a look at three books that focus mostly on watershapes found beyond the United States. All are published in English and are generally available here.



□ *Dream Pools & Gardens*, written by Francisco Asensio Cerver (published in 1999 by Stewart, Tabori and Chang in New York), focuses on swimming pools from around the world, including several European projects, some in Puerto Rico, the Dominican Republic and Indonesia – and a handful from the United States, including the famous rock pool and grotto at the Playboy Mansion in Los Angeles.

The book is divided into sections on panoramic pools, architectural designs, Mediterranean-style pools and pools with a tropical look. By and large, these are fairly spectacular pools by residential standards, with a few looking like they belong to small resorts.

By and large, these are also highly creative designs – including a few placed in built spaces or on slopes that clearly required some sublime engineering. And it doesn't hurt that the photographic coverage often moves beyond the watershapes themselves to show how the vessels work as parts of their surrounding garden spaces.

□ *Small Pools* – written by Fany Tafari, edited by Paco Asensio, published by Loft Publications in Spain in 2001 and distributed in the United States by Harper Collins of New York – is a 176-page text offering 28 case studies of relatively small residential swimming pools found through-

out Spain.

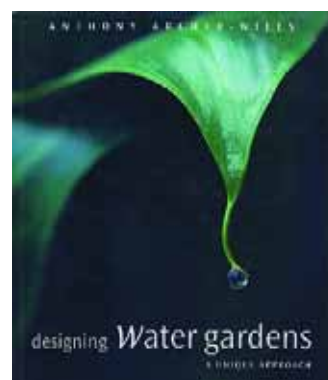
It's a beautifully illustrated book, with lots of large photos that do a good job of showing the variety of details popular with European consumers. There's broad use of stucco, tile and stone decking as well as extensive use of painted surfaces and wood in areas surrounding the pool – and lots of elegant glass tile mosaics.

For the most part, these are rectangular pools in a nice sampling of contemporary and classic styles – with a few highly detailed indoor pools thrown in for good measure. Many of these pools are installed in homes that are obviously extremely old, and the photos do a good job of showing how the finishing details of modern work can be used to blend new design elements into classic settings.

□ *Designing Water Gardens*, written by Anthony Archer Wills and published in 1999 by Conran Octopus Ltd. in London, is all about naturalistic watershapes found throughout Great Britain. Many of the projects are by Wills, a landscape architect famous for his ponds and water gardens, but the book features the work of others as well.

Unlike the other two books described above, this one focuses on the types of watershapes. In its 190 pages and four sections, the book covers springs, fountains and jets; streams, rills and canals; waterfalls, cascades and water stairs; and swimming pools, hot tubs and ponds.

Before each section, Wills discusses environmental qualities that inspired the designs. His primary focus is on decorative water, but there's a nice variety of features and details that could easily be placed in the context of a swimming pool or spa. In fact, I found this book in particular to be an excellent resource for ideas. **WS**



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