

Inside: Brian Van Bower on Time Management

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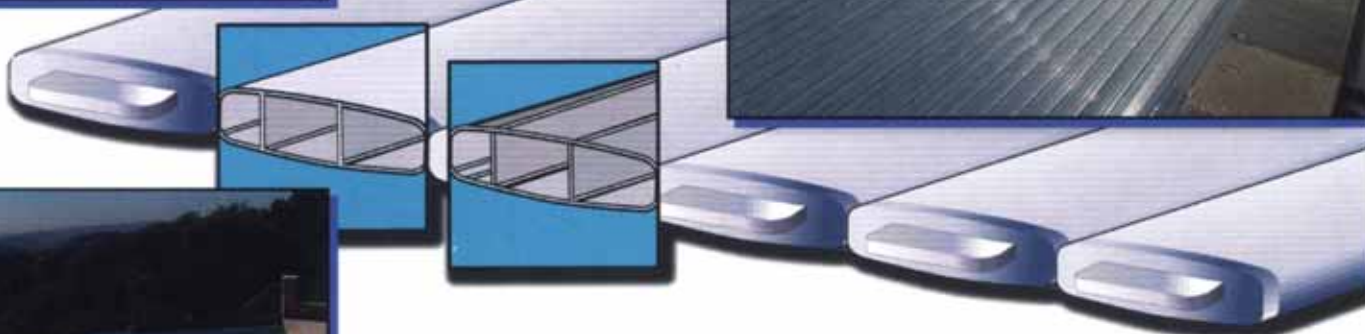
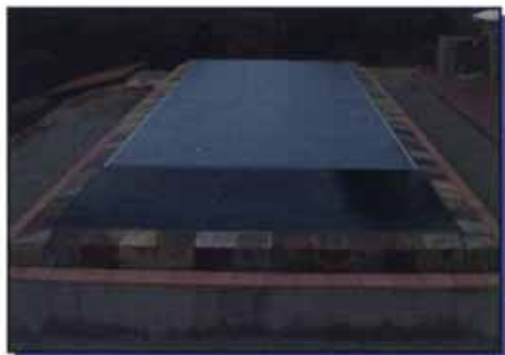


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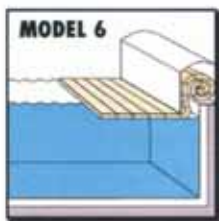
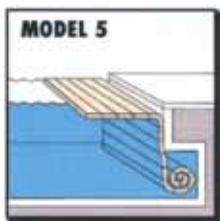
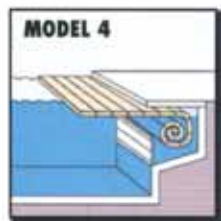
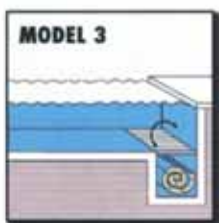
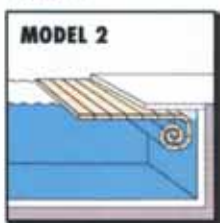
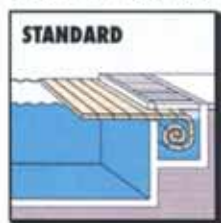
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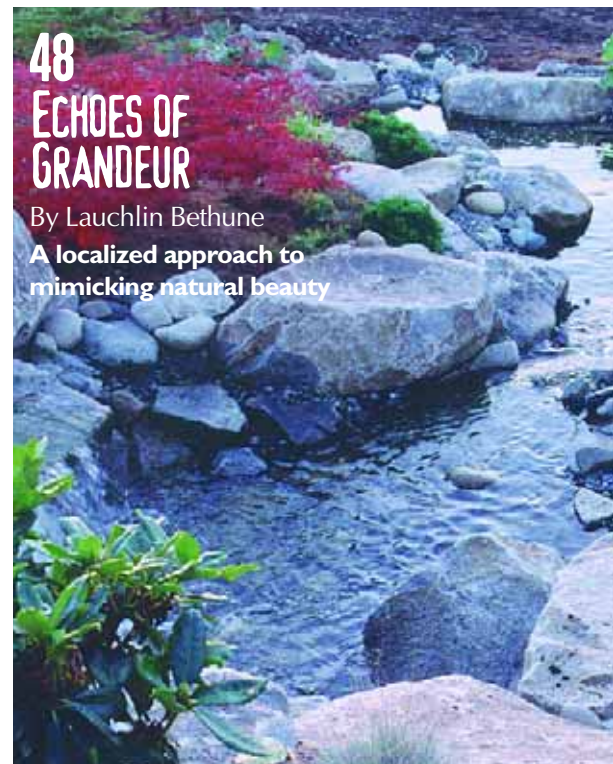
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On the cover:
Photo courtesy David Tisherman,
David Tisherman's Visuals, Manhattan Beach, Calif.

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**SPLASHES
OF COLOR**

By David Tisherman

**Unusual hues for a
distinctive watershape**

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

POSTMASTER: Send address changes to *WaterShapes*, P.O. Box 1216, Lowell, MA 01853-9930.
Periodicals postage rates paid at Woodland Hills, CA 91365 and additional mailing offices.

The Ultimate Canvas

I envy landscape architects and designers and your involvement in the design of everything from small, intimate residential spaces to sweeping acreage intended for public use.

This creation of exterior spaces for human occupation is a fascinating profession, and I can only imagine how satisfying it must be to take a project from concept to reality and ultimately see these spaces come to life as people begin to interact with the newly built environment and move among all of its features.

When we began publishing *WaterShapes* four years ago, we saw that a good portion of our readers and authors ultimately would come from the ranks of landscape architects and designers, but I don't believe we envisioned back then just how strong those ties would so quickly become. After all, where the pool and spa industry is 100% about water, only a portion of the typical landscape project has to do with any sort of watershape.

Virtually from the start, however, the response to the magazine from the landscape community has been supportive and more enthusiastic than we could ever have imagined. We knew that we were on solid ground with the pool industry before we put any ink on paper; we've now confirmed that we were on *terra firma* with the landscape trades right from the start as well.

Universally, we've encountered tremendous interest in what makes watershapes tick – how they're designed, how they fit into their settings, what materials work, what systems make the most of the available effects, how they're installed, how they are fine-tuned and, ultimately, how the vision becomes reality. As it turns out, what we saw as common ground for pool people and landscape people was a grander and more compelling space than even we had thought.

The diversity of what we've found continues to amaze me. In this issue, for example, we have two articles from landscape architects that represent opposite ends of the spectrum when it comes to scale, scope and purpose.

In "Cooling the Flock" by John Copley and Lynn Wolff, we follow the renovation of a big deck-level fountain and plaza in Boston's historic Back Bay neighborhood. Here, we find a watershape originally designed as an ornament for a significant church that has evolved into a gathering place for throngs of area children who use the fountain to beat the summer heat. It's a renovation with a lofty architectural purpose that also involves a keen understanding of interactivity and children at play.

By contrast, in "Echoes of Grandeur" by Lauchlin Bethune, we survey the work of a landscape architect who specializes in creating naturalistic watershapes for a mostly residential clientele in the Seattle area. The work is smaller in scale and more intimate than is the case for Copley and Wolff, but Bethune's work involves just as keen a sense of the setting and the sublimely interactive nature of water in motion.

When you break it right down, what these two articles have most in common is the creative use of water. That, it seems, is just about all it takes.

Perhaps this is why so many landscape architects and designers have come to see *WaterShapes* as a publication that very much serves their interests as well as those of pool, pond and fountain designers and builders. Perhaps this is so because water itself is able to exist, comfortably and beautifully, wherever designers of any variety are striving to create enduring beauty.



WATERSHAPES

Editor

Eric Herman — 714.449-1996

Associate Editor

Melissa Anderson Burress — 818.715-9776

Contributing Editors

Brian Van Bower David Tisherman
Stephanie Rose Rick Anderson

Art Director

Rick Leddy

Production Manager

Robin Wilzbach — 818.783-3821

Circulation Manager

Simone Sanoian — 818.715-9776

Director, Marketing and Sales

Stephanie Behrens — 818.715-9776

National Sales Manager

Camma Barsily — 310.979-0335

National Sales Representative

Sherry Christiaens — 505.421-3100

Publisher

James McCloskey — 818.715-9776

Publishing Office

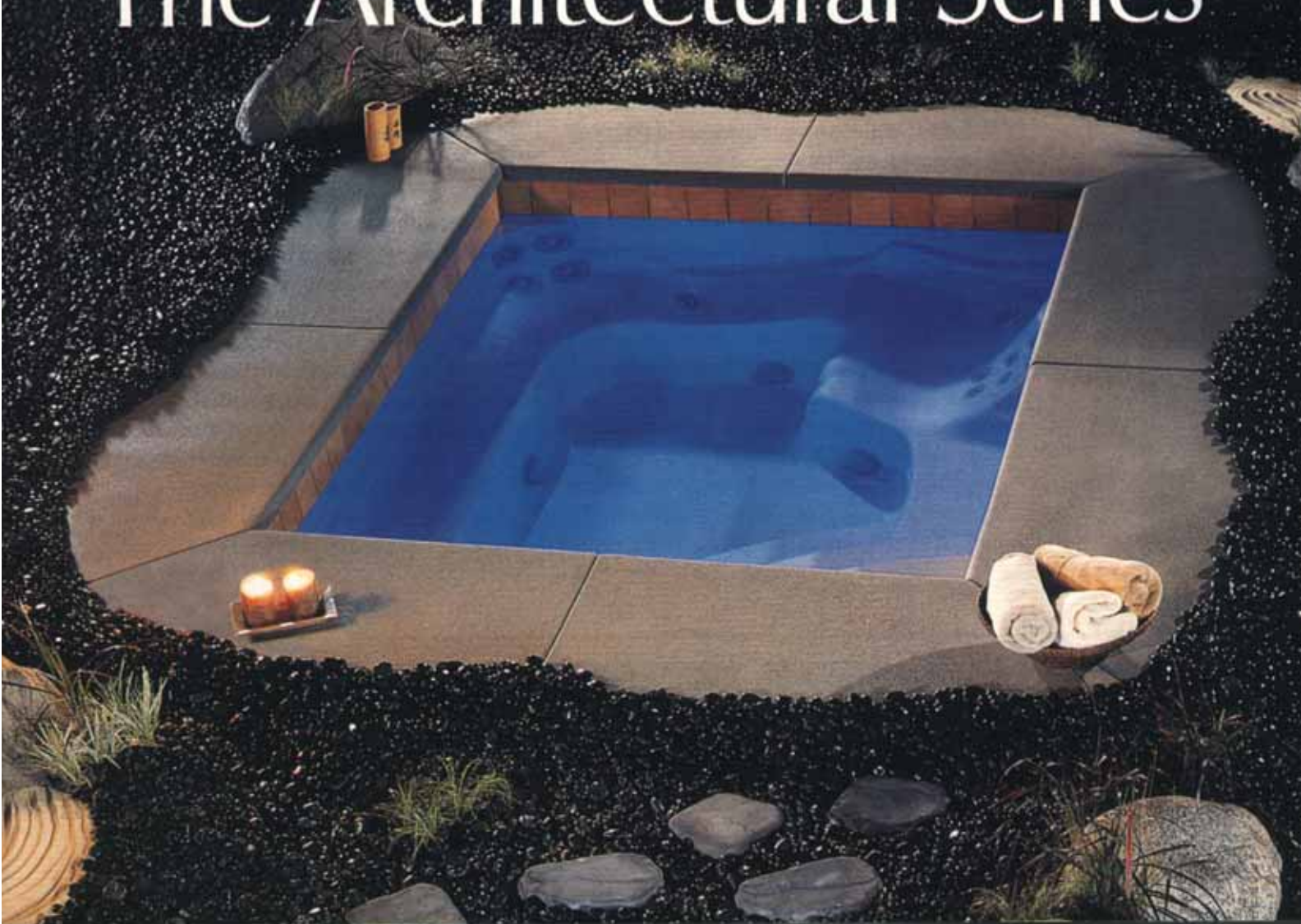
McCloskey Communications, Inc.
P.O. Box 306
Woodland Hills, CA 91365
Tel: 818.715-9776 • Fax: 818.715-9059
e-mail: main@watershapes.com
website: www.watershapes.com

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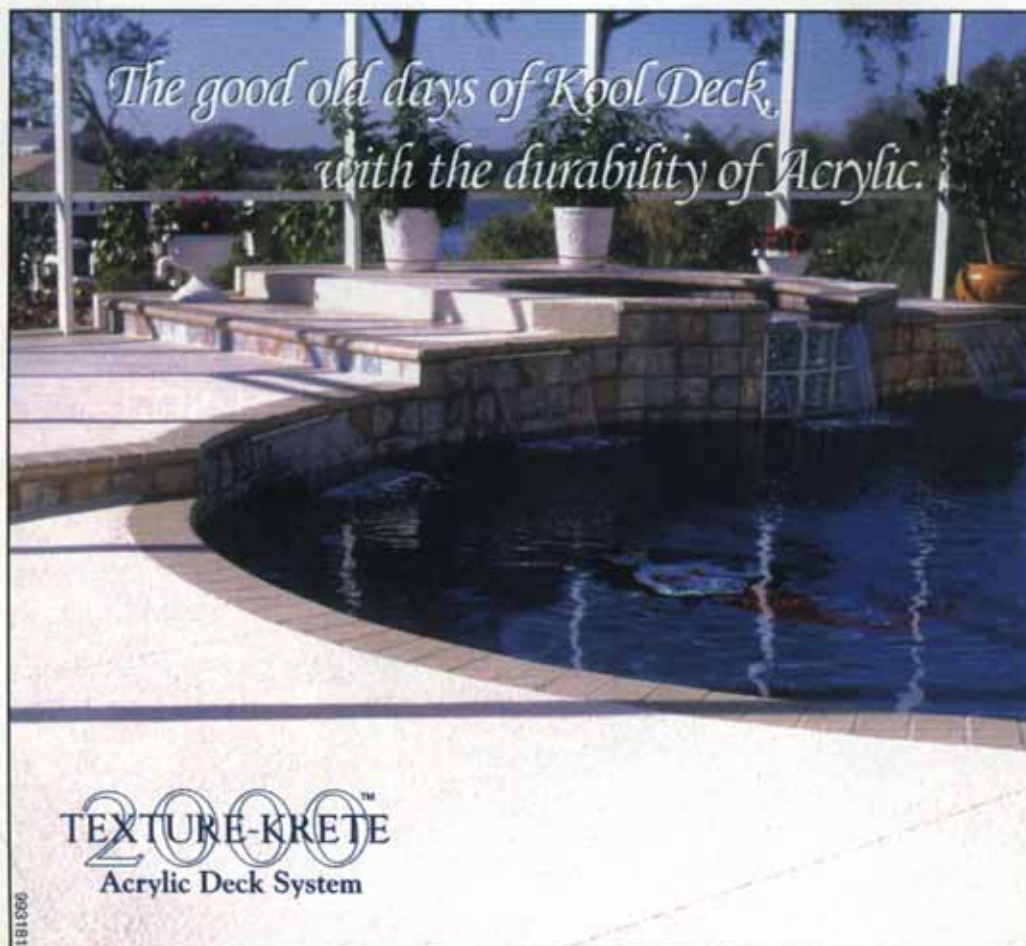


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John Copley is founder and owner of Copley Wolff Design Group, a landscape architecture firm in Boston. With extensive experience in site planning, design and implementation of projects throughout New England, he has been responsible for a wide variety of award-winning spaces, including streetscapes and urban design projects noted for a special sensitivity to design and detailing consistent with historical contexts. He is actively involved in all phases of the business, from office management and community involvement to project management, design and construction. **Lynn Wolff** has more than 20 years' experience in planning and designing for public and private clients and is a registered landscape architect in Massachusetts and New York. Her speciality is complex urban projects requiring expertise in

management for multi-disciplinary project teams, multiple clients and extensive cultural, historical, public-art and public-participation components. She often collaborates with outside design professionals, artists, government agencies and non-profit neighborhood groups to design public spaces that successfully reflect the diversity and cultural richness of their surroundings.

Paul L'Heureux is president of Crystal Fountains, a waterfeature design, engineering and construction firm based in Toronto. Working as a team of experienced architectural waterfeature specialists, the Canadian firm produces high-end commercial fountains and waterfeatures around the world. A "career world traveler," L'Heureux has more than 20 years' ex-



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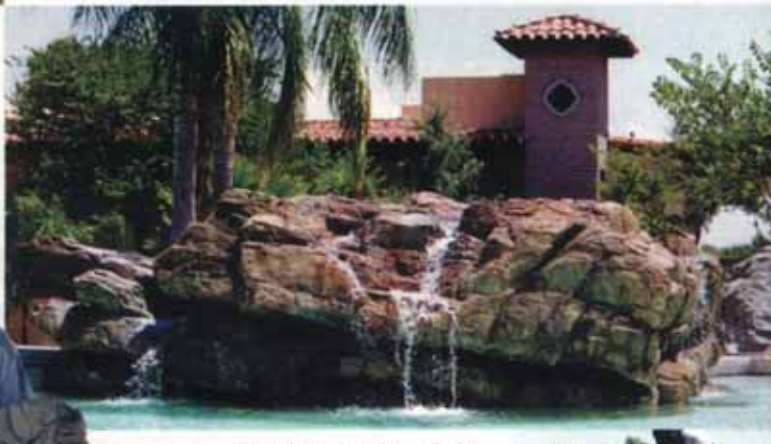
Lauchlin R. Bethune is a landscape architect in Kent, Wash. With 20 years of experience in a variety of disciplines including exterior design, watershape design and construction, urban planning, site development and environmental remediation, he is a 1982 graduate of the University of Oregon with a degree in landscape architecture. For the past 11 years, he has run his own firm, Lauchlin R. Bethune Associates, and has focused on projects for both residential and commercial clients. His work includes design and project management for all phases of exterior design, including planting plans, hardscape design and sequencing of large residential and commercial spaces.

David Tisherman owns and operates David Tisherman's Visuals in Manhattan Beach, Calif. A designer and builder of high-end custom swimming pools since 1979, he is widely known in the pool and spa industry as an advocate for the highest possible standards of design, engineering and construction. He has degrees and credentials in industrial design, scientific illustration and architectural drawing from Harvard University and Art Center School of Design and has taught architectural rendering and presentation at UCLA. An award-winning designer, he serves as an industry expert for California's Contractor State License Board and has been a member of NSPI's Builders Council since 1994. Tisherman is a co-founder of and principal instructor for the Genesis 3 Design Group.



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Time's Not On Your Side

I don't know if it's because I work in the pool and spa industry or if this is common to other fields, but I know a great many people who run businesses who are ill-prepared to do so.

Architects and landscape architects might have taken some classes that introduced them to basic business principles, but their counterparts in the pool and spa trades are far less likely to have taken such classes and tend to run things by the seat of their pants.

In my case, I've learned what I know about business through seminars and business-oriented reading. I've made a lot of mistakes along the way and wish I'd had formal training that would have simplified things for me, but I've been diligent about trying to catch up and improve my business skills as I go.

Two huge topics I've been focusing on lately are time management and goal setting, which is what I'll be discussing in this column and the next.

When you manage your time effectively, you have more time to think about what you're doing, both day-by-day and over the long haul. You have time to reflect and plot your course and decide where you want to go and what you need to do to get there.

Planning to Plan

Time management and goal setting are inter-related: The goals you set will dictate many of your priorities, which in turn guide you in planning your time. By the same token, efficiently managing your time enables you to pursue your long-term game plans on a daily basis.

Although they are interrelated, I still place time management first on my chart of priorities.

When you manage your time effectively, you have more time to think about what you're doing, both day-by-day and over the long haul. You have time to reflect and plot your course and decide where you want to go and what you need to do to get there. This is important in so many ways that I'd think it would be self-evident to everyone, which is why I'm *amazed* by how many people I meet who appear to have little or no control over their own time.

For me, resolving time management issues all flows from the ability to visualize how you get things done. In this sense, business owners and managers aren't unlike championship athletes in the degree to which visualization keys success. In fact, if you take nothing else away from this column, I urge you to recognize that when you can visualize something, you stand a far greater chance of seeing it come to fruition.

In practical terms, time management begins with the simple recognition that each day is made up of a list of things we intend to do. Some people keep their lists in their heads, while others use calendars. Some use elaborate scheduling programs in their computers, while others cram all they can into hand-held data assistants.

For my part, I use a combination of pen and paper and a hand-held device that carries my

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calendar, key contacts and other important bits of information.

I bring up hard-copy methods vs. digital technology early on because it's important for everyone to find their own comfort levels with what's available today. In my case, I don't need to be in constant communication with my e-mail, nor do I need up-to-the-minute stock

prices or to be in contact with the outside world 100% of the time. As a result, a whole lot of intriguing technology is just over the top and not worth the time it would take me to integrate it into my working life.

That said, I would be lost without my electronic organizer, which I use to schedule events up to two years out. It's

very helpful with details, although I've learned the hard way that it's important to back it up on my desktop computer back home.

I've come to depend on this device, but a far more ordinary system guides me daily: I make lists. I use a clipboard and pads of legal paper for listing everything I need to do in a given day—business and personal. And as I progress throughout the day, I take pride in crossing items off of my list.

Setting Priorities

Keeping lists is one thing, but assessing the importance of various tasks and prioritizing what you do can be quite another.

We all know how easy it is to get wrapped up with the small things and never get to the major projects at hand. For myself, I consciously assess the relative importance of smaller tasks and the benefit or payoff they provide, then select a handful that I will take care of before jumping on a major, more time-consuming job. My desire here is to keep the small tasks from piling up and getting to a point where they provide all the distraction of a much bigger task.

Business educators offer a variety of techniques for prioritizing. Some praise numeric systems in which a "value" is assigned to each task based on its benefit relative to the time it will take. To me, that seems like yet another time-consuming task all by itself, and I'm perfectly fine with being more subjective.

However you choose to proceed, the key is remembering, first, that you need to have a list of some kind in order to prioritize tasks at all and, second, that you need a system for assessing the importance of the things you put on your list.

This same "sorting principle" also works when it comes to keeping paperwork straight. Most busy people I know have piles of papers in their offices, and I'm among those who are comfortable with a moderate level of clutter around me. Some people work with *extraordinary* piles of stuff around them at all times. It's all about finding a comfort level and having some way of working through the clutter to accomplish tasks that need to be accomplished.

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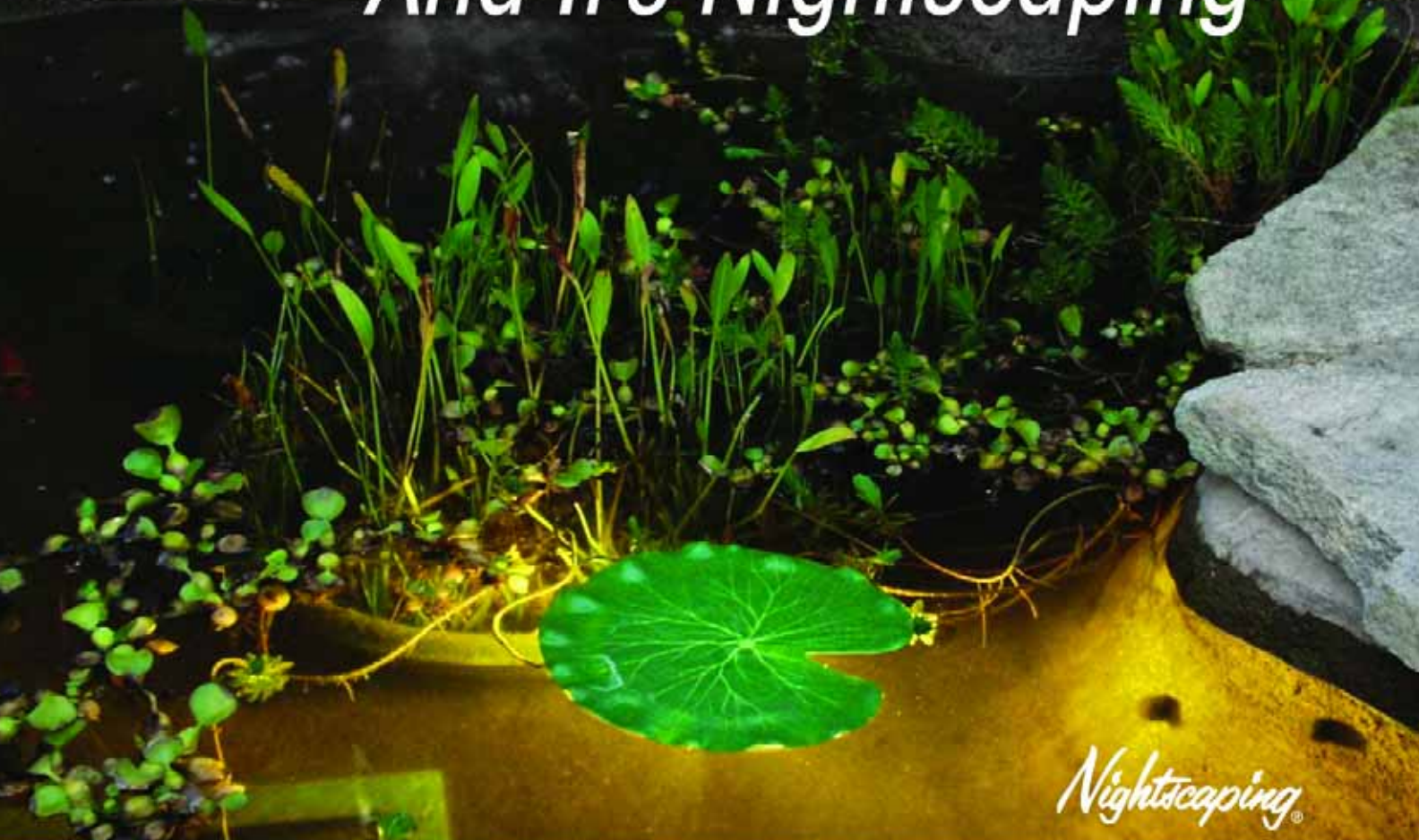
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Through the years, I've developed a simple filing system. I have two rolling cabinets in which I keep all of my active job files in alphabetical order. The files contain all information relevant to the project, and they are always within easy reach from a project's earliest phases through completion. When a job is finished or appears as though it's not going

to move forward for whatever reason, I transfer those files to a less accessible storage area.

In addition, I maintain on my desk two key piles to which I am constantly adding and subtracting. One is a pile of items that I will "get to, time permitting" that are *not* on my to-do lists. The other is a stack of things that I will need down the

road at some point. These piles are diverse and range from information about items I've ordered to notes about some sort of correspondence I must compose or just something I need to read or act on for some reason or another.

If I had to point to a weakness in my behavior, it's that I need to do a better job of putting things in files, particularly items that don't go in job folders but are either personal in nature or relate to some general aspect of the business. I tend to allow these items to accumulate so that I can "do all my filing at once" – the ultimate procrastinator's excuse.

Face Time

In addition to your own "stuff," other people have an obvious role in your ability to manage time.

One of my favorite old sayings is, "If you want something done, find a busy person." It underlines the fact that there are certainly people who will accelerate your progress and those who will just as certainly waste your time.

If you're an employer, you have the wonderful opportunity to delegate activities and distribute tasks among your staff. I don't have a staff anymore, but when I did, I was well aware of the advantages and disadvantages that came with working that way: Some will help in managing time effectively; others will drain away your ability to work with any efficiency at all.

As a manager, you need to step back, assess priorities and evaluate the talents of employees to be able to delegate tasks effectively. As a rule, if you can assign a task and know that it will be done reliably and finished to your own standards, then the job is well assigned. If you can't delegate with that degree of comfort, you'll almost certainly find yourself thinking that you're better off doing something yourself – and a new time-management crunch is born.

Employees aren't the only folks who will waste your time. When you meet vendors, clients or colleagues, there's a natural tendency to engage in discussions that are not directly related to business. This is ultimately a good thing that makes doing business enjoyable, and I fall into it easily because I'm an affable guy.

Continued on page 16



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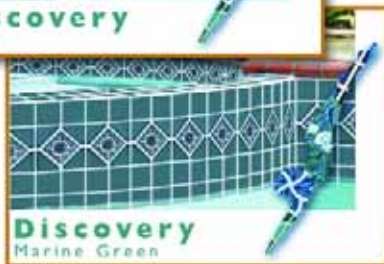
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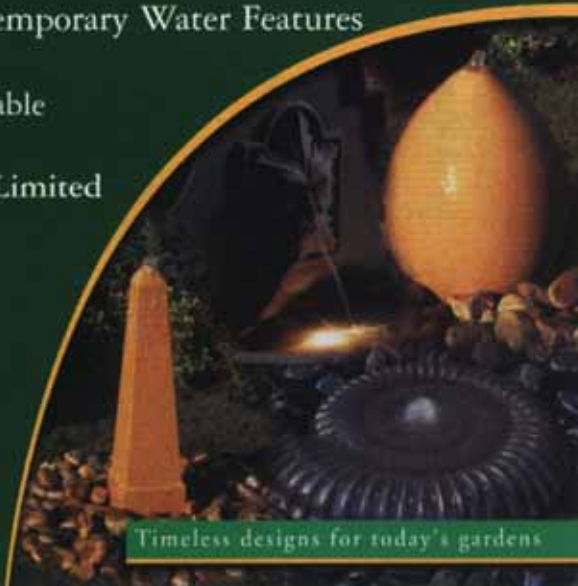
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AQUA CULTURE

Even so, I've come to realize that I need to keep things moving along when I meet people face to face, and I've hit on a couple tactics that help me do just that. When I need a discussion to take place with a minimum of extraneous conversation, for example, I stand during the meeting, either next to my drafting table or someplace else where the discussion can comfortably take place. I do so because when people sit down, they tend to settle in and ramble on.

I also listen carefully in meetings, and when I feel we're drifting I'll speak up and say what I think is on the other person's mind. If I'm on target (or even if I'm not), I find that it spurs the conversation back to a constructive direction.

I also like to schedule my meetings in bunches—for two reasons: First, the fact that there's a "next" appointment gives me a reason to speed things along or wrap them up. Second, I find that moving through a sequence of similar tasks is more effective than constantly changing gears.

(Similarly, I prefer to work to completion of a given task when I'm on my own. If I'm doing design work, for example, I find that I'm better off finishing a certain phase of the work rather than leaving it for later. It saves time in transition and lets me use my own momentum to accelerate the work.)

Of course, the dynamics are different if more than two people are involved in the meeting. You need more patience and persistence to keep things on track, and often your best efforts will fall short. In a nutshell, this is why agendas are so important: They're designed to remind groups that there really is business to be done in a systematic way.

Guilty Associations

I've often heard that some people in positions of responsibility feel guilty about time they feel they've wasted. It's certainly true that successful people often get that way because they get things done and don't let time get away from them. Still, I think we all need to keep things in perspective.

Almost all of us can afford to improve our time-management skills, but every day is different, every project is differ-

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ent and everyone you meet brings a different set of skills, interests and personal characteristics to a given situation. As a result, it's only reasonable to expect that you can never be *completely* in control of your use of time when other people are involved.

I'd even argue that it's silly to think you should eliminate *all* the "time wasters" from your life, because some of them are good for you. Just as you prioritize the items on your to-do list, I believe it's important to weigh the value of those things that you can readily identify as time wasters.

On a personal level, I often challenge my own policy of returning all phone calls on the same business day whenever possible. In strict time-management terms, I recognize that not every call I receive qualifies with same-day priority and that I could probably put off a great many of these calls.

Just the same, because I believe that promptly returning calls is important for the message it sends about the way I do business (and because I believe it's the courteous thing to do), I hold fast to this sometimes-inefficient use of time. I can't, however, say the same thing about my habit of occasionally playing a game of computer solitaire while I wait for my dial-up modem to connect to the Internet – and promise myself once again to sign up soon for DSL.

As I mentioned at the outset, time management is a personal issue that requires you to strike your own balances and establish your own routines and methods of organization – things that work for you in your own circumstances. I don't think it much matters what those measures are, so long as you make an effort.

As I also mentioned, the most important point in all of this is that you need to step back and take the time to assess what you do and how you do it. I've been asked from time to time how I manage to keep all the plates spinning and all the balls in the air. No matter the metaphor, my answer is always the same: I take time to think.

If you allow yourself that space, then you'll be able to make good use of the many educational materials available

about management. If you don't, then all the advice in the world will do little good because you'll always be rushing from one task to the next. **WS**

Next time: Using the time you spend thinking about what you're doing to set goals that will help you keep time on your side.

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

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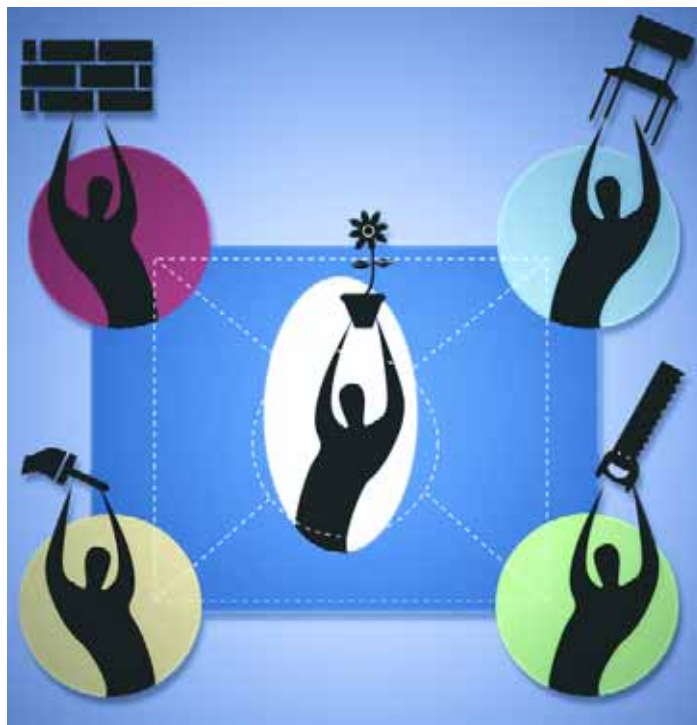


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Professional Relations

Most people who know me will tell you just how independent I am. Some, in fact, will say that I'm too independent for my own good.

When it comes to business, however, I know that being a soloist carries me only so far: Rather, it's the relationships I've established and maintained within the business community that have taken me beyond the independent realm and helped me achieve the success I was looking for when I started my business.

As a designer, I work primarily one on one with my clients to create a design. If I've done a good job with that work, I'll need to call on a strong network of other professionals to implement that design. It's not simply a matter of picking up the phone and calling contractors out of the Yellow Pages: That won't cut it, particularly if none of them are familiar with my work.

I'm not alone in needing help. My clients, for instance, are constantly complaining to me that they've gone through hell to find someone "just to put in sprinklers and spruce up the yard" or do other basic work in their gardens. I face the same challenge in my projects and as a result treasure the relationships I've established in the trades through the years – especially when I need something done in a hurry.

Landscaping is just like any other people-oriented business: The key to success is networking, establishing relationships and keeping in touch with reliable resources who will also refer you to others.

Making Contact

Once a design is complete and my client says, "OK, let's do it," I start making calls to whatever collection of trades is needed to get the work done. That might include custom masons, electricians, plumbers, painters, landscape contractors, woodwork specialists, nurseries, furniture or upholstery specialists and/or various other professionals.

I didn't start this contact list entirely on my own. In fact, one of my most valuable resources in finding subcontractors is a building contractor I met on a jobsite many years ago, when I was just getting started.

I needed some work done on my own home, so I hired him and took advantage of the opportunity to see how he worked, establish a relationship with him, and get to know his subcontractors and how they worked. Through the years, I've called him often (particularly as his business has expanded exponentially) to suggest the names of reliable subcontractors. I've also found that using his name as a referral tends to get me quick responses to my inquiries.

My point is that landscaping is just like any other people-oriented business: The key to success is networking, establishing relationships and keeping in touch with reliable resources who will also refer you to others. I'm certain this isn't news to most of you, but those of us with independent streaks (which ropes in a whole lot of us in the design community) need to think often about the best ways to find the people we need to get the job done.

Here are some suggestions – some of them a bit unusual:

▼ **Take the high road.** Find your subcontractors through a resource with a reputation for reliability. And if you're lucky enough to have your own strong reputation, use it to your advantage: Many subcontractors are out there just waiting for the right opportunity to work with you, and you need to recognize the fact that one good referral can make your whole career.

▼ **Check out their work.** When I was employed in a hospital years ago, I was told that the best way to find a

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good doctor was to ask the nurses — they knew them best by working with them. I apply this same principle to landscaping, talking with good building or landscape contractors to check out particular subcontractors' reputations. I also use my eyes: Good subcontractors have portfolios and lists of references I can check out myself.

▼ **Don't wait forever.** If a subcontractor can't meet with you for a week, he or she may be too busy or indifferent or egomaniacal to meet your expectations. Don't be held hostage: Move on and find another subcontractor who's eager to get together with you and start working right away.

This is a tricky area, because it is cer-

tainly true that some subcontractors are worth waiting for and that working with them can do wonders for your own reputation because of the caliber of their work. It may be my independent streak talking again, but I see responsiveness (coupled, of course, with a good reputation) as a key indicator of a subcontractor's desire to work with me and eagerness to share my vision of a project's potential.

▼ **Expect accuracy.** How many times does a job go off course because a subcontractor has inaccurately estimated time or materials or didn't anticipate potential problems that everyone should have been aware of before the work started?

There is indeed nothing worse than having to tell your clients they'll have to pay more for the job after you've already begun. Of course, my own ability to anticipate potential problems has grown with time and experience, but I almost invariably ask subcontractors what might go wrong and if he or she has figured that potential into his or her estimate.

Having a clause in a contract that allows for adjustments is one thing; accounting for the problems ahead of time is quite another — and a helpful sign of experience.

▼ **Reinforce and compliment.** I know this may sound a bit too basic, but it's always important to let subcontractors know how you feel about their work. Using them on your next job is, of course, the best compliment you can offer — and keeping them busy is the surest way of guaranteeing their ongoing availability and reliability.

A phone call or in-person compliment, however, goes *much* farther than that. It also spreads your reputation throughout the community and will help you become someone with whom subcontractors are happy to work.

The Plant Factor

All of the various landscape and peripheral trades are critical to a landscape designer's or architect's success, and we all spend a good deal of time cultivating relationships with masons, electricians, plumbers and a host of other trade spe-



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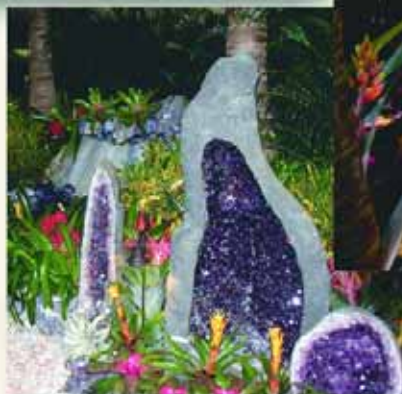


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cialists. As you build these relationships, however, you can't afford to overlook the one that might be the most important of all – that is, your relationship with good nurseries.

Nurseries work the same way as most other businesses in responding to the push and pull of supply and demand. Many of my clients find pictures in magazines or books and tell me about plants they want in their gardens, and then expect that I will be able to meet their desires. I, in turn, am completely at the mercy of nature and local nurseries and need their help in making clients' dreams come true.

I've said it before many times in my columns: Having a good nursery to call on for information and the plants you need is crucial. You must remember, however, that plants aren't like other commodities and that what your client wants isn't necessarily what local nurseries will be carrying.

Can you work with your suppliers and make them more responsive to your needs? Yes you can, and here are some things to keep in mind as you complete your base of trade relationships:

▼ **Expect a slow start.** Lots of people, from interior decorators to anyone else who has a resale license, try to find their ways around retail pricing no matter how remote their ties are to the landscape trades. That's why most nurseries are wary of newcomers who claim to be "in the landscape business."

If you know what you're ordering and appear to be knowledgeable, you'll have few problems. At first, they'll probably ask you to pay for plants when you pick them up or even with the order, and it's all part of the game of establishing your legitimacy and credibility. Be patient: Before you know it, you'll have no problem buying large quantities on credit.

▼ **Watch the calendar.** Many plants are only available during certain times of the year. Nurseries are just as dependent as you are on growers who produce what they know will sell – in other words, plants that are in demand. The lower the demand, the thinner the supply, the scarcer the plant and the higher the price. It's just

Many plants are only available during certain times of the year. Nurseries are just as dependent as you are on growers who produce what they know will sell – in other words, plants that are in demand.

like any other commercial venture, and your timing can be critical.

▼ **Be persistent.** Many plants simply won't be available through your nurseries, but that doesn't mean you should ask for them anyway. I bugged my regular wholesale nursery about Oakleaf Hydrangeas for the first five years of our relationship and was met with a dismissive chuckle each and every time I stated my request.

Today, that plant is a regular staple for them. Again, it's supply and demand. As a plant catches on in popularity (and I like to think I helped the process along in this particular case), the nurseries will ask for it more often and give the growers an incentive to provide it.

▼ **Stop by often.** Just being around nurseries to check out their inventories from time to time makes you and your business a known quantity to them and can gain you their trust and support. Don't hesitate to ask questions: You'll find after they get to know you that they're your very best source for plant information. They know what's selling, what's growing well in the area, and what other professionals are thinking.

They can also often be a good source for referrals to subcontractors – and help you complete your circle of contacts. **WS**

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



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From the Top

Let me introduce you to an exciting project I've been working on most of this year. Right from the top, I'll say that even in the realm of the unique and rarified, this one is truly amazing.

The clients are quite well-to-do, and the moment you walk into their home, you can't help recognizing that they are accomplished art collectors with an eye for modern masters as well as folk art. Their beachfront Malibu, Calif., home – one of several they own and occupy around the world – is best described as part residence, part museum, with views that go on for miles.

They live on the water in the Malibu Colony, where many of the homes are truly spectacular. John Lautner designed one of the more distinctive structures in the neighborhood, and my clients live in one designed by the respected Los Angeles architect Ed Niles, whose work clearly evokes the modular modernity of Le Corbusier, Walter Gropius and the Bauhaus. Situated on a relatively small lot fronted by a narrow band of beach and a rock-strewn reef, the home is an artful collision of concrete, glass, space and light in a spectacular setting.

Even I was impressed. I've built my career by working for clients who appreciate fine design and can afford watershapes of the highest quality, and as a result I've been in a bunch of amazing homes. But this setting is exceptional – and to say I was excited to get involved would be an understatement.

I've built my career by working for clients who appreciate fine design and can afford watershapes of the highest quality, and as a result I've been in a bunch of amazing homes. But this setting is exceptional.

To the Chase

When I became involved in the project, the homeowners already had a set of plans for remodeling a narrow courtyard that already contained an uninspired rectangular pool and green slate decking.

The new plan, little more than a sketch at that point, called for a pool/spa combination with a pattern of intersecting radiuses that created a wave-like effect down one side of the structure. The concept had merit, but there was little to go on and I knew that we all had quite a way to go in bringing the rough idea to fruition.

From my first visit, I knew immediately that this was going to be a complicated job. For one thing, the elevation in the courtyard around the existing pool didn't seem right. For another, there were obvious drainage problems. In addition, the equipment was located in a property-line setback that was supposed to be left clear for emergency access. Finally, the construction techniques associated with the existing pool and the deck seemed rather shabby, given the context.

On top of all that, access to the pool area was extremely limited, with the only available passage through a long five-foot wide entryway. It was also clear that, in a place like this, there wouldn't be much latitude given for construction crews, equipment and materials on the street. I'd worked in Malibu before, so I knew as well that working through the city's labyrinth of red tape could be a real challenge.

All of this is why one of the very first things we discussed was *timing*.

Frankly, these clients are accustomed to having things done on *their* timetable and *their* schedule. Because I knew in a matter of seconds that working on this site under these conditions would be no picnic, I let them know clearly that if we were going to go forward together on this project, it would have to be on Tisherman time, not theirs. We had a good laugh and they agreed – sort of.

The first thing I did was pull a set of plans and permits on the original pool construction, which had been completed some years after the home had originally been built. As far as I could tell, it was low-grade construction – a deficit that would be confirmed over and over again as we proceeded. It was at this

point I first mentioned to the clients my concern about the relative elevations of the deck and home and let them know that there might be problems with any wood framing near deck level.

On the Surface

I immediately set to work in fleshing out the plans for the courtyard. Right off

the bat, and as is the case in most of my projects, most of the decisions had to do with materials selection.

The original architectural plan had called for slate to be used on the deck surface, a choice intended to pick up the look from the interior's slate flooring. But that choice, as reasonable as it sounded, was not structurally correct for the applica-



The pool being replaced dominated the space with its raised beam and bulky presence. Our mission was to replace it with something that did a much better job harmonizing with an extraordinarily dramatic space.

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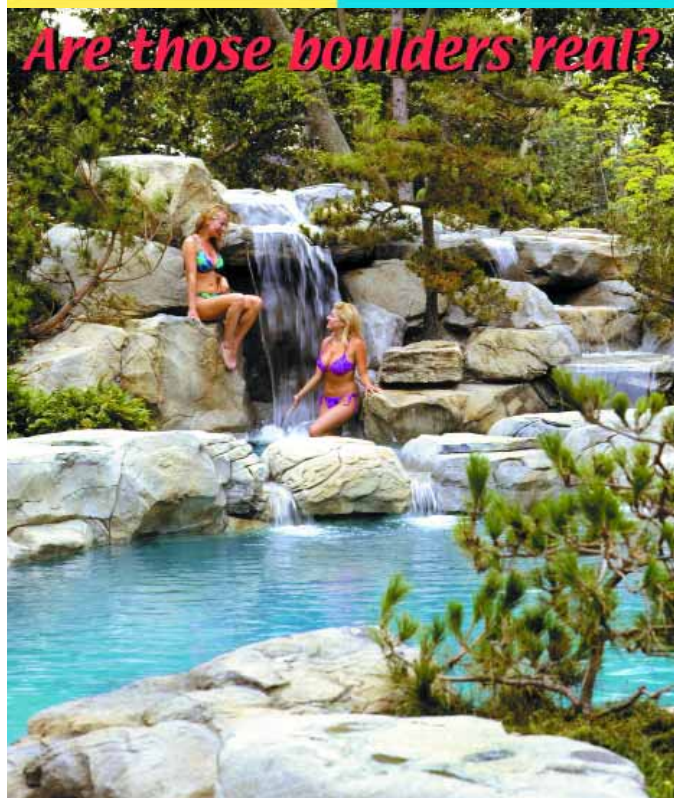
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tion they had in mind.

After a great deal of discussion and multiple meetings, we settled on a 12-by-12 bluestone that would be gauged to a tight, 3/4-inch thickness. (I'll be covering this project in detail in upcoming issues, and we'll definitely return to the specifics of the edge and the deck material.)

We also started talking immediately about the interior finish of the pool and spa. In keeping with the visual scale of the relatively small vessel, my preference was for using a one-by-one-inch glass tile in a blend of three colors and two finishes. The clients were intrigued, so I put together six sample boards with different combinations of tile in differing ratios.

They ended up selecting a gorgeous combination of greens that I'm sure will be dazzling when the project is finished.

I bring up materials here to emphasize an important



Access to the job site was a nightmare — a long passageway barely wide enough to allow passage of excavating equipment that had to be driven by extraordinarily careful operators on an incredible number of trips back and forth.

point about my preferred design process: To the greatest extent possible, I design pools and spas to match materials in their specific dimensions and shapes – a theme of proportion and scale I'll touch on more than once in future columns about this project as we get into construction techniques and what it takes to produce visual harmony, balance and appeal.

We also talked about the spa and the how it would have multiple jets and distinctive seating configurations and a stand-up well for total-body hydrotherapy. We talked about the use of a remote-control system and about planters and landscaping and fiberoptic lighting. We also talked about practical concerns, such as establishing a sub-grade equipment location, and covered as best we could the overall logistics of the project.

As we got further along in the design and planning process, both the clients and I became more and more excited. At one point, one of them said that he wanted something that was a true showpiece – something that befitted the setting. Knowing this, I now suggested that we install multiple laminar jets and their associated fiberoptic lighting, computer-controlled to create a variety of effects.

Showtime

Probably because I was so excited by the laminar-jet idea, he liked the concept but wanted to see for himself what I was talking about.

At that point, I contacted my friend Paul L'Heureux of Crystal Fountains, a Canadian firm that manufactures a laminar jet system that would be perfect for this application. At the same time, I called in Steve Zorn of Pentair Pool Products (Sanford, N.C.) and Steve Gutai and Ron Soto from Laars & Jandy (Petaluma, Calif.) for a full-scale project meeting and site visit.

Before driving to Malibu, where we would be joined by service expert Kerri McCoy as well as Eric Herman and Jim McCloskey from *WaterShapes*, the five of us gathered at my house to mock up a system that combined Pentair's lighting system with a Jandy control system and a pair of Crystal Fountains' laminar units.

I'd have to say that this meeting rep-


resented the best of what can happen when people in the trade work together. We were all there to produce the most beautiful pool possible and make it work with the best possible systems, regardless of manufacturer. The governing idea: *Everybody wins* when we band together to do great work.


Drawing on the talents of people from

As we got further along in the design and planning process, both the clients and I became more and more excited. At one point, one of them said that he wanted something that was a true showpiece.


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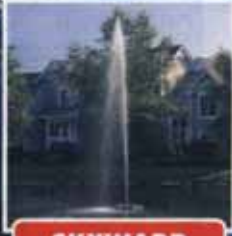
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DETAIL 21

With all of the important plan points settled, we began demolition — and all of my worst fears about the site and the existing construction were realized and then some.

such excellent companies, all working together creatively for the benefit of a single client, was something rare and inspiring. We packed up the gear and on a warm evening showed the clients the technology, using the old pool for the demonstration.

Although they were duly impressed, the final decision on the water effects lingered — he in favor, she doubtful. Despite this hitch, we were able to finalize most of the major decisions on materials and equipment, and the pool was engineered based on a plan that called for the pool, a spa, 650 square feet of bluestone deck and three large planting areas adjacent to the pool. The plans I submitted to the engineer also included a significant sub-drain system, a sump with pump and equipment vaults — and some fairly amazing plumbing runs.

The excavation itself was a snap, because there was no steel or mesh in the deck and the old shell gave away quickly. What we found once the site was cleared, however, was anything but simple to deal with — as future columns will relate.



With all of the important plan points settled, we began demolition – and all of my worst fears about the site and the existing construction were realized and then some. The existing pool was indeed an abomination, with undersized PVC plumbing and grossly oversized pumps. The slate decking and its concrete sub-base had no structural integrity – we found no steel or wire mesh in the concrete at all – and the pool shell itself had numerous voids.

Removing all of this material created an enormous hole where the courtyard once had been. As we moved ahead, it didn't take long for us to recognize that things were going to get much tougher than anyone wanted them to be, even given the fact that I had been anticipating trouble because of the original deck elevations.

In fact, the series of events that began unfolding when the last of the demolition and excavation were completed would test me in ways I'd never encountered before and called on every shred of design skill, construction know-how, client relations and patience I have. The

story will end well, I think, but the blizzard of details and disasters we had to address in the first phases of the project will be enough to fill several pages in many issues of *WaterShapes*, so stay tuned. **WS**

Next, we'll cover what we found when we peeked below the surface of this spectacular home.

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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Boston's First Church of Christ, Scientist, has become nationally known both for its original design and also for the spontaneous child's play that has developed through the years in the facility's deck-level fountain. Here, landscape architects John Copley and Lynn Wolff discuss their firm's role in modifying the original design to match its actual usage, all while preserving the character of a site that has become one of the city's modern landmarks.

By John Copley & Lynn Wolff

Cooling

Sometimes, it's the unexpected that gives a place its true spirit.

That's been very much the case for The First Church of Christ, Scientist, a 1975 addition to Boston's historic Back Bay district. The site features a campus plan devised by legendary architects I.M. Pei and Peter Walker, with grounds organized around a central reflecting pool flanked by a circular, ceremonial display fountain. The famed fountain is enclosed by an equally famous bosque of linden trees pleached into lollipop forms.

For Bostonians and visitors alike, this classic design has become part of the urban fabric – and the church's plaza a popular gathering place.

The

Not long after the original work was completed, children from surrounding neighborhoods (the South End, Fenway and the Back Bay) discovered the wonderful play opportunities associated with the 180-nozzle deck-level fountain, especially during the hot summer months. Since 1975, literally thousands of kids with their families in tow have made this space their summer hangout, and now second-generation children are being brought to the fountain by parents who grew up playing in its irresistible jets of water.

From the start, however, there was a problem with what was intended to be a decorative rather than interactive watershape: It simply wasn't designed for the purpose it had come to serve.

Flock



SETTING THE SCENE: The fountain covers a large area terminating at the monumental reflecting pool positioned directly in front of the church. From the start, however, the fountain has played the more public role, becoming a magnet for children and a great way to beat the summer's heat.

Redefining Needs

Our firm, Copley Wolff Design Group of Boston, became involved in the re-design and reprogramming of the famous fountain. It's a project that exemplifies the power of water to create and define public spaces as well as the importance of such spaces in meeting the social needs of local residents and visitors from farther away.

Our goals were straightforward: to increase safety and inject color and whimsy into a well-used space while preserving the sense of history of its famous setting.

We were aware, of course, that the transformation of the fountain from a decorative feature into a recreational destination had taken place gradually over many years. As more and more children began playing in the water, their presence created a number of management issues for the church.

First, the watershape originally was set up with a six-inch-high, cast-iron grate that accommodated the trajectory of the nozzles through a vertical, sidewall exit. While the water seemed to fly out of the ground as a result, the elevation created a hazard for children running through the water streams.

Second, the arcs of water cascaded to the ground and rushed to a central drain grate. Water flowed to the grate in such volume that a shallow pool would occasionally vortex around it. The vortexing also meant that the water could be pushed by the wind beyond the capture drains and, as a result, new make-up water had to be added to the system on a consistent basis.

Through the years, facility managers had reduced the vortexing by adding six-inch-high granite fins that radiated out from the center. This worked—but added another tripping obstacle for the children.

As challenging as were these surface details, the fountain offered another set of issues related to the fact that it was built atop an underground parking garage. This allowed for convenient placement of pumps, the storage reservoir, electrical panels and filtration systems, but it complicated things as well with concerns about waterproofing and about draining the subsurface roof.

All of these issues were to be resolved in the redesign.

The New Program

To its great credit, the church recognized the importance of what had become known to the neighborhood as the "Plaza Fountain" and committed itself to a total renovation of the space and the upgrading of its watershape.

In preliminary meetings, the design team was given its marching orders:

- ❑ Eliminate all tripping hazards and

JETS ON PARADE: One of the key goals of the re-design had to do with eliminating tripping hazards for the young children who've adopted the fountain as their own. The grate system did the job, enabling us to flatten the plane of the fountain while introducing a new and pleasing aesthetic element to the composition.



changes in grade while maintaining the fountain's visual relationship to the central reflecting pool and the surrounding tree bosque

- ☐ Maintain some portion of the central pool for kids to splash in
- ☐ Provide dramatic night lighting of the nozzle streams
- ☐ Provide a new paving system
- ☐ Reuse – whenever and wherever possible – existing nozzles, piping, pumps and storage reservoirs
- ☐ Improve waterproofing and subsurface drainage.

The elimination of tripping hazards entailed re-grading the site to remove all changes in elevation – a direct solution, but one that involved many challenges with respect to draining the fountain area and re-thinking the nozzle covers and trajectories of the water streams. To manage the flow correctly, we took careful measurements and developed a set of test templates to document the arcs issued by each of the 180 nozzles.

To eliminate the grade change at the nozzle, the design team created a custom, flat, cast-iron grate through which the water was to be discharged. An intermediate drainage grate also was introduced to eliminate the vortex and create a new central pool.

The 180 original nozzles were paired and crossed to give the fountain an interlacing effect. All water issuing from the nozzles flows to the intermediate grate

before moving into new subsurface trenches that lead to the reservoir. Eight small, flush nozzle fills were added to the system: These replenish the pool and drain back to the intermediate drainage trench, constantly regulating the water level in the central pool.

New fiberoptic lighting was introduced at each nozzle's end. The illuminator boxes are suspended from the ceiling of the underground garage and are linked through a central controller so that the

color of the lighting can be sequenced and designed for varying effects. A maximum of nine cables are connected to each illuminator. To allow access for the cabling, we cut vertical cores through the roof slab.

We also had to deal with wind-aided fountain-water migration – a major problem on this particular site. The Church calculated and mapped common wind conditions in an attempt to determine just how high the fountain should run with any given wind speed. Once these

determinations were made, wind sensors were installed on the roof of an adjacent building. This placement mirrored the wind conditions in the plaza below, and the regulating system now automatically adjusts the height of the water streams to match wind conditions.

From Plan to Pavers

The six-month construction project began in earnest with the demolition of the existing surface and the saw-cutting, forming and pouring of the new subsurface drainage trenches. Once the trenches were in, we set up the subsurface drainage mat and waterproofing system, then covered the fountain area with a new concrete base slab set to the new elevation and slopes.

Once the cast-iron frames and grates were installed, the new paving system was applied. Final construction stages included installation of the fiberoptic cabling and illuminator boxes, the adjustment of the 180 nozzles and tests of the various control systems.

Throughout the redesign and construction process, we constantly discussed issues of durability, energy efficiency and serviceability. Along the way, for example, we spent a lot of time and energy designing the return flows so that the system is balanced and hydraulically efficient. We also examined various options we had for surface grates: We needed to accommodate the nozzles and the fiberoptics, for instance, without creating a new set



SIMPLY IRRESISTIBLE: The redesign was all about making the fountain an even better gathering place for kids of all ages. Whether prevailing wind conditions call for smaller, gentler streams or allow for full-throated cascades, the potential for fun has made the plaza a magnet for more than a quarter century.





NIGHTTIME SPECTACLE: The new fiberoptic system has made the plaza a special draw at night, both for children who enjoy playing in the eerie light and for adults out for romantic strolls. All in all, it's a tale of a project that has enhanced the safety and performance of a classic system while staying true to the setting's historic nature.



of tripping hazards.

In addition, we evaluated myriad approaches to waterproofing and to keeping the water flowing through our sub-surface conduits rather than around them. We also looked into a range of lighting options, ultimately settling on fiberoptics both for the interesting illumination they provide as well as their safety and cost-effective bulb life.

Throughout the project, cooperation among key vendors and our design team was crucial. We used the technical assistance they offered to create many custom designs that address the unique challenges presented by this project. In fact, one of the lessons reinforced during this project is the importance of coordinating the electrical, waterproofing, fountain, mechanical and hydraulic-engineering consultants.

The result of these improvements is a public facility that will continue to serve as a venue for the spontaneity of local children – but without the former safety and maintenance concerns. The new plaza also remains true to the aesthetics of the original design and is indeed a place where beautiful form now matches joyous function.

Credit Where It's Due

As mentioned in the accompanying text, the rehabilitation of the Plaza Fountain for the First Church of Christ, Scientist, was a collaborative effort. Our appreciation and thanks go to fountain designer Dan Euser of D.E.W.; structural engineer James Balmer of Boston Building Consultants; electrical engineer Michael Brown of AHA Engineering; waterproofing engineer Herb Ule of Edwards and Kelcey; Chris Gumbrecht, Robert Johnson and William Keene of contractor Shawmut Construction; grate supplier Urban Accessories; and fiberoptic supplier Lumenyte.

– J.C. & L.W.

Civic Pride

The project described in the accompanying text is only one of several we've executed in the Boston area. Copley Wolff Design Group is based in downtown Boston, and we're proud of our affiliation with this great American city.

In many ways, in fact, the character and history of Boston has defined the creative character and work history of our firm. A great many of our local projects have involved the restoration, redevelopment or restatement of public and historic spaces. One of the most significant of these was our work on the restoration of the Frog Pond in Boston Common.

Established in 1634, Boston Common is one of America's most significant open spaces. It is the oldest public park in the United States and a truly beautiful hallmark of the city to this day. Once a place where cattle grazed, Minutemen mustered, and prominent Bostonians were buried, the Common now serves as an urban oasis.

The Frog Pond, originally a natural marsh, was dressed up for the Great Water Celebration of 1848 and has been a central feature in the Common ever since. Through the years, however, the pond's fountain display and concrete basin fell into disrepair. In 1994, city officials decided to restore the site.

Our firm's proposal called for restoring the pond's original plume and concrete basin and adding amenities that included an adjustable nozzle that serves as a children's spray fountain in summer and the embedding of refrigeration coils in the concrete slab to create an ice-skating rink in the winter.

To maintain the pond's historic integrity, the plume was placed in its original position and the granite edge was reset in its original configuration. The mechanical equipment for the ice rink, reflecting pool and fountain were hidden in an underground vault nearby.

When completed in December 1996, the project met with praise in the community and numerous awards, including an award from the Preservation Alliance and an Urban Landscape Award from the Massachusetts Horticultural Society. To this day, it remains one of our firm's proudest achievements.

— J.C. & L.W.





The lighting of water in motion is equal parts engineering and art. To be successful at it, observes Paul L'Heureux of Crystal Fountains, you need to combine an understanding of the available technology with an eye for what's involved in accenting movement with light. Here, in the second part of his discussion of fountain lighting, he gets specific about techniques that bring moving water to life when the sun goes down.



Light

Just as a painting comes alive with a tiny lamp perched over its frame or a simple landscape becomes a nighttime spectacle with strategically placed spot and flood lights, illuminated water creates an intense experience for the eyes. Lighting adds depth and dimension while revealing subtle details and producing emotional responses among those who view and enjoy these scenes.

The simple truth is, if we didn't light water in fountains and other watershapes, much of its visual beauty would be lost. As we discussed in

By Paul L'Heureux

Sensations

"Guiding the Lights" (*WaterShapes*, March 2001, page 48), understanding and applying the various approaches and techniques of lighting water enables professional watershapers to operate on whole new levels.

In the following pages, we'll continue that discussion with a look at what it takes to maximize the aesthetic effects of water in motion and discuss some practical issues having to do with lighting installation and safety.



Solutions in Motion

Last time, we identified the various categories of water effects, design considerations for each and the most effective of the available lighting solutions. This time we'll dig deeper, exploring ways of achieving those solutions and showing off certain water effects to the greatest possible extent.

To review the basics, water in motion typically does one of four things. It either falls downward from a water source, flows over a surface, shoots up in the air or arches from one point to another. The "look" of each of these motions can be dramatically maximized using specific lighting strategies.

▼ **Falling Water:** Natural light is still one of the most effective lighting sources for water as it falls, but relying strictly on that source means that the nighttime drama of falling water will not be exploited. Taking advantage of that drama means that you must set up the appropriate type of lighting fixtures in adequate numbers in the correct locations and at the proper angles.

Because the majority of waterfalls are less than six feet high, up-lighting is usually the most effective method for evening viewing. We recommend using wide floodlights (250-watt halogen lamps minimum) spaced four to five feet apart for even lighting across the entire waterfall (Figure 1). You'll want to use angle-adjustable fixtures and position them either in front of or behind the falling water.

Remember to keep light fixtures away from the heavily aerated water that circulates around the "landing zone," because this bubbly water disperses too much of the illumination.

▼ **Sloped spillways:** These water effects are among the greatest challenges in watershape lighting. Just what do you illuminate?

The key to capturing the water's motion is to create "pick-up" points for the lighting – that is, places where the water vertically drops (however slightly) or where water and air mix together. By designing these details into the project, you provide ample opportunities for creative lighting.

In the case of sloped water, we often design the surface with plated elevation changes. Where two plates of stone are overlapped, it causes turbulence in the water's flow that allows air to mix with the water (Figure 2). These spots are excel-



Figure 1: Many waterfalls are designed with water drops of six feet or less. In these cases, you can position light fixtures in front or behind the water to good effect – so long as you keep them away from the foamy water.



Figure 2: When it comes to illumination, sloped water spillways are among the most challenging of all water effects. Fiberoptic lighting has definitely simplified the process because of its compact nature and the fact that it doesn't heat up the way conventional lighting fixtures do.

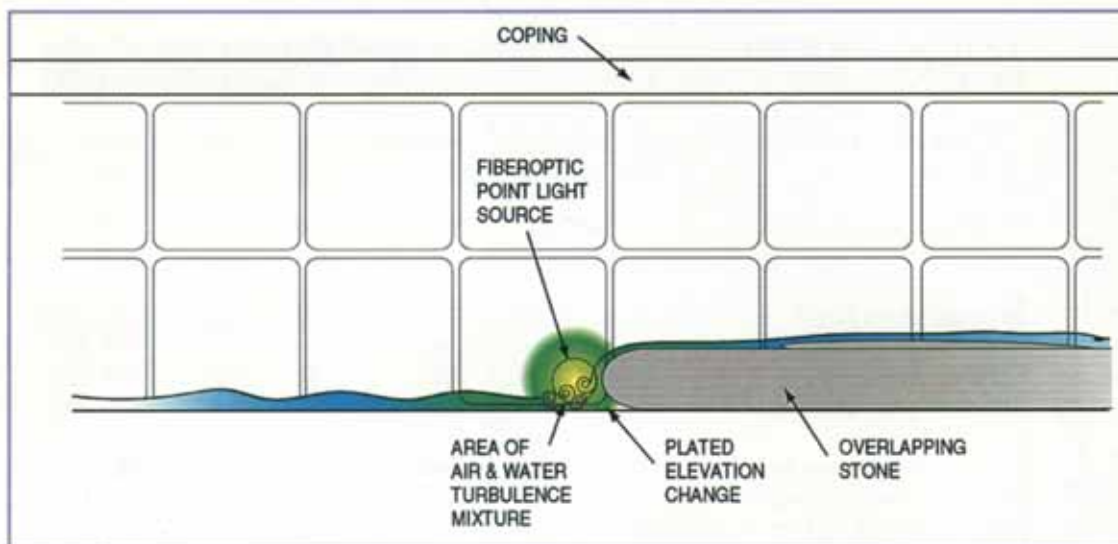


Figure 3: For best results with sloped water-features, locate fiberoptic point lights in a wall close to the elevation change.

lent locations for evening illumination.

The next question has to do with *how* these small places are to be illuminated. The answer, naturally, is that small details require small lighting solutions. In general, we've found that fiberoptic lighting is ideal in these situations (Figure 3). Point lights made with 100 fibers (and 150-watt

metal halide illuminators) or with 50 fibers (and 250-watt metal halide illuminators) can be used in the walls beside the plated elevation changes, washing light over the surface and the drop to great effect.

▼ **Vertical fountain effects:** A vertical fountain effect is one of the more common and traditional forms of watershap-

ing. Illumination is generally straightforward and typically means placing a submersible fixture next to the nozzle.

Most practitioners will design with spotlights for narrow and high water effects and floods of medium beam width for wider effects such as a ring of closely grouped small vertical nozzles (see Table

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I for some selection guidelines).

Grouping or arranging the submersible fixtures is just as important as selecting the correct lumens level and beam characteristics. We usually design water-effect illumination with at least two submersible fixtures because most are viewed from all sides and angles (Figure 4). Exceptions to this rule occur when vertical water nozzles are grouped together (as in a circle, for which you can achieve consistent illumination from all viewing angles by locating the fixtures *inside* the ring of nozzles).

Place the fixtures close to the surface of the water, just one or two inches below the surface, because lighting efficiency drops considerably when you get much deeper. Lighting efficiency also

Table 1: This chart helps when it comes to picking lights for different water effects.

Primary Applications/Types of Effects	Beam Height	Lamp Life (hours)	Watts	Volts	Lamp Type	Beam
Reflecting surfaces and pool perimeters	N/A	7500	80	120	A-21	Flood
	N/A	8000	100	120	A-21	Flood
Medium single jets	10 ft	6000	100	120	PAR-38Q	Spot
Low waterfalls, rings, bell jets	6 ft	6000	100	120	PAR-38Q	Flood
Medium single jets	15 ft	6000	250	120	PAR-38Q	Spot
Medium waterfalls, rings, bell jets	8 ft	6000	250	120	PAR-38Q	Flood
Low waterfalls, rings, bell jets	5 ft	2000	150	120	MCQ	Flood
Medium waterfalls, rings, bell jets	8 ft	2000	250	120	MCQ	Flood
Medium waterfalls, foam & cascade jets	2 ft	2000	500	120	MCQ	Flood
Medium single jets & pools	25 ft	2000	300	120	PAR-56Q	Spot
Medium rings, spheres & foam jets	15 ft	2000	300	120	PAR-58	Flood
Medium single jets & pools	25 ft	2000	300	12	PAR-56Q	Flood
Large single jets	35 ft	4000	500	120	PAR-56Q	Spot
Large rings, foam & cascade jets	20 ft	4000	500	120	PAR-56Q	Flood
Very large single jets	50 ft	4000	1000	120	PAR-64Q	Flood
Very large rings, jets, pools	30 ft	4000	1000	120	PAR-64Q	Flood

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drops significantly when the fixture can't be aimed accurately at a water effect, so seek out submersible fixtures with tilt-and-swivel adjustments. They're a little more expensive, but well worth the flexibility and the larger grins on your clients' faces when they see their waterfeature beautifully illuminated at night.

▼ Aerated vertical fountain effects:

Aerated water is the white, foamy stuff created by combining air and water. This effect requires double the light intensity per vertical foot when compared to clear-stream nozzle effects.

When positioning fixtures to illuminate these effects, the key is to keep as much foamy water away from the light sources as possible in order to maximize light intensity (Figure 5). Again, be sure the light fixture lenses come close to the water surface, within an inch if possible. If you're designing with large aerated nozzles, such as cascade jets or aerator jets over 1-1/2 inches in diameter, always position the light fixtures at least two feet away from the

nozzle (Figure 6).

▼ **Sculptural and structural water-features:** Sculptures and structures will take on different attitudes when you illuminate selective features, so your lighting design can take advantage of all available corners, angles and hollows. By using narrow-beam spots, for example, you can create striking contrasts between

the illuminated features and their offsetting shadows (Figure 7 on page 44).

The key to lighting sculptural water-features is to start with moveable floor fixtures so you can optimize lighting locations *after* construction. Non-moveable fixtures will limit your options, and we've found that it's better to give yourself as many alternatives as possible. For exam-

Figure 5: In many applications, a single nozzle requires two fixtures (at least) for proper illumination. Just be sure to position the fixtures away from foamy, turbulent water that will disperse the light before it can shed light the water you want it to illuminate.

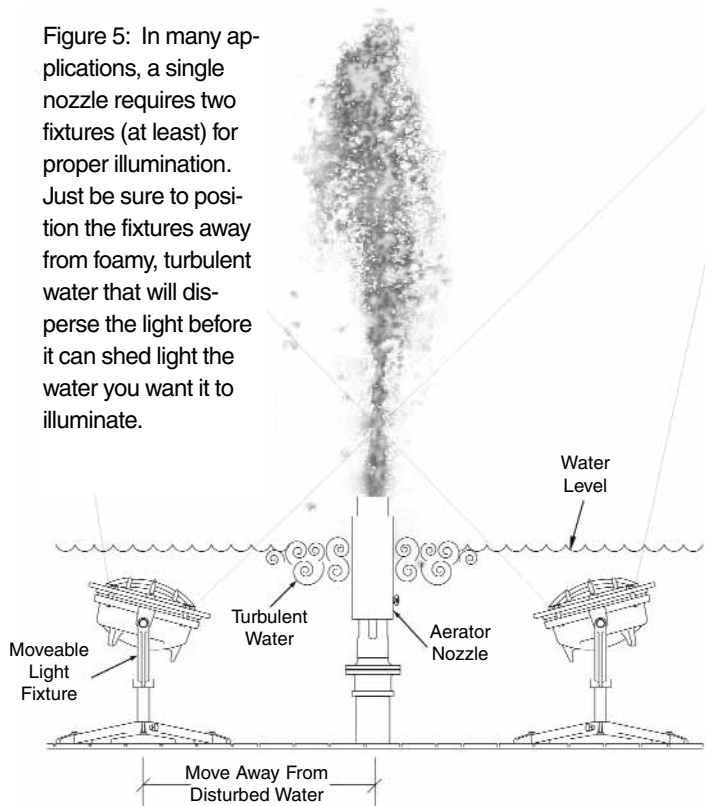
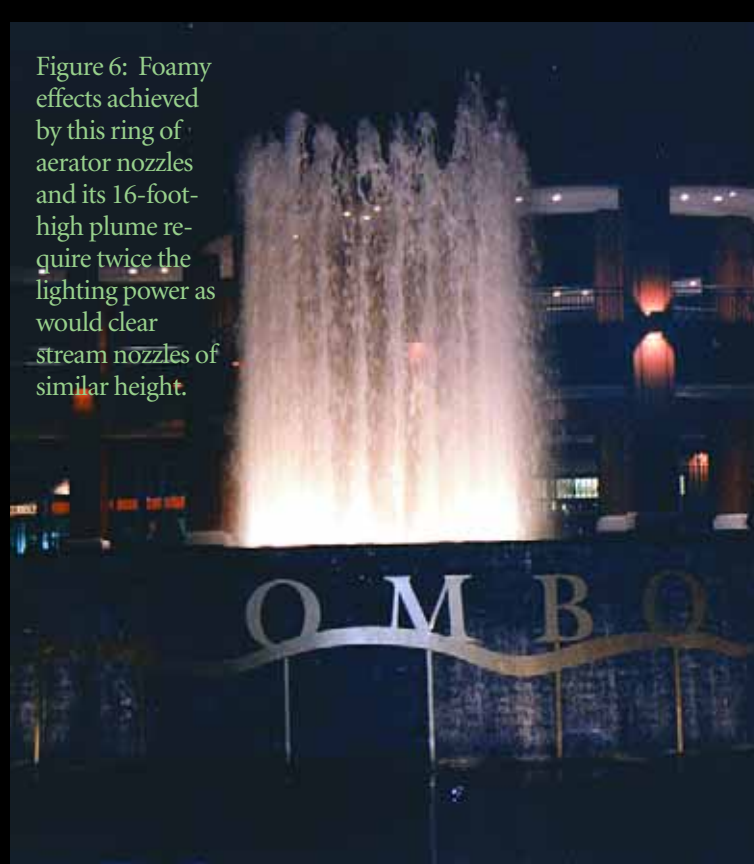


Figure 4: Water effects with this spacing (and in a setting that allows for 360-degree viewing) require illumination from both sides of the stream.



Figure 6: Foamy effects achieved by this ring of aerator nozzles and its 16-foot-high plume require twice the lighting power as would clear stream nozzles of similar height.



Clean and Clear

Dirty lenses on submersible fixtures affect lighting performance in the same way muddy headlights reduce visibility for a driver.

If you require a rock guard on your submersible fixtures to meet local electrical codes, purchase one that can easily be moved away from the lens surface for routine cleaning. In our experience, we've found that hinged rock guards are ideal for this purpose.

— P. L.

ple, simply being able to adjust the angle of a light allows you to capitalize on an opportunity previously unseen. In fact, the places you thought might be best for fixture location might turn out to be less than optimal in actuality.

Spotlighting of this sort generally calls for halogen lamps between 75 and 150 watts when projecting through clear, non-aerated water. Floodlighting will require lamps between 150 and 300 watts, depending upon illumination heights.

Physical Factors

As you ponder the potential of lighting to make your water effects into 24-hour wonders, there are a number of basic, practical issues you need to consider.

▼ **Rock guards:** To protect outdoor lighting fixtures from vandals and wayward stones, you may wish to add rock guards. These devices protect the glass lenses of submersible fixtures from breakage. Depending on the manufacturer, their construction can be bronze, stainless steel or lexan (polycarbonate plastic). If you need to use these fittings, expect to lose between 10% and 15% of the light intensity.



Figure 7: Illuminating selective features of a structure (A) or sculpture (B) sets up an entirely different impression for evening viewing.

▼ **Water Level Protection:** Submersible lights generate a good deal of heat and need water to keep them within allowable operating-temperature ranges. To ensure that the light fixtures are submerged when operating, NEC requires a device to protect these fixtures from overheating — meaning you have no choice in the matter.

Traditionally, the most effective solution is incorporating a water-level-sensing device in the control circuit of the light fixtures (Figure 8). These low-voltage devices, which are available in many types, sense the level in the body of water in which the fixtures are submerged. We often use simple magnetic-read switches — a technology that has been around for decades and offers great reliability in a compact package.

▼ **Thermal Protection:** This offers you an alternative to water-level sensing as a way to deal with potential overheating of submersible light fixtures. Thermal

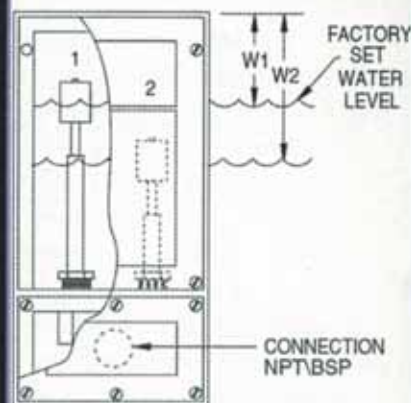
protection devices were introduced about 14 years ago and feature bi-metallic strips that bend when heated. This causes a metal contact to open, shutting off power to the lamp.

This is the same device that the average household toaster uses to prevent burnt toast. They are less effective than water-level sensors but let you comply with NEC rules where the physical configuration won't let you use a water-level device.

▼ **Ground Fault Protection:** The most important consideration in setting up lighting systems in water is public safety. NEC calls for class 'A' ground-fault protection for electrical devices of more than 12 volts that are within 15 feet of a publicly accessible body of water.

For swimming pools and fountains, this means that any light fixtures the public can touch, either in or around the pool, must be ground-fault protected if they exceed 12 volts. (This is, by the way, the

Water Level Sensor



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Figure 8: A float-style sensor will reliably detect safe levels of water and ensure that an underwater light is submerged before operation.



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Fiberoptic Advice

At Crystal Fountains, we've had extensive experience with fiberoptic illumination in both commercial and residential water-features. Through the years, we've found that the commercial-grade metal halide illuminators are far superior to (less-expensive) residential-grade metal halide illuminators in lumen output (light intensity).

The lamp technology is identical in both cases. The most significant difference is that the optic packages – that is, the lenses and mirrored surfaces that sit between the lamp and the fiberoptic port – are far superior in the commercial units. In this situation, you truly get what you pay for!

– P.L.

same level of protection required for receptacles in bathrooms.)

▼ **Light-Fixture Cooling in Special Applications:** We've been involved in more than 800 watershaping projects around the world, and our experience has often led us to lighting applications that require creative, hybrid or weird solutions.

In one case, we had designed an interior waterfall that created so much aerated water over the submersible light fixtures that it virtually choked off the light and wouldn't let it illuminate the falling water. Our solution was to raise the submersible fixtures out of the water and hook up the lighting circuit through a time delay relay with a contact on the pump overload. This allowed foam to build up at the base of the waterfall and surround the fixtures before the lights turned on.

Another project required lighting in a fountain that had no body of water. The solution was to divert water from the

pump and have it circulate through a water jacket surrounding each light fixture – the same principle as the cooling system in the engine of an automobile.

A Different World

Lighting design and application is very much its own science and art. No set of magazine articles can replace personal exploration of the technologies and techniques used to illuminate moving water, and what we've covered here is no more than an introduction to a fascinating field.

There is no shortcut. True expertise in lighting is gained only through experience and applied knowledge built upon a foundation that starts with the principles and technologies discussed here. Ultimately, when you approach the design or installation of a watershape with lighting as an integral part of the project, you'll see that creative illumination is the key to a whole set of wonderful aesthetic possibilities.



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Emerging Technologies

The accompanying text began by stressing the importance of understanding how lighting works – as well as being aware of the technologies available to you in developing good lighting solutions.

Not surprisingly, as moving water has become ever more prevalent in residential and public settings, new technologies have made their way into the market. Two of them in particular have gained popularity in recent years:

❑ **Metal Halide Lighting:** Metal halide lighting is a form of high-intensity-discharge (HID) technology that has been used for many years in industrial and commercial lighting. It is often used in highway illumination, for example, and for other applications requiring *very* high light outputs.

Recent changes to the National Electrical Code (NEC) and Underwriters Laboratories (UL) requirements for submersible fixtures have made it possible to use ballasted light sources for the first time, opening the water-shaping trades to this powerful light source.

Previously, the maximum voltage allowed in the water prevented such applications. Now, provided that the supply does not exceed line voltage, a ballast may be used within a sealed light fixture. This has led more lamp manufacturers to develop HID lamps, which includes the PAR-style bulbs that have proved very attractive in fountains.

Metal halide's advantages include long bulb life and substantially higher lumen output per watt. This efficiency also comes with a higher color temperature than halogen and a whiter (less yellow) light. While it can be used in submersible applications, it has seen limited underwater use thus far: Most U.S. jurisdictions would allow its use, but electricity is still cheap enough that other approaches are still preferred, while in Europe, where only low-voltage lighting can be used in submersible applications, metal halide use is prohibited.

Nonetheless, this technology has sparked interest in the Americas because it has potential to light a fountain or pool with strong white light at lower wattages. Expense is a limiting factor because of the need for a ballast-and-transformer arrangement and the higher cost of the bulbs. In the near future, however, we foresee the use of 500-watt metal halide light sources with very large fountains (that is, those with 40- to 60-foot high plumes) in place of the 1,000-watt halogens currently being used.

One area where the flexibility of metal halide lighting may allow it to advance more quickly is with wet/dry applications and deck-level fountains: As the lamp manufacturers develop more HID bulb varieties in lower wattages, this field in particular will open up. So in general terms, it'll pay

to watch this category of lighting for future developments: Lighting suppliers are moving in this direction at a rapid clip in all areas.

❑ **Light Emitting Diode (LED) Lighting:** It's not ready for the fountain market just yet, but super-bright LED lighting – an industrial-strength version of the familiar LED lights on clocks, dashboards and computers – has great things going for it.

It's a new way to create color effects. In the past, filters were placed in front of fixtures to isolate selected parts of the color spectrum. A company called Color Kinetics has developed an interesting technology that generates intense colors directly, without filters, in a way that gives the user real control of the color output.

The system has plenty of advantages:

- First, the average incandescent or halogen bulbs last 2,000 to 5,000 hours, which means re-lamping every six months to a year. By contrast, LED products have 100,000 hours of life, meaning it'll be 10 or 12 years before they need replacing.
- Second, because they produce less heat per lumen, this will allow manufacture of housings and lenses from plastic instead of metal and glass, resulting in cheaper fixtures that don't radiate as much heat as other lights.
- Third, LED products can be *tiny* – as small as 1/4-inch in diameter and just 3/8-inch in height. This means that, without the constraints of big bulbs or fiber bundles, we'll be able to create smaller light sources and enjoy far greater design flexibility.

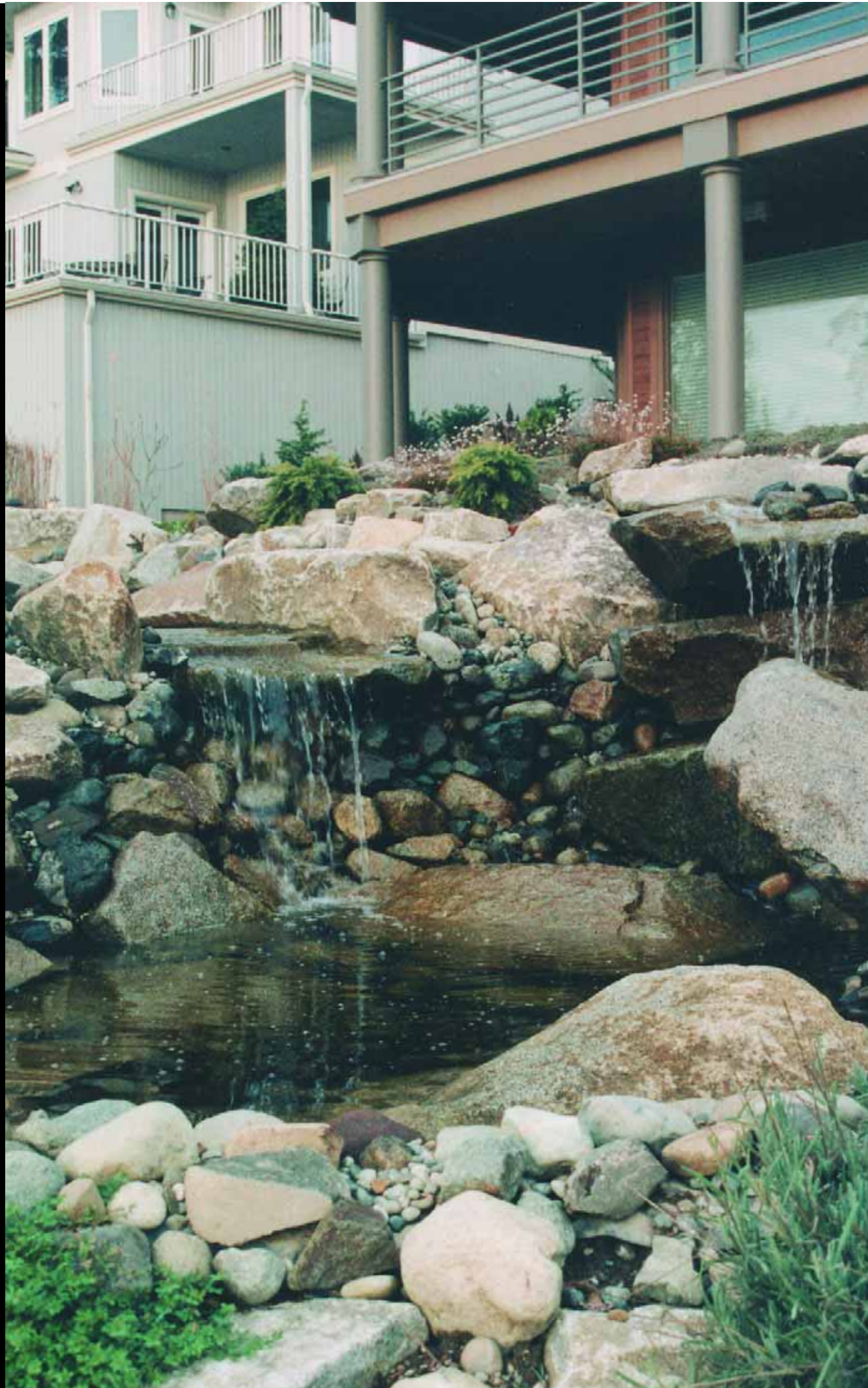
Those are big potential advantages to which must be added a fourth: LED products are both energy efficient and submersible. LEDs will be great in wet/dry applications, for example, because they radiate less heat. They'll offer a nice glow beneath the coping at the edges of fountains or swimming pools. We could even create submersible cove lighting.

A limiting factor at this point is the relatively low amount of light LED systems produce compared to halogen lights. But where the application makes sense (that is, with a five-foot column of water rather than a 20-foot column of water), LED shows great promise.

This is another area where lighting suppliers are investing a great portion of their research and development budgets. These lights are already being used in architectural applications as a replacement for fluorescents and in exit signs and flashlights. The cost is still high at the moment, but once these LED systems gain greater acceptance in the design community, it's likely that prices will drop.

– P.L.

E c h o e s o f



In some places, observes landscape architect Lauchlin Bethune, Mother Nature sets higher standards for naturalistic watershapes. Where he lives near Seattle, for example, he and his clients are surrounded by the beauty that comes with ample rain, rugged terrain and plentiful greenery – an environment that makes it tough for watershapers to balance the practicalities of construction with the passionate desire to mimic local grandeur.

By Lauchlin Bethune

The Pacific Northwest is full of spectacular scenery. From where I live near the Puget Sound, for example, you can see the Olympic range running along a peninsula to the west and the Cascade range off to the east. Looking southeast, Mt. Rainier is a silent, majestic sentinel silhouetted against an ever-changing sky.

It's a beautiful place to live and perfect when it comes to design inspiration – especially when your work is creating naturalistic gardens and watershapes.

One of the most spectacular waterfalls in the entire northwest – a place called Snoqualmie Falls – is just a short drive up Interstate 90 from where I live. Local hiking trails are dotted by scores of perennial waterfalls that cascade down mountainsides. For me, there is nothing more refreshing than clambering up a steep grade and rounding the corner to find a misty, shady waterfall. It invigorates the soul and encourages one and all to keep climbing in the hope of seeing even more spectacular scenery.

The attractions of nature and its inherent beauty are much enjoyed by the people who live around here. In recent years, I've seen a trend toward bringing slices of that grandeur down to a residential scale in gardens that use water in motion as a key feature. It's the water that makes these small spaces special, drowns out the noise of civilization and creates oases in what might otherwise be uninspiring spaces.

Natural Notes

The watershapes for which my clients are clamoring come in all shapes and sizes, from individual cored-basalt fonts to elaborate, multi-pump rock cascades. No matter the scale, the key is the sound and ambience created by falling water – irreplaceable in these gardens and especially inspiring when the work harmonizes with verdant surroundings.

Of course, it's seldom easy to design and install a convincing natural watershape in the confines of any backyard, let alone one located within easy reach of nature in all its glory. Orientation and placement and contouring are critical when it comes to blending the watershape into its setting. Then there are practical issues, such as the budget, and physical factors including whether you have the access you need to bring in large boulders and trees if that's what the site requires.

In my case and in the case of others who stay on the design side of the project, there's another key to success that must be considered: We need to find landscape contractors who have extensive experience in excavation, liner installation, rock placement, circulation systems and planting.

More important, these professionals must have the ability to see as we see and come to share the vision we have for the project. And it certainly doesn't hurt if they're nature lovers, too, and have spent time hiking and walking in the forests and along the region's magnificent waterways.

When it all works – and, happily, it works often and well – this shared vision of designer and contractor results in beautiful orchestration of the water elements in harmony with the rest of a garden landscape and in accord with the greater regional setting.

To explore the ways this orchestration works and how the various factors listed above come into play, let's take a look at a selection of projects that have grown out of my own exploration of the waterfalls and waterways of the Pacific Northwest and my personal quest to harmonize with their compelling beauty.

This northwest-facing slope contained a small residence that offered spectacular views of Puget Sound and the mountains. The site, however, was compromised by the faint yet steady sound of cars thumping over the expansion joints of a nearby bridge and more ominously by heavy sub-grade drainage headed toward the sound.

The groundwater problem was so severe, in fact, that the clients developed a master plan that called for relocating the entire residence upslope to a dry, stable site where an existing guesthouse stood. When that project was done and crews removed the concrete foundation of the old home, continuous streams of surface and subsurface water emerged, flowing right through the summer months.

When we were called in on the job, we decided to turn the non-stop water flow into an asset without compromising the natural drainage or the structural stability of the new concrete foundation. We evaluated orientation and placement options and installed a bulkhead with rock steps and extensive drainage, then built a curtain drain around the house and sunk a manhole structure to allow access to a pump basin.

From that basin, subsurface water is now pumped into a small pond above the new home. From the pond, water flows across an alpine rockery and cascades over outcrops adjacent to a large, flagstone patio. Collected into another small pond, the surface water flows down a small creek alongside the patio to the bulkhead. The creek then falls down another drop behind the bulkhead before reaching the sound.

In essence, this perennial watershape does little more than redirect a natural flow, using it to create a musical complement to views of Puget Sound.







This project was all about taking an under-used hill-side space and transforming it into an invigorating backyard amenity.

We tucked our work into a slope adjacent to a large deck. There we had just 25 feet of space available for contouring and landscaping around a cascade, and we chose to plant densely both to set off the water and provide the sense of seclusion the clients wanted in their private garden.

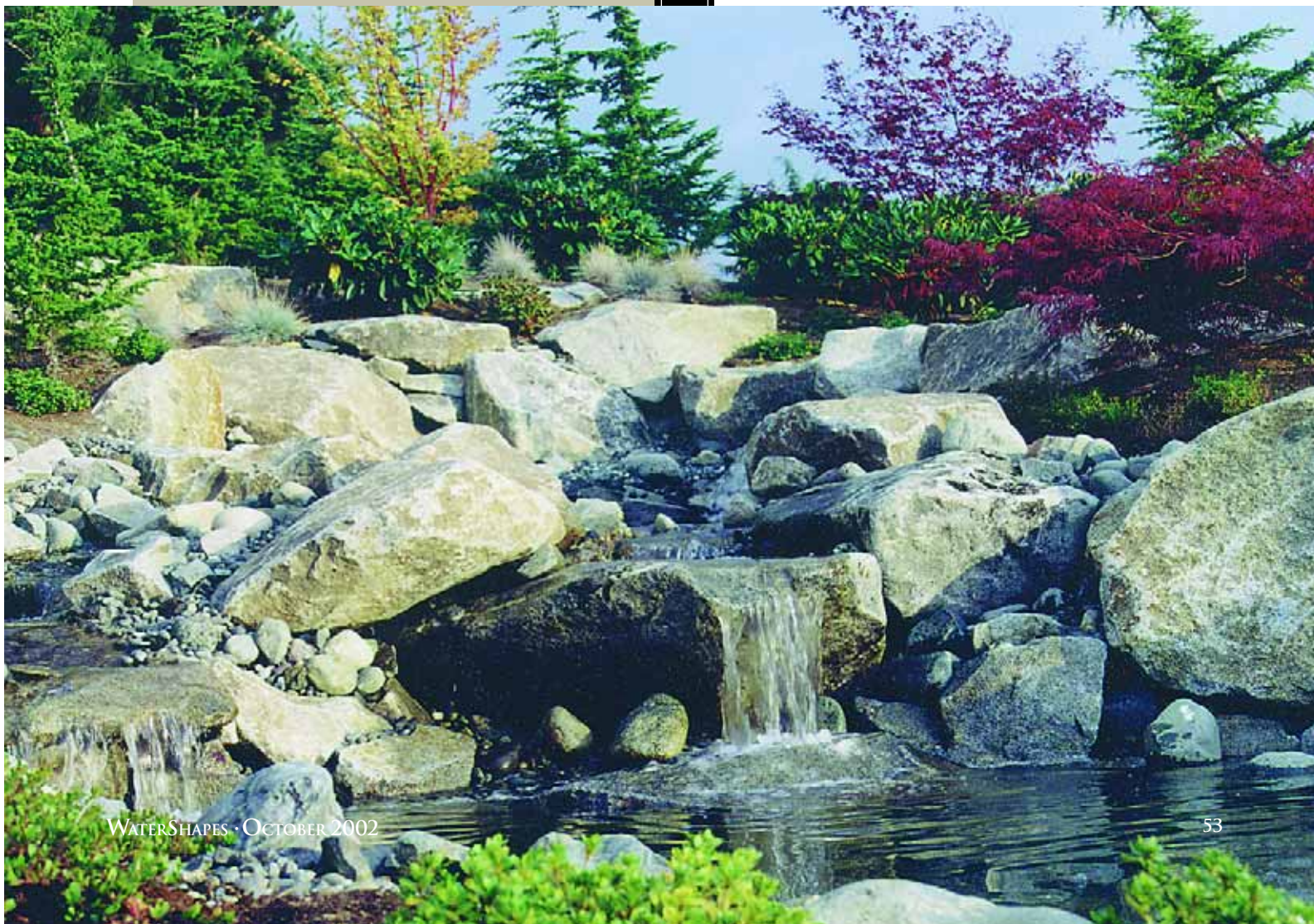
Now complete, the waterfeature is visually screened from the street, but it provokes curiosity just the same because the roar of its three-tiered cascade is quite easily heard. And the water is far from remote for our clients and their guests: At the top of the slope, granite steps allow for intimate aquatic interaction, and the mist from the cascade drifts up to the deck – a refreshing relief on hot summer days.

Recognition

Collaboration between designer and installer is key to the success of any quality watershape.

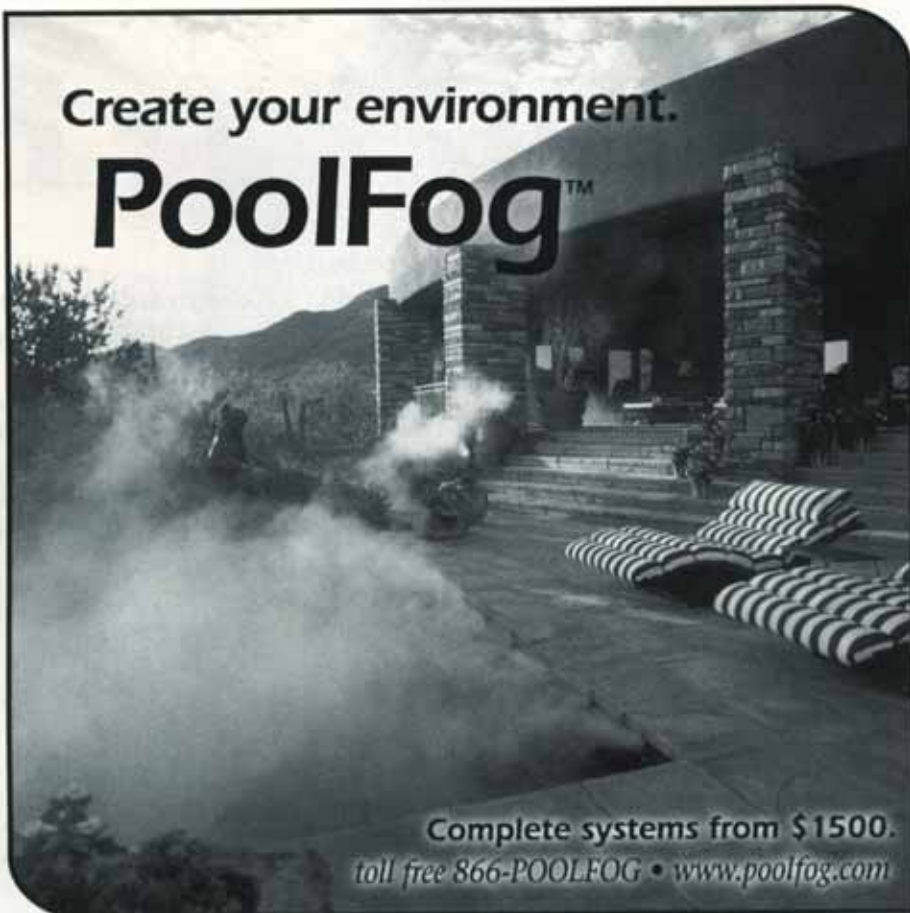
In the case of the projects seen in the accompanying article, I'm grateful for the skills of Rob Park of Park Design Associates in Kirkland, Wash. Through the years, I've worked with many landscaping contractors. Rob is unsurpassed in his desire and ability to grasp the nuances of waterfall and stream construction – and he does so with an extraordinarily high level of skill and sensitivity.

–L.B.



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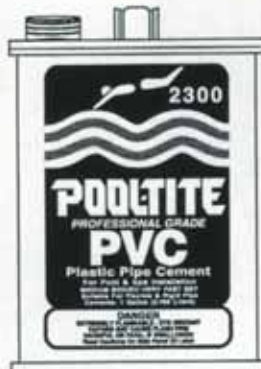
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Dramatic Entrance

After an extensive home renovation, the owners of this property decided they wanted to enhance its flat, dull entryway. It's a case where adding some elevation and a waterfeature made all the difference.

The area was literally *flat*—no contouring or real opportunity for any sort of drop. We replaced the asphalt driveway with stamped concrete to create an inviting drive and entry walk. We also built up the center of the existing circular drive and set up a cascade through a cluster of high granite rock outcroppings. The elevation hides the doorway from the street and, with the aid of dense plantings, cuts down on traffic noise.

In the process, the whole entryway and sense of access have been changed. The loop drive and breaks in the elevations provide entry into what is now a private courtyard. The watershape flows toward the front door, thereby adding to the sense of drama and making a strong impression on anyone who uses the front door.

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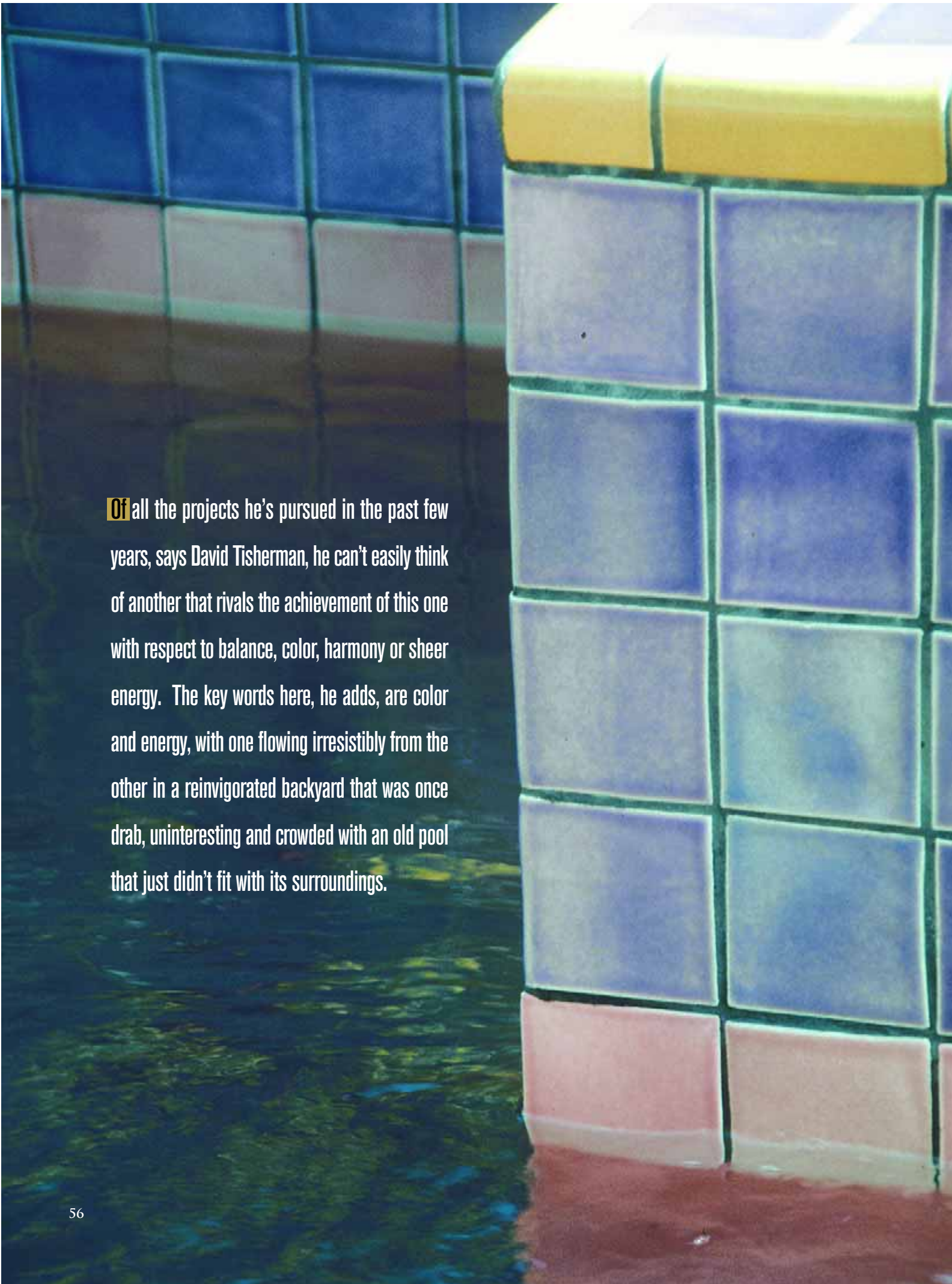
the Blanks

The opportunities and constraints with a new residence are always different from the ones we encounter in watershaping for existing landscapes. In this case, a new seven-acre Maple Valley residence was an open canvas for us—and a delightful change of pace.

The residence was designed with an outdoor seating area in front, set up adjacent to a covered breezeway that offers access to an auto court at the back of the garage. The circulation, landscape and grading programs were all designed to set up a central island with a watershape that was to lend visual focus to the whole front yard.

Given its central position, we set up the watershape to cascade in multiple directions, facing primarily the entry steps and the outdoor seating area. The sun sparkles off the south-facing cascade, creating a play of light that sets off the residence as well as the perimeter plantings.

And like the majority of the natural waterfalls and waterways found in the region, this watershape offers interactivity by way of a lower pond surrounded by large granite rock outcroppings that double as seating stones and offer an invitation to waders.



Of all the projects he's pursued in the past few years, says David Tisherman, he can't easily think of another that rivals the achievement of this one with respect to balance, color, harmony or sheer energy. The key words here, he adds, are color and energy, with one flowing irresistibly from the other in a reinvigorated backyard that was once drab, uninteresting and crowded with an old pool that just didn't fit with its surroundings.

Splashes of COLOR

If you can't see potential in every backyard you walk into, then you're in the wrong business.

Yes, some projects are more inspiring than others, and some spaces seem to offer you more to work with than others. Without exception, however, our clients' yards present us with opportunities to develop programs that take advantage of what's there in ways that bring balance and harmony and interest to any setting.

Speaking for myself, I'm no more energized in a project than when I get the opportunity to right a wrong and replace a past mistake with a fresh, interesting design – and that was certainly the case in the project discussed in this article and in my past several “Details” columns in this magazine. The setting was special, the clients were great and I was given free rein to work with color, shape and line in vivid, interesting and even startling ways – all in keeping with their wants and desires.

Setting the Scene

To recap information from recent “Details,” this pool/spa combination with its associated decking, walls, planters, outdoor cooking facilities and private garden area are located in a narrow yard at the base of a slope in Pacific Palisades, Calif. It's a spectacular spot, and the home is a wonderful structure that radiates warmth with its rich wood trim, soaring architecture and unabashed goldenrod color.

The backyard, however, was an eyesore. Built without any sense of style or design, it featured an oversized pool, lifeless concrete decking and a drab retaining wall stuck aimlessly in the middle of the yard.

My plan, as you may recall, was to play off the home's ar-

chitecture, colors and textures, shrink the pool, add a spa, maximize the sense of space, pay homage to the design sensibilities and talents of Mexican architects Luis Barragan and Ricardo Legorretta and play with color. As I've mentioned many times, I have been fortunate in this case to work with clients who've been able to visualize the yard's potential and become collaborators in the process.

Not only was the existing pool much too large for the space, it was a visual mess with curved lines, straight lines, angled lines and multiple types of materials – none of which had anything to do with the space or the shapes around the pool. Rather than enhance the space, the pool actually sapped its energy and dragged down an otherwise beautiful property.

And the problems weren't all aesthetic: The drainage was all wrong, the decks were set awkwardly at best and steps tended to be in the wrong places. It had all been composed without imagination or any thought of how the space might actually be used.

Watching the transformation of this backyard has been a true delight for my clients and me, and I hope my columns have conveyed some of the joy of this process. A yard that once seemed overcrowded now seems spacious. Walls that once intruded are now an integral part of the design and color scheme. Decking that was formerly drab and unappealing now glows with warmth and color and soft textures.

If I do say so myself, the elements of the design are all so well considered and proportioned that no one element visually overwhelms the others or takes over the space. It's all in balance with respect to color, volume and line – an ideal place when it's time for entertaining, relaxing, playing or exercising.

By David
Tisherman



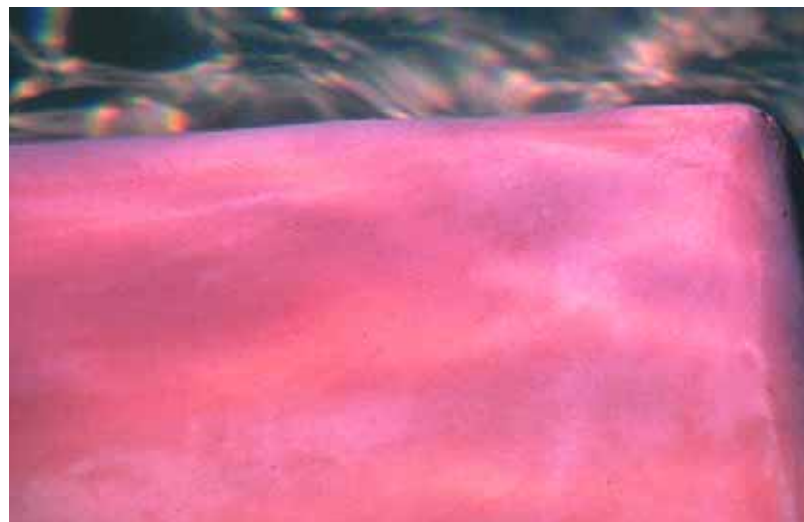
Color Keys

There's so much color in this backyard that it's really quite outrageous. But although the palette is bright and vivid, the colors all were selected to work together in a harmonious way – warm and expressive and even whimsical, but juxtaposed in ways that pull everything together.

This is a case where color has been used to expand the visual space. If that seems a puzzling notion, look at it this way: You can take three identical cars, paint one yellow, another black and the other red, and they'll all appear to be different sizes. It's also why some colors are slimming when you wear them – and why, unfortunately, others are not.

The key here is transitions that help to define shapes and spaces. The transitions bring some elements forward while fixing others in supporting roles. Look, for example, at the reddish hue of pool's plaster and how it works with the water's reflection of the vivid purple color on the walls. You see this interplay as well in the dark greens of the landscaping and the pale green of the concrete, between the plaster and the coral-colored band of tile, and between the yellow tile and golden-rod house.

It all works together because it's based on color theory and appropriate use of a color wheel. On their own, the colors are bright, even startling – but here, rather than conflicting with one another, they harmonize while expanding and energizing the space.





Wondrous Walls

Contrary to common assumptions, walls don't necessarily shrink your sense of space or just hold back slopes or serve only to separate one property from the next. In fact, if you have a good understanding of the dynamics of volume, line, color and shape, you can use walls to create impressions of space and visual balance and continuity that are truly something special.

Done well, they can give the eye a sense of sweep and focus and create sensations of flow and direction and spaciousness. Indeed, walls give us opportunities to expand rather than enclose or limit spaces. In this project, for example, they were used to create interesting offsets, reflect light, cast shadows and mingle with landscaping.

They also were used to add vibrant color. On its own, the purple of these walls is quite striking and maybe surprising, but in the context of the other colors we've chosen and the color of the landscaping and of the house, the color is beautiful, appropriate and exciting rather than jarring or unsettling.

But the appeal of these walls goes beyond great aesthetics: The original central wall has been upgraded and is now flanked by two side walls. Together, they serve as true retaining walls and have also been made an integral part of the slope's drainage system.

Here and elsewhere, I'd like to thank my friend, Mark Smith, AIA, of Tarzana, Calif., for the invaluable structural-engineering expertise he provided for this project.





A Secret Garden

There's a neat little area off the clients' home office that will eventually feature sculpture and landscaping to go along with storage space that's already been installed, virtually hidden from view.

This private meditation garden will be a special space made even more appealing by the surprise that awaits around the corner: a sweeping view of the expressive backyard and its array of visual and aural delights.

—D.T.

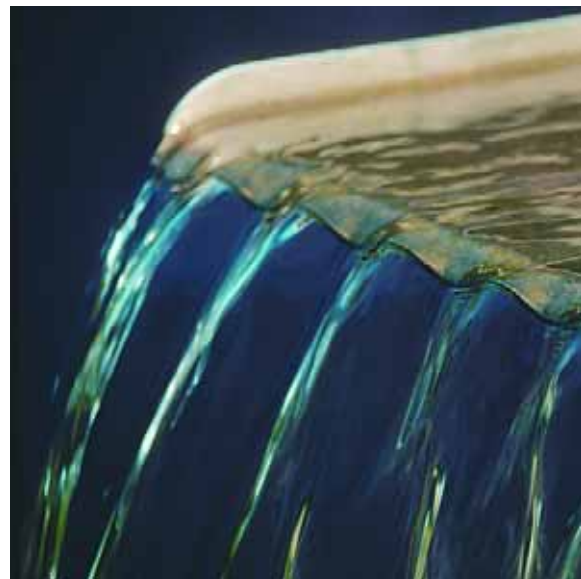


Spa Ways

The spa is the understated star of the show – and a wonderful replacement for the tired portable my clients had been using.

The new, full-featured spa has 16 jets, beautiful tile, four slotted spillways into the pool and comfortable seating in and out of the water. It's large – some nine feet by almost seven feet – and will comfortably accommodate a large group of people with a variety of jet configurations intended to work on different parts of the body.

The crowning touch here is a pair of scalloped brass spillways that send a wavy flow of water into the spa. Made to order by David White and the staff of the Custom Cascades division of Oreq Corp. (Temecula, Calif.), the spillways provide drama and add interest made possible by the fact that the wall is set back from the spa instead of being pushed





right up against it.

The whole composition now invites observers closer to the water, where they can enjoy the flow of water from the scalloped spillways into the spa or from the spa's slot spillways into the pool. They can either interact with the water physically or simply watch and listen from any number of places in the yard and enjoy its unique asymmetrical balance. The rippling effect of the water flowing over the scalloped spillways is very important here: It gives the water a visual, even sculptural texture to go along with a distinctive aural texture.

For all its star-quality features, however, the spa and spillways don't dominate the scene; rather, they blend in seamlessly as part of the overall composition.



Pool in Place

I've said it many times: Water is nothing more than a colorless, odorless, tasteless, amorphous material. When it's set in a design with rich colors in an open visual space, it reflects and enhances the surroundings. In effect, because the water reflects the environment, that environment becomes the palette.

And *reflecting* is really all we've asked this small vessel to do visually. In dimensional terms, the pool is like a simple set of building blocks with one thing growing or extending from another. Everything in this space is rectilinear, and the pool is just one more of those linear elements.

A special touch for this pool is the red plaster we used on the interior. To my knowledge, nobody has ever used red in this application, but in the context of the other colors used in

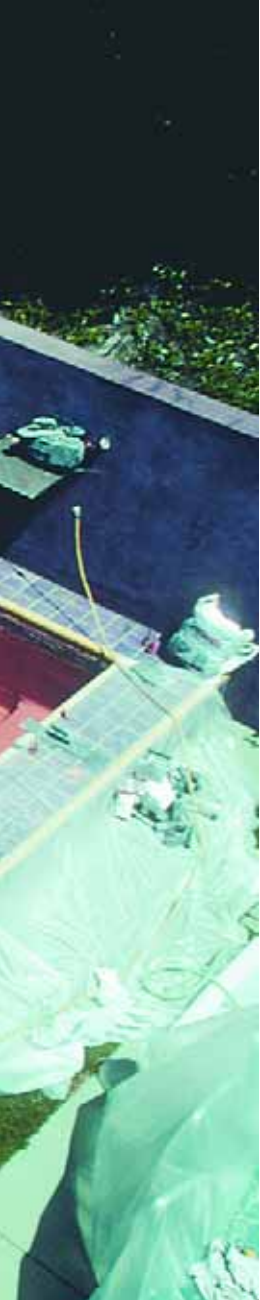
this backyard, the effect is mesmerizing – truly a special look.

In producing this unusual plaster color, which we call "Zola Red," I relied as I often do on the skills of Tony, John and Luis Marquez and the staff at Marquez Plastering in Sylmar, Calif. Their willingness to work with me in trying, developing and adjusting special colors makes it much easier to implement the visions we've developed of what this and many of my other pools ultimately have become.

On the day we plastered the pool and spa, Tony remarked that in a career in which he's plastered more than 20,000 pools, he'd never done a red one.

Seeing how keyed up I was as we mixed up the material and fine tuned the color, he teasingly said, "This takes guts." "No," I replied, "What it takes is a great crew."





Outdoor Living

The outdoor entertainment center includes a large barbecue with a two-burner cooktop, stainless steel storage, lots of electrical outlets and plenty of lighting to illuminate both the food-preparation and serving areas.

It's a large portion of the yard and an important functional space, but again, it's part of the setting without dominating it. The slate on the serving surface is flush-set rather than cantilevered to give the counters a monolithic look. The slate also features prominently inside the home and serves as a means of linking the indoor and outdoor spaces.



Laying It on the Line

What do you bring to the table when you meet with a prospective client?

Do you bring formal training or classroom education with you? Have you taken drawing classes or art history or learned anything about textiles or color theory or architecture or construction? How qualified are you to be designing and/or installing permanent, three-dimensional environments in public or private spaces?

It's apparent that few people who sell and install residential swimming pools could answer those questions with much credibility. I suppose it means opportunity for me and a few others, but I know I'd much rather operate in a universe where many, many more practitioners have the right background, the right experience and a good understanding of volume, scale, proportion, balance, texture, auditory quality, color and visual acceptance.

A well-educated generation of watershape designers would only help me improve. As it stands now, however, qualified, credible watershape designers are few and far between. The situation is outrageous – and our clients deserve better.

The clients who brought me into the backyard shown in the accompanying feature certainly did. The difference between the pool they have now and the one that was there before is the difference between the education, experience and creativity I offer as a designer and builder and the utter lack of training, sensitivity to design dynamics or refinement of thought displayed by my predecessor.

The only answer is a commitment to education. It can be a long and difficult road, but the results can be priceless.

–D.T.

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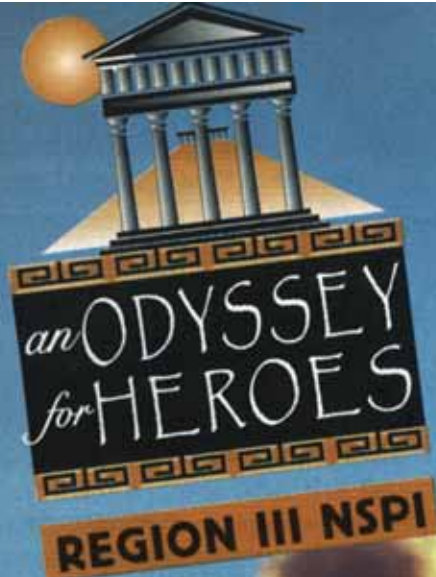
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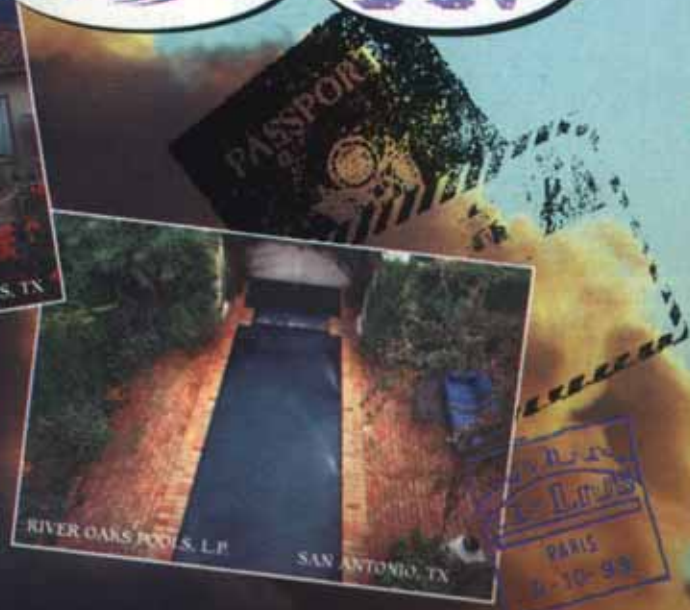


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POOL GAMES

Circle 104 on Reader Service Card



POOL SHOT PRODUCTS has published a brochure on its complete line of pool basketball and volleyball games – including a combination basketball/volleyball setup and new deck-mounted systems. The games are designed for years of aggressive play and are resistant to the effects of harsh weather with their powder-coated aluminum hardware and UV-resistant bases and backboards. **Pool Shot Products**, Ashtabula, OH.

GROUT/CONCRETE PUMPS

Circle 106 on Reader Service Card



SCHWING AMERICA offers the P-88 and P-88D trailer-mounted grout/concrete pumps. Available in conventional gas and diesel-powered versions, the pumps move 25 cubic yards of concrete per hour at a maximum pressure of 500 psi over a maximum horizontal distance of 500 feet or a maximum vertical distance of 150 feet. The twin-beam, all-welded frame features a heavy-duty axle and suspension. **Schwing America**, St. Paul, MN.

DICHLOR FEEDERS

Circle 105 on Reader Service Card



POLARIS offers the Watermatic Pro System D-1, a chemical-feeding system with an ORP controller that assures ideal sanitizing levels when using granular dichlor. The system adjusts chlorination levels automatically in response to changing conditions to ensure bather safety while reducing costs. Easy to install, operate and maintain, the device is great for commercial spas and comes with a five-year warranty. **Polaris**, Vista, CA.

WETLAND FILTRATION SYSTEM

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AQUASCAPE DESIGNS offers a filter system to meet the needs of very large water-shapes. Producing great water clarity while reducing algae growth, the device features an extendable slotted tube that disperses water in an excavated bog area. Water flows evenly through gravel and plant roots before returning, filtered and clean. A central snorkel pipe allows for easy removal of debris. **Aquascape Designs**, Batavia, IL.

Continued on page 72



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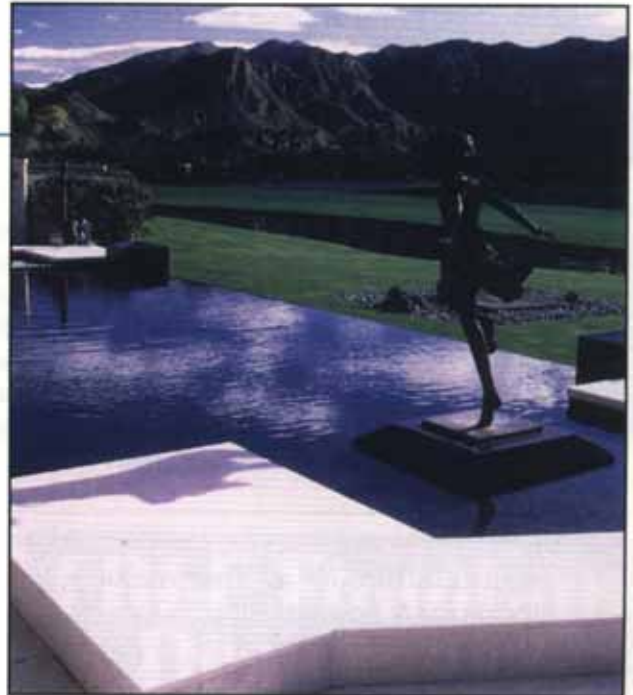
How Good Do You Want To Be?

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 second Fountain 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
Genesis Fountain School

This school, hosted by Crystal Fountains, has a special focus on fountain design. Topics to be covered include selection and use of appropriate water effects, fountain hydraulics and specialized lighting design. Open to all applicants, the school also features a hands-on visit to Crystal Fountains' facility, as well as a guided tour of Toronto's fountains.



For more information, contact the Genesis 3 office, toll-free, at (877) 513-5800
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WATER CLARIFIER

Circle 108 on Reader Service Card



VANSON CHEMICALS has announced the availability of Sea-Klear Heavy Flocculant for clearing excessively dirty and cloudy pool water. When added to the water, the product binds to particulate matter to create large, heavy flocs that quickly sink to the bottom of the pool for fast clean up – normally within 24 hours. Designed for efficiency, just one quart treats up to 40,000 gallons of pool water. **Vanson Chemicals**, Redmond, WA.

SWIMMING POOL ENCLOSURES

Circle 110 on Reader Service Card



CCSI INTERNATIONAL makes the Garden Prairie line of custom pool enclosures. Designed to allow for year-round enjoyment of summer activities, the structures require minimal maintenance and offer high resistance to the moisture and chemicals found in pool environments. Made with powder-coated aluminum, they feature roof panels that open either electrically or manually. **CCSI International**, Garden Prairie, IL.

COMPACT LIGHTING SERIES

Circle 109 on Reader Service Card

COOPER LIGHTING has introduced the Monaco series of area and accent lights under its Lumiere brand. Designed around the latest in HID and halogen-lamp technology, the products offer adjustable beam spreads and corrosion-resistant construction and are among the smallest, most adaptable and most durable fixtures currently available for landscape and architectural applications. **Cooper Lighting**, Camarillo, CA.



BACKHOE TOOLS

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CATERPILLAR has developed two new backhoes for its skid/steer and multi-terrain loaders. The BH30 (for smaller loaders) and BH30w (for larger models) feature digging depths as deep as 9-1/2 feet. Each backhoe offers 180-degree boom swing, and the assembly can be shifted to left or right of center to allow for better sight lines and closer work alongside structures, foundations and trenches. **Caterpillar**, Peoria, IL.



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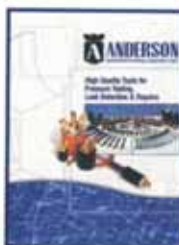
Circle 112 on Reader Service Card



FOUNTAINS FOR POOLS manufactures Aquascope, a telescoping fountain that comes in four fountain patterns and transforms pools and spas into fountains during non-swimming hours. Easily installed at depths from 8 to 108 inches, the fountains retract flush into the pool or spa bottom and do not protrude when not in use. The fountain is powered by the pool's pump, so no other pump is needed. **Fountains for Pools**, Tarzana, CA.

PRESSURE-TESTING PLUGS

Circle 114 on Reader Service Card



ANDERSON MFG. CO. offers plugs for use in pressure testing of hydraulic lines. Designed for use with the range of openings from standard pipe outlets (threaded and unthreaded) to skimmers and Ortega valves, the plugs have straight-sided rubber for extra sealing area, large wingnuts for easy expansion and non-corrosive hardware for years of service. Also offered: an inflatable plug for out-of-round holes. **Anderson Mfg.**

Co., St. Paul, MN.

WATER-FLOW PLAY SYSTEMS

Circle 113 on Reader Service Card



EMPEX WATERTOYS manufactures Aquatons, soft-flowing fiberglass forms that have no moving parts and provide simple interactivity with water flows for children of all ages. The fiberglass material is lightweight, which means the play structures do not require expensive foundations. Designed for use on decks or in shallow pools, the fiberglass forms have lifetime guarantees against corrosion. **Empex Watertoys**, Toronto, Ontario, Canada.

OUTDOOR SPEAKERS

Circle 115 on Reader Service Card



SOUNDTUBE ENTERTAINMENT offers the XT line of speakers for outdoor applications. Designed to provide high-performance sound reproduction using the company's BroadBeam sound-dispersion technology, the speakers feature durable, weather-resistant components for long service life and wide, clear sound coverage in compact packages. **SoundTube Entertainment**, Park City, UT.



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ENERGY-SAVING POOL COVERS

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AQUAMATIC COVER SYSTEMS offers Hydralux, an automatic solar pool cover for commercial and residential applications. Made up of extruded slats available in six colors, the floating, trackless system covers any converging pool shape. Powered by the company's Hydraulic Drive system, the covers are available with six storage options, from a standard grated deck trough to a hidden in-floor design. **Aquamatic Cover Systems**, Gilroy, CA.

PVC AND METAL VALVES

Circle 118 on Reader Service Card



DURA PLASTIC PRODUCTS has published a catalog on its comprehensive line of valves. Coverage includes metal ball, gate, stop and check valves in brass and bronze as well as a wide array of PVC models of ball, butterfly and check valves in white or gray. The catalog also covers replacement parts and has pages on chemical and temperature resistance, installation basics and complete engineering specifications. **Dura Plastic Products**, Beaumont, CA.

WATERSLIDE SYSTEMS

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SPECTRUM AQUATICS offers the Zeus water slide. A wrap-around tube system with a water-spray lubricating system, the slide's entry is 10 feet above deck level and features a 48-by-48-inch entry platform, a solid stainless steel frame and slip-resistant stair treads. The permanently anchored system comes with flumes and frames available in both standard and custom colors. **Spectrum Aquatics**, Missoula, MT.

FOUNTAIN AND WATER-DISPLAY SYSTEMS

Circle 119 on Reader Service Card

ROMAN FOUNTAINS offers literature on its line of equipment for decorative fountains and water-display systems. The six-page brochure depicts the full range of cascade, bubbler, fan, foam and jet effects from subtle to grand. Also included are sections on wall/deck/angle jets, floor jets, interactive fountain products and systems, and submersible lighting products for decorative fountains. **Roman Fountains**, Albuquerque, NM.



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EMPEROR AQUATICS offers the HydraScape filter system to mechanically filter and disinfect pond water. The prepackaged unit consists of a pump, a 36-inch sand filter, a programmable backwash valve and a 150-watt high-output UV sterilizer. Suitable for applications up to 25,000 gallons with a footprint of 48 by 63 inches, the system destroys algae to leave water crystal clear. **Emperor Aquatics**, Pottstown, PA.

REBAR CUTTERS AND BENDERS

Circle 121 on Reader Service Card



MULTIQUIP offers rebar cutting and bending systems that make short work of these critical operations. Four cutters are available, including three compact, hand-held models and a bench-mounted model—all of which cut bars up to an inch in diameter in seconds. The bender automatically bends bars up to an inch in diameter to preset angles and includes a foot switch for high production. **Multiquip**, Carson, CA.

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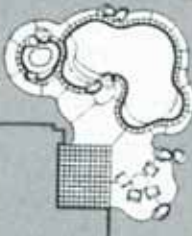
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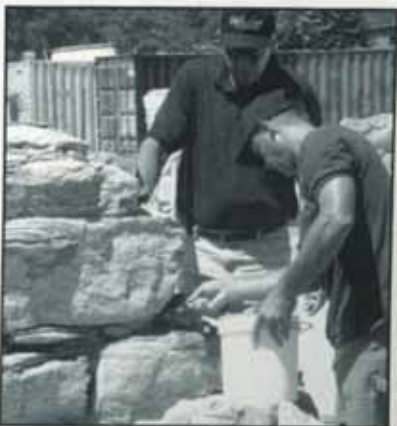
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WATERWAY PLASTICS has introduced an ozone-injector system specifically for spa applications. The system features a 3/8-inch barbed intake for compatibility with hot tub ozonators, and its PVC construction makes it ozone-resistant. In addition, the specially designed venturi allows for increased vacuum and flow in low-volume circulation systems. **Waterway Plastics**, Oxnard, CA.

LED/FIBEROPTIC LIGHTING CATALOG

Circle 123 on Reader Service Card

SUPER VISION INTERNATIONAL has published a 40-page catalog on its light-emitting diode and fiberoptic lighting systems for pools, spas and landscapes. Included is information on selecting and installing LED lights and replacement lamps, fiberoptic illuminators, side-glow fiberoptic cables and tracks, end-glow cables and lenses and a variety of light sticks for landscape installation. **Super Vision International**, Orlando, FL.



BARBECUES AND ACCESSORIES

Circle 124 on Reader Service Card



ISLANDS CUSTOM BARBECUES has published literature on its line of outdoor cooking products. The full-color, four-page brochure covers grills with up to 600 square inches of cooking surface, side burners, pull-out storage drawers, refrigerators, ice chests, access doors and more, all featuring rugged stainless steel construction. Accessories include rotisseries and tiki torches.

Islands Custom Barbecues, Las Vegas, NV.

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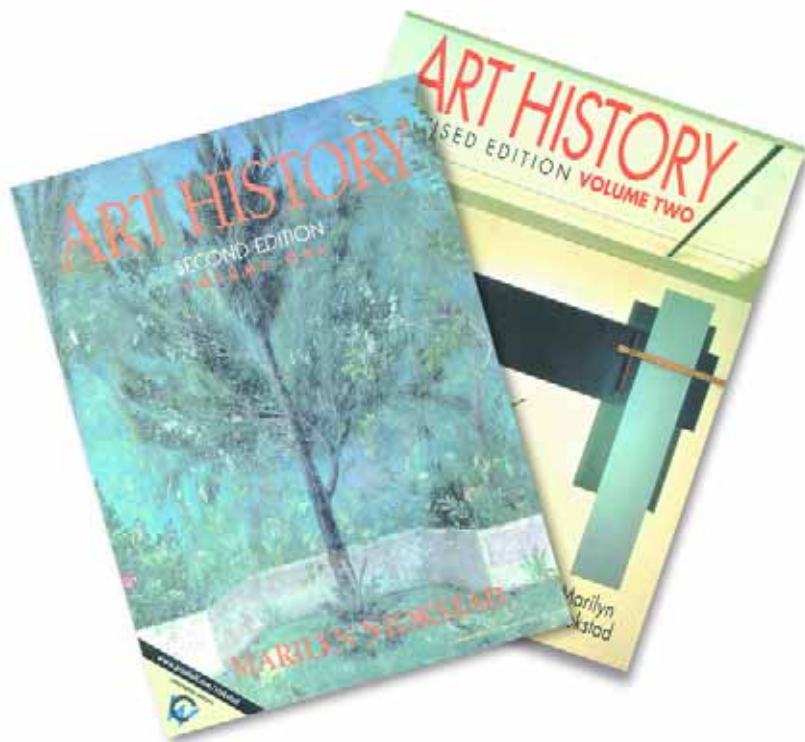
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Artful Foundations

I have a confession to make: I've never really been much interested in art.

That may seem surprising coming from someone who has a degree in landscape architecture and has dedicated a career to design. Fact is, I was never exposed to different types of art or to art history in any serious way: My high school didn't offer it, my family wasn't big on it and my landscape-architecture curriculum didn't require it.

This never really bothered me, and the fact that nobody seemed to care only reinforced my sense that this was knowledge I could avoid.

My blissful ignorance came to a screeching halt when I attended the Genesis 3 Level I school and was told time and again that to be successful as a designer, you need a working knowledge of art history, if for no other purpose than to understand your clients by observing the types of art they prefer. I accepted the advice, but I found it extremely difficult to pursue because I had no idea where to begin.

Not long ago, I found a wonderful set of books that have helped get me started: *Art History* by Marilyn Stokstad (two volumes, second edition, published by Harry N. Abrams in 2002). Together these books check in at a whopping 1,300+ pages, but don't let the size throw you, because they'll take you on a rapid and engrossing tour of the major traditions of art through the ages.

The first volume deals mainly with prehistoric art and the antiquities of Egypt, Greece and Rome through the time leading up to the Renaissance in Europe. The second volume picks up with the early

Renaissance and carries you through to modern art. It's primarily about Western art, but there's also coverage of the art of Africa, the Pacific cultures, China and Japan.

What I appreciated particularly was the cross-disciplinary approach. It's not all about painting and sculpture, nor is each period dealt with in isolation; instead, Stokstad highlights key connections between movements in art and draws interesting parallels to trends in architecture. Both of the volumes are beautifully illustrated and clearly written. There are concise discussions of specific artists, their works, their patrons and the histories of individual masterpieces as they've passed through the ages.

I chose these books as a place to start my own studies when I heard that they're used as textbooks for university-level art history classes. Although the reading is not light by anyone's definition, it's not difficult to digest or understand. In fact, it's fun and I look forward to absorbing more and more as I move forward in my life and career.

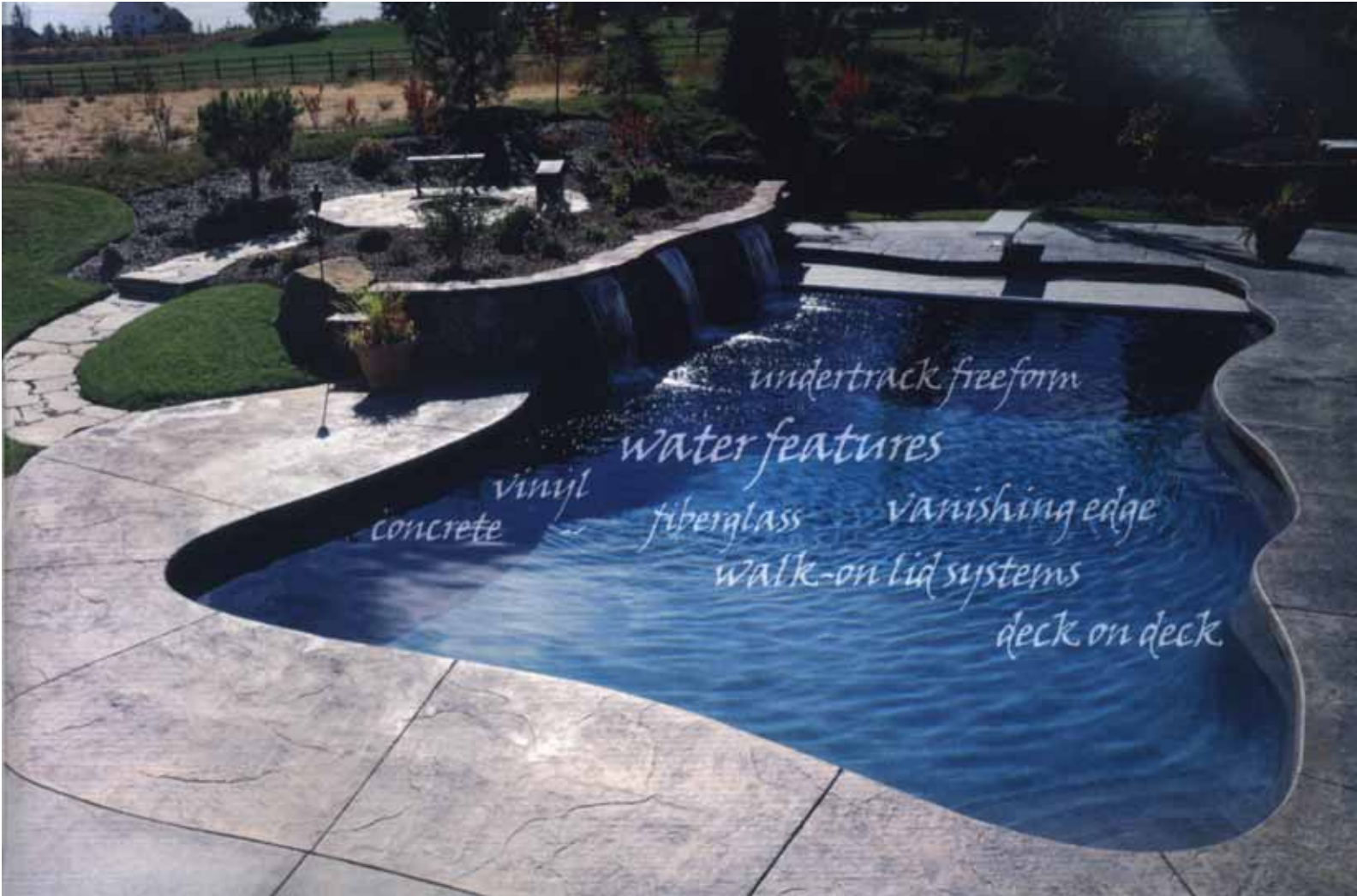
I've found that this basic information on art and artists has opened me to a far greater appreciation for what I see. I've encountered the works of Claude Monet for years, for example, but I never really cared much for all those soft-looking, fuzzy paintings until I learned a bit about his life and times and can now place what he achieved in a meaningful context.

In my career to date, I've found that things technical come much easier and are of more immediate interest to me. But through these two volumes, I've come to understand what the Genesis 3 instructors were talking about and why the understanding of a thing or two about art is so important.

I need to live with this new knowledge for a while, but I look forward to a time when I can comfortably walk into a client's home, spot the Brancusi sculpture under the spotlight in the entry hall and use my new familiarity with 20th-century sculpture as a consideration in my design discussions with them.

I'm still taking smaller steps than that in my development of art appreciation, but I have the sense at least that there are some trips to local museums in my family's future. **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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