

Inside: Stephanie Rose on Plants for the Shade

WATER SHAPES

Design • Engineering • Construction

Stone Impressions

Seeking inspiration
in classic rockwork

Volume 3
Number 5
June 2001
\$5.00

All in Fun

Crafting enjoyment
into watershape designs

PLUS:
Checking in on a huge
competitive-aquatics complex

Waterway

TRUSEAL

CHECK VALVES

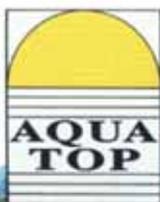
- ▶ The Waterway TruSeal Check Valve has a clear lid for easy inspection.
- ▶ Union lid for easy access.
- ▶ Deep sockets for better glue joints.
- ▶ Spring flapper, designed for demanding applications.
- ▶ The seal is molded into the flapper in a special process resulting in greater strength and longer life.
- ▶ Choice of body materials, CPVC (Black) or PVC (Gray).
- ▶ Straight and 90° body styles.
- ▶ Waterway molds and assembles all of its products in the U.S.A.



Circle 56 on Postage Free Card

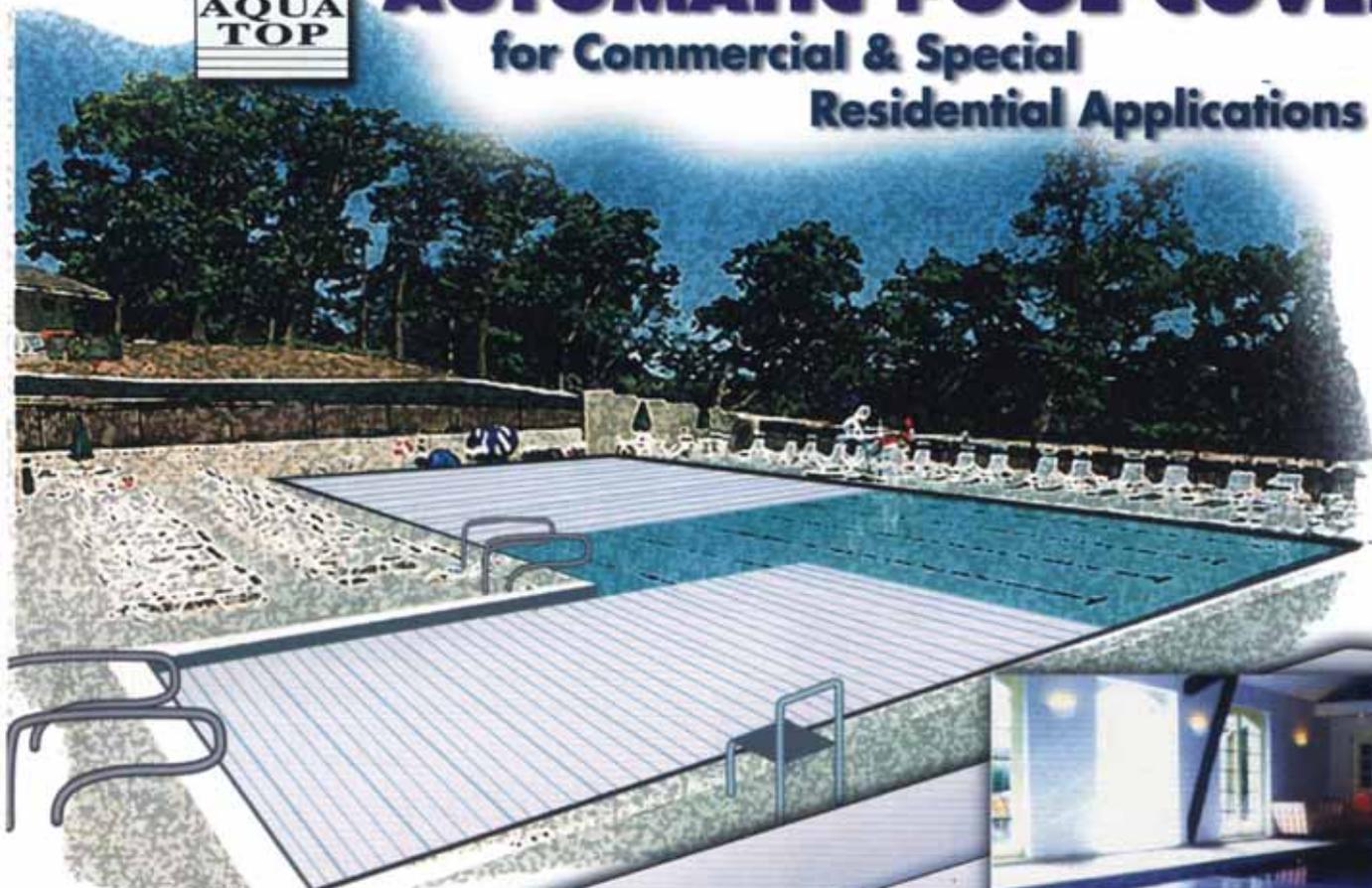
2200 East Sturgis Road
Oxnard, California 93030
805-981-0262 • FAX: 805/981/9403
E-mail: waterway@waterwayplastics.com
www.waterwayplastics.com



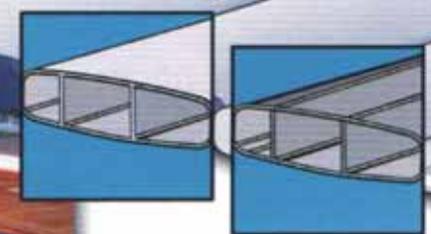
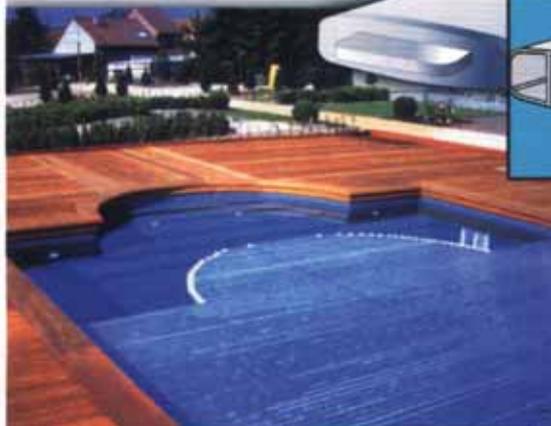


ENERGY SAVING SOLAR AUTOMATIC POOL COVERS

for Commercial & Special
Residential Applications

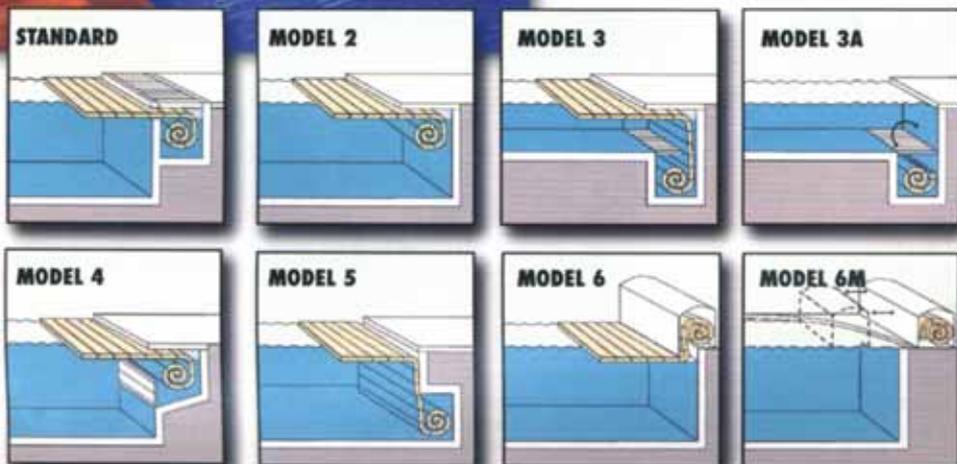


Design Concept by Garter Aquatech Pools, MI



This superb and mature German technology used on European Pools for the last 30 years now made available, modified and ready for the US market and supported by trained personnel of Aquamatic Cover Systems.

CONTACT: For engineering and custom application data, pricing and special quotations contact: Tom Dankel — V.P. or the staff at Aquamatic



Aquamatic Cover Systems

AUTOMATIC & MANUAL COVERS SINCE 1980

200 Mayock Rd. - Gilroy, CA 95020
800-262-4044 / 408-846-9274
800-800-7067 / 408-846-1060
www.aquamaticcovers.com
info@aquamaticcovers.com

AQUA-TOP is a product of T&A bvba. Belgium, which is owned in part by Aquamatic Covers Systems, CA USA

Circle 10 on Postage Free Card

26



36



FEATURES

26 SCULPTED FOR FUN

By Richard Winget
**Designs for the young
— and young at heart**

36 COMPETITION WITHOUT COMPROMISE

By William Rowley & Patricia Soto
**A first look at the
Mesa Indoor Aquatic Center**

44 SURVEY SAVVY

By Mark Holden
**Defining the value of
these key on-site services**

50 STONE IMPRESSIONS

By Bobbie Schwartz
**Drawing inspiration
from classic structures**



50

COLUMNS

6 STRUCTURES

By Eric Herman

Introducing 'Generation G'

10 AQUA CULTURE

By Brian Van Bower

A guide to setting up design contracts

16 NATURAL COMPANIONS

By Stephanie Rose

Finding plants that thrive in the shade

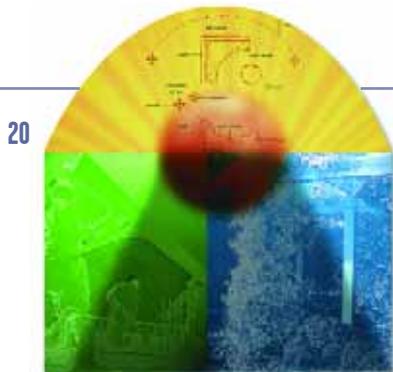
20 DETAIL #8

By David Tisherman

Strong statements with lofty structures

70 IN MEMORIAM

Notes on a friend's passing



DEPARTMENTS

8 IN THIS ISSUE

62 OF INTEREST

60 ADVERTISER INDEX

60 OF INTEREST INDEX

On the cover:
Photo by Linda Oyama Bryan

WATERSHAPES (ISSN 1522-6581) is published monthly with combined issues January/February, 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.

Generation G

Since the beginning, we at *WaterShapes* have made no bones about the philosophical connection between our magazine and Genesis 3, the design group for watershaping professionals seeking to elevate their craft. Genesis 3 came on the scene shortly before the magazine did, and it always seemed to us that its founders were working to achieve with their schools exactly what we're trying to accomplish in print.

This common purpose has made sense to them as well, and all three are generous contributors to the magazine – indeed, Brian Van Bower and David Tisherman are both *WaterShapes* columnists, and Skip Phillips has written articles for us. It also bears mentioning that David, Skip and Brian are long-time friends of mine and *WaterShapes* publisher Jim McCloskey.

No matter how *simpatico* the people behind Genesis 3 and *WaterShapes* may be, it's still surprising to me when I'm reminded of just how dynamic and important the "Genesis Movement" really is. Just this past April, I attended Genesis 3's Level II School in Islamorada, Fla. Typical of all their schools, this was a unique con-fab for creativity that stretched over many days in a beautiful (and isolated) setting.

In this case, 15 students from the pool and landscape design and construction trades traveled (mostly) a long way to learn from a roster of truly wonderful and prestigious instructors assembled by Brian, David and Skip. This was my third Genesis 3 program, and each time I've come away with the feeling that I'm witnessing nothing less than the emergence of a new art form – and the revolutionizing of a trade.

By giving attendees instruction on a broad range of design-oriented topics and setting the events in beautiful locations featuring great food, wine and entertainment, Genesis 3 not only provides important philosophical and technical information, it also conveys the benefits of living "the good life" that can result from success.

It's a powerful message, and one that often leaves those who attend these events feeling transformed. "For the watershaper whose passion is pursuing excellence and working at the cutting edge, there's no better collective body of knowledge anywhere," said Steve Swanson, a watershaper from Northern California. "Having the opportunity to discuss this knowledge with like-minded individuals is priceless."

"What this event has demonstrated to me is that you'll never know how high you can go until you think in terms of reaching for your own true potential," said Texas landscape designer Sterling Dees. "It's a whole new ballgame for me: I feel like *everything* has changed."

For me, seeing the lights go on in students' eyes further cemented the notion that exploration of the spectrums of watershaping possibilities can profoundly benefit anyone interested in taking the journey. For the vast majority of you who haven't yet attended a Genesis 3 school, you can at least begin your travels into the wide reaches of the craft simply by reading *WaterShapes*.

Regrettably, however, the magazine doesn't come with food or wine . . .



WATER SHAPES

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

© Entire contents copyright 2001. No portion of this publication may be reproduced in any form without written permission of the publisher. Views expressed by the bylined contributors should not be construed as reflecting the opinion of this publication. Publication of product/service information should not be deemed as a recommendation by the publisher.

Printed in the U.S.A.



Rock & Water
creations

Don't miss the Biggest Trend in Pool Design

What can we offer the
Custom Pool & Water Feature Builder?
The Best F.R.C. (Fiber Reinforced Cement)
Boulders & Rock Cliff Panels Available

Realize Larger Profits on your projects
Buy Direct from the Leading Manufacturer
of Artificial Rock Products
Lightweight—No Heavy Equipment Needed



Large Selection in Stock

- ✓ Buy Direct from Manufacturer
- ✓ Lightweight—No Crane needed
- ✓ Worldwide Shipping
- ✓ Technical Advice Available

See our web site catalog at
www.rock-n-water.com



Take Advantage of Our Experience...

Rodger Embury, President
Rock & Water Creations, Inc. • 815 Fifth St. • Fillmore, CA 93015
tel 805.524.5600 • fax 805.524.7339 • e-mail info@rock-n-water.com

Circle 21 on Postage Free Card

Richard Winget is founder of Authentic Environments, a firm that specializes in custom and themed artificial rock designs and installations from a base in Huntington Beach, Calif. Winget developed his skills in artificial rock design and installation through years of working on Southern California's major theme parks and established Authentic Environments in 1994 to translate that knowledge to mainline residential and commercial projects. He has traveled extensively, studying geological formations and ancient stonework around the world.

William N. Rowley, PhD, is founder of Rowley International, an aquatic consulting, design and engineering firm based in Palos Verdes Estates, Calif. Dr. Rowley is one of the world's leading designers of large commercial and competition pools. His

most notable projects include partial designs for the competition pools used in the Olympic Games in Munich (1972) and Montreal (1976), and he was the aquatic consultant for the design of the Olympic Pool Complex in Los Angeles (1984). His projects have also included a wide range of non-competition pools, including the White House pool in Washington, the Navy Basic Underwater Demolition Training Tank in Coronado, Calif., and the resort pool at the Hyatt Regency at Kaanapali Beach on Maui. Dr. Rowley is involved in a range of local, state and federal entities consulting on construction and safety code requirements. **Patricia Soto** is a senior project manager with Rowley International. She has an extensive background in competition swimming, aquatic programming and architecture and has been involved in competitive swimming and coaching throughout her life. She has traveled

DOES YOUR POND NEED AN AQUACUBE®?

The AQUACUBE® provides complete, **maintenance-free** aeration, degassing, biological filtration, circulation and foam fractionation to any size pond without a water pump, submerged electrical wires, chemicals or replacement parts.

- Use either floating or submerged to create a balanced, aerobic environment for maximum fish growth and health while reducing algae.
- Processes 10 times more water per kilowatt hour than the most efficient water pump.
- Complete, preassembled, silent Koi systems available in four sizes.
- AQUACUBE® systems for large ponds and lakes are also available - Call or fax for free systems design services.



DOES YOUR SAND FILTER NEED PERMA-BEADS™?

Perma-Bead™ Media **replaces sand** in any rapid sand filter and provides a non-clogging, non-channeling method for superb particulate removal without any plumbing changes.

- Large interstitial spaces for maximum trapping of waste - unique surface properties - ultra high density.
- Extend backwash intervals with complete fluidization upon backwash - never needs replacing.
- Complete state-of-the-art minimal maintenance Perma-Bead™ filter systems available for all size ponds.
- Call for replacement volume and quote to convert any size sand filter to Perma-Beads™.

Celebrating our 15th year of **innovative system design** and **technical support services**.



ADVANCED AQUACULTURE SYSTEMS, INC.
4509 Hickory Creek Lane • Brandon, FL 33511
Phone (813) 653-2823 • Fax (813) 684-7773
www.advancedaquaculture.com/landscape

Circle 6 on Postage Free Card

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

extensively throughout North America, applying both her architectural background and knowledge of aquatic sports in the development and programming of aquatic sports facilities.

Mark Holden owns Earth Patterns in Fullerton, Calif. A landscape architect and licensed contractor, he has been designing and building watershapes for more than 17 years, specializing in creating dynamic spaces that use water as a primary feature. While his own business combines his roles as designer and builder, he believes firmly that it is important to reach past his own resources and make contact with (and consult for) other architects and builders as a means of elevating standards in both trades. That thought in mind, he is an instructor in art and architectural history for the Genesis 3

Design Schools and also teaches senior landscape-architecture students at Cal Poly-Pomona.

Bobbie Schwartz is a landscape designer, consultant, lecturer and writer – professions that have made her well traveled in pursuit of excellence in garden and watershape design. She founded her full-service design business, Bobbie's Green Thumb, in 1977, and her residential, institutional and commercial designs have been recognized by awards from the Perennial Plant Association, the Ohio Nursery & Landscape Association, the Ohio Landscapers Association and the Cleveland Botanical Garden/ASLA. Schwartz participates in several trade associations on the national, state and local levels and currently chairs the Certification Committee for the Association of Professional Landscape Designers.

Copper Stopper.



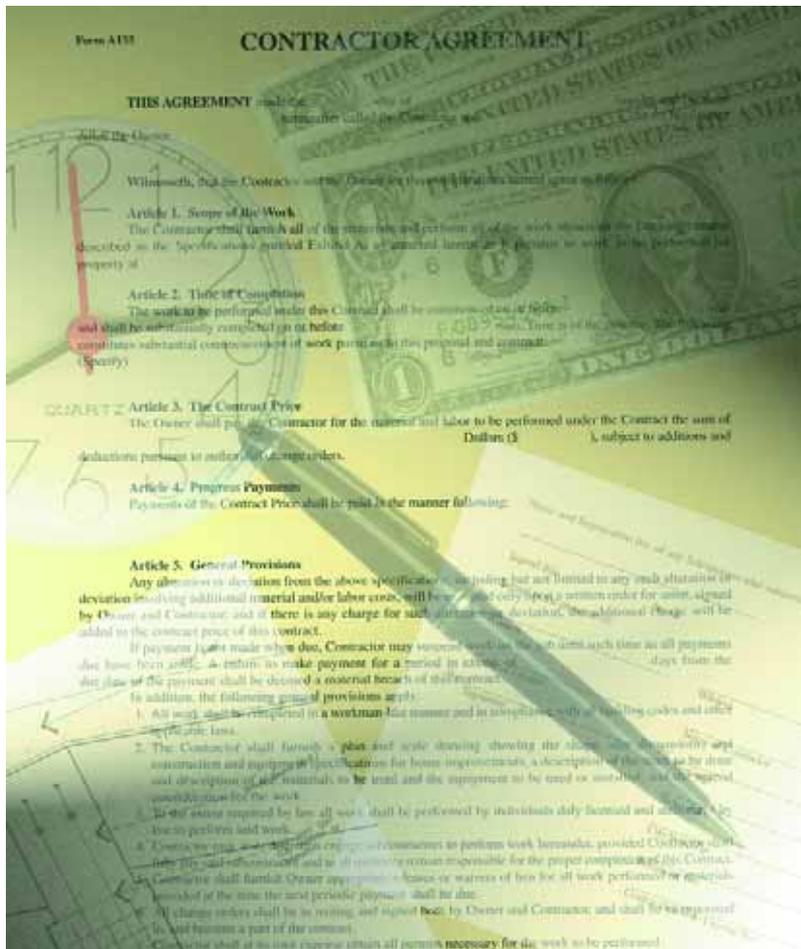
The Blue Stuff's proprietary blend actually removes copper from the water. The Blue Stuff™ is also very stable in higher chlorine levels and can be used in many fountain and water feature applications.

jack's
magic®

the pool solution™

4625 East Bay Drive, Suite 110
Clearwater, FL 33764
800-348-1656
www.jacksmagic.com

Circle 23 on Postage Free Card



The Dotted Line

I started my May 2001 column by expressing the belief that watershape designers should be paid for their designs in the same way interior designers and landscape designers are paid for theirs – and by indicating that lots of watershapers I’ve met are interested in knowing more about the mechanics of how this works.

I put off addressing those issues last time because I saw a need to establish criteria for offering such services in the first place. In other words, there’s much more to being a watershape designer than simply declaring yourself to be one, and I set up two dozen questions intended to clarify what I meant.

Once you’ve answered those questions predominantly in the affirmative, once you’ve determined, through training and experience and confidence in your abilities that you really *should* be paid for what you know, then and only then is it time to move on and take a look at *how* you’ll be paid.

And believe me, once you’ve made the decision to begin selling your services as a watershape designer, it pays to be both careful and methodical in how you

Believe me, once you’ve made the decision to begin selling your services as a watershape designer, it pays to be both careful and methodical in how you set up the contracts that cover the design task.

set up the contracts that cover the design task. A clearly written agreement – one that defines what is to be included in the design work and, as important, what is *not* – is a true cornerstone in a larger foundation of positive customer relations.

Key Issues

The first step in fitting the terms of a proposed contract to a potential design client involves answering yet another set of questions having to do with the specific project at hand.

In many respects, this is the usual sort of information you should be gathering from the client in the natural course of doing your detective work. All you’re doing is turning your focus a bit and establishing design fees rather than construction estimates.

□ How complex is the design? Jobs get complicated in lots of ways, but design complexity most often has to do with the number of water elements or systems you’re proposing and the scope of the project. If you have a job with a simple pool/spa combination, there’s often (but not always) less design work than would be true for a project that encompasses, for instance, a pair of reflecting pools, a natural pond, an underground grotto and a perimeter-overflow pool system.

There are also site-related issues that can complicate a design. If you’re building on an extreme slope, for example, or on a waterfront or in a high water table or with extreme soil conditions – those sorts of considerations clearly add hours and degrees of difficulty to the overall design challenge and need to be considered up front.

□ What level of detail are you providing? Typically, as a job moves up into the range of high-end custom watershaping, you’ll be called on to approach the design with a greater level

Continued on page 12

We Heat It.



We Clean It.



We Pump It.



Enjoy the Water

Pool and Spa System Developers and Specifiers love us, because we're their single source for efficient, attractive, quality large pool systems – that's

Pentair Pool Products.

We've got the products.

You fill the pool.



Pentair
Pool Products

Because reliability matters most

1 - 8 0 0 - 8 3 1 - 7 1 3 3
www.pentairpool.com

Continued from page 10

of detail. Less-challenging pools that call for standard treatments of edges, attached spas and adjoining areas do *not* require the same level of detailing as do projects that have unusual edge treatments or call for advanced architectural or artistic elements as part of the job.

□ What are the clients' expectations?

This is a crucial factor in all aspects of the project and especially in the writing of the

design contract: You must make certain you're to be compensated when you hit the target of client expectations; you also must nail things down as much as possible to be certain you're not dealing with a *moving* target.

On a general level, you know that if the clients want a highly creative design – one that's broad in scope and loaded with great details – this will drive your time involve-

ment and pricing to higher levels and determine how you structure the contract to meet those needs. But even a simple project can easily outstrip the big, creative one with respect to your time involvement if you don't go to the effort up front to figure out what they really want from you.

□ What will you provide? Are you providing an original design or a reworking of an existing design? Are you providing material and equipment specifications? Does your "design package" include any additional services, such as the review of contractor proposals, regular site visits, ongoing supervision or consulting throughout the construction of the project?

It's important to establish the extent of your role right up front so both you and your clients know how the relationship works after the design itself has been submitted. In lots of cases, dropping off the drawings is the end of my involvement. Other times (and to varying degrees), there's more to be done.

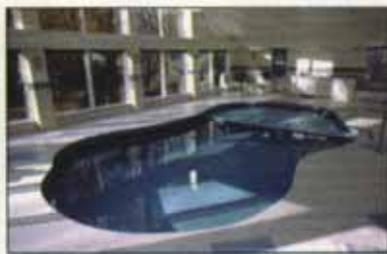
□ What's the timetable? This one is fundamental and has a lot to do with how much you charge. How fast clients want something done tells you, for example, whether or not you'll need to push other projects aside to get the work done.

You need to size up the complexity of the proposed project and determine whether you're at liberty to side-track other projects for the amount of time it'll take you to work out the details of the intruding task. Just

CONCRETE - FIBERGLASS - VINYL



RECTANGULAR OR FREEFORM



Cover-Pools can accommodate any style, shape or design feature while providing safety, strength and quality.

Standard Features

water-resistant electric motor • patented auto-adjustment feature
no shear pins • lifetime warranty on drive mechanism
non-electrical auto cover stop • no hassle fabric warranty
seven standard fabric colors

Optional Features

single drive hydraulic power option • new wireless touch control
water feature control system • colored extrusions
35 custom fabric colors • vanishing edge pool system
walk-on *Vanishing Lid*®



Save-T* Pool Covers

Call Cover-Pools Today!

800-447-2838

Visit our Web site www.coverpools.com

RETAINED KNOWLEDGE

I always charge a retainer fee for my design jobs. This is simply an amount of money I require up front to continue with the project.

I do so because this amount sets a threshold and indicates a certain level of commitment on the part of the client. In other words, requiring a retainer really sifts out the tire kickers. It also sends a message about the value I place on my own time and work.

Of course, demanding a retainer can create some awkward moments early on; I've been in situations where clients and perhaps their architect or landscape ar-

remember: If you jump in and find you can't make it work, you'll have two dissatisfied sets of clients instead of one.

And then there's the design task itself: I believe that if you're being asked to provide service on a short schedule, you should be compensated for accommodating the clients' need for speed!

Once you have these five pieces of information, you can get to work and focus on all of the nuts-and-bolts issues that still need to be settled – not the least of which is the basis on which you'll charge.

Setting an Approach

This is actually a bigger decision than one might think: Will you be charging a fixed price for the overall project, or will you charge at a specific, time-determined rate? I've found that there's merit to both approaches – and that there are times when the specifics of a project really will lead you to one method over the other.

The fixed-price approach is clear as can be from the consumer's point of view, which is doubtless why I've found that so many of my design clients are happiest when they see a dollar figure tied to a clear definition of what those dollars are buying. From their perspective, there's certainly a comfort factor in being able to fit all of the costs associated with the design of the project into a firm budget; indeed, many are reluctant to enter an open-end-

ed agreement for fear of where the final cost may end up when all is said and done.

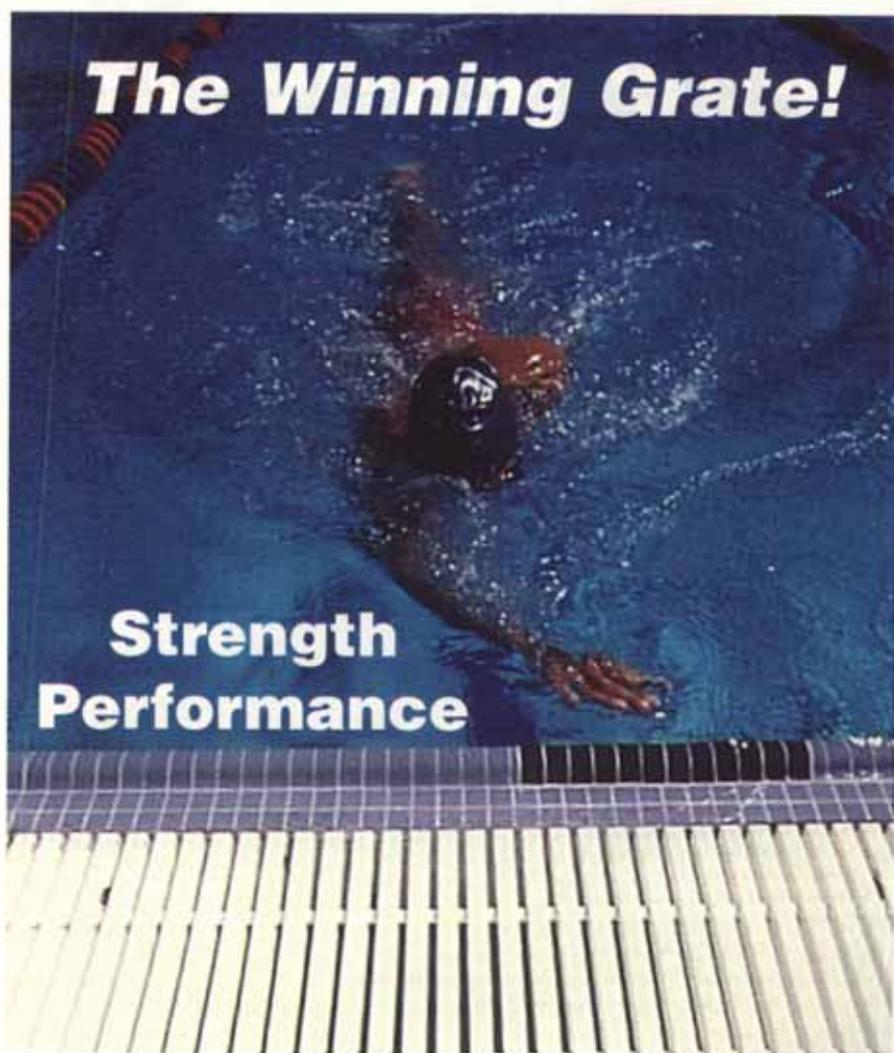
From my perspective as a designer, I can accept working with a fixed price in those cases where the answers to the five questions asked in the previous pages are clear enough that I can proceed with confidence. And if I've done a good job in gathering information, odds are I'll be pretty darned close in determining just

Even a simple project can easily outstrip the big, creative one with respect to your time involvement if you don't go to the effort up front to figure out what they really want from you.

chitect will be discussing the watershape design and immediately begin asking specific design-related questions. It's easy to jump down that path if you're not careful – and I know just how awkward it can be to pipe up and say, "I really can't continue with this discussion until I've been paid a retainer."

Still, I think it's important enough to insist on a retainer that I don't hesitate to speak up. More than the fact that they guarantee you a level of income on a project, retainers lay a foundation of trust and respect that I find crucial to any good working relationship.

– B.V.B.



GRATE TECHNOLOGIES, INC.

Grate Technologies, Inc.
3550 Westview Drive #101
Naples, FL 34104

(941) 435-3700 phone
(941) 435-3708 fax

www.gratetech.com

Circle 22 on Postage Free Card

how many hours of work the design process will entail and in setting my price accordingly.

Obviously, placing a clear definition of what you will and won't be doing is especially critical in a fixed-price contract. Just as clearly, my risks increase if there's *any* room at all for misunderstanding of what the customer is buying when they sign on the dotted line.

I cover some of that risk in calculating what I should charge on a fixed contract by building in an appropriate fudge factor. For starters, it's important to have enough money in a job so that when the unexpected arises—which it almost always does in some form or another—I won't need to worry about losing my shirt. How large that factor is depends on the project: The more challenging the

job, the larger the need.

Given a proper fudge factor, I'm generally comfortable with fixed-price arrangements. In fact, I'd have to say that in all my years of selling designs, I've generally ended up making a bit more on fixed-price contracts than I would have had these clients opted for a time-determined rate. It's almost as though the fixed price has a calming effect on these clients and makes the process go much more smoothly.

Two Perfect Answers to Your Customers' Chlorination Questions

The simple touch of a button can give your customers the perfect solution to automatically sanitizing their pool. Now you can choose the very best in automatic chlorination with either the AutoClear In-line System or the Pure & Clear In-pool System.



New Electrolytic Cell Features:

- Clear top for easy viewing
- Flow switch in cell—needs less pipe space
- Made for 2" plumbing—no flow restrictions



New Controller Features:

- Interface with Pentair Compool Cp Controls
- New diagnostics with brighter LED display



Automatic pool sanitizing 24 hours a day!

New Controller Features:

- Interface with Pentair Compool Cp Controls
- New diagnostics with brighter LED display

Now you can provide your customers with softer, silkier water that helps reduce red eyes and itchy skin. For more information call toll-free 1-888-441-2532 today!



CLEAR-TECH AUTOMATION, INC.

3860 N. Powerline Road, Ste. 100 • Pompano Beach, FL 33073 • Phone: 1-888-441-2532
E-mail: sanitize@pureandclear.com • Visit our Website: www.pureandclear.com

A Different World

Billing by the hour is a different kettle of fish. It requires a great amount of trust on both sides of the relationship and is therefore something that must be "managed" very attentively.

By way of illustrating what that means, let me tell you about a project that's now been going for more than a year: The client entered the process with the idea in mind that the design would "evolve" through ongoing collaboration. She knows that when I spend time talking to her or visiting the site, I'm going to bill her. She expects it and appreciates the freedom that our open-ended agreement provides. For my part, I find that I enjoy working with her on a time basis because of the trust factor and what it says about her confidence in both my ability and my integrity.

For all that, however, I think it's fair and reasonable to offer a time-based client an estimated range of costs in the contract.

DUAL ROLES

If you're working as both a designer and a contractor, I recommend handling the contracting portion separate from your design agreement.

The contracting segment of my business is a completely different entity. In our case, we may offer a value back (that is, something along the lines of a rebate of some percentage of the design fee) if we design a project and the customer decides to also have us build it, but that's about as far as I go in linking the two.

— B.V.B.

Circle 1 on Postage Free Card

This gives us a starting point, and I offer it only with the clear understanding that the "estimate" can and will change as the contract progresses. As a rule, I haven't found that customers working on this basis get too hung up if the costs go beyond the estimate – but they *do* appreciate a ballpark figure at the outset.

Either way you go, the keys to good and effective design contracts are clarity and conciseness.

It's important to include all of the bits of information you need, but that doesn't mean these documents need to be long or complex. In fact, almost all of my "Design Consulting Agreements" fit on a single typed page. I submit them on company letterhead and clearly call out the client's name and project at the top. The agreement includes a description of the scope of my work and offers a fixed price or a fee schedule with an estimated cost.

At the bottom, I list additional services I make available, which serves two purposes: First, it defines things that are not in the contract; second, it also lets the client know that they can turn to me for help in areas such as contractor selection and supervision if the need arises.

This is also the time to hammer out details about travel, which involves a surprising range of issues as your reputation spreads and you begin to get "out of town" work. You can settle these issues in any number of ways, but it's crucial that you and your clients know clearly who's paying for what. So right up front, I define issues such as air travel (and whether I'll be flying coach or business or first class); I also cover accommodations and issues such as ground transportation and who will be making all of the arrangements.

I'll also spell out if my work will involve bringing in another consultant, such as a structural engineer, geologist or another expert to help in designing lighting, special water effects or landscaping.

What You're Worth

The million-dollar question still remains: How much should you charge? Unfortunately, that is a question I absolutely cannot answer, other than to say that you need to determine both what your time is worth and what you need to

earn in order to make designing for pay a profitable undertaking.

What I can tell you is that by clearly defining what is in and out of the scope of the design agreement, you will minimize misunderstandings with the customer and you will be able to accurately estimate the time you'll need to get the job done. Beyond that, the dollar figure you attach to your time is something only you can decide.

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.

AWARD WINNING DESIGNS ARE EASY WHEN YOU HAVE THE RIGHT TOOLS... STEGMEIER WALL CAPS & STEP LINERS

- Cast on site
- Flexible
- Versatile
- Economical
- Easy to install



Stegmeier Corporation's Wall Caps and Step Liners transform simple pool decks into an intricate part of the architectural design. These versatile foam forms are available in many profiles and at an affordable cost. Contact us and we will show you how.

STEGMEIER CORPORATION 

1111 W. Harris Rd., Arlington, TX 76001
800-382-5430 • (FAX) 800-356-3602
www.stegmeier.com

Circle 42 on Postage Free Card



In Praise of Shade

Summer is arriving, and those 90-degree-plus days are coming with it. Your clients are thrilled to have their watershapes to cool off in, but they can't spend *all* their time in the water!

I've discussed shade trees and structures before, and it's an important feature to discuss with any clients whose yard you are designing. But there's more to shade than what you do overhead, and you need to discuss what you'll be planting in those shaded areas.

There are two problems here. For the most part, people don't know what to plant in the shade – nor do they know how to take care of it once it's in the ground. As a result, well-shaded areas will often go unplanted and even become eyesores in many gardens. That's a shame, because planting in the shade is actually quite simple once you know a few basic rules.

Consider This

I love shade gardens and see no reason to avoid designing, planting and setting them up in such a way that my clients can maintain them with relative ease. Consider these ten points:

- You can have just as much color in a shady garden as you can in a sunny garden. As the list I've provided in the sidebar on page 19

The shade is actually quite versatile in terms of attainable styles. You can plant almost any style of garden in the shade – English cottage, Japanese, contemporary, Mediterranean or something else.

shows, there's quite a broad palette of available colors.

- Varying the color of the foliage can add to the interest you create just as much as adding in flowers of various colors. Setting dark greens next to light or chartreuse greens, for example, or adding in plants with variegated foliage adds a great deal of visual interest to the composition.

- White is your greatest asset if a client wants to brighten up a shady spot. In fact, using plants with white flowers or variegated foliage can create the illusion that they're growing in a sunny spot.

- The shade is actually quite versatile in terms of attainable styles. You can plant almost any style of garden in the shade – English cottage, Japanese, contemporary, Mediterranean or something else.

- Evaporation occurs much more slowly in shady areas, so the soil generally stays wet longer and requires less irrigation. As a result, you always should try to set shady areas up as separate irrigation zones from sunny areas to avoid drowning the plants. (For more information, see the sidebar below.)

- In time, neglected, long-unplanted shady areas become great wastelands filled with soil so hard you'll have trouble getting a shovel to make any kind of dent. Watering the area to make the soil more workable – then rototilling and adding

Continued on page 18

IRRIGATION BASICS

You need to watch out for the different watering needs of plants in shaded areas and in adjacent sunny areas.

Evaporation isn't as rapid in shady spots, so the soil tends to stay wet longer and requires less irrigation. If you don't balance the needs of different areas, you run the risk of drowning plants in the shady areas or leaving those in the sunny areas high and dry.

In cases where I can't put shady and sunny areas on separate irrigation systems, I use low-spray or low-flow heads. As the names imply, they release less water, giving it time to soak in before puddling occurs.

–S.R.

Superior, Trouble-Free Landscape Lighting.



Because it's a tough world out there.™

HADCO®

GENLYTE THOMAS GROUP, LLC

For a free NightLife catalog call 717-359-7131
or fax 717-359-9289 or see us at www.hadcolighting.com

Circle 12 on Postage Free Card

NightLife® landscape lighting • Bronzelite® commercial landscape and underwater lighting.

Continued from page 16

amendments – will help you produce better results.

- Deep shade has its limitations, but fear not: There are plants that grow in the shadiest of places – typically larger-leaved plants with deeper-green foliage.

- You can *always* cover a shady area with Baby Tears (*Soleirolia soleirolia*) – an approach that has good long-term effects. If

the soil is sandy, for instance, and drains and dries out more quickly, an extremely shade-tolerant ground cover such as Baby Tears will keep the soil moist longer and can prevent much of the evaporation.

- If you live in a hotter climate area, you may be able to grow many sun-loving plants in light shade – and they may even thrive there. I'd suggest putting one or

two of a particular type of plant into your client's shady spots before you commit to an entire expanse of the same plant. Experimenting will help you figure out what will work in the long run.

- Depending upon type and specific requirements, orchids *love* shade. Many orchids are easy to maintain, and most of your clients will be *very* impressed if you recommend scattering a few of them in pots among the rest of the plants. (Consult a grower in your area for suggestions on which ones might thrive outdoors in your zone.)

What to Choose?

To find out which plants will do the best in shade in your planting zone, you have a few options. For starters, you can always consult with your local nursery and ask about their experience with shade plants. It's also a good idea to ask for advice on how to grow plants in the shade, what kind of soil amendment to use and which types of fertilizers work best.

Better yet, take a trip to a few nurseries in your area and see for yourself. Look for the area of the nursery shielded from the sun by shade cloth or a lath house: If it grows in the shade at the nursery, it will probably grow in your client's shady area as well.

There's one other thing you might consider as you hunt for appropriate specimens: Look for plants in the sun that have leaf burn or appear to be damaged by the sun. Particularly during July and August, I tend to see a lot of otherwise sun-loving plants that look like they're begging to be moved to the shade.

Once you spot a sun-weary plant, check your local garden guide to see what the plant's chances are for survival in the shade. And take a chance: You just might get lucky!

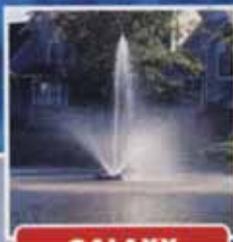
Stephanie Rose runs Stephanie Rose Landscape Design in Encino, Calif. A specialist in residential garden design, her projects often include collaboration with custom pool builders. If you have a specific question about landscaping (or simply want to exchange ideas), e-mail her at sroseld@earthlink.net.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

Font'N-Aire

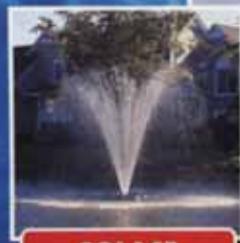
FLOATING FOUNTAINS



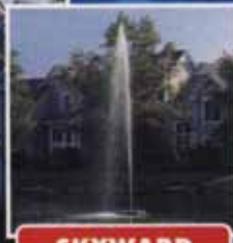
CARNIVAL



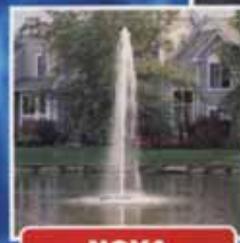
GALAXY



SOLACE



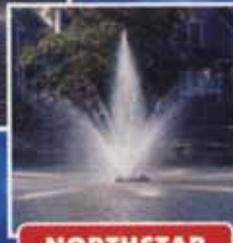
SKYWARD



NOVA



DIANA



NORTHSTAR

by **AIR- \odot -LATOR**
"THE WATER'S EDGE"

AIR- \odot -LATOR has been involved in aerator design and the technology of aerating since 1967.

The Font'n-Aire floating fountains implement a Franklin Electric submersible, water-cooled, water-lubricated and UL-recognized motor.

Font'n-Aire is supplied complete with flotation, one of eight nozzle spray patterns to choose from, 100 feet of power cord (longer lengths available), propeller guard, ETL-listed control panel to ANSI/UL 508 specification as required, flotation and three-year limited warranty. Font'n-Aire is available in 1/2 horsepower through 5 horsepower.

AIR- \odot -LATOR 8100-04 Paseo Kansas City, MO 64131 U.S.A.
(800) 821-3177 (816) 363-4242 Fax (816) 363-2322
website: <http://www.airolator.com> e-mail: sales@airolator.com

Circle 3 on Postage Free Card

MY FAVORITE SHADE PLANTS

The list of plants available for planting in shaded areas is extensive, but I have some particular favorites I'd like to suggest to you. As always, please bear in mind that success with any of the plants listed here will depend on your climate zone; consult your garden books or local nursery for details.

□ **Trees:**

- **Acers**, including maples and box elders: I love using Japanese maples in gardens, especially the burgundy-leaf varieties. There are also some unusual Japanese maples with red bark that stands out in winter. My favorite, however, is the variegated box elder (*Acer negundo* 'Variegatum'), which, when placed under larger trees, really brightens up the shade and offers an unusual display when it produces its weeping seed pods.
- **Palms and Tree Ferns:** Many of these do quite well in the shade.

□ **Shrubs:**

- **Abutilon:** A large shrub that blooms with Chinese lantern-like flowers in many colors.
- **Brunfelsia:** Also known as Yesterday, Today and Tomorrow because their flowers are purple the first day, lavender the second day and white the third day. At any given time, you will have all three colors on the plant at once.
- **Camellia:** The great shade-garden standard, they offer easy care and reliable flowering in a wide range of colors.
- **Fuchsia:** Their striking tropical flowers tend to be quite fussy but are a conversation piece in any shade garden.
- **Hydrangea:** The queen of the shade and a quick, prolific bloomer, they remind many people of the floral bathing caps from the '60s. I particularly like Oakleaf Hydrangeas, whose flowers are shaped like cornucopias.
- **Osmanthus:** My favorite hedge plant because of the powerful apricot scent given off by their inconspicuous flowers. Anyone who enters a garden with this plant in it will end up searching for the source.
- **Rhododendron and Azalea:** Both offer a wide range of plant shapes and flower colors. Check with your local nursery to determine which varieties are most reliable in your area.

□ **Perennials:**

- **Acanthus mollis:** An extremely hardy selection in many zones, it has large, dark-green leaves and produces shoots of digitalis-like flowers in a taupe/white combination.
- **Alchemilla mollis**, or "Lady's Mantle": A low-lying plant that brightens up the shade with its lime-green/yellow flowers.
- **Anemone:** With flower stalks that tower above mounds of soft, medium-green leaves, they are simple but striking.
- **Aspidistra elatior:** Appropriately known as the "Cast Iron Plant," it's a hardy choice that will survive in the deepest, darkest shade.
- **Clivia:** With its distinctively dark, strappy leaves, it's an attention-grabber with orange flowers that bloom in winter or spring (depending upon your zone). It also comes with yellow flowers if you just can't stand orange.
- **Digitalis**, also known as Foxglove. Yes, this is familiar to some as a heart drug, but it also sends up the most beautiful spikes

of flowers imaginable. This plant is a must for any shade garden.

- **Ferns:** Always a shade standard, they come in a huge number of varieties and forms.
- **Helleborus:** One of my all-time favorites. It has white, pale green or mauve flowers – definitely a conversation piece in the shade.
- **Hostas:** Annuals in warmer climates and perennials in colder ones – another very reliable and striking plant that will perform well year after year.

□ **Annuals:**

- **Impatiens:** I hesitate to recommend this unbelievable common annual, but it can add color to an otherwise colorless shady area. I prefer to plant the New Guinea variety, which is a much more interesting plant with darker leaves and more substantial colors than the typical specimens you'll find at your nursery.
- **Begonias:** Many are perennial, and they come in beautiful varieties that have rosette-shaped flowers in a wide range of colors. Check with your local garden center to see which ones they can get – the more unusual the better!

□ **Ground Covers:**

- **Campanula:** A large family of plants of which I particularly like the "muralis" variety because the flowers have a great blue/purple color and disappear quickly when faded. (Some of the more common varieties, such as "poscharskyana," tend to look weedy when the flowers fade.)
- **Lamium maculatum:** One of the most beautiful ground covers with one of the worst common names: "Dead Nettle." I particularly like "Beacon Silver." It has pink flowers above variegated leaves, and it's great paired with Campanula as a colorful base for shade-garden designs.
- **Pachysandra:** Although little used in my area, it's a staple of east-coast gardens and provides good, solid coverage.
- **Soleirolia soleirolii:** Otherwise known as Baby Tears, it's the most reliable of shade-tolerant ground covers, particularly where there is plenty of moisture. I wouldn't recommend it, however, in a desert garden or in drier climates.

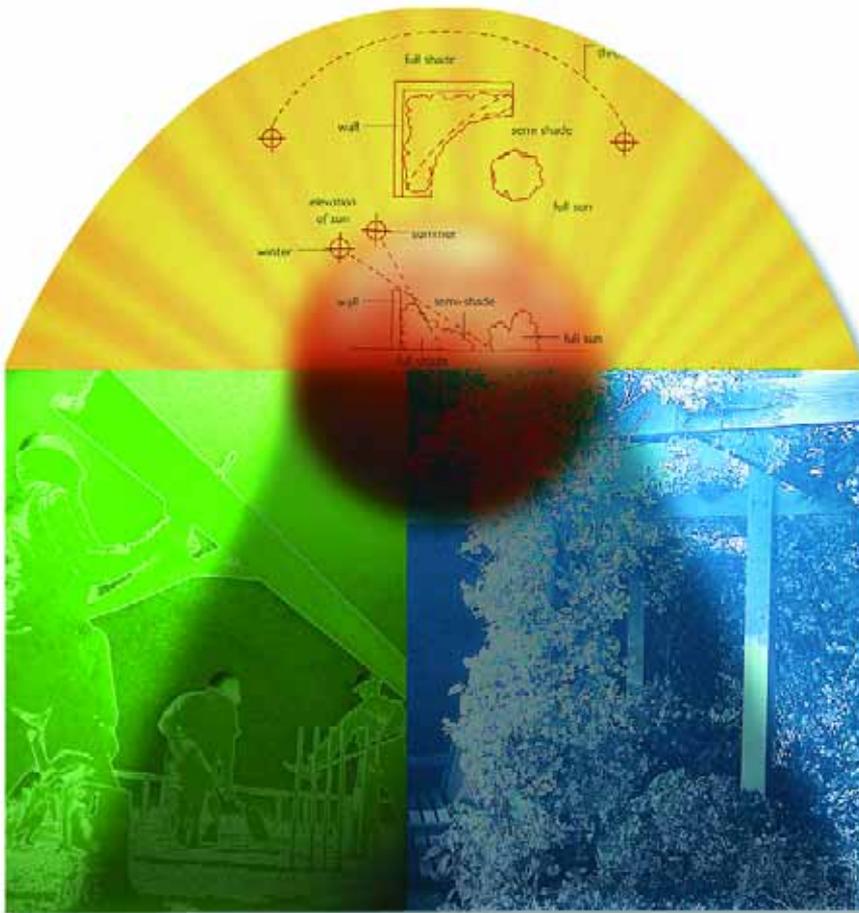
□ **Vines:**

- **Hedera:** Commonly known as ivy, it isn't one of my favorites, but it's a dominant species and grows well in areas that just won't take any other plants. Try the needlepoint varieties, or a variegated one to brighten up the shade.
- **Parthenocissus tricuspidata:** Better known as Boston Ivy, it's great for covering any wall. Its crimson color in the fall makes it stand out in any design.
- **Trachelospermum jasminoides:** It may sound like a disease but is more commonly known as Star Jasmine. Although it's not a true jasmine, it's extremely reliable and hardy and is known for its sweet spring-time fragrance.

□ **Tropical Plants:**

As an overall category of plants, those typically labeled "tropical" tend to do well in the shade. Check out their location at the nursery, or consult a garden guide for your zone to determine each plant's preferences.

– S.R.



Making the Shade

I truly enjoy including shade structures in my designs. Whether I'm working with an overhang, an arbor, a loggia, a pergola or some other structure (and, yes, they are all different), I see them as ways to create visual extensions of a house – and wonderful places to enjoy being next to the water.

There is, of course, as much art and skill to designing and installing the right shade structure as there is to setting up all of the other features of a great backyard. Done well, a structure that projects out from a house will pull your eye from inside to outside while it provides relief from the sun. Similarly, free-standing shade structures offer refuge from the heat of the day while serving to balance other features in the composition.

If the structure is set up in the wrong place or has the wrong details or uses the wrong materials, it will be an eyesore no matter what it costs. Remember: It's the whole environment that's important, not any specific detail.

To show what I mean, let's take a look at a hillside project in which a large shade structure was designed right along with the pool and is indeed integrated into

There is, of course, as much art and skill to designing and installing the right shade structure as there is to setting up all of the other features of a great backyard.

the pool's structure – so much so that one of the posts is encased in the pool shell. From this vantage point, the homeowners and their guests will escape the sun while enjoying a perfect perspective on the pool and the project's other details.

From the Ground Up

The available deck area is relatively limited because of the configuration of the lot and the home, but we maximized its functionality by setting up a large seating space with ready access to the barbecue area sunken into the right side of the pool as well as to the thermal ledge that provides easy access to one of the pool's two shallow ends.

Our biggest challenge in executing the design had to do with the site's geology. As is true of lots in most of the development, this one was set on cut/fill grading certified to 90% compaction. That sounds fairly stable, but what the certification doesn't tell you is how substandard the material is that was used to set up these hillside pads.

I've done a lot of work in the area, and you don't need to look very hard to spot cracking of walls and driveways attributable to movement and shifting. In fact, several slope failures have occurred in the immediate vicinity. Working on lots of this sort is a specialty of mine, and I knew that the pool and the overhang would both need to be well engineered and structurally sound from the foundation up.

In approaching this sort of challenge, one trap to avoid is thinking that because an overhang doesn't weigh as much as a

Continued on page 22

Rico

Rock®

Structural Waterfall Systems

One Day Waterfalls

A RicoRock Kit consists of a plastic shell, steel rebar cage, and cast rock pieces designed to fit together.

You apply concrete, by hand or by concrete pump. Only minor areas need hand texture. Color the next day.

Four models to choose from.

With our 3-Foot Ledger Long model, three men can install the unit in one day and color it the next.

The most popular model is the 6-Foot Sheet Waterfall used as a grotto and cave. We also offer rock castings and training videos on how to customize a Rico Rock waterfall.



Construction



Above: 3-Foot Ledger Long model
Below: 6-Foot Sheet Waterfall



Also available:

- Rock castings, general and special purpose
- Sales literature for your client
- Training videos for your crew
- Texture mats to imprint rock texture
- Paint kits to stain rockwork

Rico Rock The revolutionary structural waterfall system developed by the pioneer builder of artificial rock pools.



NEW ADDRESS:

14033 Rose Ave. • Fontana, CA 92337
1-888-717-3100
www.ricorock.com

**Patent Pending. RicoRock is a registered trademark.

Continued from page 20

swimming pool, deck or house, it doesn't need to receive the same structural attention. If you want the structure to last — and especially when you're working in adverse soil conditions — you have to look at *all* structures with the same approach and attitude.

It's also important to take your design ideas to a structural engineer (and, for that matter, to an architect, a soils engineer and anyone else with the certified, professional experience you lack) to get the guidance you need to do the job properly. I will say it over and over again to anyone who will listen: Any person in our business who designs a structure and is not a structural engineer should have his or her head examined!

In this case, we used six 4-inch-diameter pipe columns integrated into the pool's foundation through an extension of the pool's grade beams. This solid base allowed me to create a shade structure that is as stable as the pool itself and relieved me as much as possible of any con-



Incorporating one of the overhang's six pipe columns into the shell called for a complicated structural-engineering detail — and working in extremely close quarters within what would eventually be the pool's thermal shelf.

cerns about differential settlement. In aesthetic terms, it also allowed me to avoid using "knees" on the columns. I hate the way they look, and I could avoid them here because this foundation alleviated any concern about torsional stresses at the tops of the columns.

In all, there are six posts — one incorporated directly into the pool shell, the others outside the pool but tied into the continuous grade beams that support it. In other words, the pool and its overhang are structurally integrated in every way. None of this would have been possible if the over-

Don't Let A Stain Ruin Your Perfect Project.

GLB has the stain-fighting formulas you need to protect your picture-perfect project.

Prevent staining and scaling on pool surfaces by adding concentrated Super Sequa-Sol® granular while filling the pool. Or for stains that have already begun to form, try the Stain Magnet system to quickly eliminate metallic stains from all types of pool surfaces.

For more information on GLB's pool & spa care products, visit your local distributor or www.glbpoolspa.com.

© 2001 GLB Pool & Spa. All rights reserved.

Circle 34 on Postage Free Card

hang had been an afterthought: The fact that we knew what we wanted and where we wanted it to go made it all possible.

Rock Solid

The post set in the pool is attached to the foundation according to a detail designed by the structural engineer and is incorporated into the thermal ledge, a shallow area that enables bathers to lounge comfortably in a few inches of water (more on this detail in an upcoming issue). The ledge is supported by solid gunite (not rebound!) that encases the bottom of the metal post in roughly four and a half feet of solid concrete.

Visually, this one post seems to sit on top of the thermal edge, but it actually extends to the pool's foundation. As for the other posts, they are tied to a system of grade beams that extends past the walls of the pool from beneath the thermal ledge, and each post is tied in two directions to prevent any twisting. Everything



The overhang and pool shell are tied together through a continuous system of grade beams (seen here between the posts). Each post is tied through the grade beams in two directions to prevent any twisting.

is anchored at the same depth in the same type of soil.

On the surface, we had to watch elevations carefully because of planter locations, the sill of the house, the thickness of the stone and, most important, the drainage system.

The key to the construction process for the overhang was placing the bolts and the posts' setting pads in just the right spots. To do so, we took a piece of plywood and made holes in it corresponding to the location of the bolts. We used this as a jig to establish exact locations:

small
ingredient



BIG
difference

3M Colorquartz Aggregate can make pool finishes look brighter, feel smoother and last longer.

Colorquartz aggregate brings lasting, dynamic color and added strength to pool finishes even when exposed to strong pool chemicals and harsh sunlight. This is a surface that will stand the test of time. And, unlike pebble finishes, a pool finished with Colorquartz aggregate can be as smooth as plaster - comfortable in use and pleasant to the touch. It's a small ingredient, but it makes a big difference.



Color you can count on... From a company you can trust.

3M Colorquartz™ Aggregate

web - www.3M.com/pools • email - colorquartz@3M.com • phone - 800 447-2914

Circle 2 on Postage Free Card

The wood held the bolts in place as we poured the concrete.

Once the jig was pulled off, we set the plates and posts and tightened everything in place. This all sounds pretty simple, but it's easier said than done. The point is that nothing will work the way you want unless you work with a system that lets you place the posts in *exactly* the right spots.

That done, we needed to dress up the metal posts and create vertical transitions from the thermal ledge and the decking up to the overhang itself. We started by wrapping each post in wood for the top ten feet or so and then set up ledger stones at each of the bases to continue with the look of the rest of the pool and deck.

Each post treatment is a bit different: For the one on the thermal ledge, for example, we had to consider the fact that it stands in water. So we cut a conical countersink when the pool was gunited, wrapped the post in a waterproofing membrane and sealed everything with an emulsified waterproofing agent. On top of that,

we waterproofed the gunite surface of the thermal ledge with a waterproofing material before covering it with stone.

For the other posts, we built out with the same ledger-stone detail to create stone pilasters. We also set small brackets on all six pilasters and topped each with stone lintels as candle-stands – a neat touch that adds a lot to the romance of the setting. The two posts up against the house are integrated with a planter separated from the house by a one-inch gap. When the plants grow up and around the pilasters, the visual integration will be complete and the shade structure truly will appear to be an extension of the home.

Another post is located at the top of the steps leading down into the barbecue area. There's a boulder set against it, and we accommodated it with another neat ledger detail. In this case, the boulder was set first, and the post and pilaster were built around it to give the illusion that the boulder had been there long before we came along to build the deck and the pool.



We carried a stone detail up the posts by placing stone lintels — the same materials as the decking — on small brackets. They will serve the homeowners as mood-setting candlestands.

Overhead Construction

The driving idea here was to make the overhang seem like a visual corridor that leads you from the home into the pool environment. For that reason, we paid a lot of attention to the wood we placed overhead – not just structurally but also visually and aesthetically.

We used 8-by-10-inch and 6-by-8-inch beams along with 2-by-2-inch cross members that were sealed and finished to match the color of existing details on the house. The process involved sealing, sanding, finishing, sanding again and then refinishing to give the wood a weathered look that fit in with the house. The overall structure is 15 by 31 feet and 12 feet high from the deck to the bottom of the cross beams.

Here again, details were important: We deliberately left the buttons holding the large beams exposed; we chose the wood and its rough texture with care; we chose the finishes with the entire context of the home in mind; we even paid attention to how the ends of the beams were either band-sawed or chamfered to fit in with specific details on the house.

The overhang is set up for speakers to be placed in the rafters and for low-voltage lighting. Frankly, I don't think it's important to light this particular space electrically: The romance and sensuality of the entire space will be best suited by the aesthetically pleasing softness of candle-

naturally
INSPIRED

National Pool Tile Group's earth tones and natural texture tiles are just the beginning. We have **THE LARGEST** selection of pool/spa tiles available anywhere, so your clients' dreams are no longer your nightmare. With hundreds of tiles – from subtle textures to glossy patterns to modular matching color tile systems – NPTG has what you're looking for.

Call toll-free 1-888-411-TILE and we'll immediately send you brochures/samples.

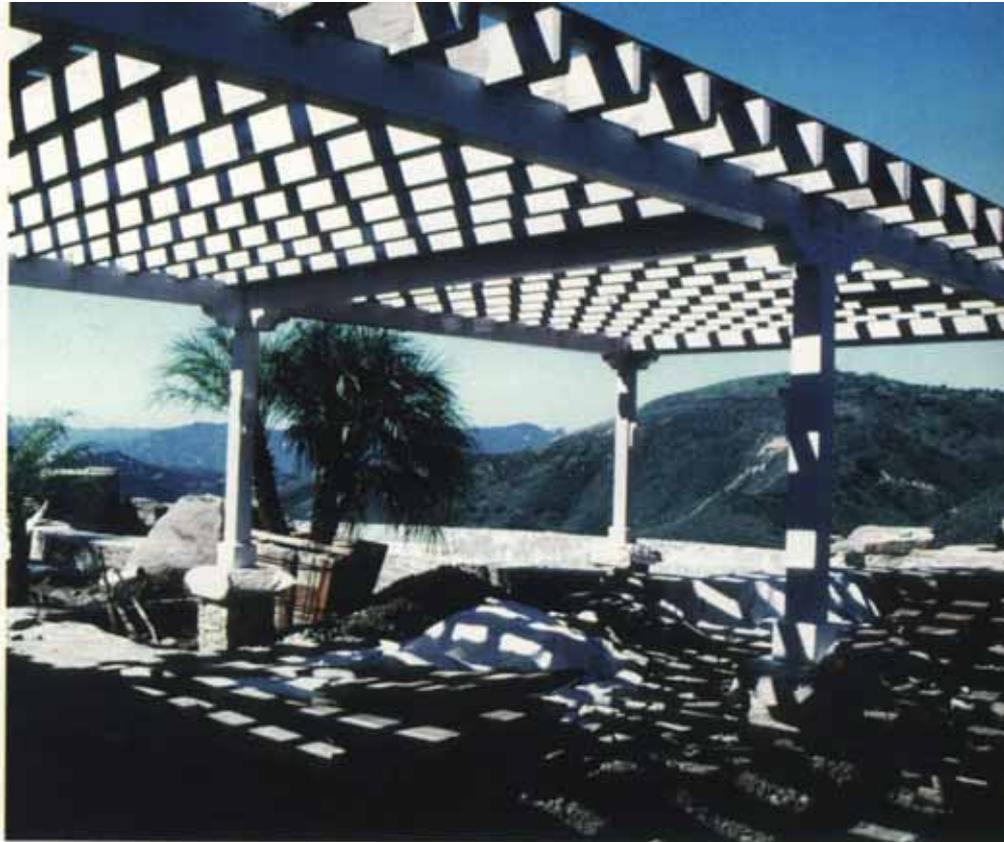
ational
Pool Tile Group
POOL AND SPA TILE IMPORTERS/DISTRIBUTORS
www.nptgonline.com

Circle 29 on Postage Free Card

light; more than that, I think, will call too much attention to one space over another. I see this as a space where kids will have fun, but I also see it as a paradise for the adults who come to enjoy it.

The shade structure is spacious and connects the inside to the outside while effectively expanding the usefulness of the relatively small deck area. When you combine the design details of this shade structure with the beautiful details in the pool and the barbecue area, you've got a space that is aesthetically pleasing, engaging and harmonious – perfect for a big party or an intimate dinner for two.

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.



The overhang and pool are completely integrated in terms of engineering as well as aesthetics. The structure enhances the space and makes it more usable — a great setting for a big party or an intimate dinner for two.

*The good old days of Kool Deck,
with the durability of Acrylic.*

TEXTURE-KRETE™
Acrylic Deck System

9811098

INNOVATIVE
CONCRETE
TECHNOLOGY
CORP.

Lakeland, Florida

*Qualified Installers
Wanted*

Free Training

No Franchise Fees

*"Color Throughout"
Technology*

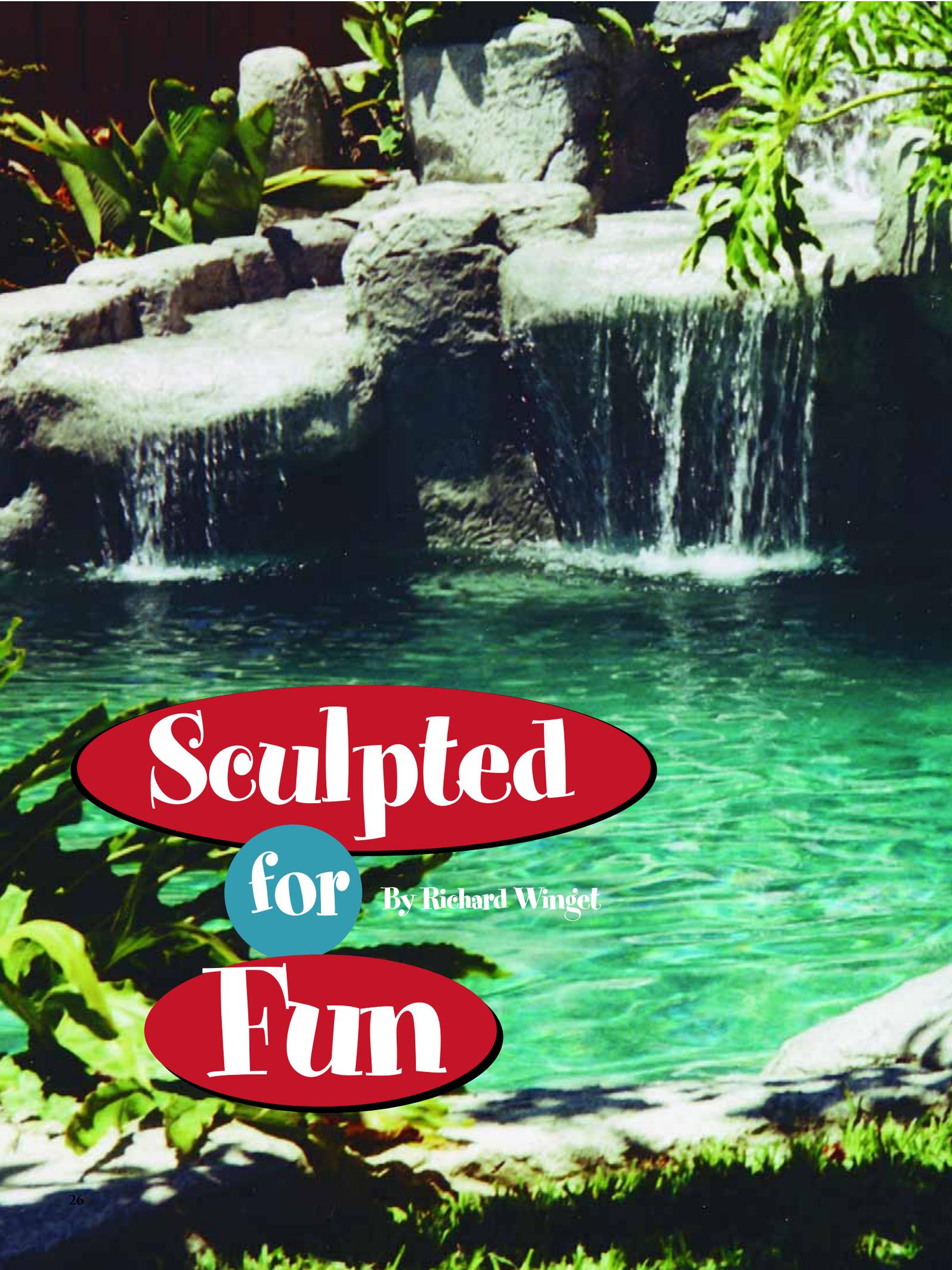
Stain and Slip Resistant

5 Year Warranty

888.296.5236

www.innovativeconcrete.com

Circle 24 on Postage Free Card



Sculpted

for

By Richard Winget

Fun



It's easy for watershapers to get wrapped up in the beauty and creativity involved in design and construction of their projects - and he's no exception, says the fabricated-rock specialist Richard Winget. But that doesn't mean swimming pools can't be fun. That in mind, he takes us on a survey of user-friendly rock features that make his pools work for the young (and young at heart) while getting high marks for their remarkably 'natural' looks.

It's something we in the business overlook all too often: Swimming pools, kids and summertime go together. That's why pools have been so enduringly popular, even at a time when watershapers seem to be focusing more than ever before on principles of design and how their work can be artfully integrated into the landscape.

I came to the pool business from an extensive background in building man-made rocks for theme parks, which has colored my perspective on the way my pools are used. I've also been swimming in backyard pools since I was a kid, and I've built all sorts of rockwork designs for all sorts of people. And in one way or another, my own associations with fun in the sun have influenced almost every project I've ever done.

My clients are mostly what you'd describe as middle- and upper-middle-class folks who are looking for something special. In all cases, my work involves highly sculptured and carefully finished artificial rock in naturalistic designs, and I strive to create formations that are believable – and also suitable for climbing, diving, lounging and the raucous play of children of all ages.

Happy Accidents

In almost every job, I re-create rock formations I've seen in nature. If you look at the world in the right way, nature *abounds* in fun features, alignments, nooks and crannies that can easily be adapted to backyard watershapes.

When rock climbers scale sheer walls, for example, they look for (and generally find) crevices, cracks, outcroppings and shelves that provide hand- and footholds. When the cliff divers of Acapulco take their death-defying plunges, they're using natural-rock platforms that in many cases cantilever out over the water. And how many rock formations have played host to sunbathers and hikers out to catch some rays?

I've been on jobs where we'll have an entire section carved out and ready to go - and then it rains for ten minutes while the plaster is still pliable. This provided a new and completely different sort of texturing that in some cases actually improved the effects I've been trying to achieve.

I consider the forms I pick up on my hikes and walks to be happy accidents: The effects I spot truly are “natural” – and also happen to be just the right shape and in just the right place for a specific purpose. Here are some examples of these happy accidents at work:

❑ **Diving rocks** are by far the most readily “available” of natural shapes and have made diving boards a thing of the past as far as my pools are concerned. For the most part, people I know aren't all that concerned about the possibility of a springboard effect so much as they are looking for an elevated place on which to stand before jumping into the water.

For many projects, I've designed large, flat rock areas on different levels or plateaus. This variable-height approach provides good access to a diving rock slightly cantilevered over water deep enough for safe diving and to other rock structures around the perimeter of the pool that offer inter-

esting places to sit. Many of these flat spaces are linked as well to entry and exit features, such as small slides or little wallows where bathers can lounge in shallow water in what amounts to a rookery for people.

❑ **Creative access** in and out of the pool is another area filled with potential. In some cases, we'll create small handholds in the form of crevices or small indentations in the rocks. (This is particularly useful in deeper water, so kids can hold on comfortably to the side of the pool or climb out.)

There are also different step configurations that set up large, submerged shelves that enable small children to wade into the pool – or adults to relax partially submerged in the water. You see these “wallows” in nature all the time, created by large animals moving in and out of a body of water. I use them to create interesting ways to slide in or climb out of the pool.

❑ **Seating configurations** represent yet another area where you can be ex-

tremely creative. I set up all sorts of seating around a pool's edges or a fire pit or adjacent to planted areas. Or I'll set up flat areas in my waterfall structures that serve a dual purpose by providing easy climbing access or places to sit. And in some cases, they offer an easy platform for jumping into the water.

One of the really popular features you see in all sorts of pools these days are benches placed behind waterfalls. I usually add to the arrangement by creating places to sit right in the flow of water: This is something that kids really love, even if it's just sitting in the flow of a small cascade into a stream or pond in the structure of the waterfall itself.

❑ **Privacy zones** are increasingly popular as a way to conceal certain views or provide more intimate settings. Many of my clients go the whole route and order up large grottos with seating on the inside, but I also use outcroppings and walls to cut off views of things such as equipment pads, neighboring yards or portions of my clients' yards that are considered separate from the pool area. Rockwork can also be used as an acoustic buffer to mask noisy pool equipment.

❑ **Small details** are where I have some of my favorite designing fun. I'll work in hollowed-out pockets that can be used to stash ice and drinks, or small flat areas on which to securely set plastic cups. I'll also shape a wide array of small crevices and spaces to accommodate plantings as well, or set up rock outcroppings to hide sources of lighting or even some stereo speakers.

❑ **Slides** are another family favorite, but I have to admit they pose the greatest

Model Behavior

I build scale models in clay for many of the projects I tackle. It's a great sales tool, but much more than that, they work as three-dimensional guides for my excavator, steel crew and gunite applicators.

I started using models when I found that flat drawings weren't enough to enable my clients to visualize the installation and size up the physical relationships among the shapes. Models let us discuss details great and small in very real terms and also help me pull suggestions out of them about the placement of certain elements where their choices are especially important.

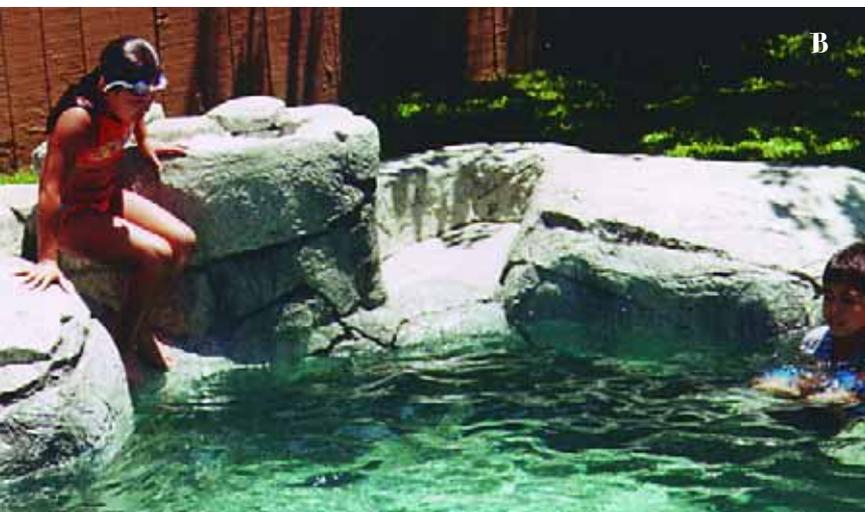
I usually build the models to scale and by hand. For the most part, I don't worry about color or texture: This is about getting the physical dimensions correct. And I don't kid myself: Building models is great fun, and they help me by letting me try things out in 3-D and better understand the designs I'm creating.

Model building does take practice, but if you're already in the business of creating three-dimensional shapes at full scale, how much harder can it be to work on a small scale, too?

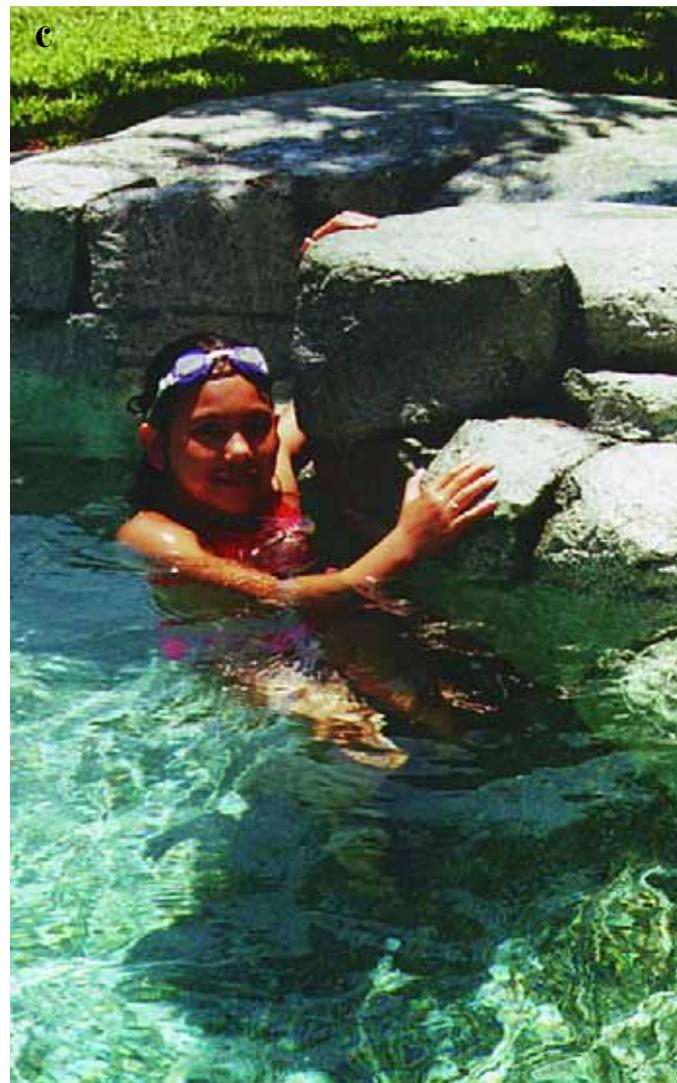
– R. W.



A



B



C

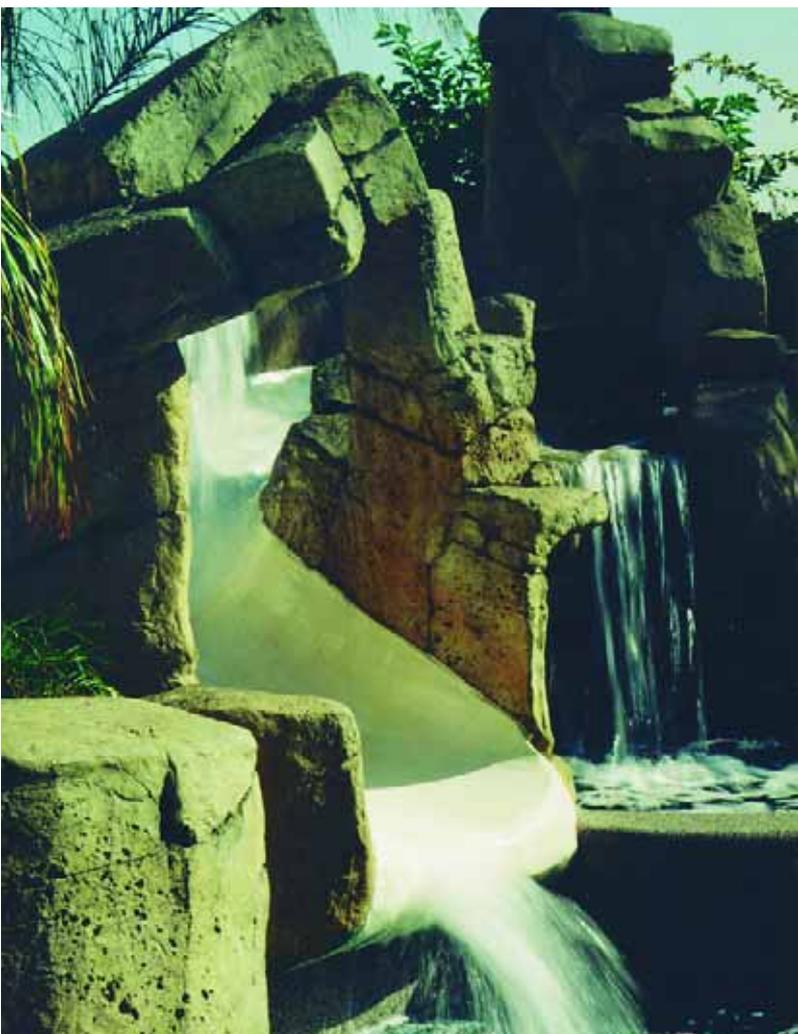
The peaceful, well-composed, entirely naturalistic pool seen on pages 26-27 changes in impression (but not in appearance) once children are introduced to the scene. Now the varying levels of man-made rockwork (A), the multiple paths of access (B), the hand-holds (C) and details such as the integrated ice bucket for cold sodas (D) all come fully into play – *literally*.



D



Seating areas set up under waterfalls are particularly popular among my clients: Their kids love having the water splash over their heads – and I've seen more than a few parents join in on the fun.



Slides offer a real challenge to naturalistic designs, basically because there isn't much you can do to hide a flume. But they are very popular, so when I build one, I pay special attention to making their surrounding rockwork as dramatic as possible, creating a visual distraction that softens (even if it can't overcome) the flume's intrusion.

challenges of all when it comes to keeping things natural. Flumes are tough to conceal, and steps leading up to them have a hard time looking anything other than man-made.

That's not enough to deter me. I'll texture and finish these parts of the project to look as natural as possible – at least so they don't conflict with the other rock and plant elements. Even though the results may not look 100% natural, kids love them so much that many of my clients are willing to sacrifice a completely natural appearance in the name of fantastic summer fun.

Getting It Right

After years of working with artificial rock, concept and execution now go hand in hand for me: I know my capabilities and am seldom constrained any more in what I can accomplish. But reaching a level of performance where there's not much beyond my reach didn't come overnight and is, in fact, the product of years of experimentation, trial and error.

I use two basic approaches: I either build the rocks on site once the pool shell is complete, or I'll contour shapes into the gunite itself. (Depending on the situation, I'll sometimes use both techniques on one project.)

About half of the time, I'll place steel armatures in the shell's cage to be used as guides by the gunite crew. The rest of the time – and usually on projects where the weight of the gunite is a consideration – I'll have the crew shoot a broadened footer at the top of the bond beam and separate rock elements from the pool structurally with mastic joints.

In either case, it all starts with the steel: The shapes I create with steel armatures always dictate how the finished product will look, and I've learned that the more detail you put into shaping the steel, the more detail will be revealed later on. A key lesson I've learned is that the material on top of the steel takes up a lot of space. If, for example, I want to create a crevice in a rock face that's only a couple of inches wide, that same crevice in the *armature* will be eight or ten inches wide.

As for the rocks themselves, I use mostly concrete rocks created on site as well as pre-fabricated panels in certain situations. The material is plaster modified with a variety of admixtures that affect workability. It's not a standard sand/cement/water mixture by any means and is part of the process of experimentation and trial and error I just mentioned.

I use cement materials at two stages of the work: First to create a structural substrate and second to add textures. I use a variety of accelerators and retardants to control the medium at both stages.

Some of the plaster recipes I use are very good for carving large shapes, for example. Other mixtures are designed to create certain types of surface textures. I'll also add fiberglass to the plaster or different aggregate types or different setting agents – there's a whole art and science involved here.

I also use a large range of tools and techniques. There are many types of brushes and trowels (some we make ourselves). Then there's foil and plastic, water and even dirt and plant material. All of these techniques require careful examination of how concrete mixtures behave as they set and are manipulated. I've come to recognize windows of opportunity when it comes to texturing, for example, and how those windows will change depending on temperature and humidity.

Elements of Surprise

Each project is a little bit different, and I've learned to be ready for surprises, no matter how well I think I have the whole process figured out.

Continued on page 33

Coloring Creatively

Natural rockwork comes in such a kaleidoscope of colors that it's necessary to use a wide range of techniques to capture in artificial rock the appearance of things people have already seen in nature. To that end, I use a wide range of concrete dyes, topcoats and various application techniques.

Much the same as the sculpting and texturing pushes me to experiment and always increase my range of techniques, so does the finishing.

The thing about rocks in nature is that they tend to be very complex. In real rocks that are really hammered by the sun, for example, you'll see a lot of colors that come from UV exposure and oxidation of the rock materials – lots of reds, yellows, oranges and rusts. Other rocks with different mineral compositions and less exposure to the sun tend toward cooler colors – grays and blues and greens. In some rocks you'll see *all* of these colors and more.

We're patient in approximating these appearances. In some cases, we can do it with one or two colors, but in many cases we'll end up using seven or eight colors in multiple coats that give an appearance of real depth.

I start by painting everything off-white to give myself a blank canvas and an ability to take off in any direction I want. If I then add some gray, for example, I'm already heading in a specific direction. And I'll use different hues of the same color and different application techniques to expose and conceal background colors. I may work from light to dark in order to create depth, or dark to light depending on the type of rock I'm using for inspiration.

Experience plays a big role here. I keep detailed records of all of the finish schedules I've ever used so I can re-create exact looks for the same client or for another client who wants the same thing. (I'm willing to engage in guesswork the first time I do something, but I don't want to miss the mark later on!) The same goes for the sealers I use: I work mostly with acrylics because experience has showed me they don't alter the appearance of the finish or yellow over time.

–R.W.



Getting the steel just right to support the structures I design takes a lot of imagination and on-site supervision: You can't say, "Build a multi-level rock mountain over there" and leave it at that. To speed the process, I use scale models in clay to help my crews visualize what we're after – and then watch every step of the process to make certain they have enough information to get the job done right.



In finishing artificial rock, we're not talking about anything much more complicated than making impressions on wet concrete. So why not get creative and create Maya-inspired temple stones set up with planting spaces to capture a wild, subtropical look?



A



D



B



E



C

Here's another project that offers a Japanese-inspired impression of serenity (A) and ample spaces for special plantings (B) – a package certain to please adults. But when children young or old arrive on the scene, raucous good times are had by all. The extended steps provide smaller children with ample opportunity to get used to being in the water (C), the rocks provide hand-holds for kids playing in the deep end (D), and a small, multi-level stream with waterfalls gives toddlers a chance to cool off in the shallows (E).

I've been on jobs where we'll have an entire section carved out and ready to go – and then it rains for ten minutes while the plaster is still pliable. This provided a new and completely different sort of texturing that in some cases actually improved the effects I've been trying to achieve.

Taking my cue from Mother Nature, in some cases I'll now spray new artificial rockwork with a hose, letting the water run down its surfaces and surprise me with the results. If you're using the right mix schedule for the cement and spraying it at the right time, the water will carve wonderful details – a technique perfect for creating rivulets or natural paths of water flow.

I've found other finishing techniques that are a bit off the beaten track. Often, for example, I'll crumple sheets of foil and press them onto wet cement to transfer impressions of random cracks and creases to the rock. I've taken dirt clods and thrown them at the wet cement, then come back once the cement is set up and pressure wash all the dirt away. This leaves

The Shape of Fun

If my experience with artificial rockwork and swimming pools has taught me anything, it's that it is possible to increase the enjoyment a family will derive from its pool without driving them away with an extraordinarily high price.

A great many of the middle-class people I deal with are considering whether to spend their money on a recreational vehicle or an extended vacation – or a swimming pool. When I successfully demonstrate that the pool will not only be attractive to look at, but will also be a source of tremendous fun because of the way its rocks are designed, they are far more likely to be persuaded to spend their money in their backyards.

Many pools I've done were built specifically with the idea of creating a place for the neighborhood kids to gather and spend their playtime in the safety and security of the home environment. When that aspect of pool ownership is a priority, more fun is built into the design and the investment assumes greater value for the homeowner.

When I design, I think back to my childhood and imagine what it would have been like to have all of these structures to climb on and jump from and hide behind, and it's usually fairly easy to get my clients to visualize with me. And what I find as a result is that many of the adults I've worked with will end up playing in and enjoying their pools right along with the kids.

– R.W.

Electronic Water Level Management Systems

Levolor® TECHNOLOGY

So Complete You Don't Need To Be There.



System Dynamics
Scottsdale, AZ 85260
800-844-8514 Fax: 480-443-0487
E-Mail: millenum@primenet.com

Circle 52 on Postage Free Card

pockets that look remarkably like the trapped air bubbles you see in lava rock.

Carving at different times during the setting process is another approach I use in coming up with different ways to get new results. Basically, there are no limits to the techniques you can develop and use on your own. I've also found all sorts of techniques for stamping and embossing artificial rock to create the illusion of fossilized plant material. The key in this type of technique is avoiding repetition, so I work in what I call an "inconsistently consistent" pattern.

What I'm talking about is no more complicated than pressing different materials into wet cement, but the patterns you create will either make or break the believability of the work. That said, stamping and embossing are really just the beginning of the process that includes further carving and brushing to create more detailed textures.

As mentioned above, I also use some prefabricated panels – an entirely different an-

imal. I make the panels myself using rock formations I find in nature, and I use them most often when I'm looking for a *highly* detailed appearance with features from bold to subtle. Generally, I set these up in high-visibility areas, and they let me work both quickly and efficiently with good results.

What I said above about trial and error and experimentation applies to my work even now: I take chances and try new things, and sometimes they don't work the way I want them to. This sometimes means ripping out sections of work because they just won't make the grade, and I don't worry about it too much because the time I spend learning a new trick on one job will invariably be put to use in another job down the line.

I've always been pretty fanatical about expanding my own bag of tricks. I see it as time well spent.

Worlds of Fun

Regardless of the size of the job, I work very hard to give all my customers

something creative and interesting – and most of the time that involves building rockscapes that quickly become the envy of every neighborhood kid.

I've made many friends among my clients along the way, and I think it has a lot to do with the fact that I keep the focus on fun. I offer them options and the opportunity to express their thoughts about the details that will go into their projects; they develop a sense of collaboration, and it helps us work that much more closely together.

One of my favorite things to do is to attend barbecues or birthday parties at clients' homes long after my work is done: It gives me a chance to see how my work is faring in the real world.

It sounds like a cliché, but the truth is there's nothing like the feeling I get when I see smiles on faces and hear the laughter of kids climbing all over one of my projects. As I said up front, that's what summer and swimming pools are all about.

Call Spectrum
for All Your
Aquatic Needs.



Now available the
Spectrum 2001
Aquatics Catalog.

1-800-776-5309

E-Mail: info@spectrumproducts.com
Web Site: www.spectrumproducts.com



7100 Spectrum Lane
Missoula, MT 59808

Circle 14 on Postage Free Card

EXCALIBUR By Spray Force

The Sensible Way To Mix & Pump Swimming Pool Finishes



Pumps up to 500 feet of material hose, and up to 400 sacks per day.

Truck Rig

EXCALIBUR PUMP

- 40 HP, V-4 Wisconsin engine with electronic fuel injection
- Heavy-duty centrifugal clutch with four speed ranges
- Heavy-duty pump designed especially to handle swimming pool plaster & pebble finishes, sand and cement mixtures
- 12 CFM compressor atomizes material at nozzle
- Large 75-Gal. hopper

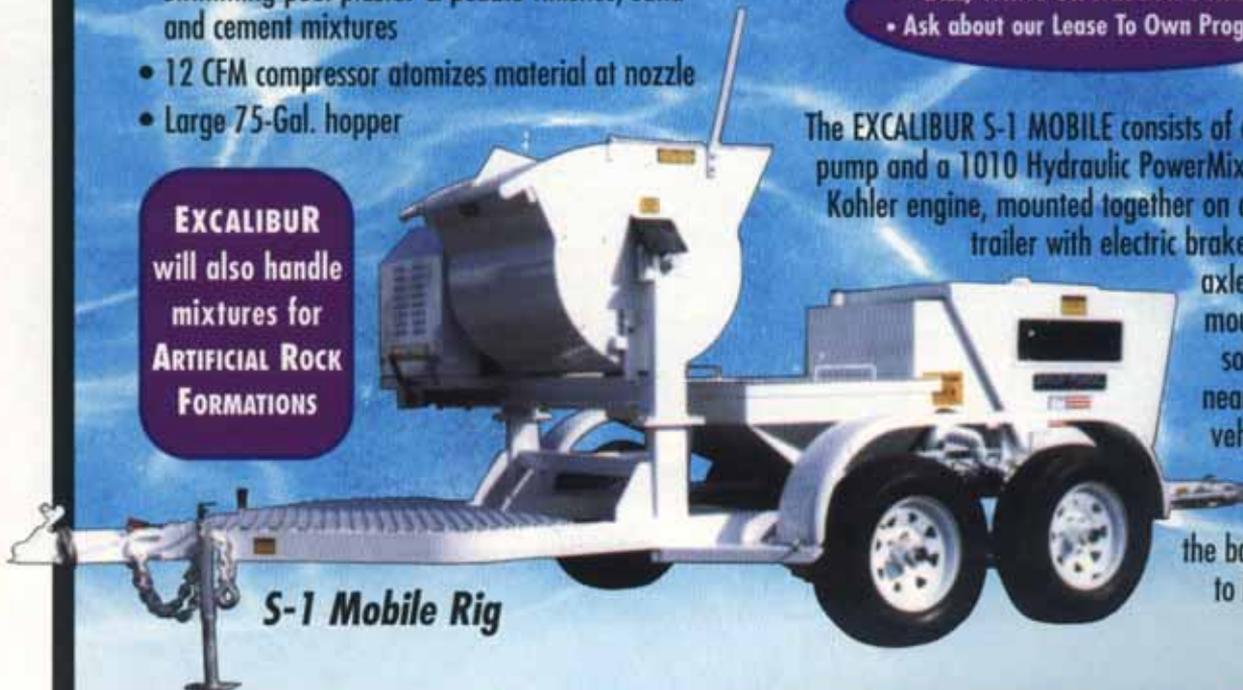
EXCALIBUR
will also handle
mixtures for
ARTIFICIAL ROCK
FORMATIONS

HYDRAULICALLY-OPERATED MIXER

- Large, 13 cu. ft. steel mixer bowl with cast steel paddles and safety grate

• CALL, WRITE OR FAX FOR DETAILS •
• Ask about our Lease To Own Program •

The EXCALIBUR S-1 MOBILE consists of an EXCALIBUR pump and a 1010 Hydraulic PowerMix with a 16 HP Kohler engine, mounted together on a tandem-axle trailer with electric brakes on the front axle. The mixer is mounted in front, so that it will be nearer the towing vehicle that most likely would be carrying the bagged product to be mixed and pumped.



S-1 Mobile Rig



SPRAY FORCE[®] MFG. INC.

2880 North Larkin • Fresno, CA 93727 • (559) 291-3300

1-800-824-8490 TOLL FREE • FAX (559) 291-3345

visit us on the Web at: WWW.SPRAYFORCE.COM

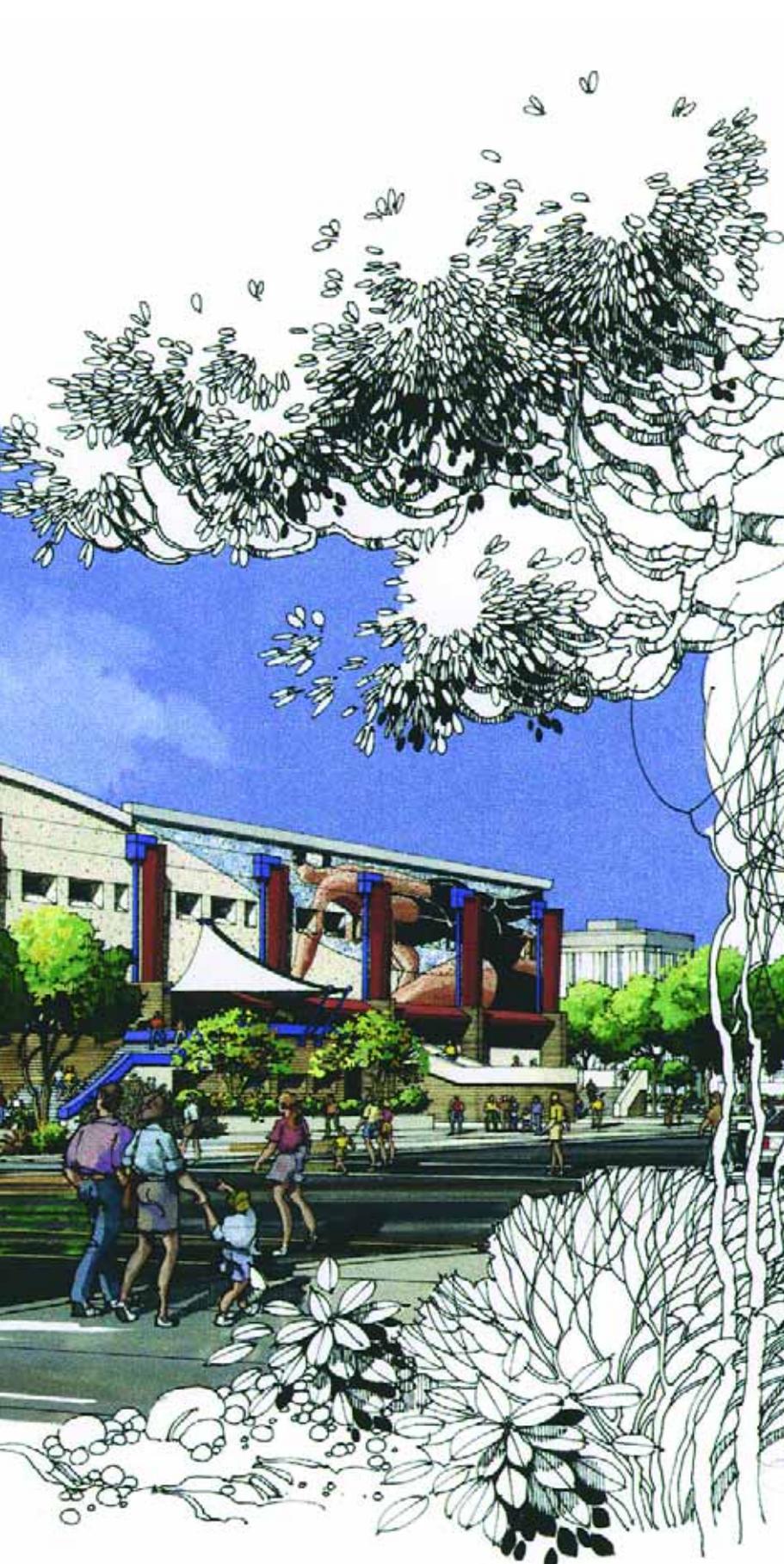


Seeking to take a giant step to the forefront of aquatic sports in the United States, the city of Mesa, Ariz., has commissioned the design and construction of a monumental indoor swim center to be built in observance of the strictest international competitive standards. Here's a look at what's been involved in realizing the city's ambition, as seen from the perspective of the aquatic design and engineering firm that was asked to join the design team.



Competition Without Compromise

By William Rowley & Patricia Soto



When it's completed sometime in mid-2002, the Mesa Indoor Aquatic Center will be among the premier U.S. facilities for competitive swimming, diving, water polo, synchronized swimming and synchronized diving. Once it's up and running, MIAC will be the country's largest indoor competitive swimming facility owned and operated by a municipality; just as certainly, it will also act for years to come as host to countless world-class aquatic competitions.

A project like this is a dream come true for a firm like Rowley International of Palos Verdes, Calif., which is dedicated to designing and engineering competition pools at the highest level. Who could ask for more than clients who have proved over and over again their willingness to do what it takes to achieve their lofty goals?

More important, we were brought in right at the outset and so have been fully able to approach the project from the technical/engineering standpoint as well as from the end user's programming perspective. From Day One, we've worked hand in hand with the city and the project's architect to establish a design that meets the needs of the fullest possible range of competitive aquatics programs.

Best of all, the citizens of Mesa, Ariz. – including everyone we've met with any involvement at all in the project – have made it perfectly clear that they were after a facility that did not compromise competition in any way. As we'll relate in this article (the first of three on this project), they wanted competition to be the priority, and "world class" was the highest objective in every detail.

PROJECT PERSPECTIVE

The basic concept of building two indoor competition pools under one roof may not sound all that unique or trailblazing, but it is once you recognize that almost every other existing facility in this country has imposed limitations on that ideal in one way or another.

In almost all top-flight NCAA facilities, for example, you find pools that have been made to accommodate first of all the needs of their institutions; for the most part, their designs have not been considered or executed with international competition uppermost in mind.

In fact, when called on to host World Cup competitions or other international events, many U.S. facilities must apply for waivers from certain requirements of FINA, the body governing international competitions. Yes, there are wonderful aquatic facilities in this country, but none that we know of have sprung solely from the desire of any organization to build to the

highest competitive standards.

Mesa has just that ambition and, as it turns out, the wherewithal to make it happen. And there was nothing narrow in the vision: We were called on to deliver world-class designs for competition in swimming and diving as well as water polo, synchronized swimming and synchronized diving.

The upshot of our discussions and deliberations is a facility with two pools, side by side.

One of the pools is 54 meters long by 25 meters wide with a uniform 3-meter depth throughout. Our experience at Rowley International in designing racing pools (including the pools at the University of Southern California that hosted swimmers during the XXIII Olympic Games in Los Angeles in 1984) has taught us that deep water is one key to a fast pool. This pool also features two stainless steel bulkheads that will afford our clients maximum flexibility in aquatics programming.

This pool is set in the facility's prime viewing area and will accommodate international competitions in swimming, water polo and synchronized swimming.

There is a second 52-meter by 25-meter pool, known informally as the "variable-depth pool," which is designed to accommodate international competitions in swimming, water polo, synchronized swimming and diving. This vessel also offers the availability of a large shallow area that will accommodate a range of aquatics-education programs for the community.

UNLIMITED SCOPE

The facility is truly an aquatic-sports wonderland: two full-sized pools that can accommodate five major aquatic sports under one roof, two 50-meter pools for swimming, two FINA-compliant 20-by-30-meter water polo pools. For water polo and synchronized swimming, it is the first facility *ever* to offer competitive space, side by side, where simultaneous matches can take place.

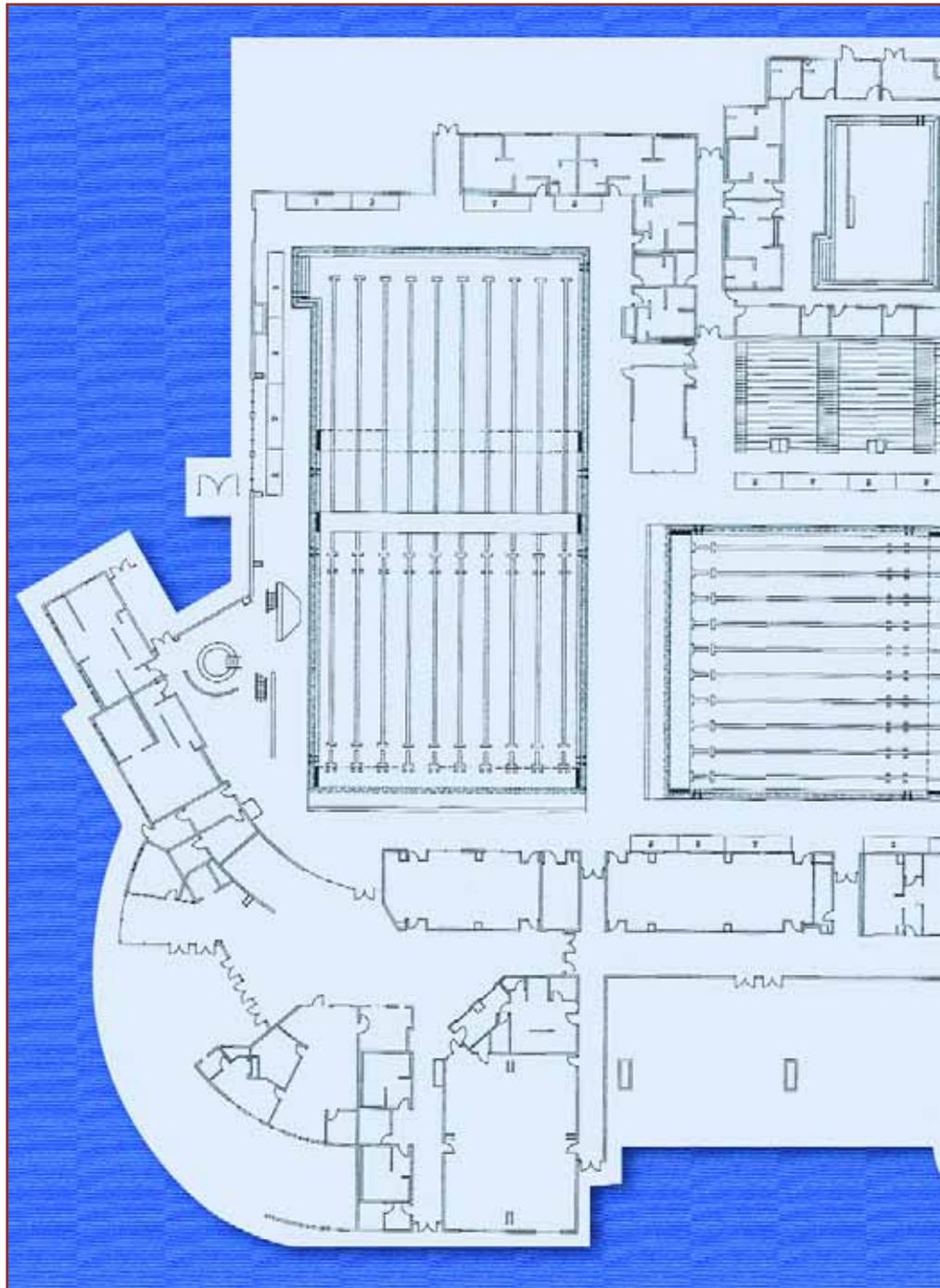
The diving array is just as impressive: A state-of-the-art 10-meter tower will feature intermediate training platforms at 7.5, 5- and 1-meter heights. A competition 3-meter platform and three 3-meter springboards, perfect for syn-

chronized diving, are here along with two 1-meter springboards for training and recreation. At its deepest, the variable-depth pool is 5.5 meters deep.

Both pools can be viewed from the spectator area, which will have permanent seating for 2,800 and enough deck seating and removable seating to accommodate a total of 4,000 spectators. The seating can be configured in a variety of ways to accommodate different types of competitions

and events in different locations throughout the 144,000-square-foot facility.

And because the owner is a municipality, MIAC isn't linked to any particular athletic body and so becomes immediately available to the full range of aquatic-sports organizations, both in the United States and on an international basis. That's very special and is part and parcel of the project. The mandate from the city was very clear: There are to be no obstacles to con-



ducting any sort of internationally sanctioned meet for any given aquatic sport.

At the same time, the facility is also at the disposal of the citizens of Mesa. To that end, the design was established to provide for flexibility of programming, from a therapy pool to a large area in the variable-depth pool dedicated to accommodating learn-to-swim programs, aquatic exercise classes and all the kinds of activities associated with municipal pools.

The project architect is BPLW of Mesa. In September 1998, they contacted us to make a presentation on the simple concept of two pools to accommodate international competitions. We made a personal presentation that not only established our credentials, but also offered an overview of how we would approach developing the design. Soon after that first meeting, BPLW selected us as aquatic consultant – and made us part of the team.

A COMMUNITY EFFORT

The City of Mesa is no newcomer to aquatics. It already has 12 other community pools widely considered to be among the finest in the country. The National Recreation & Parks Association has recognized its aquatics programs, and Mesa's peers nationwide have cited the city for its commitment to community recreation in general and aquatic sports in particular.

In other words, it's no huge surprise that this would be a city that would make such a high level of a commitment to aquatic sports.

From the start, the MIAC concept has attracted a tremendous amount of attention in the global aquatics community and has tied us as designers into a fantastic network of individuals and organizations all wanting input into the creation of this grand facility. We took our time up front and have processed all the available information and feedback.

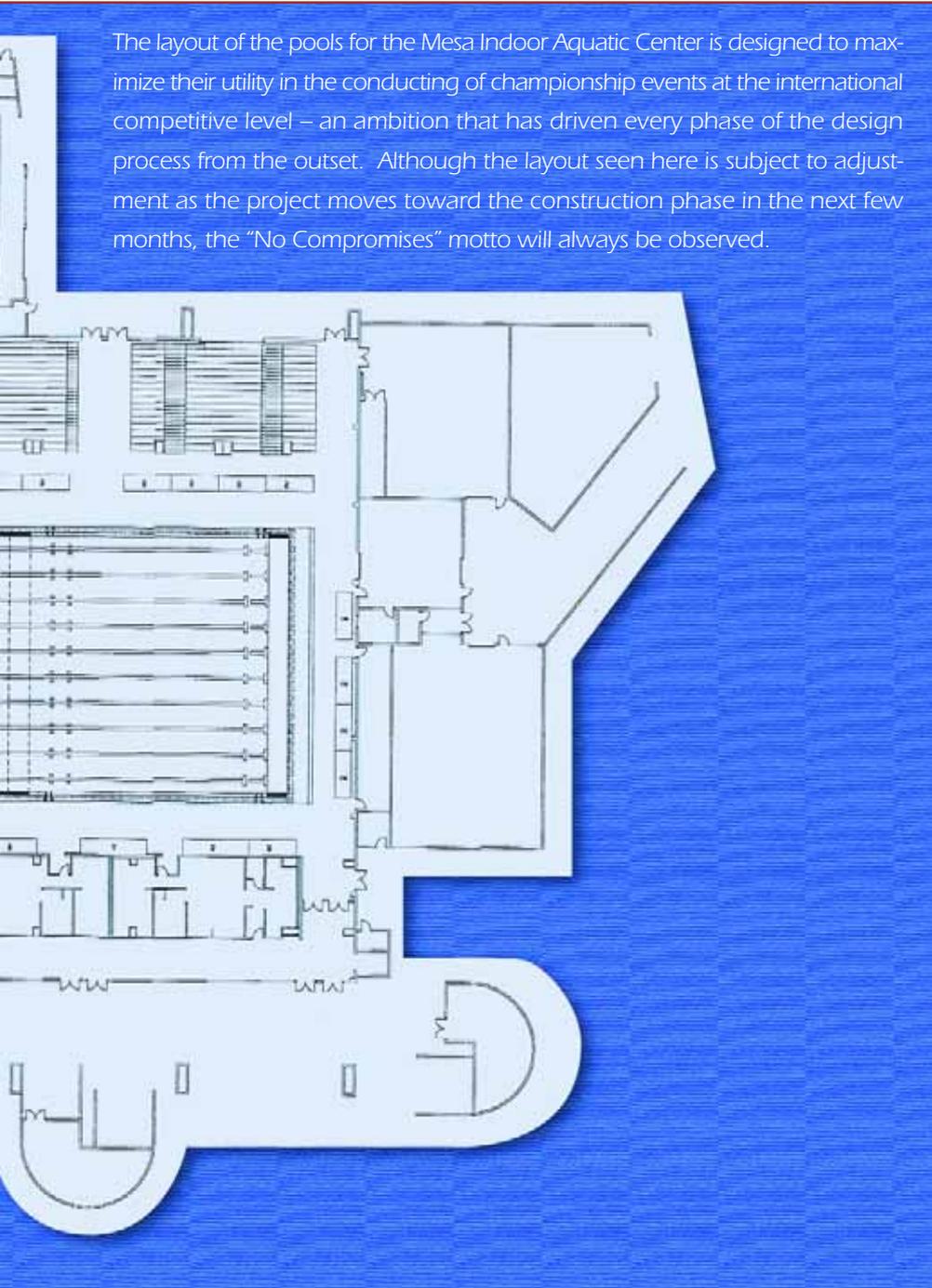
Once we moved beyond the generalities and the entire design team had been assembled (including structural and electrical engineers as well as aquatics experts), we moved into what is known as the programming phase, which lasted for a total of 15 months.

During this time, we created an elaborate matrix to track specific sorts of aquatic programming as defined by the needs of user groups. This covered dimensions, depths, access, bulkhead distribution and every conceivable variable that went into creation of world-class facilities in each of the targeted aquatic sports.

It's not something one often considers, but there are distinctions between the requirements and regulations for competitive facilities when it comes to activities as diverse as swimming, diving, water polo, synchronized swimming, synchronized diving and instructional, recreational and therapeutic aquatics.

We took each set of specific needs and dimensional requirements and went through a detailed (almost microscopic) analysis of the facility, creating specific programming layouts, bulkhead positions, lane configurations, overall physical configurations, racing courses and competi-

The layout of the pools for the Mesa Indoor Aquatic Center is designed to maximize their utility in the conducting of championship events at the international competitive level – an ambition that has driven every phase of the design process from the outset. Although the layout seen here is subject to adjustment as the project moves toward the construction phase in the next few months, the “No Compromises” motto will always be observed.



tion layouts for each proposed use in turn.

When you add in accommodations for kayaking and canoeing as well as scuba lessons, learn-to-swim programs, Red Cross certifications and physical therapy, a picture emerges of a delicate set of balances that had to be dealt with in making the facility meet the clients' ambitions.

BOTTOM LINES

In a typical project's programming process, working with clients is all about telling them what they can and cannot do based on the facility being designed. When budget is an issue, for example, many clients will start compromising and remove items, such as a bulkhead or two, or reduce the size of a pool, or trim the number of diving boards and platforms. In the usual process, we tell them next how those decisions influence the actual functionality of the facility and how its usefulness will be limited.

On this project, however, the programming we did was always inclusive, always driven by the needs of the sports.

In the case of diving programming, for example, we sent the preliminary package to U.S. Diving and worked with executive director Todd Smith and technical director Ron O'Brien (Greg Louganis' coach), who reviewed it and came back to us with a variety of specific recommendations. We also worked with Jay Flood, who was commissioner of aquatic sports for the '84 games and has been involved in FINA ever since.

We took those comments and recommendations back to the city and started racking and stacking all the various programs and the attendant facility requirements. From there, we started putting a dollar value on the whole package.

At this stage, when function and facilities are being compared to dollars, you begin in the usual project to shake out the priorities and define the clients' real wants and needs. This process is so common that there's even a saying in this business: "You can have anything you want, but you can't have everything you want."

In this case, however, the city took *nothing* out. They declared categorically that they wanted to meet full international competitive standards for all applicable sports and whatever other standards could be ap-

Continued on page 42

The Power of Collaboration

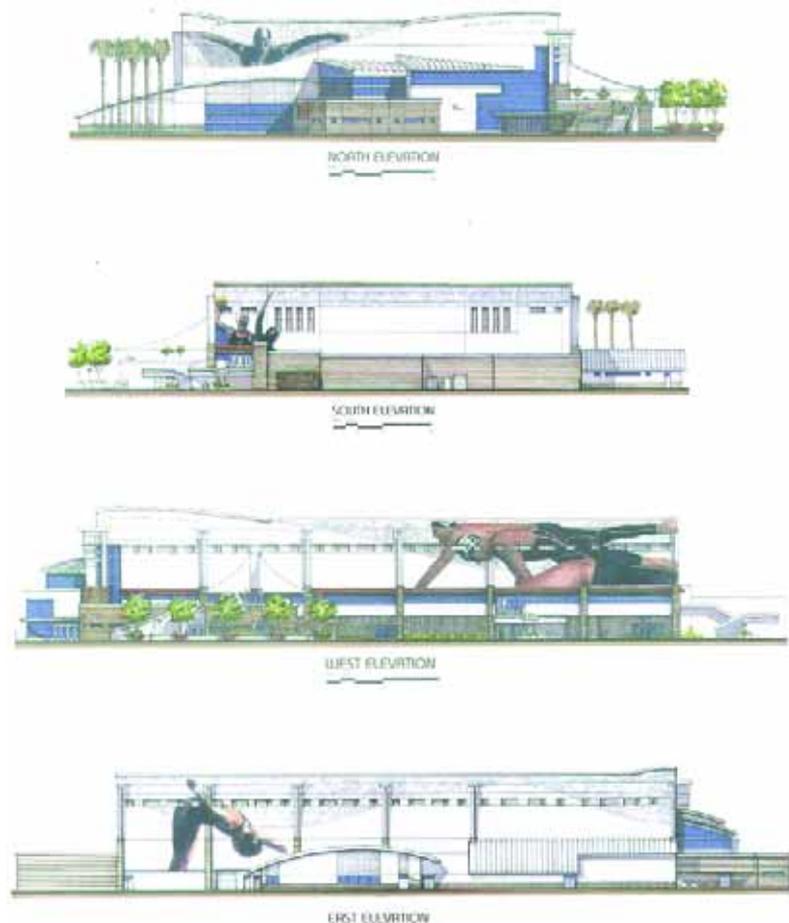
We at Rowley International (Palos Verdes, Calif.) have a wonderful working relationship with BPLW of Mesa, Ariz., and its principal architects, Gene Valentine and Carl Jordan. Their firm was retained for the Mesa Indoor Aquatic Center and brought us in on the project right at the start.

At \$24-million plus, this project isn't exactly huge for a firm of their capability. But the value of this sort of facility cannot be measured in dollars alone, and it is clear that they've come to recognize and appreciate the significance of the project to the nation's aquatics community as well as to the city of Mesa, Ariz.

In fact, they now see as we do that this venue has the potential to reinvent the aquatic-sports movement in the United States.

Answering the call, they've come up with a remarkable building – a strikingly modern architectural form that includes beautiful geometry, shapes and forms throughout. The facility doubtless will become a landmark in downtown Mesa – particularly when the huge, painted murals depicting aquatic sports are applied to the sides of the building.

– W.R. & P.S.



DESTINED TO BE A LANDMARK: With huge murals on all four faces of the building, the Mesa Indoor Aquatic Center will become a prominent fixture on the Mesa scene for years to come.

Pool Cover Specialists

*The Design
Friendly Company*

THE
SHAPE
OF
THINGS
TO
COME

Known throughout the industry as "the innovators" in pool cover technology, Pool Cover Specialists National, Inc. has developed an impressive reputation for accommodating the unique design requirements of architects and pool designers.

THEN
Pool cover limitations dictated pool designs and shapes.

NOW
We can accommodate your vision. You dream it and we'll design it.

The **INFINITY 2000™**, expanding the horizons of pool cover technology into the 21st century.

- Automatic Systems for Vanishing Edge Pools
- Designs that completely hide recessed mechanisms and housings
- Invisible tracks for free-form pools
- Water features synchronized to cover activation



www.poolcovers.com

(800) 369-5152

plied to other activities.

The original budget was \$11 million – not nearly enough to fulfill this vision without severe compromises. In fact, our estimates had the no-compromise project coming in at about \$18 million, and that's what we reported.

At that point, the city went to work. After months of fundraising and re-budgeting, project backers prevailed and covered a total budget of more than \$24 million, including some amenities that went beyond the scope of our proposals. We're still in the design and engineering phase, but we're reasonably confident this budget will work.

The current plan covers it all: the electronic scoreboard, deck areas, the lobby area, the queuing area for spectators, locker rooms – the works. It also covers the needs to treat all dimensions in metric terms to meet international standards, including lane widths and elevations on the ends of the pools for the timing touch pads as well as the starting blocks.

Quality Issues

With any indoor environment for aquatics come two immense challenges: noise and air quality.

Noise drives more people away from standard indoor pool environments than any other factor, and it's our observation that those with the least tolerance are older folks, such as grandparents who are taking grandkids to swimming lessons. To address this issue, we're working closely with the architect's consulting acoustical engineer to design interior features for sound absorption – a double challenge when you consider that most sound absorbers are moisture absorbers as well.

Obviously, this relates to the second challenge to indoor facilities and the fact that everything in an indoor aquatic environment must stand up to moisture. Design of air-handling systems and dehumidification regimes is therefore of critical importance. But it's a bit of a Catch 22: Glass and stainless steel and tile are basically impervious to the effects of moisture, but they are also acoustically bright and actually intensify sound and noise.

Finding the right balance between the needs for noise control and moisture resistance is now in the hands of the engineers – and we'll look at the solutions they develop in our next article.

– W.R & P.S.

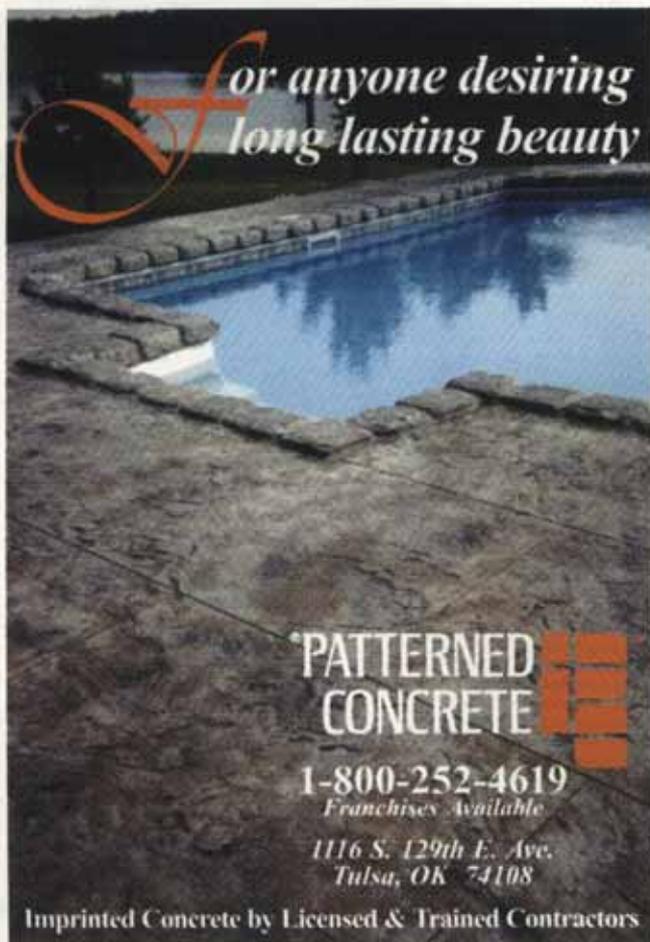
IN REAL TERMS

With the overall programming and budgeting in place, we've now begun the process of fine-tuning the design and engineering of the pool systems. This phase will take a while as we prepare detailed

plans and specifications that will be used to obtain bids from contractors.

Although this process is ongoing, there are several technical aspects of the facility that we are certain will not change:

- The main racing pool will hold 1.1



For anyone desiring long lasting beauty

PATTERNED CONCRETE

1-800-252-4619
Franchises Available

1116 S. 129th E. Ave.
Tulsa, OK 74108

Imprinted Concrete by Licensed & Trained Contractors

Circle 26 on Postage Free Card

GENTLEMEN PREFER BRONZE (AND GENTLEWOMEN TOO)

SPRAY INLETS

6633 4742 6630

STANDPIPES **DOLPHIN** **CASCADE**

7670 7631

LIONS HEAD **BANJO CATFISH**

5511 3087 3326

FONT BASIN

STANDARD BRONZE COMPANY

172 West 5th Street *Atlanta's* Bayonne, N.J. 07002

Phone: (201) 339-1351-2

Circle 35 on Postage Free Card

million gallons of water, while the variable-depth pool will hold 1.2 million gallons. Once you add in a small therapy pool and a hot-water pool, the overall facility is pushing 2.5 million gallons in all and will need 4.1 million Btus to keep it all heated. The plumbing runs will use pipes from 2 to 16 inches in diameter flowing through big, automatic hi-rate sand filters.

□ The circulation system will have a completely redundant back-up system to avoid any possibility of system failure during a major event. Rationalizing and organizing these systems for efficiency is crucial, and we've learned from our experience with Olympic pools that there are a number of ways to achieve the necessary redundancy. (We'll be settling these issues in the summer of 2001 and will address them in detail in the next installment of this series of articles.)

□ We'll be using deep gutters with deck-level overflow down the sides of the pools and cantilevered gutter system at the ends. (We took this approach

so that the ends of the pools could be raised high enough to meet FINA standards.) In the variable-depth pool, the deck-level flow is carried around the full perimeter of the shallow end to allow for easier access for recreational swimmers and kids.

□ At this point, there's no money in the budget to allow for tiling the surface of the deck, which would be beautiful. We're now evaluating a variety of possibilities, including brushed or stamped-concrete treatments of some kind – but we still have hopes that the final budget will have enough room to permit the use of tile.

□ As required by FINA, the lane markers will be black tile and the interior surfaces of the pools will be white plaster. There also will be stainless steel grab rails and tile edging on the gutters.

□ We'll be using gas chlorine to sanitize these large bodies of water. We prefer this approach: Used well in a well-engineered system, gas chlorine is an effective, affordable way to sanitize an indoor pool.

MOVING FORWARD

The project is set to go out for construction bids this summer. As the design consultant, Rowley International will be involved throughout the bidding and selection process and during the entire construction process. On projects of this size, we know we can count on the unexpected – and there are sure to be challenges along the way.

Given the commitment of the citizens of Mesa and the passion and overall skills of the entire design team, however, there is little doubt in our minds that Mesa Indoor Aquatic Center will achieve its high-flying goal of becoming the country's premier site for swimmers, divers and aquatic athletes of all stripes to come to test themselves against the best the world has to offer.

We'll return to Mesa in 2002 for a look at the project as it is being constructed. At that time, we'll cover technical features of the facility in greater detail, then follow up later with a final report on the project's completion and dedication.

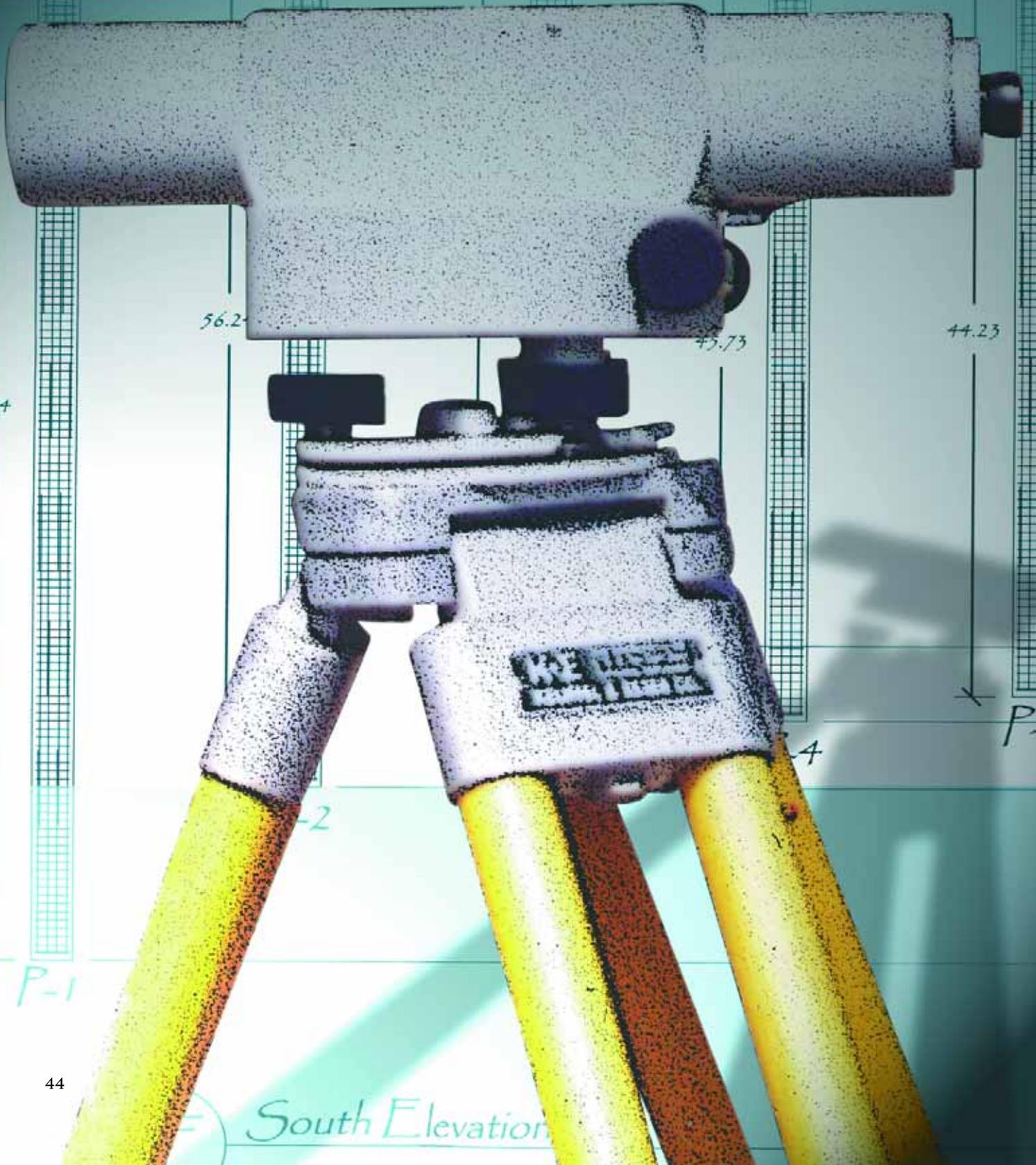


MACALITE EQUIPMENT, INC. 4510 EAST KERBY AVE. • PHOENIX, AZ. 85040 • (480) 967-0770

- Specializing in Pool Plastering Equipment • Plaster Hose • Nozzles
- Easy Flow Nozzles for Pebble Applications • Fittings • Trowels, Etc.
- Manufacturer of Hydra-Flow Plaster Mixers, (Left or Right Dump)
- Distributor For Excalibur and Putzmeister Plaster Pumps
- Parts and Service for All Plaster Pumps and Mixers

Circle 27 on Postage Free Card

It's a given that watershapers need to maintain close control over design, engineering and construction, especially when they're working on complex projects and/or challenging sites. That control, says landscape architect and pool builder Mark Holden, can only begin with a clear understanding of the site in topographical and geological terms - an understanding that calls for familiarity with surveys and all the valuable information they offer.



Survey Savvy

By Mark Holden

Whether it's done using only a tape measure and a pair of experienced eyeballs or requires the help of satellites orbiting the planet, every construction project is surveyed before the work begins. In fact, surveyors have been plying their trade for thousands of years, and their services have been valued for one simple reason: It's really a good idea to measure the size and shape of the ground before you try to build on it.

In today's terms, surveying is usually defined as the process of taking accurate measurements of the land on the X-, Y- and Z axes (that is, in three dimensions) and then translating that data into a usable (usually printed) format. There are several different surveying methods used to measure, process and communicate this critical information, and choosing the right one is essential to getting any watershaping project off to a sound start.

So how do you determine the level of detail required and communicate your need to the surveyor so he or she can give you the appropriate level of information? Let's take a look at the different types of surveys in common use and review what those options mean in terms of creating a truly useful array of site-specific data for any given piece of property.

A MANAGEMENT TOOL

As watershapers, we use surveys as a tool not only to initiate a design, but also to foresee possible difficulties in the construction process.

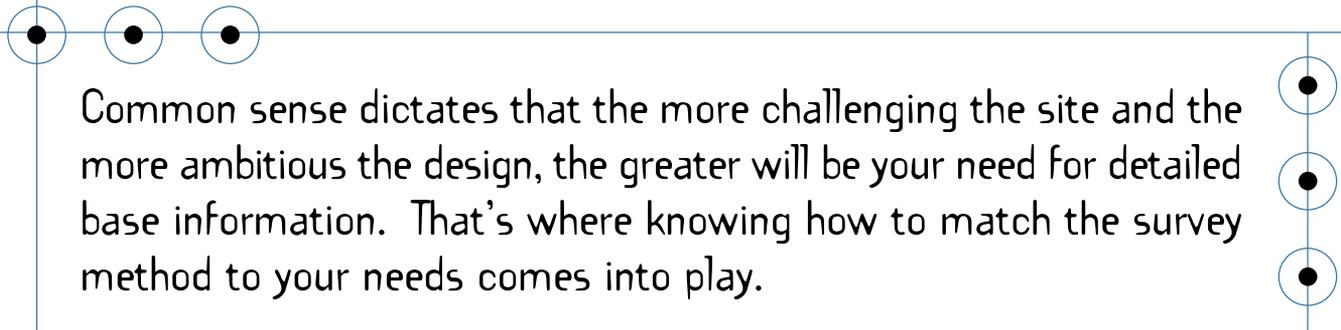
Up front, architects and designers will use survey information to inspire and shape special designs, contours and physical relationships among structures. A bit later on, project managers, builders and sub-

contractors will pay close attention to survey information to set up access, avoid utilities, understand the limits of cranes and other large equipment and establish site storage and workflow patterns.

Long before the first shovel of dirt is lifted from the ground, surveys set the stage: They can reveal serious challenges and limitations of a site that relate to the watershape, its design and the overall feasibility of the project; they also carry with them serious implications for the dollars that will be required to make anything happen.

In other words, only with a survey in hand can you provide upfront criteria to a client and/or the project architect so that adjustments in designs and budgets can be made well in advance of any on-site crisis or misunderstanding.

This need for information starts with a basic site survey that indicates site contours and boundaries in detail. Once this basic map has been generated, it guides the soils engineers and geologists and tells them where



Common sense dictates that the more challenging the site and the more ambitious the design, the greater will be your need for detailed base information. That's where knowing how to match the survey method to your needs comes into play.

they need to dig investigation pits or bore into the earth to find the depth of competent bedding material. If there are any questions about anything related to the site, beginning the design process *without* the information these surveys have to offer would be risky at best.

After all, without these surveys, how can you know for certain where to place any necessary retaining walls, caissons or footings? How can you know whether the watershed requires an extensive substructure – or none at all? How can you accurately determine how strong the structure should be and how much steel a shell needs to withstand pressure from the soil that surrounds it? Basic surveys key the answers to all of these questions.

Bottom line: This is all critical information, and common sense dictates that the more challenging the site and the more ambitious the design, the greater will be your need for detailed base information. That's where knowing how to match the survey method to your needs comes into play.

WHAT FLAVOR?

Surveys come in many forms, ranging from simple hand-drawn sketches to computer technologies that are sophisticated enough to guide missiles. The latter is obviously much more costly than the former, so the trick for the watersheder is not to go way beyond what is necessary to get the job done. More important, however, it's critical to make certain you go far enough.

Among the first questions a surveyor will ask you is: What type of survey do you need? To answer confidently and competently, you have to know a bit about the four basic survey types:

❑ **Hand Measurements:** This type of survey usually takes the form of a sketch and can be done by a designer or contractor armed with a tape measure and a sight or path level. Hand-measured surveys are typically recorded in ink or pencil on vellum or paper, and the accuracy is usually to the inch. For the most part, this survey method is suitable only for smaller lots with flat yards and projects with simple designs.

❑ **Formal Surveys:** Using an array of complex instruments such as transits, these surveys offer information on dimensions and elevations to within 1/100th of a foot. The finished layout can be either a hand-drafted image or a computer-drafted file, and reliability is greatly enhanced if a professional surveyor is involved.

❑ **Fly-over Surveys:** These surveys use photographs shot from airplanes or helicopters. On a simple level, these images allow for highly accurate information on X- and Y-axis data. More advanced surveys also allow for generating Z-axis data through triangulation with existing or known landmarks. A more reliable (and more expensive) fly-over variant is a radar-based aerial survey in which readings are converted to drawings by a computer.

❑ **Sophisticated Surveys:** Through computers, computer-driven data collection devices and synchronized satellite uplinks, it's possible for a surveyor to provide an extremely detailed layout of any parcel. The cost of all this technology is great and the fees charged by these surveyors can take your breath away, but when it comes to detailed information for very large or unusually complicated projects, these sophisticated surveys can't be beat.

The computer files generated by these systems start with standard plan views of a project, but you can also tilt the point of perspective, which allows you to fly

through a site on a computer while looking at a 3-D model of its topography. The multiple spot elevations shot during the survey process are also translated into a "wire-frame" form that can be rendered into graphic contour lines that accurately denote elevation grade changes in units of one, five, ten or sometimes more feet – remarkable stuff in amazing detail.

Once you integrate this information into most computer-assisted drawing (CAD) programs, the survey data forms an unalterable base upon which designs are imposed – a most useful feature. And if further surveys are conducted, base data can be updated independently and then transferred into the design file.

RETAINED SERVICES

A professional surveyor also will ask a number of other questions about the job at hand – details that will help him or her plan the survey and estimate fees. In some cases, your answers will suffice. In others, the surveyor may need to visit the site.

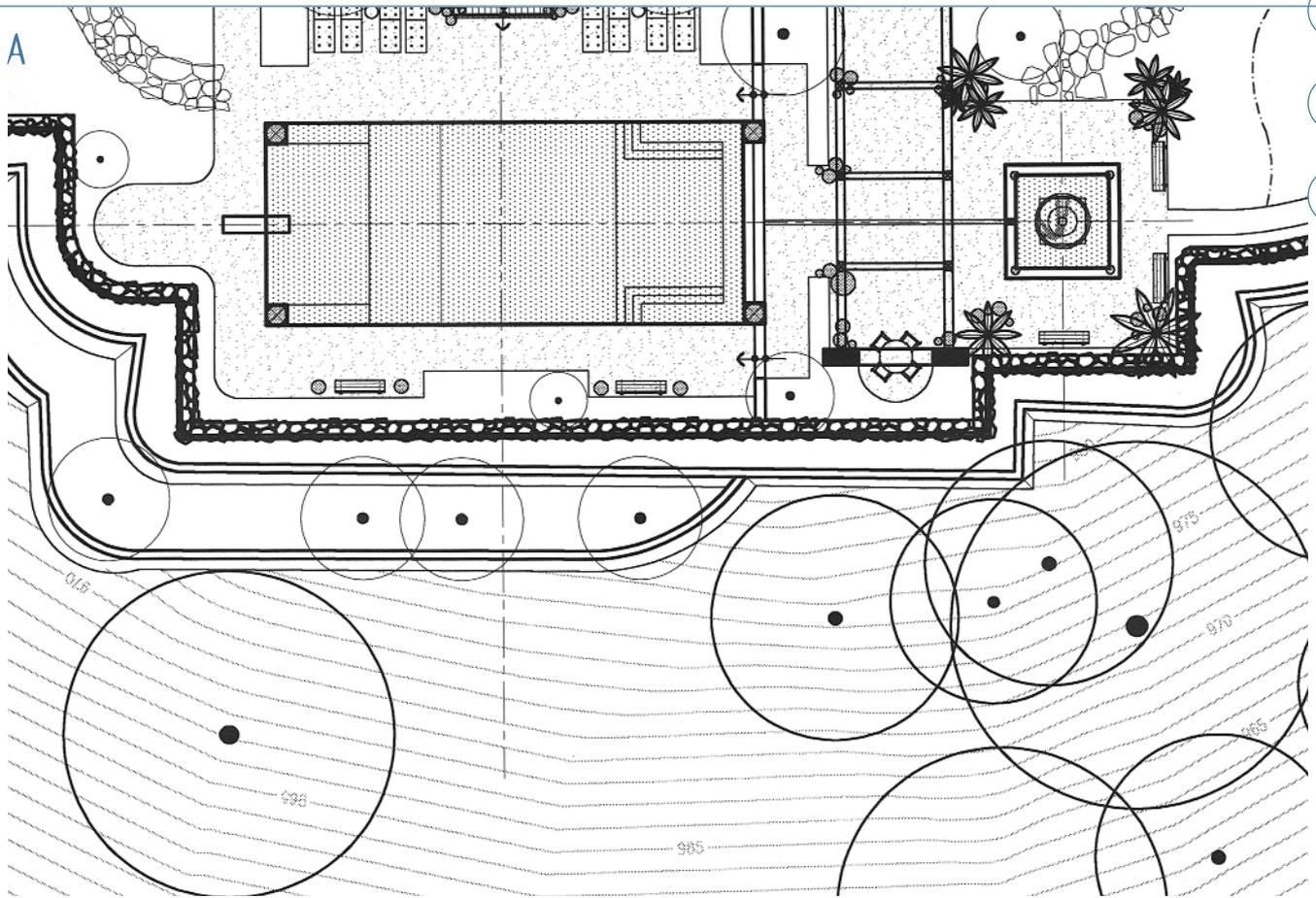
Here's what he or she will need to know:

❑ **Parcel size:** This is pretty straightforward and can be expressed in either square feet for smaller lots or in acreage for larger ones.

❑ **Lines of sight:** The surveyor needs to know if the site can be shot from one location, or if multiple set-ups will be required to cover all of the property.

❑ **Degree of accuracy:** How many shots will be taken to adequately cover your needs? Can five or ten shots of the area be used to compute the topography, or will it take hundreds?

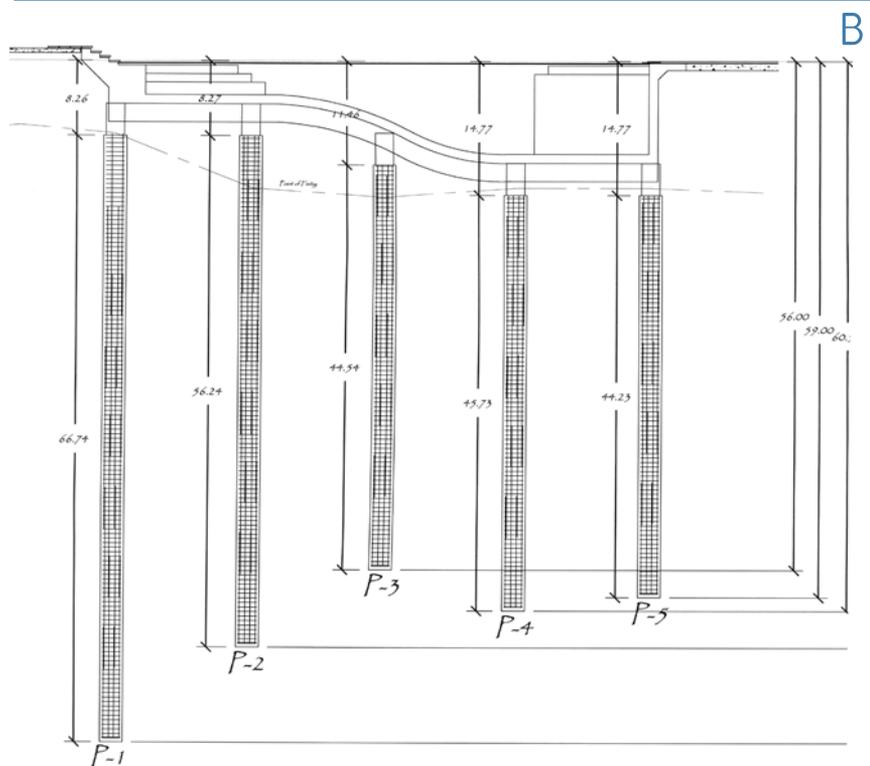
❑ **Base detail:** How much graphic work is required to generate the base documents? What information will be included in the report? What kind of com-



This pair of drawings shows in clearest possible terms why you need a full set of surveys – topographical, soils and geological – before you can even think seriously about design or construction on a dramatically sloped site.

The topographical survey (A) clearly shows the positioning of the proposed pool on a severely sloping hillside. The soils and geological reports showed us what was going on beneath the surface and led us to specify a substructure for the pool with ten piles reaching down as far as 75 feet to competent bearing soil (B).

The dashed line seen just beneath the shell in the structural plan is particularly important: It indicates the contours of bedding planes beneath the pool, as indicated in the soils report. Originally, we had thought to have the deep end of the pool oriented the other way. With all of the survey information in hand, we were able to turn the pool 180 degrees at the design stage and saved ourselves lots of trouble by working with the bedding planes rather than against them.



Defining Distinctions

As the scope and difficulty of any given project increase, so should the sophistication of the survey methods you apply. At one end of the spectrum, a simple yard will probably be taken care of with a simple survey conducted by the designer or contractor. At the other end, sophisticated technology and professional services might be an absolute necessity.

To help you know what's appropriate for which type of project, here's a little matrix intended for residential applications only (as opposed to commercial or public-works projects, which are dealt with at a much earlier and higher level). It springs from the thought that, as a rule, survey requirements will be determined by the complexity of the design, the available budget, grade-change extremes and how the survey will be used.

—M.H.

puter files will be needed?

□ **Degree of difficulty:** Are there any site factors that may affect the surveyor's ability to shoot the job easily? Is access a problem? Are parts of the property overgrown or filled with debris? Is there any risk of animal attack? Is the soil unstable, or are there any known hazardous conditions?

From your end of the conversation, it's important to know the basis on which the surveyor will be calculating charges. It's also important to know what rates apply to additional services: Once on site, for example, you may find that you need to survey areas you hadn't previously considered to get a complete and accurate report. You also need to determine a fee schedule for possible downstream needs such as document reproduction and/or computer time.

Another factor to consider is the fees

that will be charged for surveys taken later — that is, as planning and design work continues or once actual construction has begun. After all, once the initial architectural plan has been developed, the design may need to be laid out with the same degree of precision on the site itself.

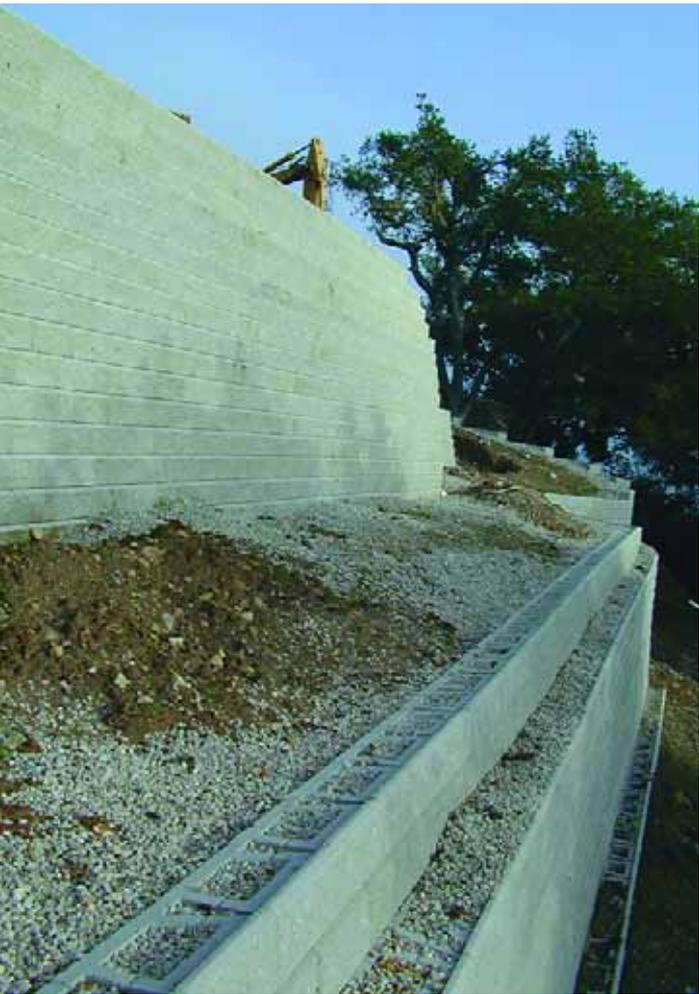
IN THE FIELD

Before you break ground, the survey information is transferred to the site itself in the process of physically laying out the watershape.

The simplest form of layout involves tape measures, stakes and string lines to locate "objects" for construction. In some cases, however, and especially when greater control is required for more complicated projects, computer-driven equip-

Project Scope	Small Home (up to 1/4 acre with grade changes of no more than 3-4 feet)	Moderate-Size Residence (1/4 to 1 acre with grade changes not exceeding 10 feet)	Estate Home (1 to 3 acres with grade changes not exceeding 50 feet)	Ranchette size home (5 to 10 acres with moderate grade changes)	High-end estate (10 acres and up with radical grade changes)
Surveying Process	Tape measure dimensions and hand-level elevation shots in inches	Tape measure dimensions and path level w/ Lenker Rod in decimal foot elevation shots	Licensed Surveyor shooting with computer-fed transit	Same as Estate Home with computer-driven, motorized transit and lens rod	Same as Ranchette with satellite link to the above computer data
Minimum Survey Information Needed for Base Plot	Property lines, building footprint, existing elements and simple elevations	Same as Small Home plus detailed elevations	Same as Moderate-Size Home plus accurate topography (contour lines) for use in CAD Program	Same as Estate Home	Same as Ranchette plus GPS satellite lock-in on computer data
Finished Product Format	Hand-drawn base with simple grade changes called out in 1-inch increments	Hand-drawn base with elevations calculated to the 1/100th foot	CAD file base and sample plots to 1/100th foot or better		
Budget for Survey and Base	Up to \$300	\$300-\$500	\$750-\$1200	\$3,000-\$15,000	\$30,000 & Up
Layout Method	Tape measures, stakes, string and layout paint	Same as Small Home plus elevations set to the 1/100th foot	Computer-assisted transit used for all layout	Same as Estate Home	Same as Ranchette

*Prices will vary due to numerous other variables. Budget amounts should be confirmed by a survey professional.



The existence of competent surveys simplify tasks such as excavation by giving the excavator's crew precise guidelines, but real performance on site requires steady supervision of the dig and regular re-shooting with surveying instruments to make certain all significant dimensional details end up hitting their marks.

ment is often used to transcribe the design data into real-world points in space.

Some surveyors use tripod-mounted computer guns that take information downloaded from the CAD system, pre-designated with X, Y and Z data. These instruments alert the surveyor when the lens-mounted rod is in the correct spatial point on the site. The surveyor then marks this location with a pin or a piece of lath. With this type of system, the survey professionals can find any point during the construction process by simply re-accessing the numeric code for that particular location.

Such a system provides a mechanism for steady checking of base survey information to ensure that important construction dimensions have been observed at their precise locations within the site. This is especially important when changes are made in the course of construction: It makes it possible to determine whether any alterations have affected areas that were *not* to be changed.

In essence, surveys are a tool with which every watershaper should be familiar. They offer up-front assurance that a design will work in the context of a specific site. In the course of a project, they also give the watershaper assurance that work is moving forward accurately and within specifications. From the simple to the sophisticated, they have a primary role in any successful watershape installation.

Knowing the Lingo

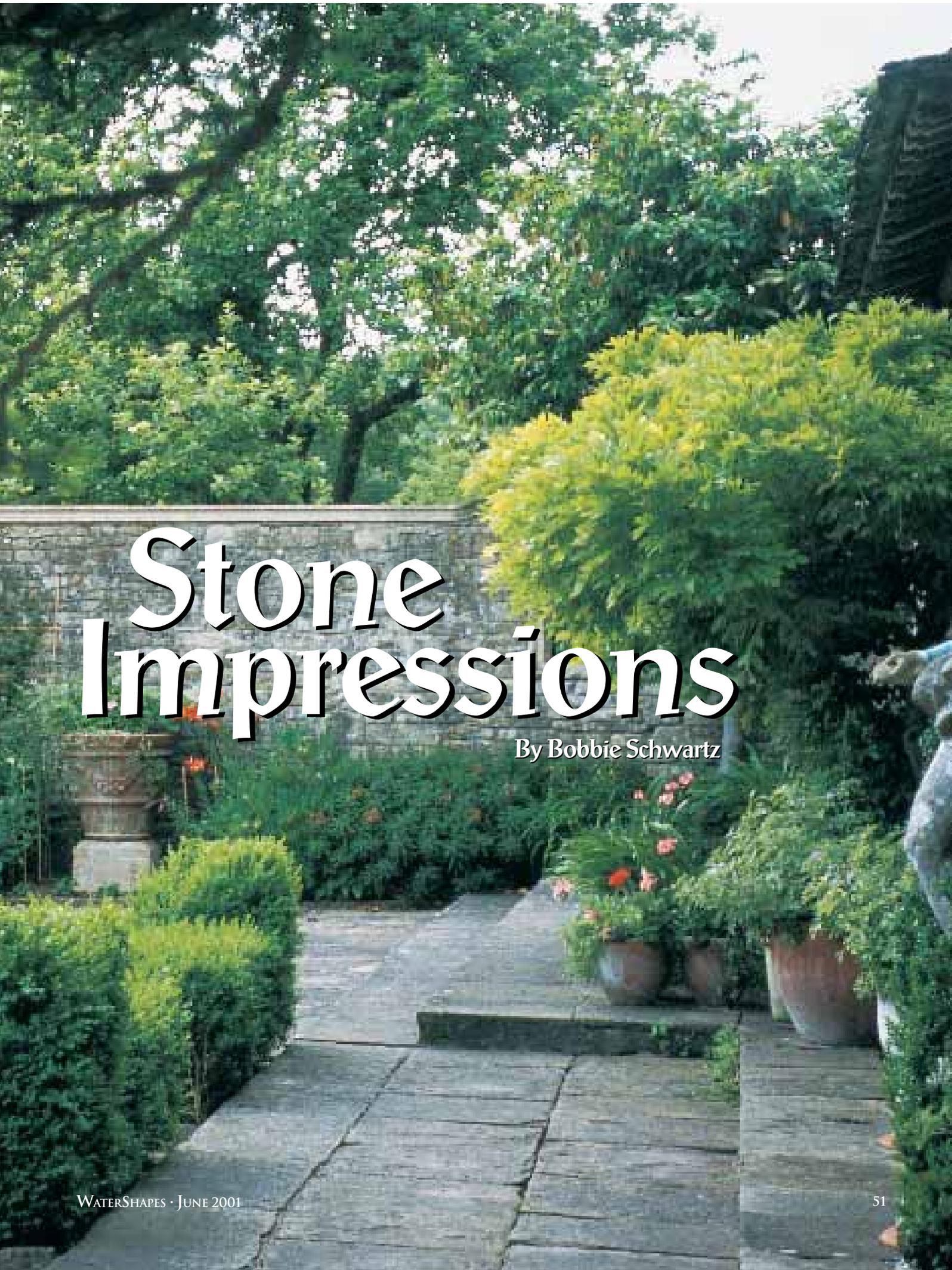
Understanding the basic language of surveyors is useful in discussing your information needs with these professionals. Here are some key terms:

- ❑ *Assessor's Parcel Number (APN)*: A code given to a piece of property and recorded with the County Clerk's office. This information is required for issuance of most building permits.
- ❑ *Benchmark*: A beginning or starting point used to set data in a project.
- ❑ *Contour Lines*: A line within a survey that encompasses all common points of an identical elevation.
- ❑ *Elevation*: The vertical distance relative to a given data point (usually sea level) of a point or object.
- ❑ *Global Positioning Systems (GPS)*: A navigational and surveying system based on observation of signals transmitted from satellites. Elapsed times for these signals are measured from transmitter to receiver, enabling receiver positions to be computed.
- ❑ *Interpolation*: The process of calculating potential contour lines by the use of two or more perimeter points of elevation. This can be used to "guesstimate" topography of an area that is hard to access by working with known top and bottom elevations.
- ❑ *Lath*: Thin wooden stakes that surveyors set on a point to communicate a location, signify a boundary or demarcate monuments.
- ❑ *Lenker Rod*: A self-reading rod used by an instrument operator.
- ❑ *Path or Site Level*: A simple surveying device used to view a measuring stick while maintaining a level field of view.
- ❑ *Transit*: A complex device used to measure distance and change in elevation by comparing markers within the instrument to objects in the field.
- ❑ *Topography*: The configuration or relief of the earth's surface, including both natural and cultural features. Natural features include hills, valleys and other irregularities; cultural features include the products of civilization, such as roads, buildings and other structures.

— M.H.

When we say someone is 'stone faced,' observes landscape designer Bobbie Schwartz, we're thinking of someone who shows no emotion. But in truth, she says, stone is a highly expressive material that imparts a sense of antiquity while giving impressions of permanence, security and serenity. And when you factor in its durability and flexibility, it's easy to see why stone has been the material of choice for uncounted generations of designers and builders.





Stone Impressions

By Bobbie Schwartz

THE ANCIENT CELTS TRANSPORTED HUGE SLABS OF stone over long distances to create religious circles at Stonehenge and Avebury. The Romans used stone to build their aqueducts. From the pyramids of Egypt to the Acropolis in Athens, from the Great Wall of China to the great castles of Europe, stone has been the raw material of choice for our greatest and most enduring structures.

Through the ages, stone has been a well-used material because it is both durable and readily available. It's hard to find a town in Europe without walls constructed of local stone, and all you need to do is drive through New England to see stone walls everywhere, basically because farmers had to do *something* with all the stone that they dug out of their fields.

Stone can also be used in the artful imitation of nature. It has been used in Chinese and Japanese gardens for centuries, for example, to replicate the mountainous terrain of these countries. These gardens and their borrowed views also integrate stone into the landscape as paths and altars and as ornaments such as stone lanterns.

Watershapers and landscape designers alike will find a treasure trove of ideas and design touches in even a quick survey of what has been done with stone through the years. We can transmute those approaches, placing stone in our landscapes, in our garden structures and in our watershapes. To that end, let's take a tour and drop in on some of the possibilities.

Bedrock Foundations

In landscaping, gardening and watershaping, stone is very often used to help create the illusion that the viewer is looking at the work of nature. And from the beginning, designers and installers have understood that stone in a natural setting must be *believable*.

Too often, however, boulders look as though a giant dropped them into the landscape with no regard



Figure 1: This jumble of stones is the antithesis of the potential of the materials from which it's made. The lack of unity or of any sense of design leads to discomfort on the part of the observer.



Figure 2: This simple outcrop works because the designer or installer was sensitive to the grain, texture and color of the stones and how they might appear in nature.



Figure 3: Stones covered with moss or lichens take on the appearance of having existed in place forever. Getting them to take root in new or newly placed stone is one of the keys to establishing an appearance of age.

for a sense of unity or design (Figure 1). That's the wrong approach: Multiple boulders should instead be thoughtfully placed, with at least the bottom third buried in the soil. The color and grain should be similar so that several pieces appear to be merely part of an outcropping (Figure 2). In addition, the angle of the rocks should be similar.

This isn't rocket science, but it does require thought and planning, especially when large stones are involved. Think of the material: Stone conveys a sense of power because of its size and a feeling of permanence and also because many cultures believe that spirits abide in it. This combination of attributes is probably why

stone has frequently been used to create prayer niches or altars by the roadside or in the woods.

At the same time, stone conveys a sense of age, particularly when it is somewhat eroded and covered with lichens or moss (Figure 3). Such stones are almost always found in Oriental gardens, but you don't need to go to China or Japan to see them. In fact, I believe that such stones can be found almost anywhere in the world.

Near where I live in Ohio, for instance, there's a section of the Cuyahoga Valley National Park called The Ledges. The Ledges are huge, glacially striated and pock-marked rock outcrops that are covered with lichen (Figure 4).



Figure 4: These distinctive, mountainous striations make an amazing impression – one that might be translated to a smaller scale as part of a spectacular waterfall.



Figure 5: The simple step of darkening new stones helps them to appear much, much older. These steps and coping stones, for example, look ancient – even though the park they're in was built in 1939.



Figure 6: Plants will take advantage of the slightest of opportunities to climb up the faces of rock walls. Working them onto new walls gives an appearance of age – and adds considerably to their charm.



Figure 7: Planting *Sempervivum* on a new wall speeds the development of an aged appearance. Rain will spread a stain from the plants to the stone surfaces that will darken the wall and lend it a quick dash of character.

Few watershapers would ever try to duplicate the grandeur of The Ledges, but it should be possible to create, on a smaller scale, similar effects through a study of the shapes, striations and manner in which plant material (particularly ferns) are growing here. Such an outcrop could, under the right circumstances, be the basis for a *spectacular* waterfall.

And of course, stone doesn't have to be in a near-natural state to play its role in a landscape or watershape. Old European gardens usually contain *carved* stone. Some stones are statues or monuments; others serve as pedestals for statuary or urns. Through the 17th and 18th centuries, English garden designers commonly copied architectural elements of earlier Italian Renaissance gardens, appropriating their stone arches, staircases and balustrades as well as their stone piers and columns used as ornaments or as supports for pergolas.

The Effects of Age

When you look at these traditional applications of stone – regardless of the period or culture – the richness, subtlety and beauty of stone that has been in place for a long time is instantly apparent. No matter where it's found or how it is used, stone ages gracefully, and its presence lends an immediate sense of antiquity and tradition to any setting.

If you look carefully (and even not so carefully) at pieces of old stone next to pieces of new stone, you will notice that no piece of old stone is exactly like another and that each has blunt edges. New stone tends to have an Industrial Age accuracy to it, with its very even, sawn edges. Therefore, Step One in making a new installation take on what I consider to be a desirable air of antiquity might be to blunt all those new edges with a chisel or some other tool of choice.

The other noticeable difference in old stone is color. The steps and pond edging at the Hohenpark Killesberg, a public garden in Stuttgart, Germany, are very dark and look very old (Figure 5), even though the park only opened in 1939. The combination of weathering, dirty shoe soles and pollution all contribute to that darkening. New stone is much brighter. This is an instance where dirt is truly useful, so in Step Two of the "aging" process I rub it into new stone to begin the darkening process.

Under favorable conditions, old stone is also a magnet for plant growth. Given the opportunity, plants will root anywhere space is provided by crumbling mortar and a bit of moisture (Figure 6). If you are using new stone to build a wall, Step Three in the aging process calls for leaving gaps to sustain plant growth – and, in shady settings, encouraging the growth of lichen and moss either by transferring existing growth or by administering a buttermilk mixture to the stone.

In areas with little rainfall, succulents such as *Sempervivum* can be planted into the wall (Figure 7). Over time, rain falling on the foliage will create stains that color the wall. (Naturally, you will need good drainage behind the wall to ensure its stability and the survival of its plants!)

The Walls Have It

Another approach to creating the illusion of age in stone is transferring or closely replicating the patterns of old stone construction.



Figure 8: This new wall mimics the construction technique of ancient walls found all over England, making a strong, weathered impression of having been around for centuries rather than years.

Figure 9: The techniques used in building this old wall can easily be translated to modern projects – right down to the detail of the stained clay cap.



Stone conveys a sense of power because of its size and a feeling of permanence and also because many cultures believe that spirits abide in it. This combination of attributes is probably why stone has frequently been used to create prayer niches or altars by the roadside or in the woods.

This, of course, requires both a familiarity with the work of artisans from ages past as well as a keen eye for detail. Just as designers gain ideas from the study of nature, we also can learn from carefully considering the ways of masons and builders of the past. These details are plentiful anywhere old buildings and gardens can be found – and ideas you find in walls are among the easiest to expropriate for use in a fresh setting.

On a recent visit to a small, rural English town, I saw a five-foot stone wall

that ran along the main street. This wall had obviously been there for hundreds of years. Just a few weeks later, I saw the same wall, scaled back to a two-foot height, on a street in a Toronto suburb (Figure 8). Later that same afternoon, I saw another wall in a similar style that had been constructed in the early 1900s. It's quite apparent that the English who settled Toronto in the 1700s brought some construction techniques and styles with them.

Of course, almost all of these old construction techniques can be adopted or

transferred directly to just about any setting by designers and builders willing to study them and breathe new life into them. Take an old wall I spotted in Italy (Figure 9): This could be duplicated anywhere, right down to the detail of the stained, clay-tile cap.

(Compare that to the newer wall seen in Figure 10: It was constructed using the same technique but with a new-looking cap. If it had been capped with clay tile, it would have been difficult to tell the age of either wall.)

In the wall technique just discussed,



Figure 10: It's startling how much newer this wall, with its crisp stone cap, looks than the older wall in Figure 9, made in much the same way. Sensitivity to these details is crucial when your design goal is making a new wall look as though it's been there a long time.

Figure 11: Was this stone meant to be exposed, or has an original layer of plaster weathered away? It depends on whether the wall is new or very old, I guess – but either way, it gives a strong impression of great age.



When you look at the traditional applications of stone – regardless of the period or culture – the richness, subtlety and beauty of stone that has been in place for a long time is instantly apparent. Stone ages gracefully, and its presence lends an immediate sense of antiquity and tradition to any setting.

stone is definitely meant to be seen. It's hard to tell if that's the case for the stone in another wall I spotted nearby (Figure 11). This wall is at least 200 years old and might be even older, given that parts of the adjacent castle date from the 13th Century. Perhaps the stone was originally used as an aggregate for concrete that had been plastered and evened into wall form. Or was the stone meant to be exposed as we now see it? Either way, it's beautiful now – and reproducible!

As can be seen in the Italian wall with its distinctive cap (Figure 9 on page 56), a simple wall can become very interesting when the pattern at the top is unusual. With an approach as simple as standing every other stone on end instead of laying it flat, a wall becomes crenellated – and more interesting (Figure 12).

A Brief Start

Making new stone look old and therefore more interesting is something attainable by every contemporary designer and installer. It offers watershapers, landscape professionals and architects the opportunity to call on the impressions made by stonework found around the world and across the ages – and all it takes to exploit this heritage is seeing with open eyes.

And rest assured that the sampling seen in the photographs accompanying this article barely scratches the surface.

There's much more to this discussion of the uses of stone in landscapes, structures and watershapes: In the next issue, we'll pick up this discussion with a few more details from retaining walls and then look at stone details found in walkways, steps and patios.



Figure 12: Beyond making walls look old, stone placements can be used to add immediate interest to garden features. Here, for example, turning every other capstone on end creates a crenellation that makes the observer think of Medieval castles and knights in shining armor.

PRODUCT INFORMATION CARD

For more information on advertisers and/or products featured in this issue's Of Interest section, circle the corresponding Product Information Number on the postage-free card opposite this page.

Reader Service Number

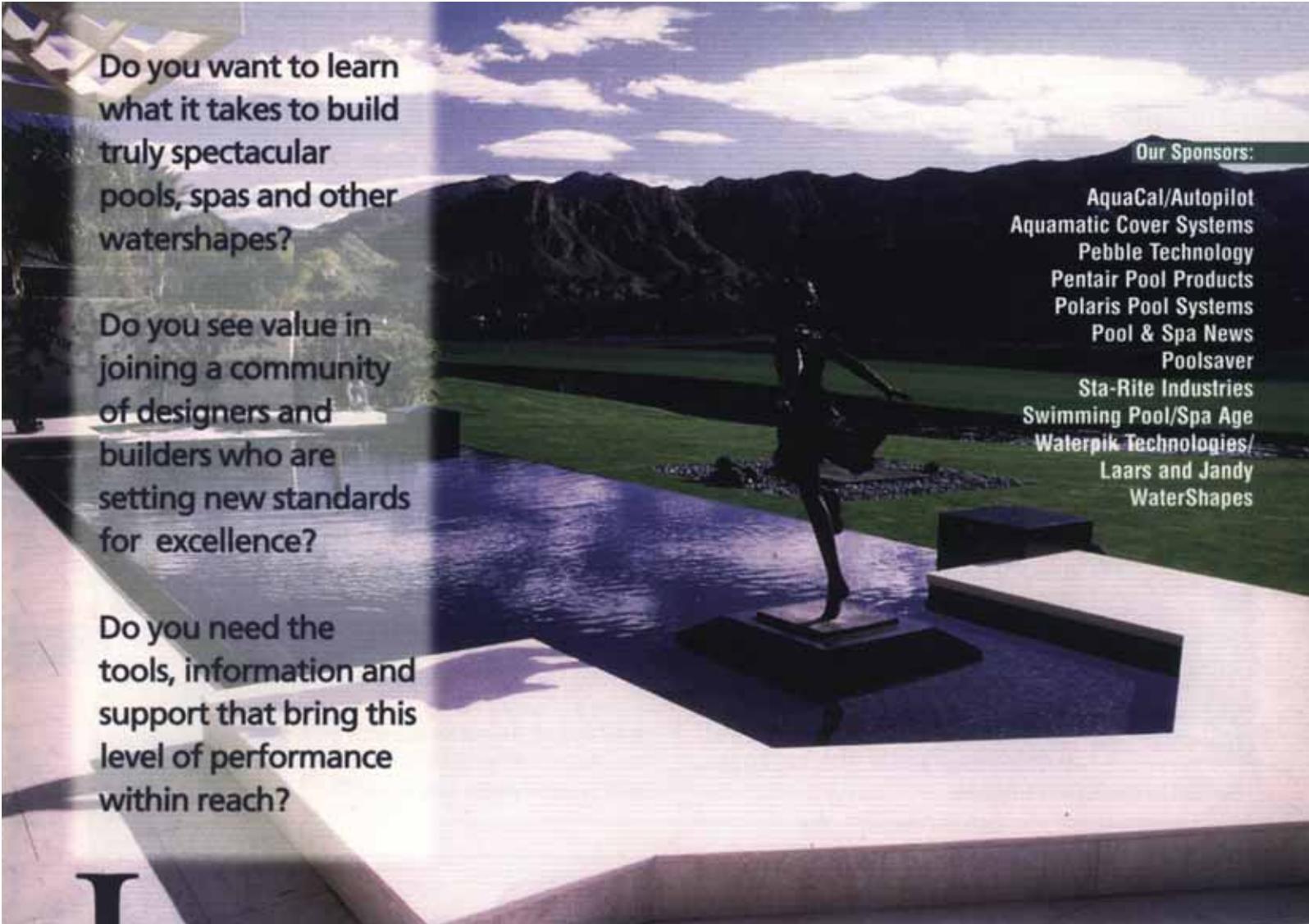
ADVERTISER INDEX:

2	3M Industrial Minerals (pg. 23)
6	Advanced Aquaculture Systems (pg. 8)
3	Air-O-Lator (pg. 18)
10	Aquamatic Cover Systems (pg. 3)
4	Artistry in Mosaics (pg. 63)
15	Atomizing Systems (pg. 64)
28	Carolina Solar Structures (pg. 66)
1	Clear Tech Automation (pg. 14)
5	Colorado Lining Co. (pg. 66)
8	Cover-Pools (pg. 12)
18	Coverstar of Utah (pg. 68)
9	Dura Plastic Products (pg. 71)
7	Florentine Craftsmen (pg. 67)
	Fountains & Ornamental Stone (pg. 65)
16	Genesis 3 (pg. 61)
34	GLB Pool & Spa (pg. 22)
22	Grate Technologies (pg. 13)
12	HADCO (pg. 17)
13	Hobbs Architectural Fountains (pg. 68)
24	Innovative Concrete Technology (pg. 25)
23	Jack's Magic Products (pg. 9)
19	Laars and Jandy Pool Products (pg. 72)
27	Macalite Equipment (pg. 43)
32	Master Supply (pg. 65)
25	Nathan Kimmel Co. (pg. 67)
29	National Pool Tile (pg. 24)
26	Patterned Concrete Industries (pg. 42)
49	Pentair Pool Products (pg. 11)
17	Pond Supplies of America (pg. 64)
11	Pool Cover Specialists (pg. 41)
64	PoolPower USA (pg. 69)
33	Pool Shower (pg. 69)
59	Quikspray (pg. 69)
20	Regal Plastics (pg. 62)
30	Rock Formations (pg. 21)
21	Rock & Water Creations (pg. 7)

31	Safe Guard Surfacing (pg. 62)
14	Spectrum Pool Products (pg. 34)
58	Spray Force Mfg. (pg. 35)
35	Standard Bronze (pg. 42)
42	Stegmeier Corp. (pg. 15)
52	System Dynamics (pg. 33)
	Transtec (pg. 65)
69	Waterworks Int'l. (pg. 63)
67	Western Rock & Boulder (pg. 2)

OF INTEREST INDEX:

100	Unique Lighting Systems (pg. 62)
101	Pond Supplies of America (pg. 62)
102	Turcotte (pg. 62)
103	Santa Barbara Systems (pg. 62)
104	Bobcat (pg. 63)
105	Vac-Alert Industries (pg. 63)
106	Advanced Aquaculture Systems (pg. 63)
107	Carefree Clearwater (pg. 64)
108	Stegmeier Corp. (pg. 64)
109	Crystal Fountains (pg. 64)
110	Mortex Mfg. (pg. 64)
111	Otterbine Barebo (pg. 65)
112	Symons Corp. (pg. 66)
113	Paramount Pool & Spa Systems (pg. 66)
114	Reed Mfg. (pg. 66)
115	Air-O-Lator (pg. 66)
116	Baker Hydro Filtrations (pg. 67)
117	Lithonia Lighting (pg. 67)
118	Fountains for Pools (pg. 67)
119	S.R. Smith (pg. 67)
120	Sta-Rite Industries (pg. 68)
121	Saffron Corp. (pg. 68)
122	Polaris Pool Systems (pg. 68)
123	Engelhard Corp. (pg. 68)
124	Aquatic & Site Technologies (pg. 69)
125	Precision Tile Co./Penrose Coping Co. (pg. 69)
126	National Pool Tile (pg. 69)



Do you want to learn what it takes to build truly spectacular pools, spas and other watershapes?

Do you see value in joining a community of designers and builders who are setting new standards for excellence?

Do you need the tools, information and support that bring this level of performance within reach?

Our Sponsors:

AquaCal/Autopilot
Aquamatic Cover Systems
Pebble Technology
Pentair Pool Products
Polaris Pool Systems
Pool & Spa News
Poolsaver
Sta-Rite Industries
Swimming Pool/Spa Age
Waterpik Technologies/
Laars and Jandy
WaterShapes

It's all here in Genesis 3. Our schools have helped more than 100 professionals see their way to making a better product and unlocking greater profitability – and we can do it for you, too.

Our next Level 1 school has been scheduled November 7-11, 2001, in Morro Bay, California. Watch upcoming ads for information about our school schedule for 2002!

For more information on Genesis 3 schools and the leading manufacturers and trade publications that sponsor and believe in our philosophy and the Genesis Family, visit our website – www.genesis3.com – or call us toll-free at (877) 513-5800.

Genesis 3: It's all about the future of our trade.



GENESIS 3 A DESIGN GROUP

Circle 16 on Postage Free Card

HUB SYSTEM FOR LANDSCAPE LIGHTING

Circle 100 on Reader Service Card



UNIQUE LIGHTING SYSTEMS offers the Equalizer, a hub system that distributes proper voltage evenly to each lamp in a landscape lighting array. When paired with the company's Multimatic power transformer, the hubs eliminate below-ground connections, provide for greater flexibility in design and installation and dramatically reduce the labor involved – all while ensuring that the proper voltage reaches each pre-wired lamp. **Unique Lighting Systems, Escondido, CA.**

POND-PLANNING BROCHURE

Circle 101 on Reader Service Card

POND SUPPLIES OF AMERICA has published a guide to the installation of its Pond Sweep basic or advanced water gardens. The brochure explains both required and optional system components before listing and illustrating 26 steps to installation success, starting with basic education. Included are tips on layout, plumbing configurations and liner placement and a table on rock quantities needed for ponds of various sizes. **Pond Supplies of America, Yorkville, IL.**



HEAT PUMPS FOR POOLS

Circle 102 on Reader Service Card



TURCOTTE has published a flyer on its line of heat pumps. The sheet discusses reliability features, including UV-resistant polypropylene cabinets guaranteed for 20 years as well as an internal arrangement of components – compressors, condensers, controls, evaporators and fans – that protects them against moisture and rust. The six available models range in output from 30,000 to 115,000 Btus.

Turcotte, Longueuil, Quebec, Canada.

ON-LINE CONTROL SYSTEMS

Circle 103 on Reader Service Card

SANTA BARBARA CONTROL SYSTEMS offers Chemcom, Windows-based software that enables the company's Chemtrol water-management systems to be operated remotely from a desktop or laptop computer in true duplex mode. This allows for instant factory technical support and easy operator training. The remote computer has full access to all menus and submenus, and all commands are executed immediately and accurately. **Santa Barbara Control Systems, Santa Barbara, CA.**



IT PAYS TO PLAY IT SAFE

Designed with safety in mind, SafeGuard Surfaces give competitors a run for their money. Our shock-absorbant material is made from recycled rubber which prevents you from losing your footing, while the urethane we use is environmentally friendly.

SafeGuard
Surfacing

P.O. Box 801 St. James, NY 11780
800-899-8703 Fax: 631-360-9575
www.safeguardsurfacing.com
email: sales@safeguard@playsurface.com

Circle 31 on Postage Free Card

REGAL

WATER GARDEN LINERS

Wholesale Only

Flexible PVC 20 & 30 Mil
EPDM Liners 45 Mil
Standard & Custom
Sizes Available

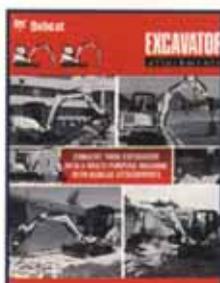
9342 W. Reno
Oklahoma City, Ok. 73127

TEL:(800)444-7755
Fax:(405)787-3211

Circle 20 on Postage Free Card

EXCAVATOR ATTACHMENTS

Circle 104 on Reader Service Card



BOBCAT has released a brochure highlighting the attachments available for its compact excavators. The company's exclusive X-Change system allows fast and easy three-step change-outs with the 322, 325, 328, 331, 334, 337 and 341 standard excavators. Available attachments include grapples, breakers, augers, clamps, rippers, bucket-tilting systems, plate compactors, cutter/crushers and a range of grading and trenching buckets. **Bobcat**, West Fargo, ND.

ENTRAPMENT-SAFETY SYSTEM

Circle 105 on Reader Service Card

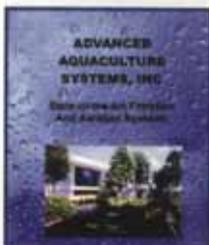


VAC-ALERT INDUSTRIES manufactures the Safety Vacuum Release System, a self-monitoring, non-electrical, low-maintenance system that automatically responds to increases in pump-suction vacuum that can be caused by plumbing blockages or body entrapment. Spring-loaded pistons open to atmosphere to release the suction. The device is made of non-corroding PVC and stainless steel parts for durability and reliability. **Vac-Alert Industries**, Fort Pierce, FL.

Spring-loaded pistons open to atmosphere to release the suction. The device is made of non-corroding PVC and stainless steel parts for durability and reliability. **Vac-Alert Industries**, Fort Pierce, FL.

FILTRATION AND AERATION SYSTEMS

Circle 106 on Reader Service Card



ADVANCED AQUACULTURE SYSTEMS offers a booklet highlighting its product line and the company's experience in working with ponds of all sizes, from small residential projects to large installations for theme parks and zoos. Products include Aquacube, a patented biological-filtration module; Perma-Bead filters and media; aerating pumps and blowers; and UV sterilizers. Complete system-design services are available. **Advanced Aquaculture Systems**, Brandon, FL.

Complete system-design services are available. **Advanced Aquaculture Systems**, Brandon, FL.

imagine...

...how much excitement mosaics can generate!

...how attractive & easy to install mosaics can be!

...the schools of customers!

Artistry in Mosaics Inc.
A Mosaics of America, Inc. Company

901 South 3rd Street • Fort Pierce, FL 34950
tel: 877-777-1393 • 561-468-8453 • fax: 561-468-3564
www.artistryinmosaics.com • email: mosaics@artistryinmosaics.com

call today for free brochures and a product poster!

Circle 4 on Postage Free Card

The Best Equipment, The Best Price, The Best Service!



- Full line of bronze fountain nozzles
- High quality low cost powder coated nozzles
- High Tech patented Waterworks nozzles
- Design and engineering service available
- Established 1986

Waterworks™
International

St. Louis • Chicago
E-mail: waterworksint@earthlink.net
www.waterworks-fountains.com
800-932-3123 • 815-932-3003
Fax 815-932-3123

Circle 69 on Postage Free Card

ION PURIFICATION SYSTEMS

Circle 107 on Reader Service Card



CAREFREE CLEARWATER manufactures electrolytic ion generators for purification of water in swimming pools, spas and decorative fountains. The systems electronically release copper and silver ions into the water, where they destroy bacteria and algae without influencing water balance. Computer controllers constantly monitor ion flow to maintain a stable sanitizer residual, and all models come with lifetime guarantees.

Carefree Clearwater, Cornelia, GA.

COLOR-CHANGING SUBMERSIBLE LIGHTS

Circle 109 on Reader Service Card



CRYSTAL FOUNTAINS makes the low-profile, low-voltage DEFO underwater light fixture for applications in which color changing is required. Twelve lens colors are available, and each of the fixture's three lamps can be controlled separately. Designed primarily for use with fountains, the cast-bronze fixtures can be installed at depths ranging from 8 to 18 inches and will provide up to 225 total watts of halogen illumination.

Crystal Fountains, Concord, Ontario, Canada.

WALL-CAP FORMS

Circle 108 on Reader Service Card



STEGMEIER CORP. has published a brochure on its line of wall-cap forms. Available in five popular configurations and standard 96-inch lengths, the forms are ideal for walls and poured-in-place coping. The literature includes tips on setting up the forms and pouring and finishing the concrete, offering guidance on mixtures and additives needed for best results. The forms are simply set in place and clamped before the concrete is poured. **Stegmeier Corp.**, Arlington, TX.

POLYMER CONCRETE DECKING

Circle 110 on Reader Service Card



MORTEX MFG. has introduced Systex, a polymer concrete deck system that combines a superior bonding agent, a streamlined application process and higher resistance to oil-based stains than plain concrete. Designed to withstand harsh weather conditions, the system will endure hundreds of freeze/thaw cycles while maintaining its appearance. The product comes in 11 standard colors and is applied with a simple three-step process. **Mortex Mfg.**, Tucson, AZ.



Creating exciting fog effects for indoor and outdoor areas. Locations include themed restaurants, hotel lobbies, theatrical presentations, fountains, waterfalls, theme parks and rain forests. Fog is created by industrial quality, high pressure pump systems using low-RPM motors. Ruby-orifice nozzles guaranteed for life against orifice wear.

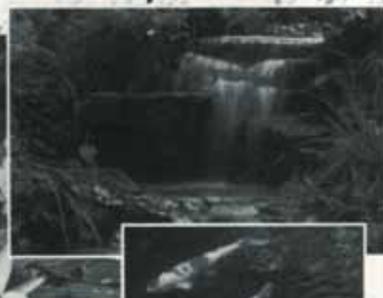
ATOMIZING SYSTEMS INC

Manufacturers of COLD FOG® systems

1 Hollywood Avenue • Ho-Ho-Kus, NJ 07423-1433
Phone: 201-447-1222 • Fax: 201-447-6932
Website: www.coldfog.com • email: engineering@coldfog.com

Circle 15 on Postage Free Card

Create nature's
music in your
own garden pond



Liners, pumps,
pond kits &

www.pondsupplies.com

these patented products...

PuriFalls® Waterfall Filter
and PondSweep® Skimmer

Los Angeles, CA Chicago, IL Pittsburgh, PA
(877) 772-7937 (888) 742-5772 (888) 772-3278

Circle 17 on Postage Free Card

AERATING FOUNTAINS

Circle 111 on Reader Service Card



OTTERBINE BAREBO has released its Aerating Fountain line. Offering a wide array of features for those interested in water-quality management or purely aesthetic benefits, the platform operates with a high-speed motor that allows for smaller internal components, size and weight – and a minimum operating depth of just 30 inches. Backed by a five-year warranty, the line features interchangeable spray patterns and low-voltage lights. **Otterbine Barebo**, Emmaus, PA.



Pool-Side Sculpture

HandCarved in Natural Stone

Drilled for recirculating pool water

Standard Designs & Custom Work Available

FOUNTAINS & ORNAMENTAL STONE

(941)261-4128 • Fax (941)261-4133
4405 Parrot Ave. • Naples, FL 34104

POOL PEBBLES

- Imperial White
- Royal Gold
(same as Rainbow/Golden Pearl)
- Majestic Black
- Coastal Bronze
- Sea Green



Transtec, Inc.

P.O. Box 494 • Pass Christian • MS 39571
800-511-6184 Fax 228-452-0386



Pool Design Templates

The most widely used templates in the industry. Quickly and easily create professional drawings. Six sets of award winning designs plus mechanical and product templates.

Master Air-Bar

Millions of bursting air bubbles will give your spa exhilarating action. The installation of the air bar is simple and professional by using these unique spa fittings, available in white, black and grey.

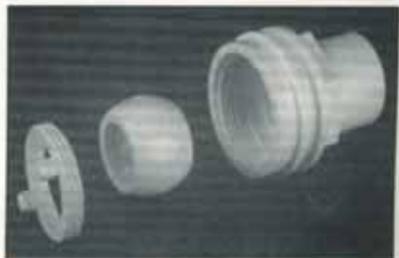


Air-Injectors & Wall Fittings

The famous Master Supply air injectors, wall returns and water barriers designed by builders who understand your needs.

M5400 RECESSED EYEBALL

The **ONLY** return fitting with the exclusive *Master Supply Water Barrier* and the patented "Super Flow" tapered eyeball.



ONE STOP SHOPPING FOR ALL POOL CONSTRUCTION AND PLUMBING NEEDS.

master supply

24 HOUR FAX LINE (626) 967-4425

PHONE (626) 967-5544

Ask about **FREE SAMPLES** and **CATALOG**

CONCRETE-FINISHING PRODUCTS

Circle 112 on Reader Service Card



fraction of the cost of natural materials. **Symons Corp.**, Des Plaines, IL.

SYMONS CORP. manufactures a complete line of decorative concrete products, including stamping, texturing and staining systems as well as ready-mix colors. These systems are designed to rid patios and decks of the dull, gray concrete look, providing a dynamic finished appearance at a

IN-FLOOR CLEANING SYSTEMS

Circle 113 on Reader Service Card

PARAMOUNT POOL & SPA SYSTEMS offers in-floor pool-cleaning and circulation systems for pools. The PCC 2000 system (for concrete pools) offers automatic debris removal and cleaning heads in a choice of eight colors, while PV3 (for concrete pools) installs inside 2-inch PVC pipe and offers heads in eight colors. Also offered are the Pool Valet (concrete), Vantage (fiberglass) and Vanquish (vinyl-liner) models. **Paramount Pool & Spa Systems**, Tempe, AZ.



TRAILER-MOUNTED CONCRETE PUMP

Circle 114 on Reader Service Card



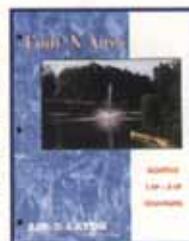
REED MFG. makes the Model B50 trailer-mounted concrete pump. The unit features a low hopper height of 43 inches for easy filling; an adjustable-force valve allowing increased force with harsh mixes and reduced force for clean-out; cable-based remote control (or optional radio control); high-pressure operation for greater pumping distances; and a heavy-duty trailer and rigging, including an integrated

locking toolbox. **Reed Mfg.**, Chino, CA.

FLOATING FOUNTAINS

Circle 115 on Reader Service Card

AIR-O-LATOR has released a brochure on its Font' N-Aire line of floating fountains. The eight-page booklet covers company history and the technology behind the products, offering detailed performance data on two spray patterns for five models with propeller pumps and on six spray patterns for five models with centrifugal pumps. Complete specifications and guidance for mooring and making electrical connections are also included. **Air-O-Lator**, Kansas City, MO.



The **Ultimate**
Feature for Your Luxury Home

CSS
CAROLINA SOLAR
STRUCTURES

TELEPHONE: (828) 684-9900
FACSIMILE: (828) 684-9977
AIRPORT ROAD INDUSTRIAL PARK
8 LOOP ROAD, ARDEN, NC 28704

WE'VE GOT YOU COVERED

Circle 28 on Postage Free Card

POND & LAKE LINERS

- CUSTOM FABRICATED PANELS UP TO 25,000 SF
- PLASTIC & RUBBER POND LINERS
- INSTALLATION & SUPERVISION
- EROSION CONTROL & SOIL AND TURF REINFORCEMENT

COLORADO: 800-524-8672
TEXAS: 888-546-4641
S.D. DAKOTA: 800-661-2201
CALIFORNIA: 877-578-5000

Colorado Lining
INTERNATIONAL

WWW.COLORADOLINING.COM

Circle 5 on Postage Free Card

COMMERCIAL SAND AND CARTRIDGE FILTERS

Circle 116 on Reader Service Card



BAKER HYDRO FILTRATIONS has published a catalog for its complete line of filtration systems for commercial pools. The 38-page booklet covers the company's sand filters and cartridge filters and offers information on replacement cartridges, various automatic and manual valves and the company's line of standard and pre-filtering skimmers. A complete parts list is also included along with details on applicable warranties. **Baker Hydro Filtrations**, Augusta, GA.

TELESCOPING POOL AND SPA FOUNTAINS

Circle 118 on Reader Service Card



FOUNTAINS FOR POOLS offers the Aquascope line of telescoping pool and spa fountains. Easy to install and use in depths from 8 to 108 in., the system features nozzles that retract flush with the bottom of the pool or spa when not in use. Powered by the pool's standard filter pump and available with four water patterns, all that's needed is a 1-in. line fitted with a gate valve. **Fountains for Pools**, Tarzana, CA.

UNDERWATER LIGHTING GUIDE

Circle 117 on Reader Service Card

LITHONIA LIGHTING has published a guide to its Hydrel line of underwater lights. The 12-page booklet includes a lamp guide as well as information on the uplighting of water effects and the lighting of swimming pools, fountains and reflecting pools. The guide also covers accessories, J-boxes, potting compounds and more, concluding with recommendations for lighting of specific aerated-water applications. **Lithonia Lighting**, Conyers, GA.



COMPETITION AND COMMERCIAL POOL PRODUCTS

Circle 119 on Reader Service Card

S.R. SMITH has released a comprehensive catalog on its diving boards, slides, rails, towers, lifeguard stands and accessories for competition and commercial swimming pools. The 102-page booklet highlights specialty products including ladders, starting platforms, fill spouts, training/exercise bars and a variety of deck fittings, escutcheons, anchors, cover plates and bumpers designed to provide safety and manageability in aquatic facilities. **S.R. Smith**, Canby, OR.



WATER FEATURES and much, much more. . .



From the elegant to the whimsical, Florentine Craftsmen, Inc. hand-crafts the finest garden ornaments, statuary, fountains, furniture and more. We only use quality materials including lead, bronze, aluminum and stone. Call or write for our 48-page illustrated catalog, or visit our web site, www.florentinecraftsmen.com.



FLORENTINE CRAFTSMEN, Inc.

46-24 28th St., Dept. WS
Long Island City, NY 11101
Phone 718-937-7632 • Fax 718-937-9858

Circle 7 on Postage Free Card

Nathan Kimmel COMPANY

1213 Santa Fe Avenue • Los Angeles, California • 90021

POOL PLASTERER'S DISCOUNT PLACE

IF WE DON'T HAVE IT,
WE'LL GET IT FOR YOU FAST!!!

800-421-0005

www.nathankimmel.com or plastering-nk.com

- Machine Parts
- New and Used Machines
- Trowels
- Hose Fittings
- Nozzles
- Safety Items
- Tapes
- Tan Hoses
- Poly Sheeting
- Gunite Shoes
- Boots
- Gloves
- Custom Supplies
- Much, Much More

Discount Pricing
Same Day In Stock Shipping

CALL FOR
FREE CATALOG!

Circle 25 on Postage Free Card

RUST-PROOF POOL/SPA HEATERS

Circle 120 on Reader Service Card



STA-RITE INDUSTRIES manufactures the Max-E-Therm line of pool/spa heaters. Featuring rust-proof exteriors, low emissions, easy connections, electronic ignitions and lower operating costs, the heaters come in three sizes and have adjustable electronic control panels for self-diagnosis of problems, simple temperature programming and readings in either Fahrenheit or centigrade. The tanks come with ten-year warranties. **Sta-Rite Industries**, Delavan, WI.

POOL RAILINGS IN COLOR

Circle 121 on Reader Service Card

SAFRON CORP. supplies rigid vinyl pool railings in a variety of colors. Available in standard designs or in custom configurations, the rails are colored throughout rather than coated and are easy to clean, always cool to the touch and unaffected by acid or UV radiation. Made of high-impact polyvinyl with proprietary additives, the railings, handrails and ladders all come in many standard colors and can be custom-colored as well. **Saftron Corp.**, Miami, FL.



PRESSURE-SIDE POOL CLEANER

Circle 122 on Reader Service Card



POLARIS POOL SYSTEMS offers the Vac-Sweep 280 pressure-side pool cleaner. Designed to clean most inground pools in three hours or less, the device features double jets to provide greater suction through an extra-large bottom opening that allows for easy collecting of leaves, acorns and pebbles. The pressure-side design and its quick-release debris bag reduce the burden on a filtration system by up to 80%. **Polaris Pool Systems**, Vista, CA.

POZZOLONIC PLASTER ADDITIVE

Circle 123 on Reader Service Card

ENGELHARD CORP. has released a guide to application of MetaMax PA, a pozzolonic additive that reduces plaster's permeability and improves the appearance of the finished product. The additive also improves troweling and reduces finishing time while improving aggregate bonding, reducing alkali-silica reactivity and increasing chemical resistance and plaster strength. The guide offers batching information and mixing instructions. **Engelhard Corp.**, Iselin, NJ.



H₂OBBBS

ARCHITECTURAL FOUNTAINS

FOUNTAIN COMPONENTS
FLOATING FOUNTAINS
MANUFACTURING
RESTORATIONS
TECH SUPPORT
ENGINEERING
DESIGN

3786 DeKalb Technology Parkway • Atlanta, GA • 30340
770.457.3000 • FAX 770.457.4225 • hobbbsfountains.com

Circle 13 on Postage Free Card

Does your pool feel naked?

COVERSTAR POOL COVERS

Coverstar automatic pool covers provide modesty that's safe, reliable, innovative, and easy to put on...or take off. It's also easy to install. Choose from a large variety of styles and colors made from our custom fabrics that ship within 48 hours. Plus, we do custom tailoring.



ELECTRIC SYSTEMS WITH WATERPROOF MOTORS
HYDRAULIC SYSTEMS | ALL STAINLESS DRIVE



800.617.SAVE 800.617.7283
www.coverstar.com

Circle 18 on Postage Free Card

NEW SLIDE-SUPPORT FEATURES

Circle 124 on Reader Service Card



AQUATIC & SITE TECHNOLOGIES has announced the addition of galvanized supports to its line of semi-portable slides to add lasting protection to these affordable, durable pool features. The slides are designed to increase use and attendance at commercial pools, and some models can be used in as little as 4 feet of water while requiring no water activation – a wet bathing suit does the job. **Aquatic & Site Technologies**, Portland, OR.

PORCELAIN DECKING TILES

Circle 126 on Reader Service Card

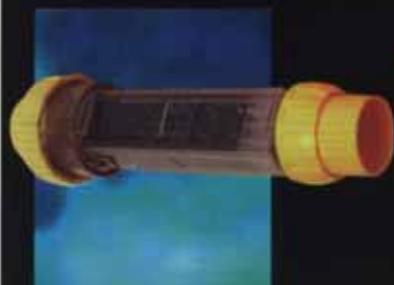


NATIONAL POOL TILE has announced the addition of porcelain decking tiles to its product line. Available in colors and patterns to match many of the company's waterline tiles, these larger-format tiles (available in sizes ranging from 12-by-12 to 24-by-24 inches) continue

the natural look throughout the deck and into the home. All tiles are frost-resistant, slip-resistant, and meet all industry standards. **National Pool Tile**, Anaheim, CA.



Salt Chlorinator Systems commercial/residential



• **Sell
the Best**

PoolPower-USA, LLC

Phone:
1-866-SALT-POOL

Email:
Poolpowerusa@aol.com



Circle 64 on Postage Free Card

Water Features
Artificial Rocks
Landscaping
Pool Coatings?
The
CARROUSEL PUMP
will do it all!



- * Versatile
- * Dependable
- * Fast Cleanup
- * Maneuverable
- * Variable Speed
- * Sealed Bearings
- * Simple Operation
- * Low Maintenance
- * Increased Capacity

Quikspray, inc.

Box 327 - Port Clinton, OH 43452
419-732-2611 fax 419-734-2628

Circle 59 on Postage Free Card

Pictured Below Is
Our Stainless Steel
Patented BS-2000
Model

ADA Compliant Valves
A Foot Shower
A Standard
Hose Bibb

Please Visit Our Website Call Toll Free:
1-(866)-SHOWER-1

**THE
POOL
SHOWER, Inc.**

517 Industrial Drive ~ Suite 2~
Woodstock, GA 30189
Website: WWW.poolshower.com

Circle 33 on Postage Free Card



I was deeply saddened when I learned that Jim McNicol passed away in April 2001. He had been struggling with respiratory disease and other ailments for many months – and suffering far more, I’m sure, than he would have ever let on to those around him.

He was a disciplined and creative thinker, and with his passing the industry has lost one of its true innovators and most devoted, respected and admired teachers. For those of us who knew him, we have all lost a good friend.

I knew Jim for more than 10 years, and he was among the first people we turned to when we were framing *WaterShapes*’ content in its earliest stages. His column, “Things Electric,” ran in the magazine’s premiere issue in February 1999 and was there in every issue until his illness began to get the better of him. It last appeared in January 2001.

Jim accomplished many things in his life, and his professional profile has been recounted in these pages several times, most recently in January. Rather than retrace the steps of his remarkable career, allow me to offer a brief personal remembrance:

Through the years, Jim and I shared many long conversations. Although we would usually begin with whatever article or column we were working on at the time, the topic of discussion invariably moved onto much broader terrain. On these occasions, he challenged and inspired me with insightful perspectives, and he always seemed delighted by the spirited exchange of ideas.

Jim was understandably proud of the things he knew, and I learned a great deal by listening to what he had to say. He was a great conversationalist, and I consider myself fortunate to have spent so much time in his company.

Although we were from different generations and very different backgrounds, our shared curiosity about the world around us proved a fertile, common ground for a friendship that I will always cherish. It’s tough to say goodbye to such a good and admittedly unexpected friend, but I can say with great certainty that, in my heart and elsewhere, Jim McNicol will be sorely missed.

– Eric Herman



The Finest Watershapes Demand The Finest Fittings!



QUALITY BY DESIGN



Circle 9 on Postage Free Card

As a designer and builder of fine watershapes, you know that what is seen on the surface is only part of what makes your masterpiece work. Using the right materials is crucial to the success of a project - and **DURA** PVC fittings are the best choice for your watershape, small or large. With a full selection of quality, injection-molded piping components up to 12" in size, **DURA** can meet your needs.

DURA - Fitting your plans with the right connection for nearly forty years!

DURA PLASTIC PRODUCTS, INC

(800)854-2323 FAX (909)845-7644

P.O. BOX 2097 BEAUMONT, CA 92223

**Schedule 40
Fittings**

**Schedule 80
Fittings**

Insert Fittings

**Swing Joints &
Components**

**Valves
-Irrigation
-Plumbing**

Hose Fittings

Anti-theft Devices

**Manifold System
Components**

www.duraplastics.com

Transform



DAYTIME FUN INTO
EVENING MAGIC
WITH FIBERSTARS
**NEW SPA LIGHTING
SYSTEMS**

POOL BUILDERS...

Create an exciting spa experience for your customers with our new Fiber Optic Spa Lighting Systems. These kits can be operated independently or fully integrated with most automatic control systems at no extra cost.

SPA-C KIT Includes:

- 1504 Color Wheel Illuminator (300 Fiber Capacity)
- 15' of 75-Strand Fiber
- Lens

SPA-CR KIT Includes:

- All the above plus a Wireless Remote

See your local Water Pik Sales Representative or call 800.327.7877 to order today!

 **FIBERSTARS**[®]

800.327.7877

www.fiberstars.com

Circle 19 on Postage Free Card

Photo courtesy of UFOptics.com