Light On Water

Adding sparkle to the splash

MSH Visual Planners/Janet Lennox Moyer

BY SCOTT WEBB

The Chicago Botanical Gardens are beautiful by day, bewitching by night.

If your customers simply want to be able to find the water once the sun goes down, you already know all you need to know about lighting. Throw up a few 150-watt floods, and they won't be able to miss it.

But where there exists an eye (and a budget) for beauty, a poolscape builder has an opportunity to create art. A few well-placed strokes of radiant gold and alabaster, and the black canvas of night comes alive with shimmering colors.

The artists who mix the pigments and wield the paintbrush of light by profession are a small but growing force in the backyard enjoyment industry. As ever-more-elaborate poolscapes are constructed, lighting experts have honed techniques that turn ordinary water into breathtaking spectacles or studies of quiet beauty.

They can make water get up and dance — from a reflecting-pool minuet to a waterfall Watusi. It's worth taking a moment to listen to what they have to say.

Follow The Rules:

❶ Everything needs to work together

One hallmark of great lighting design is the arrangement of light in the entire space. All of the elements in a lighting

scheme have to work together. Even a beautiful piece of water sculpture, gorgeously lit, loses something of its luster if not integrated into, and supported by, its surroundings.

"One of the things that's most important for all of us that work with the outdoor environment," says Janet Lennox Moyer, principal, MSH Visual Planners, Brunswick, N.Y., "is to look at the whole space, not just a portion of it. To see it as an overall composition."

That means that your glowing statuary fountain must not be left, lonely and forlorn, at the far shore of a formidable gulf of blackness. And your delicate fiber-optic-lit waterfall must not be blasted into oblivion by a 300-watt pool light.

Easy does it

Bear in mind the goal is not just to make water features visible at night, but to evoke entirely new visual qualities in them as ambient light fades to dusk and darkness.

In most cases, this requires restraint. Most ham-handed lighting blunders are the result of the old adage that if a little is good, a lot must be great.

"One of my basic rules of lighting is to use more fixtures and less wattage," Moyer says. "If you use more fixtures you get better distribution and you can show the three-dimensional characteristics of whatever you're lighting — the shape of it."

In other words, the night is not the enemy, it's a friend. Work with it. "We use 20 watts, 35 watts. If we get really extravagant, we go all the way up to 50 watts. Using less wattage, we retain the feeling of night," Moyer adds.

"And kill those 150-watt floods from the corner of the house," says Peter Hedrick, owner of Envision Waterfalls, New Boston, N.H. "Those really look awful. When people have floodlights on their house that carry to their water feature, I encourage them to disconnect them or take the bulbs out, whatever they have to do."

Hedrick cautions against the urge to install "Disney-type" lighting on a feature of natural beauty. "It should be like candlelight; a subtle light to accent the features. We're just

A Few Don'ts

Great things tend to happen all by themselves with gentle lighting on the naturally enthralling surface of water, but watch out for a few common mistakes.

Placement

Every light needs a job. Lighting installed with no apparent purpose is a common error, according to Oxley, particularly when it comes to submersibles. "A lot of people just stick them in the water like a pool light, and it doesn't work."

Get a high-quality submersible with a base so the beam spread can be controlled and directed to a specific area of interest, he says.

"You want to take those submersibles and put them underneath the motion of the water at about a 60-degree angle. That way, you capture the water moving, and make it a more compelling element rather than having just a glowing orb sitting down in the water."

Response to change

Not only does the ambient light change during the evening hours, but so does the ability of humans to perceive light. Moyer points out that when a person goes from the high lighting levels indoors to the low lighting levels outdoors, it takes about 20 minutes for the eyes to fully adjust.

She suggests dimmer switches as an easy solution to adjust lighting in parallel with widening pupils.

Over broader stretches of time in the backyard environment, she adds, "Lighting has to keep responding to the changes. Of course that's not true with paths, pools, and hardscape elements, but everything else is always changing and the lighting has to change, too."

Maintenance

Many lighting novices fail to understand the amount of maintenance that accompanies the installation. Lighting must keep up with changes in its subject, and lighting equipment, particularly submersibles, need periodic attention.

Hedrick does spring cleaning of installations, taking apart the submersibles, re-waterproofing the interiors, and putting them back. "The companies say they're waterproof, but a lot of times they simply are not," he says.

With the submersibles disassembled, he puts Vaseline on the gaskets and silicone where the wire comes into the housing. Then he puts them back together and re-installs them. Hedrick even goes through this process with new lights, heading off failures due to leaking seals. The effort is well worth it, he says.

A bit more money up front, says Oxley, can also save a lot of headaches due to leaky-light failure. "Go with a quality fixture, not some cheap fixture," he says, "because all submersibles, sooner or later, are going to leak and get water in them. But the better ones, the solid-brass ones, are much better at keeping water out."

Making connections

As with all electrical work, wiring is a major issue. Give yourself a goodly amount of slack as you piece things together, Oxley urges, and never make your connections underwater. "That's ultimately a formula for failure."

Make your field connections outside the water in the ground, he says, even if it means custom-ordering a fixture with a longer wire length. "Most of the leading fixtures will come with a 15-foot length, but sometimes that's not even enough."

–S.W.

catching the flicker of light off the water."

Light On Falling Water

With the night now fully complicit in the scheme, the stage is set for wondrous waterborne performance. Perhaps the most exciting of these is the playful dance of light across the surface of a tumbling, splashing waterfall, and it's twinkling reflection on surrounding features.

Here creative opportunities abound. And every designer's voice rises when describing the effects that are possible when the reflective surface of water becomes a cascade, sending radiant beams in all directions.

"You've got to capture that motion in light," says Mark Oxley, Outdoor Illumination, Washington, D.C. "That's where the drama is."

He prefers downlighting waterfalls with fixtures on either side of the principal viewing point — cross lighting it — rather than washing the pond with light from the opposite side of the waterfall, as is common. That way, he says, "The water will dance a lot more; you'll see a lot more of its motion. And it's a more natural look than uplighting from below — because natural light, from the sun or moon, comes from above."

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Many times Oxley has seen light fixtures placed too low and close to the side of the waterfall's basin. This produces a bright hot spot on the rocks adjacent to the light, distracting the eye from the water. Elevating the lights on either side remedies this problem.

Hedrick downlights his waterfalls also, and likes to add a spotlight on the surface of the pool below the waterfall. "That pool has little waves running across it from the splash of the waterfall, and these shimmer like you would typically see on the landscape or house around a swimming pool that is lit up at night. It looks really cool."

If he were building large features, Hedrick would employ more bulbs and fixtures along the course of the

stream, but because his waterfalls are small, the low levels of light from a fiber-optic cable are ideal. "In the realm I work in, the waterfall steps are only 1 foot by 1 foot, and they're emptying into a pool that's only 2 feet by 1 foot. Fiber optics allow me to light up each individual pool."

Some Great FX

There are as many masterful water-lighting designs as there are masterpieces in the Louvre. The artists have their favorites, of course, many that suggest possibilities for your own installations. Here are four illumination schemes that are guaranteed to dazzle a customer:

❶ Lion around the pool

One that Oxley loves is the statuary lion mounted on a wall over a pool, with a tight, cohesive cord of water arcing out of the beast's mouth.

"It's a fabulous effect," he says. "You put a submersible fixture in the pond, where the water lands, angled toward the wall at about 60 degrees. What you get is all this shimmering light reflected on the wall and the lion's face. It looks really cool."

Moving the submersible light creates a multitude of different impressions and nuances. "The beauty of having submersible fixtures," he says, "is that you can move them around and create different results, and it's something that you can just do for yourself rather than a fixture that is in mortar or something."

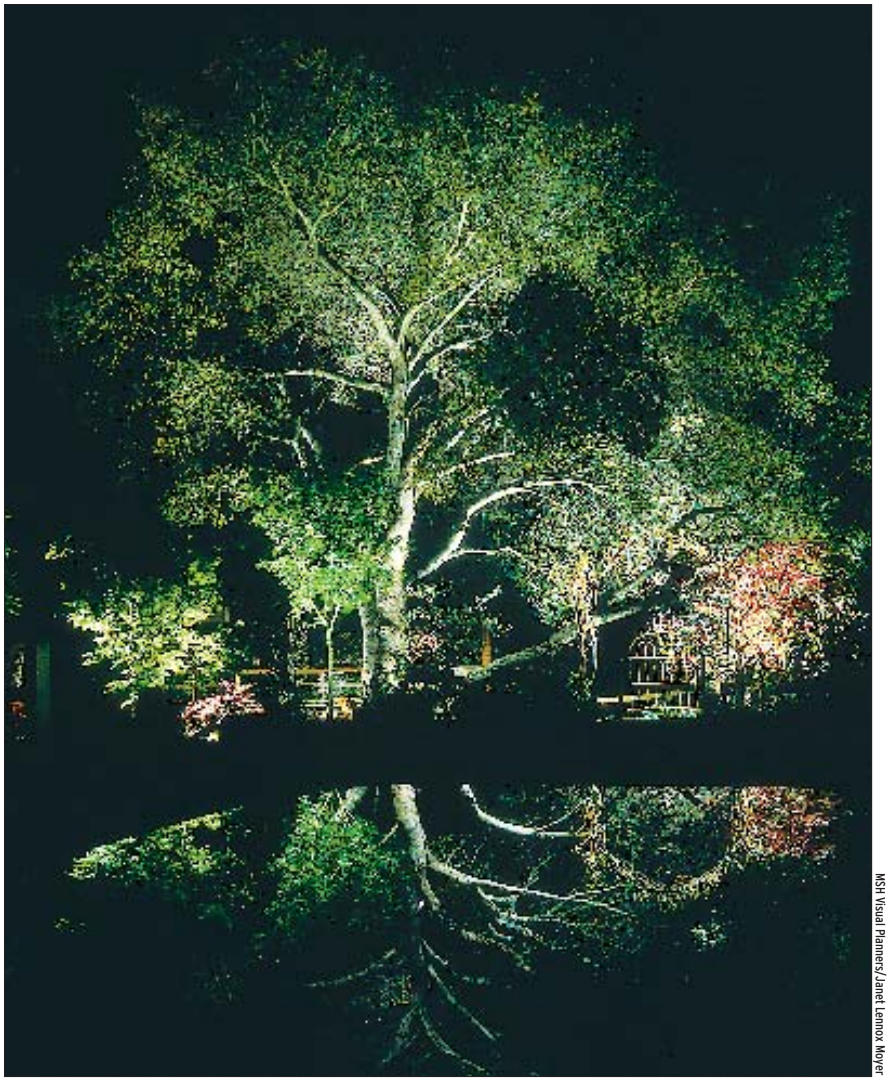
❷ Tacoma's wall of water

Moyer, whose résumé includes a number of major commercial lighting projects, used fiber optics to light a 200-foot-long waterwall in downtown Tacoma, Wash.

At the light source, the point where all the fiber-optic cables come together, is a wheel with a random pattern of holes cut into a black disc. The disc turns before the fiber-optic cables, randomly blocking and allowing light through, so it appears that the water is moving and sparkling in a rhythmic pattern.

Also, the ends of the fiber-optic cables are not set into the hardscape material; they extend into the water

Envision Waterfalls/Peter Hedrick



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Top: Low-voltage light on this waterfall at a small nursery/garden center slows traffic to a crawl. Bottom: With skillful lighting, water's reflective qualities are as stunning after dark as in daylight. Left: More fixtures and less wattage reveal this water feature's dimensional texture and form.

beyond it, so they sway gently as the water passes over them.

❸ Hedrick's cave

Hedrick likes to put a small cave along the shore of his waterfall basins, in the deeper section of the pond, partly for the effect, and partly out of concern for the fish. "They feel safer when they have a hiding place," he says.

By lighting the cave from underneath with a submersible, the glow seems to emanate from nowhere, and the fish in the cave are plainly visible from the far side of the pond.

This is primarily due to Hedrick's use of an ozone system on his water features, which oxidizes particles in the water. "The clarity you get with ozone is unbelievable. It's swimming-pool clean. The light travels much further in the water when there's very little particulate matter. It makes a big difference on your water feature.

"When you have a crystal-clear pond and the fish swim by the light and their colors are shimmering and the lily pads are lit from underneath with a reverse shadow on top with their veins glowing through, it's just awesome."

❹ Splitting strands

Hedrick says he also gets some nice effects from splitting the fiber-optic cable casing open, revealing the bundle of individual strands, like glowing fishing line, within. The strands themselves glow, and the end of the line provides a pinpoint of light.

Working with Larry Womack of Nevada Water Gardens in Las Vegas, Hedrick built some unusual steps into a pond.

They poured concrete over fiber-optic cable in tubes to create pillars, and used them to support flagstone steps at the pond surface. The concrete pillars were painted black to make them invisible at night.

"The fiber-optic cable was set in concrete and came out the top," he says. "We laid the fiber-optic strands out, cut them off at the edge of the flagstone, and epoxied them to the underside.

"Each 2-by-3 flagstone had 50 fiber-optic strands sticking out from underneath. So when it was lit up at night, the whole rock glowed. Because the light was pointing away from the black column, you could not see it, and it appeared that the step was floating in the water."

Growing Skills

If you can pour concrete over fiber-optic cable and use it to make glowing, floating steps, you can do just about anything. The possibilities are endless and rewarding, both artistically and financially, as the market for fine water-scape lighting grows ever larger.

Just as the experience of swimming in a neighbor's backyard drives pool sales, an encounter with an enchanting waterfall after dark spurs sales of larger, even more enchanting waterfalls.

"It's an emerging industry, and there are companies that are becoming landscape lighting experts," says Oxley. As demand grows, construction companies are faced with the choice of trying to grow lighting skills in-house, or outsourcing to a specialist.

Oxley is of two minds on the topic. Some companies decide, he says, "'I'll just do this myself.' And it's true, you can get into just about anything. But at the end of the day, it's sometimes better to just subcontract the job to someone who knows the art form exclusively. You get a better result and happier clients.

"On the other hand, if you can get good at it, and you're willing to invest the time and go out at night and really look at it, it could be a good business for you."

Scott Webb is a freelance writer and the former editor of AQUA Magazine.

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Budget Voltage

Moyer's and Oxley's clients include builders of large public works and resorts, where the size of the project makes commensurate demands on the power source. But on Hedrick's jobs, materials and labor typically have to fit in a $7,000 to $20,000 budget. His compositions require the careful calculation of effect versus such factors as cost, time, effort, safety and convenience of maintenance. For him, low-voltage lighting is the right power medium.

In a low-voltage setup, the power comes from an outdoor receptacle and then through a transformer that changes it from AC to DC. It's safer and far less expensive. "It won't electrocute anybody," he says, "and you don't fall under the electrical codes that you do for AC, which would require you to put everything 18 inches in the ground, water tight, with junction boxes everywhere."

Where possible, Hedrick uses inexpensive, mass-produced equipment, such as the 50-watt spotlights on the waterfall.

Some inherent difficulties accompany a low-voltage DC system, however. DC wiring loses current as it flows — the further you go from the transformer, the less power you have. Hedrick notes that a 50-watt fixture at the end of a long run of wire may drop to half that power.

"And the smaller the wire, the more resistance and the more power loss you have," he adds. "The larger the wire, the better it carries the current. We use 12-gauge wire, which is fairly thick, and more expensive, but delivers power better."

When changes in the surroundings necessitate changes in lighting, Hedrick's low-voltage DC lights make adjustment simple. DC wires can be cut and extended very easily, as opposed to hardwired AC cable that must be ripped out of the ground.

"When we're building the feature," says Hedrick, "we just leave the wire on the bare ground. Then, when we're finishing up, we just mulch right over it. If you want to put something else there later, you just pull it up and move it."

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