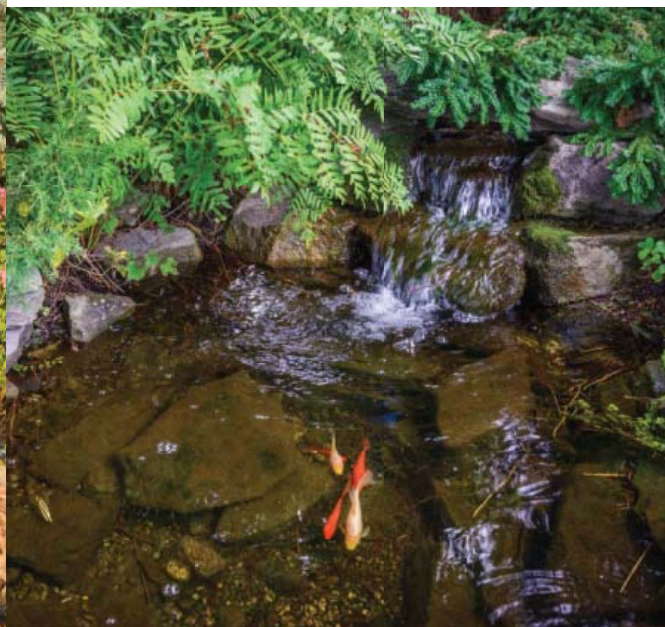




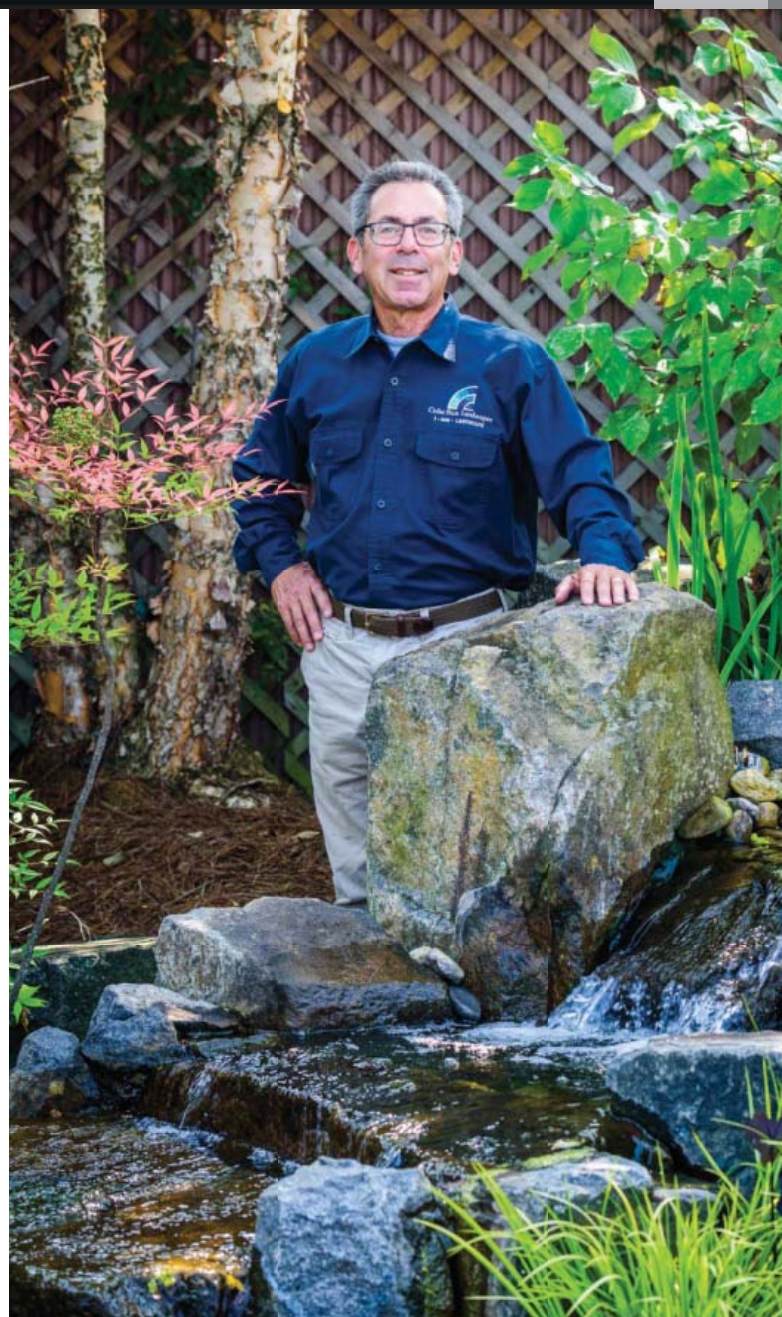
This naturalistic pond, fed from an underground 3,000-gallon rainwater-harvesting system, provides a sustainable ecosystem for the plants and fish. Alden Zove (opposite page) has been creating beautiful water features for 30 years.

Rain Man

A landscape designer creates water features in which the surface beauty hides deep wells of innovation.



by JOANN GRECO
photographs by ROB CARDILLO



THINK OF A GARDEN WATER FEATURE and Alden Zove, owner of Cedar Run Landscapes, guesses that “you probably envision a mosquito-ridden, cracked and leaking, algae-filled eyesore that your neighbor once installed.” Nothing makes Zove happier than combating that dreary impression, which is why he installed a series of innovative and imaginative water garden setups at his design-build business in North Wales, Pennsylvania.

As a member of the Delaware Valley Water Garden Society, Zove will be helping to set up that group’s exhibit at the 2018 PHS Philadelphia Flower Show, for which the theme is *Wonders of Water*. He is also a certified contractor for the Rain Check program, which is administered by PHS for the Philadelphia Water Department and encourages city homeowners to capture rainfall on their properties rather than letting it run off into sewers, where it can contribute to overflows into the city’s rivers and streams. His Rain Check projects include the now-familiar rain barrels, rain gardens, and porous pavers, but on



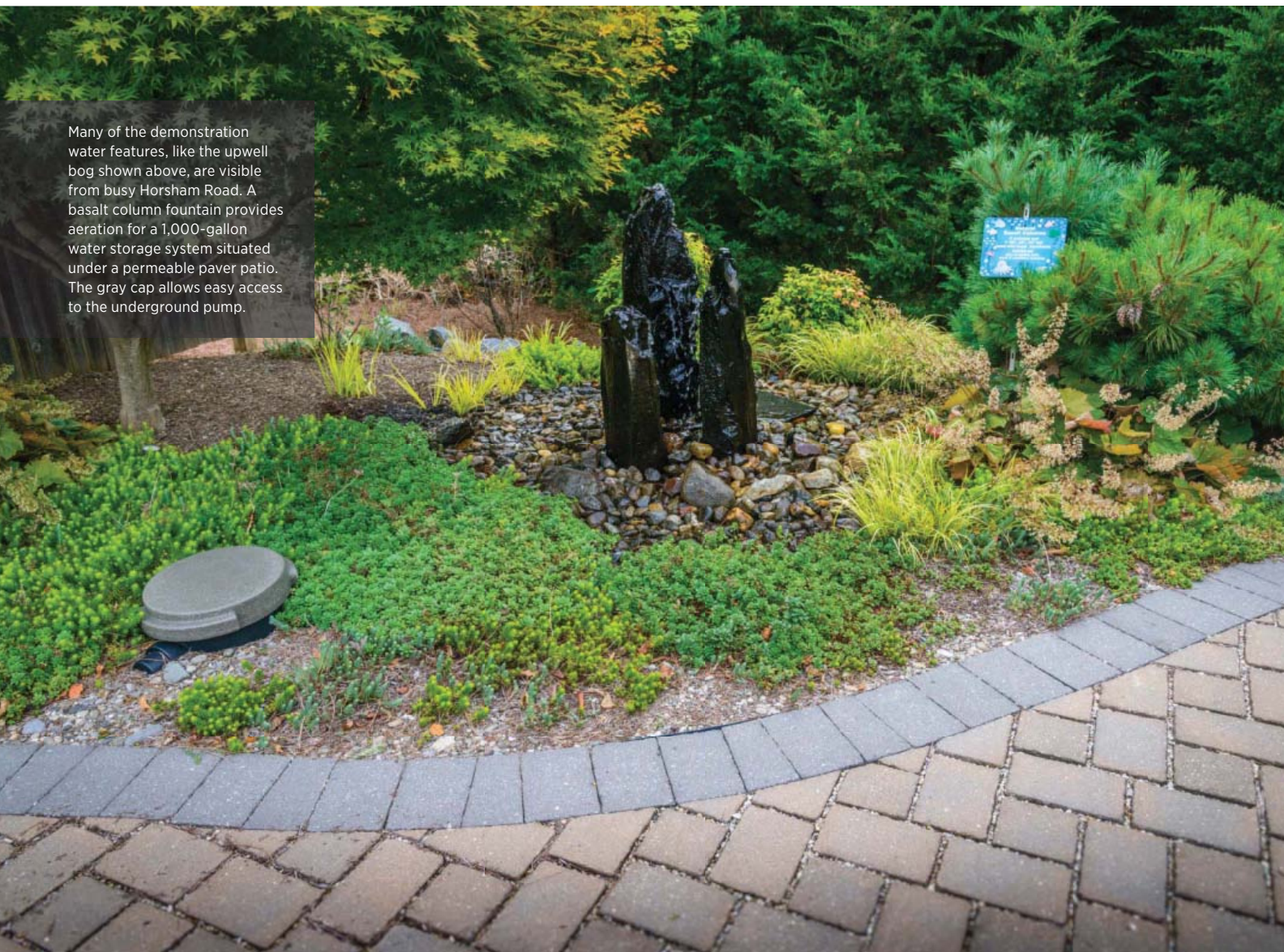
his North Wales property, many other sustainable aquatic-gardening possibilities have come to the fore.

Once a working farm, this demonstration garden of all things watery and wonderful uses a variety of rainwater-harvesting systems of different sizes and complexities. Today, about 15 ponds, fountains, and waterfalls dribble, spurt, and rush through the 2-acre site. Some of the prettiest of the bunch sit right on busy Horsham Road, and Zove invites anyone to come anytime to examine and enjoy them. People seem to take up his offer: Employees from a nearby office building often wander over to sit among the sun- and water-splashed rocks as they eat their lunches.

BENEFITS FOR BIRDS, PEOPLE, AND THE EARTH

“Without these displays, it would be difficult for me to convey what a water feature can do for your lifestyle,” Zove says. Indicating a gurgling fountain that emerges from a groundcover of sedum and gravel, he points out that even birds revel in the joys of waterworks as they perch on the three rough-hewn columns of black basalt at the fountain’s center.

Many of the demonstration water features, like the upwell bog shown above, are visible from busy Horsham Road. A basalt column fountain provides aeration for a 1,000-gallon water storage system situated under a permeable paver patio. The gray cap allows easy access to the underground pump.





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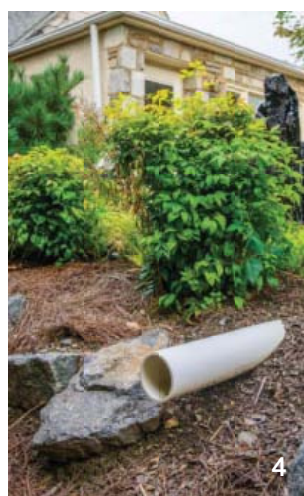


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1. A water matrix module sits on top of permeable pavers. 2. A self-cleaning first flush rain filter removes dirt and debris from roof water. 3. Even without a pond, this water feature is attractive to wildlife. 4. An overflow pipe from the water storage area is directed into the rain garden. 5. A rain barrel can be capped with a mini green roof.

As organic, elemental, and appealing as it is, this particular fountain is actually the carefully planned end result of a sophisticated setup that collects rainwater from three nearby downspouts, each of which uses a different type of first flush filtration system to remove debris such as shingle pieces or droppings from those visiting birds. The surrounding patio is also hard at work, capturing rainfall in a series of “water matrices” that are stacked 5 feet deep to support the permeable pavers laid out on top.

The modules, which look a bit like plastic milk crates, provide voids in which to collect the water and are much more efficient than the crushed stone often used for this purpose. “Think of it this way,” Zove says: “If I



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were to take a bucket, fill it with stones, and pour water into it, approximately 25 percent of the space in the bucket would be water because the stones take up so much room.” On the other hand, he says, “97 percent of the water matrix is empty space, so an excavation can be smaller while holding much more water.”

Two pumps complete the job. The first pushes rainwater up into the stone columns, keeping it aerated (a benefit for any fish that call your water feature home) and moving (which prevents it from freezing, a bonus for thirsty birds). The other is an on-demand pump connected to a hose; this offers access to the stored rainwater.

The pumps are also connected, metaphorically, to another mission of Zove's: showing that the value of water features can go beyond their good looks. By way of demonstration, he holds

a hose aloft and lets it spew forth precious streams of water for about two minutes. “I could do this all day for months and not waste a drop while washing our trucks or watering plants,” he says. “It’s all going back into the system through the porous pavement. We estimate that during the first year that we had all of our systems installed, we used about 45,000 gallons of recycled water. So instead of drawing that amount from the public system, we used our own captured water for watering plants, washing our fleet of vehicles, and topping off our display features.”

Best of all, he adds, when heavy rains come, the excess is transported via a perforated pipe under the pavers into a nearby rain garden filled with clethras, liatris, junipers, irises, and other plants.

Harvesting Rain: Follow the Flow

Water features come in a variety of shapes, styles, and sizes, but most of them simply use an aboveground pond and a recirculating pump for storage and flow. In order to understand how an integrated rainwater-harvesting system, like the one shown here, works, the key is to look at what happens underground. First, water from the roof flows through a filter and into the underground water storage system, which is surrounded by a rubber liner. Water that passes through permeable pavers, which are underlaid with crushed stone, also helps fill the series of modules that look like milk crates. In heavy rainstorms, overflow from the storage system drains into the rain garden. One pump runs continuously, providing water to the top of the waterfall, which then flows into the pond and back into the storage system. The second, on-demand pump is activated when the faucet is opened. This nonpotable water can be used for washing cars or watering ornamental plants.

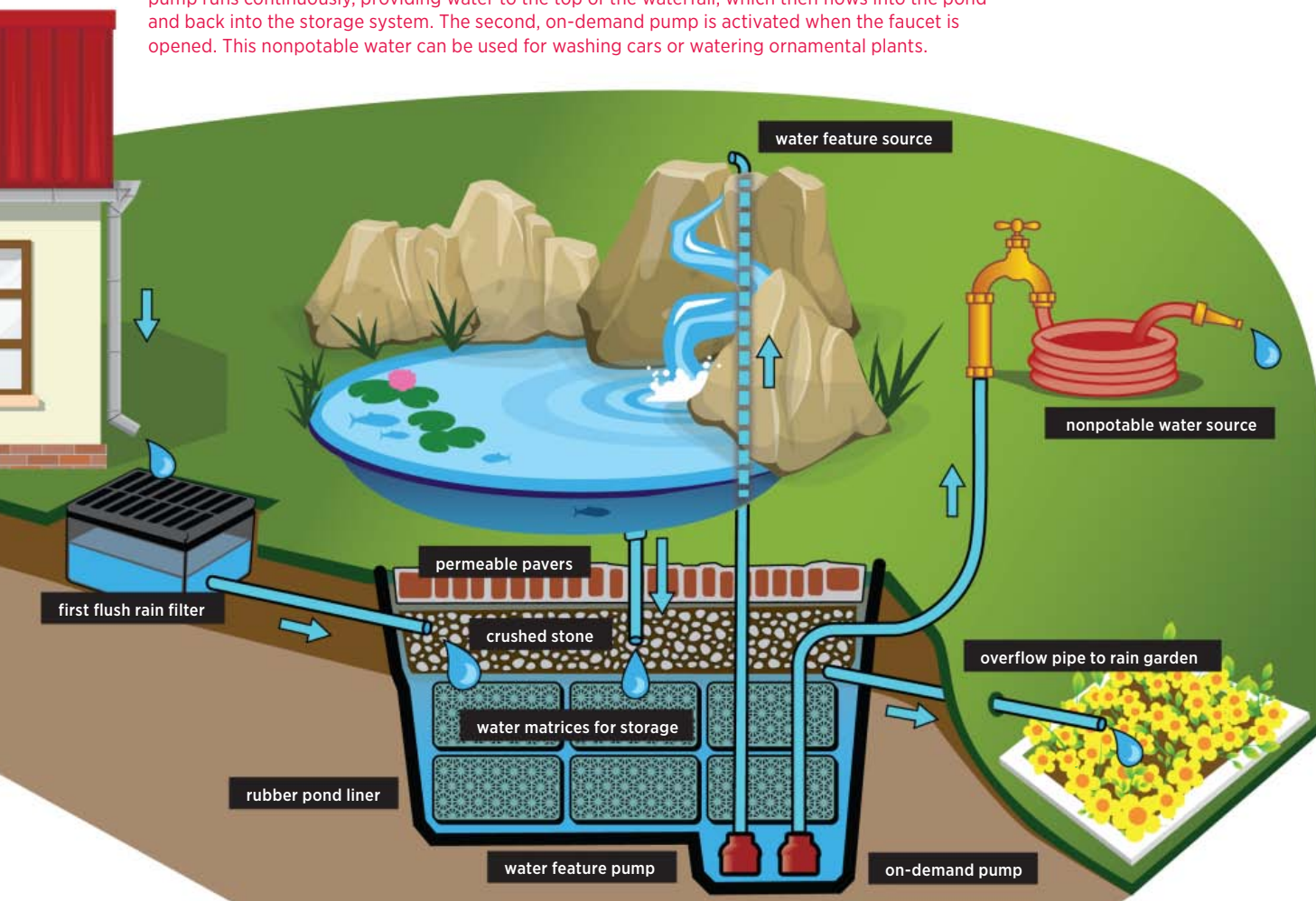


ILLUSTRATION BY MATT HOLLENBACH

A bubbling boulder, fed by an underground storage system, is one way to have the sight and sound of water in a garden without a pond.



5 Hints for Beginners

Alden Zove, owner of Cedar Run Landscapes in North Wales, Pennsylvania, offers the following considerations for anyone thinking of adding a water feature to the home landscape.

Keep it close. Position your water feature where you can view it from inside your home and enjoy the sound of moving water and the sight of the birds that will be frequent visitors.

Have a seat. Be sure a patio, seating area, or hammock is close to your feature; you'll be amazed by the hours of relaxation this will afford you and your friends.

Go big. Make your pond three times larger than what you think you want. Most pond owners enlarge their features at least three times, so save yourself the effort and make yours large to start with.

Light it up. Adding lights to a water feature will extend your enjoyment into the evening and provide a lovely view from inside your home.

Rock out. Extend large rocks over the edge of a pond to provide a comfortable spot where visitors, especially children, can interact with the water and fish.

For more information on water gardening, visit the website of the Delaware Valley Water Garden Society (dvwgs.com) or stop by the organization's exhibit at the 2018 PHS Philadelphia Flower Show, which runs from March 3 to 11. To order advance tickets, visit theflowershow.com.

WATER MUSIC

Just as the various pumps and matrices provide examples of the out-of-sight, underground setups available to gardeners interested in water features, each of the displays also offers aesthetic mix-and-match options. "The displays help to give people a vocabulary and visual sense of what can be done so they can discover their preferences," Zove says. "Someone might not like river stones and instead want Pennsylvania fieldstone, for example. But they won't necessarily know that until they see both. The idea is to make everything look as integral and natural as possible—whether it's the way in which you put stones together or the way in which you combine plants."

Two other considerations, of course, are cost and space. The simplest, smallest option might be something like a 4-foot-by-4-foot patio fountain that consists of a lidded tub (instead of a matrix) to catch rainwater and conceal a pump that pushes water through a hole drilled into a decorative vessel. If money and space are less of a concern, though, something like the

tiered "mountain stream" pondless waterfall setup might fit the bill. The one on display hides its cistern under bluestone permeable pavers and provides a good example of how designers can play with sound.

"The sound of splashing and falling water can be directed to wherever you want," says Zove. "By the way we configure and shape the waterfall, we can use the sound of moving water to mask background noise. We can create anything from a deep, guttural rumble to a very high treble."

He indicates one display where the sound builds to a crescendo as a visitor nears the center of the waterfall. As she walks away, the sound recedes, lingering just a bit—like a pleasant childhood memory. It's a great example of the power of water to delight, inspire, and refresh. 🌿

JoAnn Greco, one of the early adopters of the Rain Check program, lives in South Philadelphia.