

I'm hearing more about bottom drains. Why do ponds need them? How do I know what size bottom drain to use for a pond?

Learn more about our Contractor ExpertA. Bottom drains serve a myriad of purposes depending on the application. In a water garden, bottom drains primarily address oxygen saturation in deeper waters, which commonly is referred to as dissolved oxygen level (DO).

To understand the benefits of bottom drains, you must understand DO and how oxygen stratification affects the body of water. DO is a measure of the oxygen dissolved in the water.

Several factors affect the DO stratification in water.

The deeper the water the less DO.

Warm water closer to the surface encourages photosynthesis, phytoplankton growth and natural oxygen assimilation from the air, improving DO levels.

Deeper, cooler water -- or water with poor clarity -- might include less DO due to the decomposition of organic material, phytoplankton overgrowth and lack of sunlight for photosynthesis.

In a water garden, bottom drains counteract this stratification. By drawing water from the bottom of the water garden, a bottom drain introduces that water into the circulation system and mixes the it from all levels, to reduce water stratification.

Properly sizing a bottom drain depends on the pond's size and proportion. Ponds with larger surface areas and large bottom areas might require multiple bottom drains. In a smaller body of water, however, one bottom drain might prove sufficient.

Additional concerns are whether the bottom drain is siphoned by a pump or statically drained into a vault. Also, is the vault void or full of water during normal operation? These factors affect the bottom drain size.

Max Hammond is director of operations for David B. Duensing Aquatic Construction Services, vice president of Nature's Expressions Outdoor Design and Construction, as well as former president of National Association of Pond Professionals. Serving the water gardening and water feature industry through strategic partnerships has been Max's core competency.

Beginning with NEI, Hammond and his two equal partners, Ken Owen and Dave Miller, built a water feature business from a grassroots operation based out of a garage in Ken's home to a multi-million dollar enterprise based in the Bluegrass of Central Kentucky. In 2004, NEI's leadership partnered with David Duensing to bring DBDACS to the water gardening and water feature industry. Now serving on an international venue, Hammond and his partners consult, design and construct water features, managing everything from \$95 to multi-million dollar installations. Hammond and his partners focus on delivering the experience to their customer.

"Many other players in our industry build a nice water feature, but truly serving the client means something different to us," Hammond said. "We don't consider a project a success until the client has us back a second time. Many others can get a great project one time from a client. We want every project the client has to offer. That's a great passion of ours, however, the greatest passion is when we have the opportunity to sit down with another business owner and open up dialogue that helps them rethink their definition of success and readdress their mission to serve their clients."