

Effective Design and Construction for Algae Control

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Rough in of two skimmers. Ponds of more than 8,000 gallons should use multiple skimmers.

The quest for clear water should be the ultimate goal of any pond builder. Sure, waterfalls, edge treatment, lighting, and plantings are all intricate components of the all encompassing waterfeature. However, you could produce the most elaborate waterfeature with spectacular falls and graceful streams, and if the water doesn't run clear because of algae bloom, the customer 'ain't gonna' be happy. And if

the customer 'ain't' happy, 'ain't' nobody happy. Dealing with this issue can be a very complex and agonizing process. I have friends that are employed to do nothing but control algae in water systems and get paid good money to do it. They have degrees in microbiology, chemistry, and probably many other subjects that require a lot of reading and studying. I must admit, they are pretty smart people, but I can't sit still that long to read a maga-



Same shot as previous. Finished ponds with two skimmers

zine article much less a book solely devoted to single cell organisms? However, in conversations with these overwhelmingly intelligent people, they do seem to agree with my relatively shallow opinion that the best defense against any algae problem is proper construction techniques.

In naturally occurring ponds and lakes, water quality is assisted by a constant replenishment of fresh water via rain, streams, and springs. With the introduction of the fresh water source, the dissolved nutrient levels in the pond or lake are kept to a minimum. In addition, when water is added to a pond or lake, an equal part is removed via overflow or ground seepage never to return again. Therefore, the body of water continually renews its water supply. However, in an artificial pond, we recirculate the water over and over again. It's similar to a coffee percolator, if you're old enough to remember those things. The water is recirculated through the coffee grounds over and over again until the fresh, clear water you started with is saturated with the oils and tannins from the coffee beans. The more you perk it, the more saturated it becomes. To compound the recirculation issue in our waterfeatures,

we rarely introduce fresh water into the system, unless of course, you have one of those leaky water features, which create a whole separate host of problems. So what to do? You can either refresh your water supply by running a hose to your pond 24 hours a day (don't laugh, I've seen it done), or incorporate adequate mechanical filtration systems when designing and constructing the waterfeature. By doing the later, you will save yourself from many headaches down the road. This is an area that can neither be ignored nor skimmed upon when it comes to design and budget. It is the single most important element for the successful life of any constructed waterfeature.

With that said, there are two areas of mechanical filtration that need to be considered when designing a waterfeature. Both have equal importance in acquiring optimal water clarity and both should be included without exception in every waterfeature design. The first filter should be one to trap "potential" nutrients out of the waterfeature. In other words, a filter to trap leaves and other debris that enters the pond before they have a chance to dissolve. I prefer a skimmer type filter as



This is just a nice shot of a waterfall with some clear water below it.

it traps the majority of floating debris before it has a chance to settle to the bottom of the pond and decompose. These skimmers also keep the surface of the pond looking pristine and are easy to maintain. Ponds larger than 8,000 gallons should use multiple skimmers to properly handle the debris load. Bottom drains are a crucial necessity when installing a skimmer filter. Since the water flow in recirculating ponds never varies, water currents and patterns will develop. Skimmers only move the top six inches or so of water leaving the bottom water to roll over in a revolving current pattern. Therefore, installing a bottom drain is important to capture the otherwise stagnant water at the bottom of the pond.

Although skimmer filters are an excellent way to reduce debris in the pond, they are not 100% effective in eliminating all organics from the water. Once these organics settle to the bottom and break down, they are dissolved in the water creating a nutritious environment for simple cell algae to thrive. This is where the second kind of filter, a biological filter is necessary. A biological filter gives home to plants and bacteria that will absorb the dissolved nutrients minimizing the availability of those nutrients which promote algae growth. I prefer to create a large bog garden at the head of each waterfeature to perform this type of filtration. It is not only an extremely effective filter system; it adds beauty to the total waterfeature design. Although, UV, ozone, and chemicals are readily used as a control method, it is not ideal in creating an ecologically balanced system. These methods usually “sterilize” the water, yes killing the algae and clarifying the water, but also killing all other forms of life that support a healthy pond environment. A mechanical bio filter or bog garden will provide an ecologically friendly solution to reducing dissolved nutrients in the water thereby reducing the algae growing in the pond.

Algae are a vital part of the ecosystem in a pond. Its ability to rapidly utilize dissolved nutrients actually makes it a type of filter in itself. Also, it is a terrific food source for many of the pond critters. However, too much of a good thing can go south in a hurry and make an otherwise beautiful waterfeature turn green as pea soup. Therefore, reducing the organics that enter the water by incorporating effective filtration systems will result in a healthier pond with water clarity. A healthier pond makes for a healthier client relationship. It’s worth the investment!



Rough in of Bog Filter



Finish of same bog filter

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