



Loose rock on the bottom of a pond, covered with opportunistic algae and choked with organic waste and debris

Note the unhealthy condition of the lillys. They are being strangled by the algae.

Managing Problems of "Loose Rock" Style of Pondbuilding

Description: Recently the "loose rock" style of ornamental fish pond construction has become somewhat common. This method of construction dictates: (1) "loose rock" lining the entire bottom and sides of the pond, (2) lack of bottom drain, and (3) the dependence on pump suction to remove waste and unfiltered water through a surface skimmer. (4) The folds in the pond liner are left as they are created when the liner is placed in the excavation site. (5) The "loose rock" is continued up into the waterfall and expanding black foam is injected into the areas under and around the waterfall spill rock to prevent water from running under the rocks rather than the preferred path over the rock. Most of the waterfall rocks are left loose.

Claims: It is claimed that the "loose rock" environment creates a large surface area on which beneficial bacterial growth occurs. This - in the short term - is correct. Unlike water in a natural stream bed, which has contact with the earth and a myriad of bacterial processes, the water in a lined pond is confined from this biological activity by the liner. Over a relatively short time, organic waste (mulm) from the restricted bacterial activity in and around the rock surfaces builds up and has no place to go. Non beneficial, opportunistic algae use this nutrient (mulm) and compete with other pond inhabitants (fish) for the available oxygen. In this scenario, algae always wins. Fish can begin to show signs of stress and eventually koi fish behavior can be altered.

Visual Impact: It is common to hear that this style of pond "looks more natural". However, once the rocks become covered with opportunistic algae and choked with mulm, the visual effect becomes one of increasing organic waste and loses the colors and attractiveness of natural rock.

The Problems: We receive a huge number of calls every year requesting assistance in managing these problems. These callers complain that: (1) their ponds are full of algae, (2) their fish are not thriving, (3) they are having to put many more hours of maintenance into their project than expected, and (4) feel their time and money have been wasted.

Our Suggestions: Since the visual definition of any rock placed below water surface is, for the most part, lost to algae and debris after the first six months of operation, our preferred method includes: (1) no rocks below water surface of the pond, (2) mortaring in all rockwork in the waterfall and border edge and (3) taping flat the folds of the liner.

The Basics: A pond created without rock below the water surface dramatically reduces maintenance levels. The pond is free of the huge bed of waste-collecting "loose rock". The unobstructed liner surface is clear and free of collecting waste and the free flowing current over the smooth liner surface towards the bottom drain allows for simple and efficient removal of waste.

Surface Skimmers: "Loose rock" ponds typically use skimmers for unfiltered water intake. Surface skimmers only address the surface waste and do nothing to collect the heavy solids that sink to the bottom. Ponds with complete emphasis on surface skimming all water essentially act as large settling ponds, further compounding unremovable waste from the floor.

Bottom Drain: The above described process degrades the general water quality and increases the maintenance levels for the pond keeper. Minimum maintenance can be achieved with some modifications to the existing installation. The need for a bottom drain or initial water intake system at the deepest area of the pond becomes paramount. Since complete rebuilding of the pond is often not an option, retro fitting can prevent spending additional thousands of dollars and countless hours of upheaval to the landscape.

Three Options: We offer these options of retro fitting "loose rock" ponds with our retro-drain, thereby resolving, in large part, one of the most significant aspects of maintenance of these ponds. All options assume an out of the pond filter sufficient to manage the filtering requirements of the pond. If you need help choosing an out of the pond filter, give us a call.

Ideally:

- Remove all rock below surface water line
- Clean loose debris from liner (don't remove the short dark green beneficial algae on the surface of the liner)
- Install an Aqua Art Retro-Drain
- Install a pond pump in a pumphouse outside of the pond
- Do not return rock to pond

Compromise:

- Remove all rock below surface water line
- Clean loose debris from liner (don't remove the short dark green beneficial algae on the surface of the liner)
- Install an Aqua Art Retro-Drain
- Install a pond pump in a pumphouse outside of the pond
- Clean and return the rock to the pond (the compromise)



When installing an Aqua Art Retro-Drain, be sure to leave the area around the drain clear of rocks to allow free flow of water intake.

Minimally:

Clear a 2 foot area at the deepest end of the pond

Install an Aqua Art Retro-Drain
Install a pond pump in a pumphouse outside of the pond

Be prepared for the huge amounts of waste that will need to be removed daily from your filter as the water current pulls debris, mulm, and unfiltered water from the bottom of your pond. This last option will not remove all of the debris from the bottom of the pond, but will certainly remove quite a bit. The amounts of debris that will be deposited into your filter will decrease with time and this process will improve water quality. At some point, you will become aware of the level at which you will need to regularly clean your filter. It may be every few days, every week, or longer.

We suggest keeping a close eye on filter maintenance, as a clogged filter will not do anything to improve the problems created by the "loose rock" system.