

The Path to an Aquatic Ecosystem

Armed with a vision and some CAD plans for my semicircular Georgian pond, I presented my idea to the Columbus Department of Health Animal Permit Division. I had discussed my need for a large aquatic biosystem to support fish and ducks on past visits to the urban farm to inspect the livestock at Mezzacello. Initially, the DoH veterinarian agreed that it was a good idea. I thought it was no big deal. As long as the pond had a liner, a flow valve and access to a biofilter everything should be fine. Easy, right? I was told that my pond was technically a pool. My pool was technically an "open septic system" (the ducks and fish would be defecating in it) and I had plans on recycling small amounts of rabbit droppings to augment the diet of the fish. It was a BIG mistake to add that little tidbit to the story.

After several rounds of back and forth about the scale of the pond, and how I was to access a sanitary sewer and how a 15' x 6' semicircular, lined and brick finished 2,100 gallon, 5' deep hole in the ground was neither a pool or a septic system, we came to a compromise. If I layered the pond from 1' to 2' to 4' to 5' deep I could reduce the volume to 1,700 gallons I could avoid the pool classification. The EPA might be seriously troubled by the idea of ducks and rabbits defecating in a pond with inadequate storm drain clearance though (even though 8 blocks away at Franklin Park it happens regularly). So I compromised there as well. I added a submerged sump pump with a hose that would drain to a sanitary sewer complex, a complete biofilter, oxygenating plants, and multiple aerators so bacteria could adequately break down dangerous pathogens and ammonia. I should also have to build a six foot fence around the "pond" so that children and pregnant women did not get into the pond and swim. There would be duck feces in the

pond and that is very dangerous for pregnant women. I pushed back on this too. I already have a 4' high fence around my entire property, security cameras, motion activated relays and several "NO TRESPASSING" signs posted around my property. This placated him, and after paying the appropriate fees for licenses, I got the tacit go ahead. I also got a lesson in innovation; When you are the first to do something, you bear the weight of that innovation. I am the first garden in Columbus history to request such a system. How does the city know what to do? That's fair. I'll bear that cost.

Now I had to get a 1,700 gallon hole dug in my clay soil in a space where the foundation for a house used to be before it was raised and the foundation was buried over. Fun times. I didn't want to hire a backhoe because 1. I didn't have the money after the fees for the licenses and permits, 2. I didn't want to tear up the gardens that were already in place. So I hired two men to dig the basic outlines of the pond. That left a 14' x 5' x 4' high pile of dirt on the space where I was planning on planting a parterre herb garden. Luckily it was summer and I found a few neighbor kids willing to haul the dirt in wheel barrows. I had them haul loads to the north side of my 1868 house. My basement gets damp on that side and I hoped to increase the slope against the house to keep the basement drier. So I had my hole. Not a pond, not an open septic system, just a stepped hole that resembled of all things, a stairway to hell. The step effect was especially apparent after I hand cut the edges to be as sharp as they needed to be, and added the submerged 50 gallon barrel at the deepest section to contain the necessary sump pump. Every day I felt like Dante getting ready to rescue Beatrice.



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I needed to know how much EPDP rubber to buy that would cover the odd geometry of this pond. A co-worker at PAST Foundation let me borrow one of [Knockout Labs' 3D scanners](#). I used the scanner to take a scan of the pond so I could determine the surface area of the pond. Picture me in a 6' deep hole in my yard at sundown, with a huge pile of dirt next to it. I had to wait for sunset because the scanner uses infrared light and sunlight can interfere with the scan. There I was, standing in a deep hole scanning up and down with the scanner. A police car pulls up in the alley about 10 feet away and rolls his window down. The officer calls out, "Is everything alright?" Me, "Yes, officer." Officer, "OK" window rolls up and he drives off. Five minutes later, he rolls back around. The window rolls down. The officer yells out, "No really, what's going on here?" I look up startled, and then remember that I am in downtown Columbus in a hole deep enough to bury a body... So I explain, "It's a pond, officer. I am taking a 3d scan of the surface so I know how much material I will need to line it." I show him the hand held scanner. He looks at me, laughs. Then he says, "There's always something going on here. That's going to be a big pond." I laugh, realizing how absurd the situation is. Then I say with all seriousness, "Yes, officer. I need this much volume to support my aquatic ecosystem and

sustain life.” He gives me a long look and says, “alright. Carry on.” rolls his window up and drives away. I got my scan and made my calculations. then I bought the first sheet of 10' x 25' EPDP rubber.



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