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November 28, 2017

Isles Self-Reliant Communities

10 Wood Street

Trenton, NJ 08618

Attn: Jim Simon

 Deputy Director

Re: 33 Tucker Street & Rivera Middle School/Rainwater Harvesting

Dear Jim,

The following is a proposal to install rain harvesting systems at 33 Tucker Street and the Rivera Middle School locations.

I will address the Tucker Street site first. There are two separate roof areas each with their own respective downspout. The first roof area at 460 square feet will allow for collection of approximately 285 gallons of rainwater. The second roof area at 1500 square feet will allow for collection of approximately 940 gallons of rainwater. These are estimated amounts only based upon collection potential of 643 gallons for every 1,000 square feet of roof area.

Both of these downspouts are on the right side of the building near the side entrance ramp. With total collection potentials of approximately 1270 gallons of rainwater from one inch of rainfall I recommend installing a round 1500 gallon HDPE green cistern just beyond the side entrance door. There is already a base of gravel on which the tank could sit. We would bring more ¾” stone to level out the stone area prior to setting the tank.

This would be a wet system which will use gravity and water pressure to fill the tank. We will combine the PVC pipes under the elevated stairway into one 4” Schedule 40 pipe. The new 4” PVC pipe will connect to a WISY vortex filter installed on a 4” by 4” pressure treated post. The outlet of the filter will connect to an additional length of 4” PVC and discharge into the tank. The first flush of the filter will discharge in the catch basin or the future rain garden within the vicinity of the tank.

The Wisy vortex filter acts a first flush filtering the water via a stainless steel screen inside the device. The cleanest water will enter the tank. The screen will be replaced by a solid insert in the fall for winterization.

Inside the tank we will install a calming inlet for the incoming water pipe. This fitting will help oxygenate the water and prevent the water from being stirred up during filling. We will also install an overflow siphon to allow any excess water in the tank to drain to the catch basin/rain garden.

For security reasons we will install a submersible rainwater pump inside the tank. This pump comes with a low-water float switch for protection as a well as a suction hose and float which allows for drawing the water from just below the water surface where the water is cleanest. It also has integrated dry run protection and automatic restart after dry-running. A dedicated exterior outlet would need to be installed by others. The pump will allow you to pump water into the adjacent garden via a hose or sprinkler.

I should not that at the time of inspection the downspout scuppers would full of leaves on the rooftop. The Wisy filter will not allow leaves to enter the tank however I highly recommend periodic maintenance of the scuppers to be free of leaves and roof debris. This will allow for free flowing downspouts.

The price for design, materials and installation is $ 5,900.00. If you wish to move ahead with the system installation please forward a check for $ 1,500.00 for the tank purchase which is always paid at time of order.

The Rivera Middle School is a simpler system. A tank would be connected to the downspout located on the right side of the building near the six (6) raised planting beds. Jim asked for a slimline tank which would be installed up against the brick façade. The tank would be supported by two courses of 8” CMU’s to provide elevation to the tank. The tank would be brick red in color. The downspout would discharge into a screened opening on top of the tank. No need for a filter this size job. A spigot would be installed on the bottom of the tank. We will also install a separate cast iron pitcher pump adjacent to the tank. The pitcher pump will be installed on a pressure treated wooden platform and securely fastened. It will an optional method of pulling or pumping water out of the tank. The pitcher pump does need to be primed before each use. Water from the spigot is simply poured into the top of the pitcher pump.

The price for this system is $ 1,800.00. If you choose to move forward with this project please forward a check for $ 900.00 for purchase of the slimline tank. All tanks need to be pre-paid.

Please contact me with any comments or questions at 856-767-4443.

Sincerely,

Bill Hoffman