

HCC STEM Building Rainwater Harvesting System

Rainwater is collected from the **standard roof drains** on the STEM Building and connected to the rainwater harvesting system instead of the underground storm water piping where most storm water runoff drains. Storm water runoff is the excess water that runs off impervious surfaces such as roofs, roads, patios, and even grass lawns. These surfaces prevent water from infiltrating back into the soil.

As rainwater enters the system, it enters a **vortex filter** that uses the pressure of the rainwater coming off the roof to spin it in a centrifugal manner, and then forces it through a **cleaning screen**. Debris drops through the center and into the storm water system and clean water exits the sides. In this self-flushing design, 90 percent of the rainwater entering the system is retained, which minimizes maintenance. During heavy rains, the street storm water drains are over capacity, which allows untreated water into the Chesapeake Bay. Storm water runoff is the number one cause of coastal pollution and a threat to water quality. Thus, the STEM rainwater harvesting system is playing a role in reducing pollution in the Chesapeake Bay.

Rainwater harvested by this system is stored in two **1500 gallon cisterns** on the 3rd floor. The stored water is then drained to a combination **booster pump** that includes an ultraviolet disinfection section. Finally, the water is injected with a **colored dye** so it is clearly identified as non-potable water. The water is then pressurized by a booster pump system and delivered to the toilets on the 3rd, 4th, and 5th floors of the building.

How many of these **components** can you find in the architects drawing below?

