



JAY R. SMITH MFG. CO.®

case study

Jay R. Smith Mfg. Co.® Rainwater Harvesting Products – Commercial application



Problem: The Claude Moore Educational Complex renovation job was the first building in Roanoke, VA to be registered with the U.S. Green Building Council for LEED® certification. The Henry Street building that once was the Lincoln Theater has green features that should reduce energy consumption by 35% - 40%. The job uses wood products free of formaldehyde and harvested from sustainable forests; siphonic roof drains that collect the rainwater for flushing toilets and irrigate the landscaping; solar panels to preheat the water for the kitchen needs. The city storm water system will not be burdened by the runoff as part of the roof will be green roof (planted) and the discharge from the siphonic roof drains is

captured in two 2,500-gallon tanks buried under a patio/paver area. This facility will serve as a showcase culinary school as part of the Roanoke Culinary Arts Institute. One of the goals for the renovation was to save money on energy and water usage while maintaining a practical working environment. This particular project offered challenges that are typical of renovation projects. The existing building had to be used and due to construction budgets only a small percentage of the roof and walls could be retrofitted with drains and piping. Furthermore, the Roanoke County had strict restrictions on the quantity and quality of storm water runoff from the site.

Solution: Rainwater Management Solutions, a consulting company and Jay R. Smith Mfg. Co. partner worked with Gregg Lewis of Smith Lewis Architects and the construction team to provide them with the right product and installation information for the job. Siphonic roof drains and rainwater harvesting products were selected and used in order to collect, convey, and store the rainwater. Siphonic roof drains, Figure # 1005, use smaller diameter pipe and piping installed horizontally which drastically reduces the amount of space consumed by piping. The piping was routed to one point of the building to facilitate rainwater harvesting on the job as an additional benefit for cost and space savings. At the point of discharge, two vortex fine mesh filters, Figure # 9520-06, were used to filter debris from the water. The filtered water is then sent to the storage tanks where the heavy particles sink to the bottom and the light organic matter floats to the top. Harvested water for use in the building is extracted from the cleanest part of the tank, just below the surface of the water using the floating filters and a pump. Overflow devices are installed for overflow situations. In this particular project the harvested rainwater was used as supply water for flushing the toilets and urinals.

The architect achieved his goals for this installation to reduce potable water demand and to reduce the storm water runoff from the site. Other usages such as dishwashers, laundries, irrigation, and HVAC cooling towers can also be accomplished by using rainwater harvesting products.

The Roanoke Culinary Arts Institute (part of Virginia Western Community College) has been pleased with the steps taken to lessen their water usage, preserve the integrity of the building and meet the city of Roanoke requirements. Additionally, the job is a showcase example of green and sustainable building practices.

For more information on this and other Jay R. Smith Mfg. Co. products, or to contact your local representative, visit www.jrsmith.com.