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Going for Gold: Claude Moore Education Complex anticipates Gold LEED certification, thanks to innovative energy- and water-reduction techniques.

ROANOKE, VIRGINIA

The Claude Moore Education Complex, Roanoke's soon-to-open culinary arts and entertainment complex, comprises approximately 10,000 square feet of new and renovated space, including three existing structures. The complex will house the Culinary Arts degree program administered by Virginia Western Community College. In addition to standard teaching techniques, the Culinary Arts program will focus on the importance of energy and water conservation.

Design officials are anticipating a Gold certification from the United States Green Building Council (USGBC), thanks to the innovative use of rainwater harvesting, a planted roof, solar preheated water and passive solar design. Due to an integrated design approach, the Claude Moore Education Complex expects to reduce its energy usage by 35 percent and its water consumption by 37 percent.

The facility's restrooms will contribute to its overall water and wastewater reduction. Waterless urinals and dual-flush toilets that use rainwater for flushing were installed. The rainwater is captured in two 2,500-gallon rainwater cisterns stored behind the building under an elevated plaza. In addition to being used in the restrooms, rainwater will also be delivered to the 1,600-square-foot planted roof through a series of hose bibbs. The roof will eventually contain 18 varieties of sedum. In addition to being visually pleasing, the green roof will reduce storm water runoff and ambient temperature and noise levels around the building. It will also reduce cooling loads by 25 percent.



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Four solar panels that contribute to the solar preheated water system are also located on the roof. The preheated water system feeds the facility's automatic dishwasher and pot-washing sinks. Surrounding the four panels is high-albedo roof membrane, which aids in further reducing the cost of cooling the completed facility.

The new complex will also house Roanoke's first large-scale porous concrete slab. The porous slab will allow all of the precipitation that falls on the property to stay on the property, reducing the load on the Western Virginia Water Authority's storm water infrastructure.



Virginia Western Community College's Horticulture Department will plant and maintain an herb garden in a raised garden bed adjacent to the building's principal entry and the plaza dining area. Visitors to the building will enjoy the aromas and visual appeal of the plants as they walk past the herb garden, and the Culinary Arts students will have a ready supply of organic, site-grown herbs.

Decisions were made early in the renovation process based on durability and longevity. Due to the educational nature of the business, a short payback period was not top priority. The project team decided to focus on what made financial sense over a 25- to 50-year time frame. For example, the green roof's payback period is nine years. The rainwater harvesting system and the solar hot water system's payback period is 10 years.

By utilizing innovative water-saving and energy-reducing techniques, the Claude Moore Education Complex will boast an environmentally friendly atmosphere for students and visitors, and will save the Roanoke Higher Education Center an estimated \$6,200 on annual energy costs and \$1,900 annually on water costs.