

USM's Rooftops Go Green

By: Dave Holman

Posted: 4/19/10

Keen observers may notice plants growing on several small roofs of the Abromson Community Education Center and Wishcamper Center of the USM Portland Campus. These plants are not there by accident - they're green roofs designed to reduce water run-off, extend roof lifespan, and reduce heating and cooling needs.

In 2006 USM installed several prototype trays on small vestibule roofs of the Abromson Center and parking garage that led to the installation of an 880 square foot green roof on the Wishcamper Center in 2008.

The Wishcamper green roof project and the rain gardens surrounding the building were largely paid for by the Casco Bay Estuary Partnership, a nonprofit organization associated with the Muskie School. "Facilities [Management] here is very interested in figuring out how to do green building and they were very open to installing a green roof here," said Casco Bay Estuary Partnership director Curtis Bohlen.

The plants grow in modular plastic trays to reduce the installation costs and enable easy access for roof repair. The plants belong to a group of moss-like succulent plants called sedums that can survive both the extreme drought conditions and flash floods that life on a rooftop requires.

Eight different varieties of plants grow in 110 trays on the Wishcamper roof in a mixture of sand, gravel and minerals - which includes no organic matter - to minimize weight and prevent invasive weeds from growing that could puncture the roof membrane over time. "The primary material benefit that drove the decision was that an unsaturated green roof reduces the rate at which water runs off a building and therefore reduces storm water run-off from a site," said USM Sustainability Director Dudley Greeley.

Modern green roofs developed largely in Germany where strict regulations and fees controlling storm water run-off make many commercial and residential green roof projects economically viable. In the US, cities like New York and Chicago actively promote green roofs as a way to reduce both water runoff and the urban heat island effect. While New York tax incentives have produced dozens of new green roofs and Chicago recently installed a large green roof on the Chicago City Hall, there are only two green roofs in Maine registered with greenroofs.com - an industry website where people can list their green roofs in the site's database.

Portland has increasingly serious sewer overflow problems that are caused largely by the kind of storm water runoff that green roofs help alleviate. "872,000,000 gallons of raw sewage overflowed into Back Bay in 2009. Nobody does water testing there because they know it's really polluted [with fecal coliform bacteria]," said Bohlen.

Portland is spending over \$50 million dollars to address storm water overflows but has no plans to charge commercial or residential property owners for their contribution to the problem via roof and asphalt acreage.

Greeley said that USM doesn't measure the amount of storm water runoff it creates nor is he aware of plans to install green roofs on any new buildings in the future. "As an institution of higher learning, USM can be proud of its willingness to experiment with re-emerging technologies and new practices in an effort to continuously improve human quality-of-life," said Greeley.

Bohlen said Maine now gets 20% more annual precipitation than it did 100 years ago and severe flooding events are on the rise. "We need to be thinking more creatively about what kind of an urban landscape we're creating and that's why green roofs are so important because they reduce and delay storm water runoff." said Bohlen.

© Copyright 2010 Free Press