REAL STORIES FROM REAL BUILDINGS

Dirty Details of the Ecoroof

Kathy Bash, Lori Kessler and Yasuyki Yanagisawa
University of Oregon

Abstract

This paper presents a case study of the ecoroof of Ecotrust's Jean Vollum Natural Capital Center. Ecotrust is a conservation-focused, non-profit based in Portland, Oregon. Portland's heavy rainfall combined with the city's large area of impervious surfaces has lead to high volumes of stormwater runoff, which eventually overflow into the Willamette River. Ecotrust'smain interest in ecoroofs is their role in storm water management. More than 5000 square feet (approximately 25%) of the roof of the Natural Capital Center are covered with soil and native plants. This ecoroof, in conjunction with four large bioswales, is expected to divert 95% of the site's storm water from the city's system.

Directly determining whether Ecotrust has accomplished its intent to divert 95% of its storm water would require monitoring the connection to the storm drain during an entire statistically typical rainy season (October through June). Because the short time frame for this case study made answering this comprehensive question impossible, we chose to study three aspects of the ecoroof that affect storm water run-off: water retention, evaporation and delayed discharge. We also studied a fourth aspect,insulation value, which affects building operating energy. These four studies are presented individually and are followed by a discussion of what the results imply in the larger context of planning for monitoring.