

# Investigation of Plant Performance on Green Roof Systems at SIUE

Bill Retzlaff<sup>\*1</sup>, Serdar Celik<sup>1</sup>, Susan Morgan<sup>1</sup>

<sup>1</sup>Box 1608, Southern Illinois University Edwardsville, Edwardsville, IL 62026

<sup>\*</sup>Corresponding Author, [wretzla@siue.edu](mailto:wretzla@siue.edu), (P) 618.650.2728

Greening the urban landscape involves the use of plants in engineered environmental systems. Recently, in conjunction with urban greening at the street-level, the use of planted systems on the horizontal (green roof) and vertical (green wall) aspects of buildings has been employed to provide many environmental benefits. Like urban street-level green spaces, all planted green roof and green wall systems have ecological benefits that address numerous modern environmental issues. Plants are essential in these systems. Poor plant choices have resulted in failure of many of these engineered environmental systems. The species or composition of species planted in these urban green systems will determine/impact the stormwater retention, stormwater quality, the biodiversity, the thermal performance of the roof, the urban heat island benefits, and the amount of maintenance a green system will require. Proper plant selection is essential for performance of a green roof or wall system. Our data, collected since 2004, clearly demonstrates that choosing the correct plant and plant system is essential for proper environmental performance. We have also demonstrated that both Sedums and native plants are successful at reproducing/thriving in these urban green systems and with minimal maintenance contribute to the success of green roof and green wall projects.