**Green Roofs: Synergistic Benefits to Energy and Environmental Building Design**

**Abstract** Green roofs, or living roofs, are a sustainable building practice that are implemented mainly in cities across the world to reduce the urban heat islands, manage storm water run-off, and increase the efficiency of building by absorbing heat. These roofs provide synergistic benefits to energy and environmental building design as a single entity. In addition, green roofs increase the efficiency of the systems inside the building, improve air quality, and better stabilize ecosystems of native and adaptive species by providing an elevated habitat. Green roofs are able to replace the vegetated land that was removed to construct the building. Consisting of insulation, a waterproof membrane, a drainage layer, a soil mix, and a choice of native plant species, green roofs allow a building to stay insulated and absorb water while still maintaining the well-being of the building.

Since green roofs are seen as a sustainable building practice, they are recognized in LEED®. LEED stands for Leadership in Energy and Environmental Design and was developed by the United States Green Building Council. As a result of green roofs providing synergistic benefits, they capture many varying degrees within the LEED rating system while allowing a building to be resource-efficient throughout its life. One can maximize their LEED certification using green roofs by reaching LEED categories including Sustainable Sites, Water Efficiency, Energy and Atmosphere, and Materials and Resources.