

It is estimated that 15–30% of total urban land area is comprised of rooftops. Wouldn't it be great if this space could be turned into a force for cleaner water and air, energy savings, beauty, recreation and food? Throughout history "green roofs" have done just that. A "green roof" is the partial or complete covering of the roof structure with vegetation. A typical "green roof" consists of layers including vegetation, a growing medium, drainage, waterproofing membranes and occasionally root barriers. There are two types of green roofs, intensive and extensive. "Intensive" roofs can support a wider variety of plant species because they are thicker with a reasonable depth of soil. They can require more maintenance because they are heavier and they can include a wider variety of plants from kitchen herbs to small shrubs and trees. "Extensive" roofs are designed to be more self sustaining. They may require maintenance only annually and can support fewer species of plants because they have a thin layer of "soil".

The environmental benefits of green roofs are numerous and variable. These roofs absorb rainwater, provide insulation, lower urban air temperature and provide habitat for wildlife. Green roofs allow for impurities from rainwater to become trapped in the soil and broken down. These roof systems decrease and slow the total rate of runoff, often times retaining up to 70% of rainwater. Green roofs can reduce heating and cooling costs by providing a critical layer of insulation, some studies indicate as much as a 26% reduction. Other benefits include filtering pollutants and carbon dioxide from the air. These green urban spaces provide natural habitat creation for insects, birds and animals who would otherwise have limited access to natural spaces. Finally green roofs provide residents and citizens the opportunity to produce food locally and sustainably. There are economic benefits to green roofs as well.

The first economic benefit involves the entire community. Jobs are created for individuals installing and maintaining these green spaces. These individuals provide properly installed and designed green roof systems which increase savings for clients. These cost savings are associated with reduced stormwater runoff, sound insulation, dramatically increasing roof life spans, and energy savings. These spaces can function as small parks providing an urban oasis with marvelous views. It can also be argued that green roofs in urban settings provide a space for solace and contemplation which increases worker productivity. All of these aspects help to contribute to a healthy and robust local economy.

An example of a successful local green roof would be the Ballard Library in Seattle where 18,000 plants help with insulation, habitat creation and reduction of runoff. There are several native plant species that would be suitable for a green roof. These include: *Aquilegia formosa* (Columbine); *Aster subspicatus* (Douglas Aster); *Boykinia major* (Greater boykinia); *Camas* species; *Carex lenticularis* (Shore sedge); *Carex obnupta* (Slough sedge); *Dodecatheon hendersonii* (Shooting star); *Eriophyllum lanatum* (Oregon sunshine); *Festuca idahoensis* (Idaho fescue); *Fragaria* species; *Iris tenax* (Oregon Iris); *Lilium columbianum* (Columbia lily); *Lupinus polyphyllus* (Lupine); *Nothochelone nemorosa* (Woodland beard tongue); *Sedum lanceolatum* (Spearleaf sedum); *Sedum oregonum* (Oregon sedum); *Sisyrinchium idahoense* (Idaho blue-eyed grass); *Symphoricarpos albus* (Snowberry); *Triteleia hyacinthina* (Fool's onion); *Valerian sitchensis* (Sitka valerian); *Viola adunca* (Early blue-violet).