Green Roofs and the American Urban Landscape

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The implementation of Green Roofs is becoming more and more prevalent within our American urban landscape. However, green Roof technology is not new. In fact Europeans have been realizing their aesthetic, psychological, environmental and even economic qualities for years. It makes perfect sense to follow their lead and convert otherwise barren spaces into lush green landscapes.

Simply stated a green roof is the installation of plant material on a rooftop, typically but not exclusively on a flat roof. Green roofs fall into two categories, extensive and intensive.

Extensive Green Roofs

Extensive Green Roofs typically consist of low growing drought tolerant plants (2" – 6" high) such as sedum. The soil profile is shallow (2"-4" depth). Many manufacturers even offer pre-planted tray systems complete with a drainage component. Once a waterproof membrane is installed the trays are simply laid down, resulting in an uninterrupted lush carpet. Extensive green roofs are not intended as accessible use spaces.

Intensive Green Roofs

Intensive Green Roofs are essentially landscaped environments, much like those you find on the ground plane, installed on roof spaces. The plant material can be larger and more diverse and the soil profile is generally several feet deep. They are intended and designed as use spaces. Intensive green roofs are often classified as "roof plazas", containing amenities such as plantings, patio spaces, structures, water features, pools, etc.

Regardless of the type (Extensive vs. Instensive) green roofs offer a plethora of beneficial traits. Listed below are some examples:

- **Beat the Heat:** If you have ever walked across a parking lot on a hot summer day you have most definitely experienced the "Urban Heat Island Effect". Un-vegetated rooftops contribute greatly to this condition and Green Roofs can effectively diminish the negative impact of this situation.

- **Stormwater sponge:** Green roofs can absorb a large percentage of rainfall, effectively reducing the intense runoff generated from a roof surface during a storm event. In fact, an annual reduction of 50 – 60 percent is common.[1] As a result the pressure on stormwater systems can be alleviated. Additionally, stormwater is cleaned of pollutants and cooled as it passes through a green roof profile.

- **Green saves green:** Although green roofs are initially more expensive to install compared to a conventional roof (approximately $20 - $40 vs. $10 - $15 per square foot) this cost can soon be overshadowed by long term operational and maintenance cost savings. For instance, protection from the elements and harmful UV rays enables the life span of a green roof to far exceed that of a conventional roof. Experts agree that a green roof life span of 40 -50 years should be anticipated.[2] Furthermore, building heating and cooling costs can be significantly reduced by as much as 10-15 percent.[3]

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1 "Extensive Green Roofs" by Charlie Miller, P.E.Roofscapes,10-02-2008 http://www.wbdg.org/resources/greenroofs.php
2 "ASLA – Green Roof Project", http://land.asla.org/050205/greenroofcentral.html.
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- **Look at that view!** Imagine looking out of your hotel or apartment window. Would you rather gaze at a sea of grey asphalt or lush green and colorful plantings? Green roofs can dramatically improve the urban vista while also providing both positive visual and physical experiences.

Green roof implementation takes advantage of otherwise wasted spaces and has virtually no impact on the street level infrastructure. Empty rooftops are unclaimed territory and should be the new frontier for landscape architects and installers. An uninterrupted connective network of green spaces can be realized in the urban environment by simply looking upward.

About Garden Associates Landscape Architecture

Garden Associates provides a comprehensive suite of services in the areas of landscape architecture, sustainable design, and green initiatives including rain gardens, green roof and green wall design. The company partners with architects, engineers, builders & developers, and environmental groups to handle the landscape design services for single family homes, multi-unit housing, commercial & retail properties, schools, healthcare, and state & local government. Garden Associates also works directly with homeowners in the development of master plans, pool & spa design, hardscaping, plantings, outbuildings, fencing, decks, patios & walkways, and equine environments. Garden Associates Landscape Architecture has been in business for 17 years as state certified landscape architects.

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If you'd like more information about this topic or to schedule an interview with David Chewey, President, NJCLA #748 or Michael Medea, Senior Landscape Architect, NJCLA #809, please call Kelly Duncan at (908)823-3330 or email info@gardenassoc.com