

University Pointe Ecoroof

1955 SW 5th Ave

Introduction: University Pointe, originally known as College Station Housing, was built in 2012 as a residential project to respond to the growth of Portland State University. The 16 story project was a private project undertaken by American Campus Communities. The project overcame many financial and physical constraints to become an important piece of the urban fabric at the south end of downtown Portland.

This student housing building has ecoroofs on levels 2, 3, 16, 17, and 18. The lower level ecoroofs are readily visible from the higher levels providing an aesthetic for the building residents to look down on. Although primarily functional being higher than most adjacent buildings, the roofs are visible to West Hills residents. Altogether, the building consists of approximately 24,255 s.f. of ecoroof.



Stormwater Overview:

The ecoroof at University Pointe provides stormwater management for all the rain that falls directly onto it. After the rain percolates through the 4" ecoroof growing medium, it travels by way of the drain mat to roof drains, which convey the water to stormwater gardens in the central courtyard of the U shaped building. After moving through this large flow-through planter, the water is routed to the storm system in SW 5th Avenue.

System Components:

- Membrane: American Hydrotech
- Root Barrier: American Hydrotech
- Drainage Channel: American Hydrotech
- Protection Board: American Hydrotech
- Growing Media: American Hydrotech
- Gardnet: American Hydrotech
- Irrigation System: H.D. Fowler – Rotary sprinklers on fixed risers
- Plant Material: Pre-vegetated mats

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| Sedum album 'Coral Carpet' | Sedum reflexum 'Blue Spruce' |
| Sedum album 'Murale' | Sedum floriferum 'Weihenstephaner Gold' |
| Sedum sexangulare | Sedum kamtschaticum |
| Sedum sp. 'John Creech' | Sedum x Immergrunchen |
| Sedum sp. 'Tricolor' | Sedum oreganum (level 2) |
| Sedum sp. 'Red Carpet' | Phedimus takesimensis 'Golden Carpet' |
| Sedum sp. 'Fuldaglut' | Delosperma nubigenum 'Basutoland' |
| Sedum rupestre 'Angelina' | Sedum reflexum 'Blue Spruce' |



Annual Maintenance Schedule:

University Pointe will follow a maintenance schedule that will include the following seasonal activities:

Summer: Make necessary repairs. Improve growing medium as needed. Clear drains. Irrigate as described in O&M Manual.

Fall: Replace exposed soil and dead plants. Remove sediment and debris from drains. Provide erosion control for bare soil if necessary.

Winter: Monitor infiltration/flow rates. Clear drains as needed.

Spring: Replant exposed soil and dead plants. Remove sediment and debris from drains.

All Seasons: Weed as necessary.

Successes and Lessons Learned:

Crane Extraction: The time frame for the landscapers to work on the ecoroof was a challenge.. The desire to remove the project crane in a timely manner necessitated that the landscape contractor begin his work. However, this led to the challenges of working on the roof before other trades were done. Coordinating the crane extraction and unfinished work while effectively managing the cost of the crane made for a few challenges to installing and establishing this ecoroof. Due to the timing of the crane removal, sequencing of construction was a challenge for the ecoroof installation. The placement of the soil and plants was completed prior to the completion of other trades on the roof, which led to some areas being trampled, and compacted. As a result, some areas had to be repaired and replanted.

Pre-Vegetated Mats: The use of pre-vegetated sedum mats has been well received. Sedum plugs and cuttings were originally specified; however a substitution during construction introduced the sedum mats to the project. These were preferred by the contractor because of the ease of installation and the finished look they produced.

Specifications: Many ecoroof systems include proprietary materials that make it difficult to properly specify multiple manufacturers. One potential solution is to develop a performance specification. This allows multiple companies to develop an ecoroof assembly that meets any specified project performance requirements to manage stormwater or prevent wind uplift, for example.

Perimeter conditions: Wind creates an uplift tendency for air to pull up the roof perimeter. Being a high rise, the wind uplift forces at University Pointe were quite high at the upper floors. Often times in low rise buildings gravel is used at the building perimeter to offset this uplift force, but gravel is not allowed over 75 feet in elevation per code. At University Pointe, the vegetation went all the way to the edge to maximize the amount of vegetated roof. As a result, the contractor's understanding and knowledge base were expanded to develop a secure and warrantable system.

