

FERRIDAY ACCESSORY DWELLING UNIT

ECCOROOF FINAL REPORT

PROJECT DATA:

Owner/Designer/Builder: David G Ferriday

Site: 2611B SW Sunset Blvd Portland, OR 97239

Description: 1.5 story 16' x 40' 640 SF Accessory Dwelling Unit (ADU) with a 96 SF covered deck over a 640 SF partially submerged garage on a sloped lot.

Eccorroof Specifics: 736 SF "Butterfly" roof with 7" curbs, slopes to center with 1/12 pitches. Central cricket directs water to two scuppers at low points along sides.

Design: After looking into splitting and selling off part of my double lot in SW Portland, I heard that the City of Portland was incentivizing the building of infill projects by waiving development fees on ADU projects. With the down turn in the economy I found that I had extra time on my hands to design and construct a project.

Part of the design criteria for an ADU is that it must match the general style of the main house. Matching the existing low slope shed roof of the existing Mid Century Modern home meant that it was an ideal candidate for an eccorroof. The added benefit is I would not have to take any additional measures to deal with the roof runoff on a tight site.



Structurally there was negligible impact of the added weight of the green roof as my 16' roof joists already needed to be oversized to 2x12's in order to accommodate the required insulation. The only change was that some of the shear walls were beefed up to deal with the addition potential seismic forces.

Construction: Over the joists and plywood the roofing contractor added a ¼" protection board and the 80 mil TPO roofing. He thought that standard 50 mil would be fine, but I wanted the extra piece of mind of the thicker material. The roofing goes up and over a perimeter curb built out of 2X material and is finished with a metal cap.

I put down a layer of standard 5/8" recycled foam carpet padding over the TPO to both protect the roof membrane and to retain water for the plants and to slow the run off. This was a lesson learned as I was initially under the impression that a drainage mat is preferred, but that would partially defeat the purpose of the ecoroof by allowing the water to run off too quickly.

After investigating the cost of craning or blowing the growing medium up onto the roof, I settled on a low tech method of two five gallon buckets, a rope, and a pulley. It was cheap but very labor intensive to get nearly 400 bucket loads up two stories.

The areas around the 2 scuppers are kept clear of soil with pressure treated wood dams drilled for drainage and held in place with large stones.



I planted the roof with a variety of hardy ice plants, sedums and heather in the early spring. My supplier told me the early Fall and early Spring are the preferred times to plant to avoid the drought and heat of the summer and the soggienss of winter. They are randomly mixed and spaced 1' apart. Rather than laying the species out in a pattern, I took a survival of the fittest approach so if one species does better than another there won't be any bare spots. I left a 1'6" clear space clear around the perimeter for access and maintenance.



Cost:

736 SF of 80 mil TPO roofing, 736 sf of ¼" Dens Board, 124 LF of painted metal cap for the curb, 2 scuppers w/ down spouts (this includes labor):

\$4,611.14

810 SF of carpet padding:

\$202.50

9 yards of Pro-Gro extensive soil mix delivered:

\$464.50

(630) 2" and 4" potted variety of Ice Plants, Sedums, Heathers:

\$400



2x8x12' Pressure treated board and river rock for scupper dams

\$40

Total Cost \$5,718.14 (excluding sweat equity labor)



