

Martin Residence

Project Address: 903 NE Rosa Parks Way

Owners: Brian & Bethany Martin

Project Type: Shed and Chicken Coop Roof

Ecoroof Size: 220 SF (Combined)

Date Planted: September 2012

Overall Project: The project consisted of two backyard structures. The shed (10'x14') and chicken coop (8'x10') are located adjacent to each other. Because of the low pitch, the entirety of the roofs are southern exposure with full day sunshine.

Structures: Both buildings were designed and built with an ecoroof addition in mind. The roofs of both were reinforced so as to handle the additional weight of soil, water and plants. The ridge of the shed roof is near the front and slopes more steeply toward the front of the structure at about 3:1. The rear slopes much more gradually at about 8:1. The roof of the chicken coop is a much more gentle slope at about 2%, just enough to get the water to run toward the drains.

Roof Description: Both roofs have a similar profile. Plywood sheeting is nailed to the rafters. Because the shed was build a year prior, it had a full asphalt shingle roof. On top of this, filter fabric was placed to protect the waterproofing. Next was a pond liner which serves as waterproofing and root barrier. Above the pond liner, carpet padding adds extra protection. Finally 5-8 inches of soil were placed. The chicken coop roof was the exact same except that it did not have the asphalt shingles to begin with. Tar paper was placed directly on top of the plywood sheeting as a vapor barrier and as a protection for the 40 mil pond liner abover it.

2x12 douglas fir edging holds the soil in place. In the front of the shed, slits were cut in the waterproofing at the base of the roof. This allows water to drain down between the roof sheeting and the 2x12. It is captured into a 2" channel and conveyed laterally. At the back of the shed, four notches were cut into the support board to allow water to flow into the gutter. Filter fabric holds the soil in place.

The roof of the chicken coop slopes toward the front where (4) 3" floor drains are located. These drain to a gutter.

I was originally intending to plant the two roofs conservatively, using a mixture of proven plants including many varieties of sedum. In the end, I chose to use a much more diverse palate of plants and attempt to add color, texture and overall diversity to the roofs.

Maintenance and Irrigation: Ecoroof maintenance will consist of monitoring and removal of undesired weeds. Some plants may require replacement. Irrigation will consist of hand watering to establish plants.

Lessons Learned:

When the steep portion of the shed was planted, I had to create flat basins around each of the plants to keep the water from running off and not infiltrating into the soil.

I decided to pick plants from a wider variety and choose some that might be borderline for southern exposure ecoroof setting. They are worth experimenting with and can be replaced should they not make it.

It was worth the effort it took to site both of the structures and make rooflines that are visible from below. Being able to see the roofs from many locations in the yard is quite rewarding.



Chicken Coop Drainage



Chicken Coop with waterproofing carpet padding and soil



Shed with Soil



Planted Shed Roof



Planted Chicken Coop Roof