

# REDDING LIBRARY'S VEGETATED "GREEN" ROOF

The library's green roof was inspired by the last line of a poem about the Wintu Indians by Alfred Gillis.

*" Here nature grows her wild bouquets  
And mountain lilies love to bloom  
And soft winds whisper through the pines  
In dirges o'er the Wintun tomb."*



During the public design process of the new Redding Library building a green roof was suggested for the library's design. The concept and design was approved by the State Office of Library Construction. Green roofs are common in Europe and are catching on in the United States, particularly on the East Coast. This is the first green roof in Shasta County. The roof does not need mowing, though it may need weeding every now and then.

## A green roof serves 3 practical purposes:

1. Better Insulation – Soil is an excellent insulator and improves the ability of the roof to hold in heat during the winter, or keep out heat during the summer. Sod roofs and buildings have been common in the past.
2. Longer Roof Life – The roofing on most of the building is a thick plastic. Plastic breaks down in sunlight and the roof will have to be replaced in about 20 years. Roofing protected by a green roof may last up to twice as long as exposed roofing.
3. "Better" Drainage – During a rainy day a typical roof drains water as fast as its drains will allow, along with any dust, bird droppings or other materials that have settled on the rooftop. The soil on the green roof will hold some of the water, slowing and reducing loading of the City's storm sewers, and filtering out some of the dust and nutrients.

The roots of the plants reach through the growth media (soil) and gravel and anchor into a special fabric below the driplines, which provide water.

The roof has a special leak detection system in it that, with a special probe, will allow a leak to be located to within a few inches to minimize plant disturbance while the leak is repaired.

The original plants are a combination of drought resistant (low water) plants. Many are native to California. The plants are:

Festuca Glauca (Blue Fescue, Elijah Blue)	Geranium "Russell Prichard" (Hardy Geranium)
Penstemon Gracilis (Lilac Beardtongue)	Oenothera Speciosa (pink evening primrose)
Punella Grandiflora (Self-heal, Freeland Blue)	Briza Media (Quakinggrass)
Tulipa Tarda (Wild Tulip)	Penstemon Digitalis (Foxglove Beardtongue)
Carex Testacea (Orange Sedge)	Salvia Nemorosa (Woodland Sage)
Eschscholzia Californica (California Poppy)	

The green roof is one of several devices in the library that contribute to making the library environmentally sustainable. The roof helps cool the library in warm months and heat the library in cooler months.

The roof is comprised of actual plantings on top of multiple layers of growing materials, including about 6 inches of soil. The plants will remain about this height until the roots hit the root barrier and then the plants will begin to grow until they reach the approximate height of the roof edge, or about 3-4 feet. The roof is fully irrigated and completely waterproofed to avoid leakage to the ceilings below.

This is the first green roof in Shasta County, but green roofs are more common on the East Coast. One of the largest green roofs in the world is at the Ford Motor Company's Rouge River Truck Plant in Dearborn, Michigan. That roof is four acres.

Green roofs were well known to history, including the famous Hanging Gardens of Babylon, estimated to be about 160,000 square feet.

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The soil is lighter than books, so the structure supporting the green roof is actually somewhat less expensive than that supporting the shelving inside.