



Opticos GreenWORKS Design Competition Winner Green Profile

Overall Perspective

The fundamental basis of green design is the site itself including the social and historical context as well as the plan's impact on the neighborhood and the town or city. Choices are based on solar orientation, daylighting, passive cooling opportunities, water conservation and retention. The goal is to minimize automobile usage by locating near services and public transportation, thereby encouraging walking and a healthier lifestyle.

Energy Efficiency

- Solar orientation maximizes passive heating in winter from southern exposure.
- Shading devices block high summer sunlight.
- 44 180-watt Solar panels at 50.67 degrees provide 25% of electricity needs.
- One room deep units encourage cross ventilation from prevailing north south wind.
- Native vegetation shades walls, windows and walkways from western exposure.
- Fountains and courtyards cool the air.
- Green roofs passively cool through evaporation, reduce heat island effect, and increase insulation.
- Advanced ICF construction provides high R-values, longevity and low maintenance.
- On demand water heaters save gas.
- Appliances are energy and water conserving.
- Radiant heating reduces energy usage.

Water Efficiency & Storm Water

- Drought-tolerant native landscaping reduces water usage.
- Low usage appliances and fixtures
- Landscaping promotes rainwater retention.
- Rainwater is stored in pots where it is available to water the edible, organic garden that also promotes a commitment to local food.
- Toilets are low-flush.
- Pervious surfaces used throughout the project reduce runoff and filter water before it enters the city storm drains



Building Materials

- Durable, lasting materials were selected
- Whenever possible, building materials are local and from recycled/reclaimed sources.
- Finishes on walls, floors, and cabinets are low/zero VOC.
- Furnishings are made from non/toxic materials and do not off gas.

The Ecology of a Living Roof

The roof's multi-layered sandwich construction features indigenous vegetation which provides habitat for at-risk species of birds, 6 inches of soil above gravel, a root barrier, rigid insulation, a vapor barrier, polystyrene, flashing, sheathing drywall and the structural Vigas.

Local plants used in the roof include Blue Grama, Cardinal Flower, Desert Marigold, and Strawberry Cactus. This flora recreates the habitat of a local at-risk bird species—the ground dwelling avifauna.