

The Sunflower House



The Original House

Year Built 1980s, remodeled 2006
Home Size 3000 Sq.Ft. finished, 3800 total
Contractors:
Bryan Bowen Architects
(see information on page 3)
Ryland Gardner
Eco Handyman

Ethics Become Tangible

Ryland Gardner & Shari Leach

As stewards of the earth, environmental educators, and residents of this amazing planet, we recognized an opportunity to embrace our environmental ethic in a tangible way when it came time to transition from our existing home. Instead of selling our 900 square foot modular home to see it be demolished like every other modular or older home sold on our block in North Boulder, we decided to renovate and add an active/passive solar addition.

Taking on this remodel/addition was a great opportunity to preserve an existing structure while incorporating sustainable building practices in creating a unique passive/active solar design. It also allowed Ryland to relive part of his past as a project manager, carpenter and general contractor. We wanted to build a dwelling that would address our profound commitment to the earth and ecological sustainability as well as retain its economic feasibility.

The home's design is an evolution of contemporary Craftsman style. Post and beam construction is coupled with stick framing to create a modern look with Craftsman accents. Ryland was able to use a significant amount of recycled materials in the framing process – the main one being the existing 900 square foot modular home.

The design also included passive solar components and plumbing for solar hot water. The addition was built using recycled Microlam beams and Truss Joists purchased from ReSource. Recycled timbers from several sources were used in the timber framing. The south facing windows coupled with five CMU walls that were poured solid with concrete to act as a heat sink created a significant contribution to our heating.

The original modular house was well-built in the early 1980's with 2x6 exterior walls, insulated with fiberglass batt insulation and ¾ inch R-max exterior insulation over ½" plywood sheeting. The ceiling was insulated to R-38 with blown in cellulose insulation.

During the renovation, the original windows were replaced with low-e Millguard vinyl casement windows and the exterior was re-sided with Hardee panel concrete paneling. By acting as the contractors on the house, we were able to significantly reduce the amount of construction waste generated through thoughtful design, recycling, and a little extra time and energy.

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The results were immediately noticeable. Once the building envelope was closed, the furnace kicked on only twice during short "cold snaps" this past winter. The forced air heating system is distributed in a three zone configuration and allows us to heat the living portions of the home while maintaining a cooler environment in the bedrooms.

The active solar system is still under construction. It will consist of both solar hot water panels to provide the domestic hot water as well as the hot tub. There will also be a photovoltaic system that will provide 75 – 100% of the electricity use.

Outside the home, the landscaping is xeriscaped and comprised of primarily drought tolerant native shrubs, trees and wildflowers. The grasses on site are either native grasses or are reused extras from other homes' lawns. Mulch is used to retain moisture and reduce weed growth. In the heat of the summer, the house is surrounded by literally hundreds of sunflowers, hence the name The Sunflower House.

ENERGY FEATURES

- Passive solar design
- Thermal mass walls
- Programmable thermostats
- High efficiency furnace
- High-efficiency appliances
- Low-E windows
- Solar hot water
- Solar-heated hot tub

WATER FEATURES

- Xeriscaping

GREEN FEATURES

- Cork floor
- TREX decking

RE-USE/SALVAGE FEATURES

- TruJoist framing from ReSource
- Salvaged timber and Microlam engineered wood
- Salvaged landscaping materials - sod, flagstone
- Re-used stairs and doors from ReSource
- Planters, benches and tables made from recycled construction materials



Ryland, Shari and Family