



TARA & JERRY'S ECOLOGICAL FEATURES

Alexandria, VA

Design Principles

- Sunroom addition at the back of the house in harmony with the site and its surrounding landscaping.
- Expanding and light filled double-volume spaces, yet highly energy efficient.
- Complimentary wide, arcing space (yang) and masonry stove (yin).

Energy

- Masonry stove provides heat to most of entire house.
- Replace poorly insulated existing north exterior wall and inefficient windows with a new highly insulated addition and efficient windows. The new windows are made by Serious Windows, which provide an R-value three times that of most other windows (R-9).
- Biobased spray foam insulation, with +/- 30% soy, was used throughout.
- Living or green roofs were installed on the addition and porch, to provide evaporative cooling, more insulation, and limit storm water runoff.
- Passive cooling is provided by a ceiling fan and operable windows up high in the addition's two-story space (at the loft).
- AC and back-up heat is provided by a very efficient ductless, mini-split heat pump (with a 21 SEER rating).

Materials

- Cembonit panels exterior cladding: a very dense fiber cement panel (much more dense than Hardiboard). This panel is basically fabricated stone, with continuous material (no grain at cuts), which needs no maintenance.
- Most wood, finish and framing, are either from locally storm felled trees, small local mills or FSC-certified sources.
- Pavers in the Mudroom are from recycled glass in a cementitious binder.
- Masonry stove and attached bench are clad in cob, from local clay, sand and chopped up straw.
- Steel railing in the loft is from a local metal shop.
- Bamboo plywood was used to finish main ceiling.
- All finishes are very low or non-toxic.

Storm Water Management

- Site has plenty of open land to absorb rain water back down into the water table.