

## **Doylestown Borough LEED Home**

- Natural drought-resistant vegetation landscaping.
- Rain Barrels at roof downspouts collect storm water for irrigation.
- Rain garden designed to collect storm water and infiltrate back into aquifer.
- Engineered prefabricated foundation walls (Superior Walls) with R-12.5 insulation.
- High-efficiency windows with low-e glazing, argon filled cavity and a u-0.29 rating
- 2x6 exterior walls with 24” spacing. All framing members (including floor joists and roof rafters) are “stacked” to avoid additional load-bearing lumber.
- Icynene spray foam insulation at walls and ceiling mitigates air infiltration and provides a very tight “building envelope” to help lower HVAC load and usage.
- Geothermal heat pump, HVAC (Heating, Ventilation and Air-Conditioning) system.
- HRV (Heat Recovery Ventilation) system allows for fresh air support with heat transfer.
- Bamboo flooring: Environmental-friendly flooring.
- Recycled (and recyclable) carpeting.

- Enviro-pure paint at all painted surfaces (interior and exterior).
- Composite decking and porch railing: recycled material with minimal maintenance required.
- Thermoplastic resin siding: avoids re-painting and chemical maintenance.
- Solar shade device at second floor, south-facing window. All other south-facing windows have roof overhangs as shading devices.
- Exhaust fans at bathrooms with timers to provide for moisture exhaust.
- Exhaust fan at garage on timer to exhaust CO (Carbon Monoxide).
- Light-well at 3-story stair to provide “chimney effect” convection during hot season.
- Enclosed foyer provides “heat trap” at primary entrance.
- EnergyStar interior lighting fixtures.
- Exterior lighting powered by PV’s (Photovoltaics).
- Domestic water heated by geothermal HVAC system
- Low flow plumbing fixtures (highly efficient).
- Engineered flexible plumbing tubing.
- Pervious surface at patio (pea gravel).

- Ceiling fans at all bedrooms and great room.
- Advantech and Timberstrand structural members emit minimal off-gassing.
- Overall home design has minimal footprint and uses less materials by locating the second floor bedrooms within the roof system.

The design is also contexturally sympathetic to fit the community which includes both one-story and two-story homes.

A large front porch orients the house toward the walkable neighborhood and attracts outdoor living-activities that require no mechanical air conditioning.