

GREENEST uses many certified products and fundamentally meets several GREEN standards BUT is not using third party certification

Environmentally friendly sitting and "reduced carbon footprint."



Energy efficient and environmentally responsible Timberpeg Post & Beam framing and materials package



Promoting a healthy indoor air environment.



Reducing water consumption through low-flow fixtures.



Reduction of erosion runoff through stormwater capture and Bay Friendly landscaping.



Incorporating energy efficient designs and materials while building a "tighter" home.

Emphasizing material conservation and waste reduction while using sustainable products in design and construction.



How Do You Know Your Home Is Green?©

A GREENHOME GUIDE Developed by SusDev Tech Based on Planning and Building GREENEST

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Lessons Learned from the experience of building **GREEN** to ensure Sustainable Design and reduce the Carbon Footprint on the Chesapeake Bay

Many **GREEN** Building features were investigated with many compromises made to settle on a sustainable site plan and building package

Implementing proven alternative technologies to minimize the waste stream are handicapped by local codes in Anne Arundel County.

The incentive structure for sustainable design including energy efficiency and reducing the carbon footprint is too restrictive and needs innovative approaches at both the State of Maryland and county level.

Several available renewable energy technologies were not used because they were not affordable based on the allocated construction budget.

Building GREENEST

From the outset, Ken desired to create a nurturing, non-toxic, free of chemicals living environment that is also minimizing waste, and utilizing sustainable and alternative energy. The lessons learned through managing the design, permitting and building of **GREENEST**, a waterfront home in the Annapolis area, are highlighted here.

Working within local building codes, **GREENEST** is maximizing alternative construction approaches that feature harmony with the natural setting and life cycle analysis for all building components. The goal is to balance cost and materials to create an affordable environmentally friendly dwelling.

The principles in **Green** building techniques followed by Ken focused on sensitivity to site development, reducing energy and water use, having a healthy indoor air quality, and incorporating environmentally

friendly building materials as much as possible. The project is also expected to reduce utility bills, decrease maintenance costs, and enhance the health and well-being of the home occupants.

Green Building Today



Green building applies principles of resource and energy efficiency, environmentally friendly materials for a healthy building, and ecologically and socially sensitive land-use. **Green** building also requires an integrated, multi-disciplinary design and building process.

With proper planning and decisions, these actions can optimize building cost and performance. **GREENEST** also targeted reducing the carbon footprint of the project as an important parallel goal.

However, the promotion and selling of green building today is confusing with a growing universe of products using alternative standards and sometimes questionable claims.

The research undertaken to build **GREENEST** shows that there are many competing promotions and standards - it's a confusing world out there - BUT you can achieve **GREEN** on your own

What makes GREENEST Green?

Timberpeg milling and production uses computer engineering for precision cuts and minimizes lumber waste



Forest Stewardship Council certification of all the Douglas Fir framing from the Hoopa Indian reservation in Northern California with chain of custody through the harvesting and milling process



Documented certification for other wood products including pressure treated joists, western red cedar from British Columbia, spruce from Finland and ipe from Brazil



Extensive site excavation and construction to maximize stormwater capture and diversion combined with the installation of a stormwater conveyance outfall to eliminate erosion and siltation

Detailed research to identify environmental and sustainable products through life cycle assessment (LCA)

Timberpeg provided FSC certified Douglas Fir (Northern California) and PEFC - Inspecta certified spruce (Finland) for Post and Beam Frame

Using certified or sustainable wood products when possible for framing, decking and trim

Exterior siding with energy efficient and long lasting Hardiplank

Maximizing insulation values with ISO insulation and added roof insulation to exceed local insulation codes

Energy Star rated windows and doors (primarily Anderson Low-e)

Climate control with highly efficient (SER 16) Sanyo minisplit HVAC system and six zoned indoor air handlers

Propane fireplaces instead of wood burning to improve energy efficiency and eliminate polluting wood burning emissions

Rinnai on demand Energy Star propane tankless hot water heater

Water saving faucets and low flush toilets

Majority of low energy CFL lighting

All Energy Star rated appliances

Wilsonart countertops consisting of FSC certified wood, recycled paper content and low emitting materials

Low toxic finishes on floors and cabinets

Use of interior Benjamin Moore low VOC Aura GreenGuard paints

A Commitment to Design, Build and Demonstrate Practical Green Construction for the Homeowner



Site engineering design for stormwater capture with multiple intercept structures and an outfall infiltration and sediment reduction system



Construction of septic system piping drilled under county road to pump wastewater to upper lot for protecting waterfront groundwater from contamination



A FAST (Fixed Activated Sludge Treatment) septic system to reduce nitrogen through multiple biological, bio-chemical, and physical processes