

## **Lopez Community Land Trust (LCLT) ‘Sustainable Community Homes’ Summary of Sustainable Features**

6-4-07

### **Location and Linkages**

- The homes will, in measurable ways, promote energy and water independence while preserving the rural character of the site and improve the natural diversity and habitat of site, situation, and surroundings through permaculture practices.
- In November 2005, LCLT secured seven acres of land within the Urban Growth Area on Lopez Island, which allows higher density housing. Sustainable Community Homes will impact two and a half of these acres.
- The site is within walking distance of Lopez Village and all local services, including grocery stores, the Children’s Center and the health clinic.

### **Sustainable Sites**

- Low Impact Development practices including reduced impervious surfaces and storm water control.
- Site planning and landscaping choices reduce water use and encourage wildlife.

### **Water Efficiency**

- Water reuse measures include rainwater catchment for clothes washing and toilet flushing and surface water collection for irrigation.
- All indoor fixtures to be high efficiency, including low flow dual-flush toilets.
- Rain gardens will be installed at the parking area to collect gas/oil run-off and filter it before leaving the site.

### **Indoor Environmental Quality**

- Meeting ENERGY STAR rating standards through passive solar energy features, super-insulation, and green construction practices.
- On this rural site with homes under 900 sf, ventilation standards will be met with a whole-house timed fan and operable windows.

### **Materials and Resources**

- Resource-use reduction by showing beautiful homes utilizing small footprints. (Six homes at 740 sf, four homes at 876 sf,, and two studio rentals at 412 sf each).
- Local lumber has been milled for key features, including door trim.
- Metal roofing to be used for rainwater catchment, longevity, and durability.

### **Energy and Atmosphere**

#### *General Principles*

- Getting to net-zero-energy use by combining low-energy use building techniques with renewable energy production - a fun challenge. The team has defined “zero net energy” as an annual balance of consumption and actual on site energy production within five years of first occupancy.
- For the life of the home, residents will use less energy to heat their homes, cook, and clean; our Ecotech Energy Systems consultant estimates by as much as 40%. Meters will be placed inside each home and financial incentives will reward those who use less.
- A wind metering tower was used to collect data during 2006/2007, and as part of a five-year plan, LCLT will install a wind generator and solar collectors to produce on-site energy.

#### *Specific Measures*

- Passive solar orientation and modeling
- Window tuning and area distribution by elevation exposure
- Shading and insulation of windows for maximum gain and minimum loss
- Thermal mass to retain heat and envelope improvements including insulation beyond code (including straw bale walls and R-50 roofs)
- Advanced air sealing techniques
- Demand-reduction strategies including selection of only Energy Star lighting and appliances
- Clothes drying outside the home.
- Solar hot water pre-heat system

### **Homeowner Awareness**

Homeowners, through an orchestrated nine-month training program currently underway, will learn specifics about conservation that will aid them in reducing their average monthly bills.

Skills include :

- Monitoring their household use with meters located within the homes
- Understanding household use compared with renewable energy production
- Utilizing ‘night shades’ during cool weather to keep warm air in the homes at night
- Turning lights and heat off when not in use
- Using low energy use options on appliances
- Maintaining compact fluorescent bulbs in all light fixtures

### **Innovation and Design Process**

- During a 3-day design charrette in the spring of 2006, LCLT gained essential development expertise from over thirty practitioners who offered their in-kind services. The team consisted of eight architects, along with several planners, builders, county officials, water and energy consultants, attorneys, and permaculture designers. Their participation set a framework for *Sustainable Community Homes*.
- A “Scrapbook” was published by LCLT which documents the specific recommendations generated during the design charrette. (*enclosed*)
- Since then, LCLT has hired Mithun, a leading architectural firm in sustainable design, and Chris Webb of Webb & Associates Inc. for civil engineering, Dana Brandt of Ecotech Energy Systems, and Joe Bullock of RE: Sources for permaculture design. Design commenced in July of 2006.