Fact Sheet

House Facts

- Made of clay (glue), sand (compressive strength), straw (tensile strength) and pumice (insulation and added strength)
- Quantities: 80 yards of clay (8 dump trucks), 80 yards of unwashed fill sand (8 dump trucks), 52 yards of pumice, 50 bales of straw (40 of which were local)
- **First code approved, load bearing, high occupancy building in North America**
- Seismically engineered two story
- First to use pumice as an additive to gain insulative value
- Aprox. 130 cubic yards of cob, mixed and stacked in 6 ½ weeks by average of 1 ½ persons.
- Aprox. 20 cubic yards of materials mixed for floors
- 16 cubic meters of high flyash concrete for foundation (45% flyash mix) – first in Victoria to experiment and gain approval.
- 90% of wood used was recycle from Mayfair Lanes and old Glanford School
- Nails removed from recycled wood = five 5 gallon pails full.
- Recycled nails used for anchors on all embedded wood in cob = five 5 gallon pails.
- earthen floors on both levels
- Most materials mixed by rototiller – 24 litres gas used in the 150 mixes approximately 6 cubic yards per litre.
- First in Victoria to experiment with Fabric Form for foundation
- Semi duplex (shared common areas with extended family)
- Interior square footage – 1600 down, 650 up
- Upper floor exterior walls are cob infill
- Upper floor interior walls are light clay infill (cedar chips, straw and clay)
- Insulation – roof R34, Lower floor R12 ½, lower walls R25, Upper shear wall R28, Upper cob infill R10-12.
- Windows – fiberglass (Argon filled, west windows low E, and north window triple glazed)
- Very little construction garbage. Never required a garbage disposal dumpster, just residential pickup every two weeks.
- Altered the building envelope to allow building to occur on brown site, and preserved untouched ecosystems (that were in the prior building envelope).

Solar Hot Water

- Sun absorbed to heat water for space heating and domestic hot water
- First to address void in CSA certification on solar thermal components and gain approval for use in greater Victoria (with help from NRC and City of Ottawa).
- 2500 meters of tubes circulate through upper and lower earthen floors
- 60 Mazdon evacuated tubes, 120 gallon storage tank
- Heat load loss calculations aprox. 24,500 BTU/h in winter
- Back up heat source – Wood Gun wood gasification boiler

Solar PV

- 12 Sharp 170W panels – considered a 2KW solar array
- BC Hydro Grid Intertie (we think #16 in the province)
- 900 amp hours battery storage
- 24 volt system
- house lighting and appliances wired for 24 volt (lighting primarily LED)
- Low voltage El Sid pumps for solar loop and hydronic heating system

Living Roof

- To be planted fall 2008
- 2500 square ft
- Firestone EPDM membrane
- Drainage and filter layers covered with pumice and soil for total depth of 3 inches
- Acts as a primary filter for the rain water harvesting system. Mini watershed.

Rain water system

- From living roof
- 6400 gallons of storage
- primary use for food garden irrigation
- acts as a backup for potable water supply
- No waste

Grey Water System

- all household water (showers, sinks, laundry)
- sized for a 2” drain system
- linked to black water via a diversion valve
- filtered through worm Biofilter (designed by Ann)
- irrigates fruit trees via mulch basins
- worm castings from biofilter used as food for garden
- No waste

Composting Toilet System

- Based on the Humanure Handbook by Joseph Jenkins
- Lots of science, very simple, pathogen death ensured
- Compost pile used for one year (temperature between 100 F to 160 F)
- After using pile for year we let sit dormant for a year
- On third year we have great soil
- Completes nutrient cycle and is used on gardens
- No Waste