

"Green Features" - West Cottage

SMALL OVERALL SIZE - The first essential step in "green" design. Approximately 1300 square feet (interior dimensions). Reduces construction material, earth disturbance, and energy use.

GEO-THERMAL HEAT PUMP - Provides winter heating (radiant floor) and summer cooling/dehumidifying (forced air). Also provides domestic hot water.

PASSIVE SOLAR ORIENTATION - Long axis of cottage is east-west, with most of the windows on the south side to capture sunlight. This cottage has 126 square feet of south-facing glass.

ENERGY-RECOVERY VENTILATION SYSTEM
- Provides fresh air with minimal heat loss/gain.

SUPER-INSULATION - Walls & roof built with Structural Insulated Panels (SIPs), a wood/EPS foam "sandwich", providing R-30 (8 1/4") in walls and R-45 (11 1/2") in roof.

LIVING ROOF - Soil layer adds insulation, plant shading and transpiration provide summer cooling; rain runoff is moderated.

FIBER-CEMENT COMPOSITE "SHINGLES" & SIDING - Durable, attractive, low-maintenance exterior.

ECO-STAR RECYCLED PLASTIC "SLATE" SHINGLES - Durable roofing for all areas except living roof.

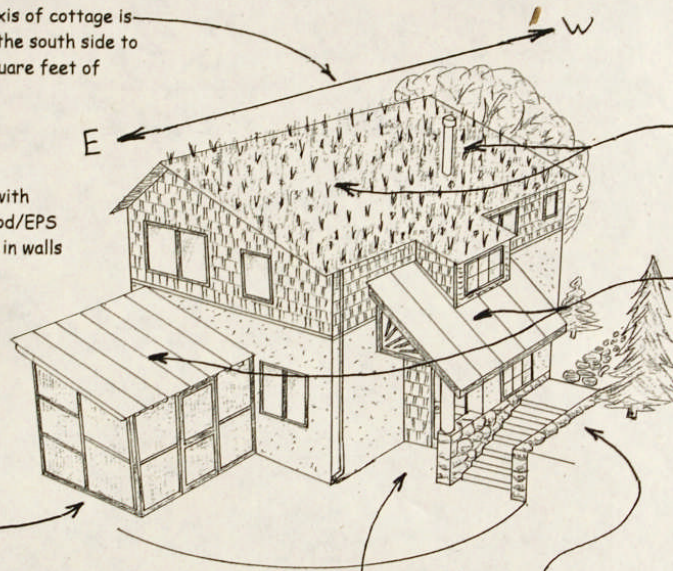
SCREEN PORCH - Provides sheltered, "outdoor" space to connect with surrounding environment.

STUCCO - simple, low-maintenance protective cover over exterior foam insulation on exposed foundation walls.

HIGH PERFORMANCE WINDOWS - Triple glazing, Low-E coating, argon filled, for better insulation on north, west, & east sides. Double glazed for higher solar heat gain on south side 1st floor windows for passive heating. Insulated shades reduce heat gain/loss. Loewen douglas fir has FSC chain-of-custody certification.

EARTH INSULATION - Northwest corner partially embedded in bank (earth coupled) to moderate exposure to winter cold & summer heat. Exterior foam insulation makes foundation walls added thermal mass.

SHELTERED MAIN ENTRANCE - convenient, visually appealing, prevents "air blast" when door is opened.



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Wood from trees harvested on site:

- Oak stair risers and trim
- Cherry island and trim
- Oak log post at entrance
- Dogwood stair newel post
- Dogwood, hornbeam, and mountain Laurel stair railing

Air-tight house construction balanced by energy-recovery ventilation system. Provides fresh air and circulation among rooms.

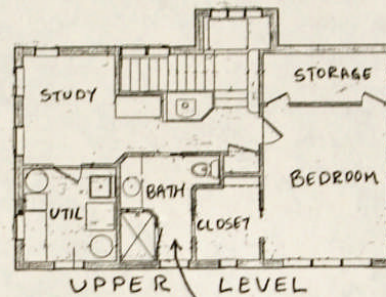
Top-rated Energy-Star washer and dryer.

Recycled fly ash in all concrete reduces portland cement and its inherent energy demand, increases strength, and reduces landfill use.

Stained concrete floor absorbs sun's heat directly and via hydronic radiant heat system. Keeps rooms comfortable at slightly lower temperatures.

Small, efficient wood burning stove.

Trellises with vines shade south windows in summer.



Windows and open stairwell provide fair weather ventilation.

Open floor plan makes comfortable, flexible use of limited space.

Bamboo floor conserves slower-growing trees.

All rooms except eave storage and closet are daylighted.

Linoleum floor in bath. A natural product.

No garbage disposal in kitchen sink and no dishwasher, to reduce hot water (and energy) use.

Top-rated Energy-Star refrigerator. 24volt DC "Sunfrost" powered by solar (p.v.) panels with battery back-up.

Cabinetry by "CitiLog" from salvaged urban trees, with Rainforest Alliance Smartwood certification. (FSC category B neutral)

Efficient lighting fixtures used throughout house.

All purchased electricity is from 100% new wind generation (from Montgomery County's "Clean Energy Rewards" program)

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