

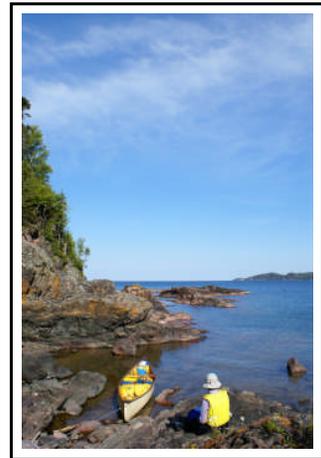
East Cottage Design and Features

Intent and Inspiration

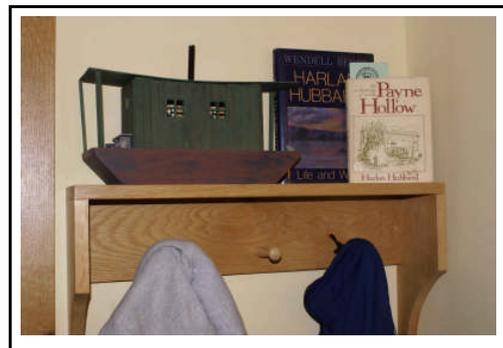
The East Cottage at Dayspring is a staff cottage that was built as a part of a new earth ministry project at Dayspring called, *Simple Gifts*. Being aware that we live in a world where the human footprint on the planet is fast diminishing the capacity of the earth to support life -- where over consumption of earth's limited bounty by a few is causing immense suffering of the most vulnerable of humans and other species -- we have long wrestled with the question,

In light of the Gospel values of compassion, justice, and love of neighbor, how can we live in a way that is simple - light in impact on the earth and our far-flung neighbors - yet abundant in soul and rich in relationship?

For 10-12 days each summer during most of the last 20 years we have traveled in the backcountry of a large wilderness park in Canada, along the rugged coastline of Lake Superior. On those trips we experience living with only what we can carry on our backs or in our canoe, living each day with what the sky and lake will allow, living not in the world man made, but the world that God made. On the lake, on the trail, we meet our limits, we wrestle with our fears, we tread the edge of the unknown. But here too, as never before, we experience life as wonder upon wonder, grace upon grace, life rich beyond the telling. On returning to "civilization" we are scarcely out of the park before we notice the plume of smoke from the local paper mill, the logging trucks rolling by on the highway, the gold-mining operations. The logs we see today in Canada are our paper tomorrow in the States. We ride the questions home -- how can we bring our wilderness life home? How can we live in a way that will preserve this forest, this lake, this wilderness for generations to come?



A number of years ago we were privileged to hear Wendell Berry read from his soon-to-be published manuscript, *Harlan Hubbard: Life and Work*. That story of the lives of Harlan and Anna Hubbard became a seminal inspiration to us in our effort to create a new life for ourselves at Dayspring.



Married in mid-life, Harlan and Anna set about to realize a long held dream of Harlan's to build a shantyboat and float down the Ohio and Mississippi Rivers to New Orleans. They spent seven years on that journey and a few more in the bayous before returning to one of their over-wintering spots on the Kentucky shore of the Ohio River -- a place called Payne Hollow. Here, as Wendell Berry put it, "their shantyboat life had come ashore," and here they would live for the rest of their lives.

In a chapter entitled, "Much in Little," Berry describes their life at Payne Hollow this way:

They lived mainly from what they grew in their gardens, from the small herd of goats, from fishing in the river, from barter with neighbors, and from what they could gather from the woods and fields. They had, eventually, running water in the house, gravity fed from a cistern. And they had a wood burning furnace, mostly homemade, in the cellar. Otherwise, their house had no conveniences -- no electricity, no telephone, no indoor toilet, no mechanical labor-savers. And yet it was an elegant household, with leisure for music-making and for reading aloud.

Wendell Berry also points out that while Harlan and Anna lived apart from the world in some ways, "hundreds of people came to see them and all were made welcome." In their later years the public utility in Indiana across the river began building a nuclear power plant. Early on there were protests against the project, and Wendell Berry was surprised and a bit disappointed that Harlan and Anna did not take part in the protests. Later he came to understand that,

by the life they led Harlan and Anna had opposed the power plant longer than any of us, and not because they had been or ever would be its "opponents." They were opposed to it because they were opposite to it, because their way of life joined them to everything in the world that was opposite to it. What could be more radically or effectively opposite to a power plant than to live abundantly with no need for electricity?

The opportunity to design, build, and live in a staff cottage at Dayspring presented us with a challenge. How could we create a handmade life, one that was both simple and abundant? How could we bring our wilderness life home?

Over the course of several years we read books (Susan Susanka's, *Not So Big House* and Christopher Alexander's *Pattern Language* among them), visited other pioneers of similar vision and intent, consulted several architects (Richard Crenshaw and Bill Hutchins among them) , imagined our way into spaces that would feed our souls and facilitate simpler living, drew up plans and built a model. Like our wilderness trips there was much planning ahead, and much pushing off into unknown territory. And then it was that a more immediate question arose in us. What were we getting ourselves into?

Construction

Building the East Cottage was the work of many hands. Professional contractors poured the foundation, ran the electric wires and plumbing pipes, and installed the solar panels. Alan Hill and his crew of carpenters worked with us closely all through the project. We had the great gift of a host of volunteers who helped with framing, painting, tiling, earth plastering, and preparing meals for the houseraising crew.

And what of us? Our hands were applied almost daily (regular observance of Sabbath saved us!) for 17 months. Neither the simple life, the handmade life, nor our wilderness travel life, for that matter, are without their days of difficulty, frustration, and much heartache. But isn't that in the very nature of creativity? This life we create, this art, this poetry, was and remains today the work of our whole hearts.



houseraising with Alan Hill and volunteers

a big man for a big beam



Madeline "supervises" Jim and Jason



Cheryl varnishes a window

Features/Construction Details

Site Selection: With an eye to causing as little additional disturbance to the natural beauty of Dayspring as possible, we located the Simple Gifts project at the edge of a gravel pad that had formerly been a parking lot for the farm market (Christopher Alexander calls this “site repair”). This was also an ideal site for exposure to the sun -- a south facing slope with few trees. In this way the cottage could be embedded in the slope so as to be sheltered from cold north winds in the winter, and the lower level cooled in the summer by being underground. One tree was well situated to provide shade from the late afternoon summer sun; additional shrubs and small trees have been planted to shade the surrounding ground, helping to keep the cottage cool in the summer.



Passive Solar Design:

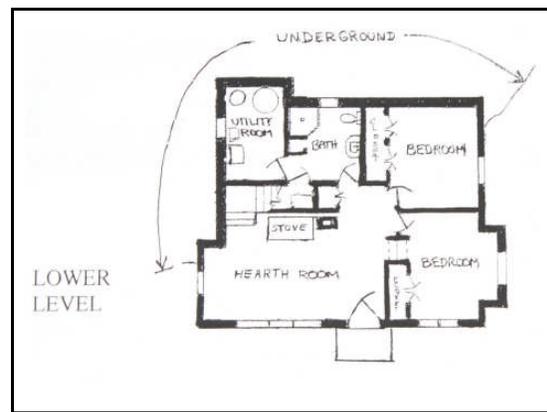
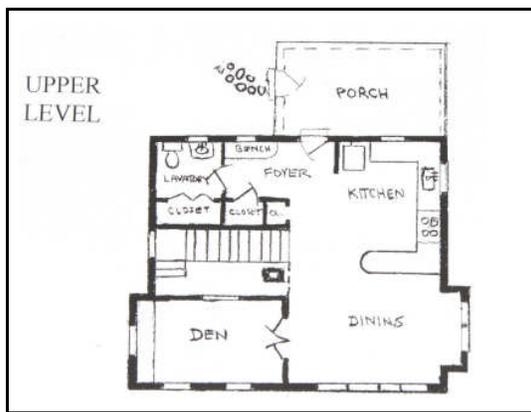
A large number of windows on the south side of the cottage take in a lot of sunlight and heat in the winter. Only a few windows for day lighting are located on the other sides of the cottage. The wide roof overhangs and trellis on the south side shade the windows completely from the high summer sun. Concrete in the

foundation and floor of the lower level as well as the inside chimney and masonry heater absorb the sun’s heat during the day and radiate it back at night.

Active Solar Design: There are 24 solar electric panels on the roof, which is at a steep incline so as to maximize production of electricity. This system is tied to the electric grid, so that when we generate more electricity than we use it goes to the electric utility (our meter runs backwards), and when we are not generating electricity we can draw power from the utility. Over the course of each year as a whole, we generate all the electricity we need, so that we are a net zero electricity house. In the center of the roof there is a heat collector panel for our hot water; an antifreeze solution runs through the collector, is heated by the sun, and transfers that heat to our standard electric hot water tank. We manage quite well on the hot water the sun gives us; rarely in the winter we do need to turn on the electricity to the water heater.

Overall Size: The cottage is 1250 square feet in size, about the average size of a new house in the US in 1950. It has two bedrooms and a den (which could be used as a third bedroom), and could house a small family. Buildings and their construction account for nearly half of the energy consumed in the US each year (By contrast, the entire fleet of SUV's, minivans, and light trucks consumers only 6.5% of the nations energy each year). The smaller that houses and other buildings are, the less energy it takes to build and maintain them. To achieve a sense of spaciousness in this small cottage, there are higher ceilings in some areas, a large central stairwell (“stairway as a stage” according to Alexander), and a combined dining, kitchen, visiting area that we call “farmhouse kitchen” which gives long horizontal views.

In addition to the storage space shown in the floorplans, the use of attic trusses on the west end of the cottage provide an 8x10 standup attic storage room over the stairwell, den and closets on the upper level, accessed by a ladder to the loft.



Insulation: The foundation and floor are insulated to prevent heat loss. The exterior walls are framed with 2x6 studs and infilled with blown cellulose insulation (made from recycled newspaper). Exterior to the studs are layers of plywood, rigid foam, breathable housewrap, and durable fiber cement siding and trim. This provides not only additional insulation but air sealing. A standard test of the “tightness” of a building (the blower door test) revealed that this was the tightest house they had ever tested. The upper level ceiling (attic floor) is covered with a thick layer of blown cellulose. Between each of the top truss cords supporting the roof there is a channel running from the eave soffit to a continuous ridge vent formed by radiant barrier attached to the bottom of the rafters. This allows a continuous flow of air right under the roof in the summer helping to cool the house, an arrangement sometimes called an “ice-house roof.”

Windows on the east, west and north sides are double pane, low-e coated to provide maximum insulation; the south windows are double pane with a high solar heat gain, though somewhat less insulating. Insulating window shades on those windows are

lowered to reduce heat loss on cold winter nights (and can also keep the cottage cooler on hot summer days).

Cooling: Cooling of the cottage in the summer can happen at no energy cost by opening windows on the lower level, the attic door, and a window in the attic, allowing warm air to exit through the attic. When needed a whole house exhaust fan quickly pulls in cooler outside air on summer mornings. A window air conditioner controls the heat and humidity on the hottest summer days.

Construction Materials: Lumber for framing came from sustainably harvested trees as certified by the Forest Stewardship Council. A large beam and two posts came from a barn that was taken apart in Pennsylvania. The use of roof trusses in the design saves the use of larger pieces of lumber that would have been involved rafters and a ridge beam. Most of the interior wood trim for windows, doors, baseboards, the stairs, and built-in cabinets, shelves, and window seat came from either white oak or cherry that had been sawn from trees that fell or were felled at Dayspring. Sustainably harvested bamboo (instead of hardwood) was used for part of the flooring in the upper level, the rest of the floor being ceramic tile. The concrete slab in the lower level was stained with concrete stain, a simple and attractive alternative to tile. The fiber-cement siding and exterior trim used throughout is more durable than wood and less toxic in manufacture than vinyl. Interior walls were painted with milk paint, nontoxic “ecospec” latex paint, or covered with earth plaster.

Masonry Stove: The masonry stove in the lower level is our sole heat source in winter beyond the heat that pours in through the windows on sunny days. Masonry stoves (also called masonry contraflow heaters, or “Russian” fireplaces) were developed in northern Europe several hundred years ago to make the most efficient use of a dwindling supply of firewood. The firewood burns hotter than in a conventional wood stove, resulting in complete combustion, and most of the heat is transferred to over a ton of concrete blocks that form the stove, before the remaining exhaust goes up the chimney. One and a half full cords of wood are required per season to heat the cottage. The stove has a “bake oven” which we use as a slow cooker to cook stews, soups, and applesauce (not at the same time) after a morning fire (“free” heat).

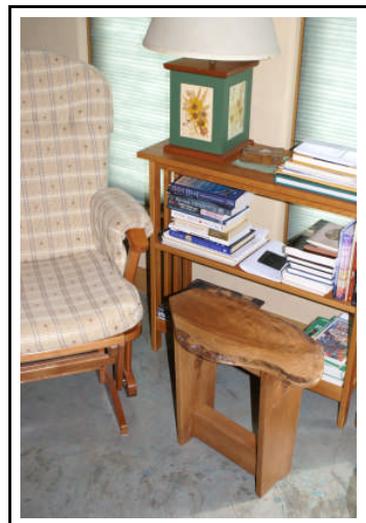
Appliances: Our major appliances are few -- refrigerator/freezer, washing machine, stove, dehumidifier, and window air-conditioner -- and are top energy-star rated. Daylight is available in every room; energy-efficient electric lighting is used throughout.

Landscaping: A number of native shrubs, small trees, and wildflowers have been planted around the cottage, to give it a settled in look, to shade the ground and help cool the cottage in the summer, and to provide wildlife habitat. Rain barrels collect water from the north roof which is used to irrigate these plantings.

Living in East Cottage

Is this our wilderness life? On cold winter evenings we gather around the fire in the masonry stove and read stories. From time to time we cook with heat from that fire. Often we find ourselves listening to the weather radio in the morning -- what will the day allow? Will we be able to do a hot wash? Will we hang the clothes outside or in the loft? Will there be plenty of hot water for a shower? If we have a lot of sun today, we won't need a morning fire, just one in the evening. It is our wilderness life!

Is this the handmade life? Everywhere we look we see handmade things, our hands on the wall finishes, the wood trim, the tile floor, and the small table, the benches, the lamps, the shelves and pegboard hangers, the photographs (yes, of our real wilderness life!), the needlepoint, the hand-forged light fixtures. A close friend who came from out of town to see us exclaimed on entering, "This certainly is the handmade life!"



Is this the simple, abundant life that is light in impact on the earth and loving of our far flung neighbors around the globe? Not yet; we still have a ways to go, maybe a long ways. Some people measure our impact on the planet and refer to it as our “ecological footprint.” By that measure we have reduced our footprint by 50%, but it is still twice as big as what would be required if everyone on the planet were to have about the same sized footprint. But we have turned a corner, and that’s encouraging enough to keep on asking the questions, keep on turning, as the old Shaker song says, “till ... we come round right.”

'Tis the gift to be simple,
'tis the gift to be free,
'tis the gift to come down where you ought to be,
And when we find ourselves in the place just right,
It will be in the valley of love and delight.

Refrain:

When true simplicity is gained,
To bow and to bend we shan't be ashamed.
To turn, turn will be our delight,
'Til by turning, turning we come round right