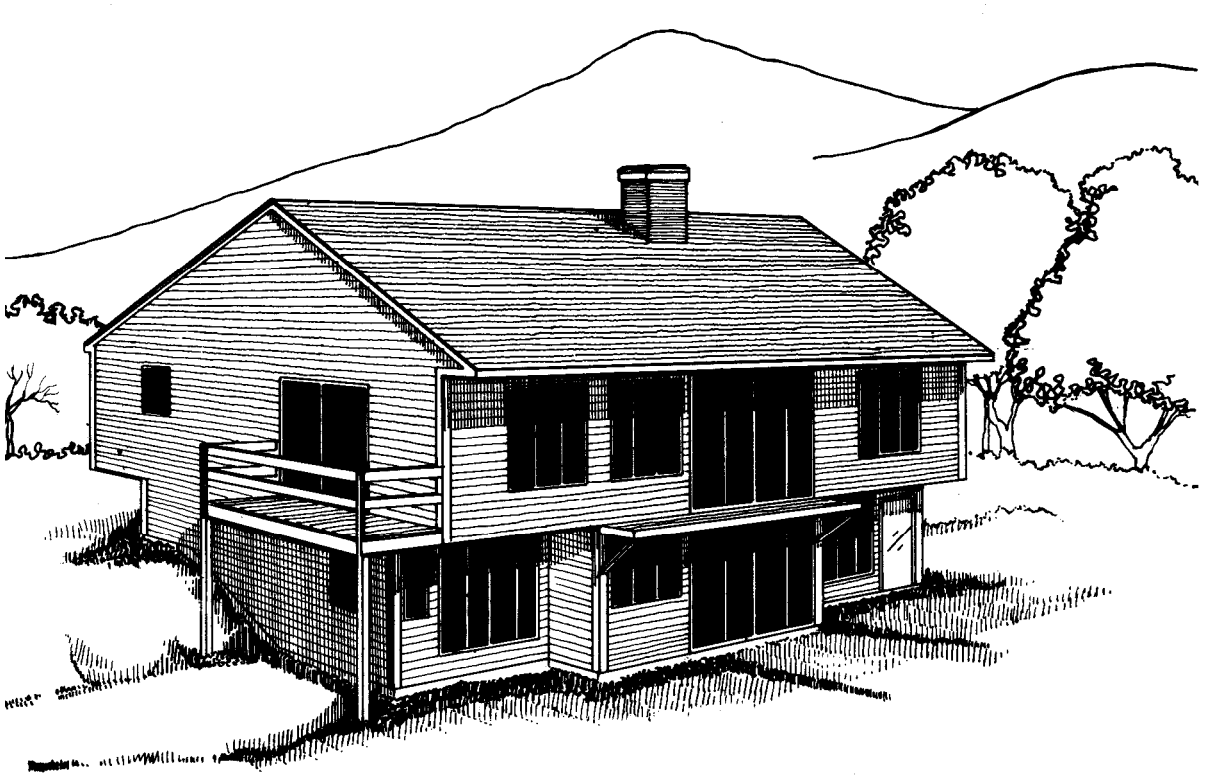
Hebron, NH



Builder: EVOG Associates, Inc., Hebron, NH

Designer: EVOG Associates, Inc.

Solar Designer: EVOG Associates, Inc. Price:

$59,000

Net Heated Area: 1348 ft^2 Heat

Load:70.3 x 10^6 BTU/yr Degree

Days: 8177

Solar Fraction: 59%

Auxiliary Heat: 2.66 BTU /DD /ft^2

Passive Heating System(s): Direct gain, indirect gain, isolated gain, sun-tempering

Recognition Factors**: Collector(s):** South-facing fiberglass glazed panels, 336 ft^2 **Absorber(s):** Masonry Trombe wall, water walls, concrete mass floor surface Storage: Masonry Trombe wall, water walls, concrete mass floor-**capacity:** 6493 BTU/F **Distribution:** Radiation, natural convection **Controls:** Manually operable Trombe wall vents, dampers and vents, interior doors

Back-up: Electric resistance heater (27,600 BTU / H), wood burning stove

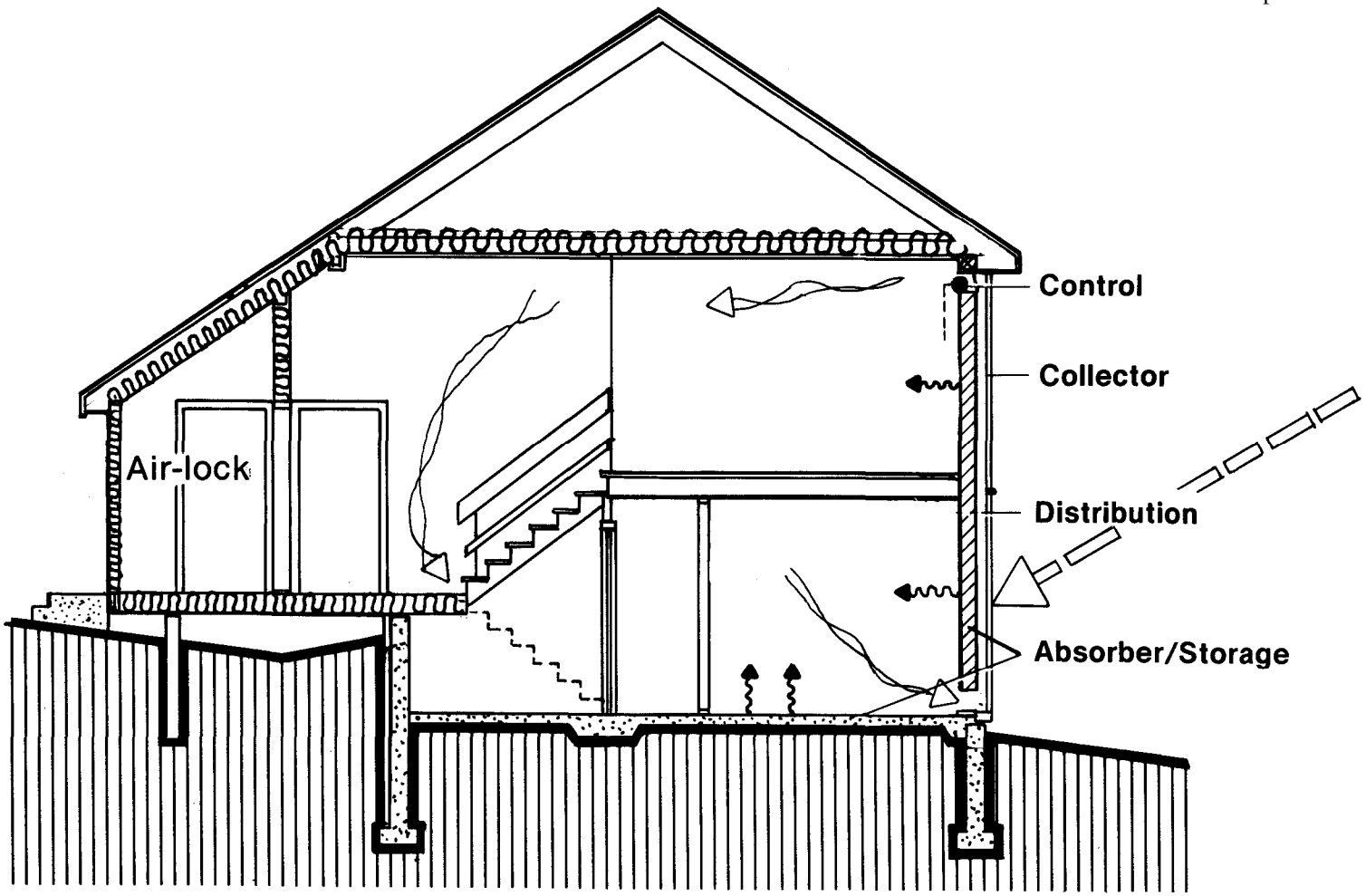
enclosed space in front of the utility room. Solar radiation is collected through fixed fiberglass windows and is absorbed and stored in the water wall. At night, the stored heat rises to the ceiling by convection, and a vent allows hot air to be distributed into the master bedroom above the water wall whenever the vent is opened. The second water wall is separated from another lower-level bedroom by folding doors. Incoming solar radiation is absorbed and stored in the water-filled tubes. When the folding doors are open, the bedroom is heated by radiation from the tubes.

The vented 2-story thermosiphoning Trombe wall collects heat through southfacing fiberglass panels, and then absorbs and stores it in mass masonry. During the

day, when the door to a third bedroom is open, heated air is drawn through an open vent in the Trombe wall and into the upperlevel kitchen, living room, and dining room and then back through this third bedroom on the lower level.

The second-story rooms also receive direct radiation, which is stored in concrete floors. At night, heat from the water walls, Trombe wall, and mass floors is **distributed** by being radiated back into living and sleeping spaces. Vents in the Trombe wall are manually closed to prevent reverse thermosiphoning.

In the summer, cross-ventilation induced by opening windows, cools the house. Overhangs on both levels provide shade and minimize heat gain.



This plan is from the book
“Passive Solar Homes – 91 new award-winning, energy-conserving single-family homes”,
The U.S. Department of Housing and Urban Development, **1982**

The solar homes designs in this book were the winners of HUD’s fifth (and final) cycle of demonstration solar homes. The 91 winning home plans in the book were selected from 550 applications from builders.

This was a time of great interest and activity in the passive solar home designs – many of the winning homes show a level of innovation not found in most of today’s passive solar designs.

www.BuildItSolar.com