YESTERMORROW
DESIGN/BUILD SCHOOL

Yestermorrow Design/Build School

Solar Design

Course Description:

This workshop will present the basic design, theory and methods required to maximize the solar potential of your present or future home. Day one will use lectures, slide shows and tours to show how to use passive design for home heating, cooling and day lighting. Day two will cover the basics of photovoltaics for home power. The course will expand your understanding of how to use the sun's energy to brighten your life, heat your living spaces and water, and recharge your batteries for a more natural, comfortable and economical home.

Course Objective

- The intention of this workshop is to give an overview of the basic principles required to maximize the solar potential in your new or existing home.

Class Schedule

The workshop is a lecture and slide course showing examples of the principles outlined. There will be a tour of the Yestermorrow solar installations Sunday morning. The basic format allows for specific student questions as the material is presented.

Course Outline

Saturday AM

- Discuss solar angles and orientation
- Discuss site assessment and load assessment

Saturday 12 Noon

Saturday 1 PM

- Basics of passive solar
- Site considerations
- Orienting buildings and windows
- Mass and glass
- Landscaping considerations to control sun and heat loss
- Architectural Organization of program, site and solar principles
- R-value and related heat loss issue
- As time allows discussion to include; weather and degree days, basics of heat flow and heat loss, sustainable building industry council guidelines

Saturday 2:30 PM

- Standard hardware for residential PV systems and solar hot water systems

Sunday 9 AM

- We will tour the photovoltaic and solar hot water systems at Yestermorrow. We will also examine a trailer-based portable system at Yestermorrow.
- Before, during and after the tour Hilton will discuss PV system hardware requirements off off-grid, on-grid an don-grid with backup. We will discuss sizing and matching hardware such as inverters, batteries and solar panels for PV systems. We will also discuss sizing and hardware selection for solar hot water systems.

Sunday 12 Noon

- Lunch

Sunday 1:00 PM

- John will deliver a slide lecture covering 35 years of solar projects. They will be discussed as to successes, failures and how basic solar principles guided the design and fabrication of each project.
- As time allows, we will delve into other renewable energy subjects and answer questions.