

Sustainable Lesson Guide – FGHS Viking House

Note: At FGHS, we build a custom home each year with 12-16 of our most outstanding woods students. This project takes up a double-block of class time over the course of the school-year. The students perform all of the carpentry on the home, from framing to finish. The goal is that in addition to serving in the role of “Carpenter” and all of the specialized fields associated with it, that the students also participate in the role of “General contractor.”

The crewmembers are encouraged to offer input into the decisions being made throughout the construction process. Sometimes these are the issues and choices of architectural design related to their tasks, and sometimes they have to do with work performed by other classes involved in the project: Basic Construction, Woods 3(Cabinetry), Interior Design, and Landscaping.

I plan to utilize some of the information from the S.S.I. in the following way:

1. Discuss the terms “sustainable” and “green” (possible guest speaker).
2. Discuss concepts of the following, their differences from each other as well as their differences from minimum building code.
 - Energy Star
 - Earth Advantage
 - LEED
3. Discuss the advantages of each program, their overlap, and how they might be applied to our project, Viking House 2010. In response to my decision to incorporate as many improvements as economically feasible, consider the following:
 - What improvements do they recommend that we make in response to my desire to move towards more sustainable practices?
 - Which sustainable upgrades will have the most impact in relation to the cost of implementing them?
4. Share with the class my choices for possible upgrades to VH 2010 and discuss:
 - Energy Star Certification.
 - Earth Advantage Certification.
 - Maintain a good erosion control plan.
 - Use “I-joist” floor system.

- Frame walls using some “Advanced Framing” techniques for added insulation.
- Use manufactured roof trusses with raised heels.
- Upgrade the furnace to 90+% efficient gas unit.
- Incorporate the furnace system into conditioned space and use duct sealing mastic.
- Look into water heating alternatives, tankless and/or solar.
- Use blown-in wall insulation system.
- Use interior windows and transoms to let light into interior spaces.
- Use CFL’s and other efficient light fixtures where applicable.
- Consider alternative landscaping solutions; no lawn, native species, etc.
- Work with the Interior Design class to make “green” selections.

As a culmination of the steps we take to improve the sustainability of our project house, we will review the benefits of each before our open house in June, and endeavor to better market the advantages of each to the public. These details will be integrated into their year-end final exam.

You may track our progress at: www.fghsvikinghouse.com