

# Timber Frames Are Green



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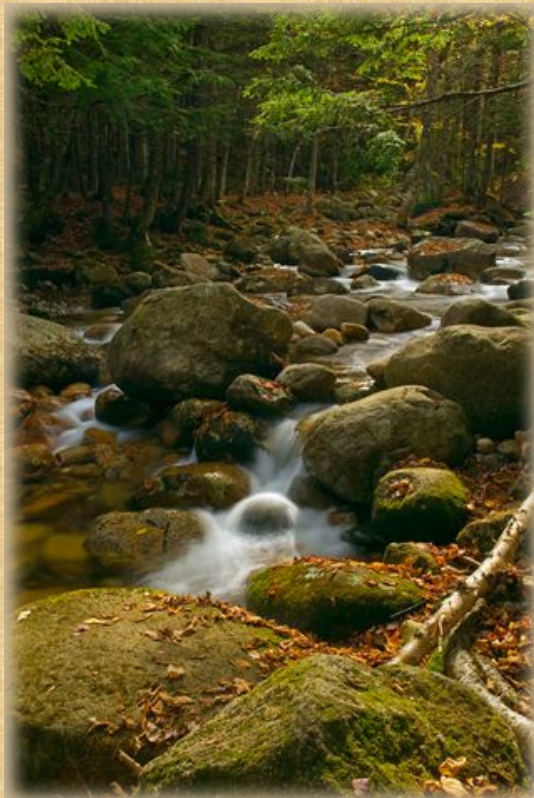
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## How Homes Become Green

1. Efficient insulation of walls, and more importantly, roofs, is probably the best way to save energy and reduce energy requirements. Structural insulated panels or SIPS are twice as efficient as most fiberglass stud arrays. Fiberglass and cellulose settle, and there is 10 times the airflow through fiberglass stud wall insulation as there is through SIPS walls. SIPS cost more, but the cost is usually regained in 5-6 years by savings in heating and cooling costs. Then for the next 400 years, the building costs ½ as much to heat and cool. Think of the total savings over centuries.
2. Timber frames provide durable, strong, beautiful, and efficient structures. They use equal or less wood than stickbuilt structures. These timbers can be recycled, and since there are no load bearing walls, interior walls can be moved or removed without structural damage to the building.
3. Windows now are available with double panes with the interior space filled with argon gas and with coatings which reduce emittance of heat from the warm side to the cold.
4. More durable roof coverings such as steel, copper, and fiber cement delay replacement cycles. Solar cells are now integrated with asphalt shingles and can look similar to other types of roofing. Lighter colors absorb less heat.
5. More south facing windows help with passive solar gain in winter and increased natural daylight.
6. Covered entryways protect doors and decrease maintenance.

7. In houses with SIPS, less energy is required to heat and cool the structure. Accordingly, HVAC systems can be accurately sized smaller, costing less initially to use more efficient equipment. Ductwork can be led to interior walls as well, reducing lengths and costs.
8. On demand water heaters or tankless water heaters can avoid loss of heat during long storage times, which can result in significant heat loss. Electric heat pump water heaters can be energy saving, and geothermal energy and solar energy can be used as well to heat water and produce electric power.
9. Duct work should be quite tight, and positioned in conditioned areas.
10. Basement areas, floor and walls, should be as well insulated as other living spaces.
11. Avoiding high VOC or volatile organic compounds in floors and wall materials makes air much cleaner. The use of wood and other natural materials makes maintaining air quality much easier. Linoleum, from circa 1860, of natural materials, is making a comeback.
12. Increasing roof overhang width is useful to protect siding and windows from weather, and to decrease solar gain during summer or high sun angle months.
13. There is little or no waste at building sites when timber frames are erected and pre-cut SIPS are applied. Compare this to stickbuilt sites. This has a major effect on landfills.
14. Energy Star appliances are much more efficient than those from only a few years ago, and lead to significant energy savings. Low flow toilets, showers, and sink fixtures save significant water and energy over standard first generation models, and work well. Early low flow toilets were problematic at best, even though they were required for installation before they were adequately designed. The latest designs seem to work well.
15. Recycled plastic can replace pressure treated wood for fencing, deck flooring, and other exterior uses.
16. Use native plants as ground cover for erosion control and native trees for shade. Native flora is the best choice for surviving and flourishing in any area during normal rainfall and drought periods.
17. Always site the structure to take advantage of sunlight, shade trees, views, driveways, drainage, and natural features.

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