

Timber Frames Are Green



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The Buzzword Green

The buzzword green, the use of energy, and intelligent building is a subject on which I may tread on many toes. It is important enough to do so.

Buildings in the US consume 68% of the electricity generated in the country, and 37% of the energy. If we consider our sources of energy, the political, economic, and environmental consequences of obtaining and using this energy, immediately we realize we need to think and reflect. We do not yet have an unlimited source of energy. The energy needs of our country are increasing. There are drawbacks to most energy sources. The logical approach is to develop and refine each track in the most benign possible way, and to be more efficient in our use of energy. This last phrase needs to be underscored, understood, and undertaken. By becoming more energy saving, or efficient, much energy, political expenditure, money, etc., can be conserved. How do we become more efficient?

One building or house built efficiently will not answer this problem, but is a start. Each one built inefficiently is an addition to the overall problem. We already have a number of tools which will cut down considerably on the energy usage in buildings. Unfortunately, most builders, architects, and designers choose to ignore the most important of these. This is the use of efficient insulation. By this I mean the use of insulated panels or SIPS which significantly reduce the airflow through building walls or roofs. The USDOE in studies at Oak Ridge National Laboratory has shown in whole walls (including windows and doors) that equally R-rated SIPS or panel insulation compared with fiberglass batt insulation has only 10% of the airflow through the structure. When thermal transmission in equally R-rated whole walls (with windows and doors) is compared, walls with batt insulation drop from R-17 to R-11, while the SIPS perform as R-17. Interestingly, these studies compared 6" fiberglass batts with 4" SIPS.

Over a period of years, these differences, along with settling of the fiberglass, consume large amounts of wasted energy, translating into a much more expensive building, and long-term costs to the owner and our country.

Users and manufacturers of insulated panels have known for years the efficiency of panels and have documented these monetary savings. Sadly, they are still a well kept secret. Most contractors and architects seem blinded to SIPS or are afraid to approach the learning curve (not difficult) associated with their use.

Oak Ridge Nat. Lab., DOE, "How imperfections Affect the Whole Wall R-value of a 2x6 Batt Insulation Wall."
http://www.eere.energy.gov/consumer/your_home/insulation-airsealin... www.suretight.com

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