

Great Lakes Log Crafters “Green Page “

The first part of understanding how “green” applies to handcrafted log building comes through a description of the building process starting with acquiring raw materials. Trees themselves store/sequester carbon throughout their lifespan and release it after they die and decay in the forest. Logs needed for handcrafted log structures come from mature trees near the end of their lifespan so when trees are selectively harvested for that purpose the carbon they contain remains in the tree and stays there for as long as the building is standing. It’s early for a track record in North America, but longevity of log structures in northern Europe and Scandinavia is measured in centuries. Of the remaining parts not used in construction, limbs and cones remain in the forest providing nutrients and seeds, and bark removed at the log building yard finds use as landscaping material or is composted. Significantly, little energy is expended in the form of fuel and petroleum products in the process of taking a tree from the forest and making it ready as a log for building purposes. Human effort is required to remove bark and preserve the unique characteristics of each log. All things considered, the end result of using mature trees for handcrafted log construction is a net removal of carbon from the environment.

When building handcrafted log homes, logs needed for the dwelling are harvested and transported straight from the forest to the building site for peeling and constructing. Logs are air dried naturally. After the logs are placed on the log wall, all that there is left to do before you have the finished product is the pressure washing, sanding and staining of logs.

When building stick frame and timber frame homes, there is extra transportation involved, from the forest to the sawmill, from the sawmill to the lumber yard, and from the lumber yard to the building site. After milling the logs into lumber, you end up with much more waste wood like slabs and sawdust. The drying of the lumber by the kiln takes more energy and heat. The end result of that process is either carbon neutral or a net addition of carbon into the environment. It’s worth noting that sawing logs for timbers (four slab cuts) is right next to processing logs for use in handcrafted construction and also results in net removal of carbon from the environment. Trees used for both handcrafted log home construction and timber frame construction represent a very small percentage of timber cut each year. Still, it’s worth pointing out that both craft industries are doing their part to control carbon emissions.

When not building with logs, extra building materials are necessary. These extra building materials include insulation, sheetrock and exterior siding, which are not environmentally friendly. After sanding and staining the logs in a handcrafted log home, the building process is complete.

Throughout the whole building process of a log home, from peeling of the logs to the end product on the log wall, the only gasoline being consumed is that which is necessary to run the chainsaw and the crane.

Current methods of determining r-values for log walls under-report the effective r-value. Log home utility bills for heating and cooling suggest much better thermal performance than current methods for calculating r-values describe. Specific research on the thermal performance of log walls is needed to provide more precise information. Given the long list of factors that determine log wall thermal performance in a particular climate zone, the resulting information could be expressed as an r-value equivalent to be of value to the building industry."

Anecdotal evidence obtained through utility heating bills demonstrates this unique quality, but more formal laboratory testing needs to be done for more precise information.