

TIMBER



<http://www.pineconelumber.com/Products/>

Important Facts

- **Use:** walls, beams, deck material, key structural components, interior
- **Key structural benefits:** Strong, durable, moisture-resistant, dimensional stability

Solar Decathlon 2013

The team plans to use Douglas fir larch wood from Pinecone Lumber, only where necessary. Since bamboo was approved by the Department of Energy, wood will only be needed as a supplemental material.

Pinecone Lumber is located in Sunnyvale, so supporting them invests in a local company while minimizing the energy costs of transportation. However, the company's website makes no mention of sustainability, so if the team were to decide to incorporate timber in a greater capacity, it would be worthwhile to ask them about their environmental practices.

Ethical Issues Raised

Think construction, and timber always comes to mind. Douglas fir larch, the wood intended for the house, is a member of the Douglas fir family, which is the most common softwood tree species in America. It is also one of the strongest and hardest of the softwoods. It maintains its structure even after an extended period of time exposed to humidity. Because of its prevalence in the construction industry, Douglas fir has a proven history of withstanding winds and earthquakes. Due to its natural strength and durability, it can be integrated into buildings without having to be treated with toxic chemicals, maintaining safety for the builder and eventual inhabitants.

It is also one of the most frequently replanted timber species, which is important with the growing threat of deforestation. Cutting down trees without replacing them has numerous environmental consequences. Clearing large parcels of land and building roads to access those parcels disrupts the fragile ecosystems that rely on trees for shelter, food, and oxygen. According to National Geographic, seventy percent of the Earth's land animals and plants live in forests. Removing trees takes out a protective insulating layer, causing the rich soil beneath to dry up and increasing temperature fluctuations. Most worrisome is the lost ability to exchange greenhouse gases for oxygen via photosynthesis. Although wood used in homes continues to sequester carbon, it has nowhere near the same life-giving benefits as it would as an intact tree in the forest.

However, there are ways to use timber sustainably. One is to avoid using timber from old growth forests, which can take longer than a human lifetime to grow again and which can be home to very rare plant and animal species. While replanting trees can be a solution, it is important to remember the lag time of replacement, during which the ecosystem can still be knocked out of balance. An alternative is to use lumber already killed by beetles to take the wood out of the forest and repurpose it into a home. There are also timber recycling programs that reclaim wood so it can be reused. Although there are ethical drawbacks to timber, it is possible to make sustainable choices when using it in construction.