

# Comparing wood to other materials: there is no comparison. (wood as building material)

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The only renewable resource on Earth is also the most environmentally friendly.

While in some environmental and media quarters it is en vogue to decry the use of wood as environmentally damaging, a closer look reveals a different story altogether.

While it is true that using wood requires that trees be harvested and that, at least to some extent, forest ecosystems impacted, the reality is that trees are the Earth's only renewable material for construction. And, in the United States trees are renewed. In 1993, trees were planted on 2,419,691 acres of land and nearly 2 million acres of forests were improved. In tree nurseries, more than 1.66 billion trees were grown. Scientists estimate that the United States has 7 percent as much forest land as when Christopher Columbus made his journey across the Atlantic.

The most environmentally friendly

To get an accurate picture of the overall environmental impact of harvesting trees it is important to look beyond harvest level vs. tree planting statistics. Harvesting a tree is only the first in a series of steps required to bring a building material to market. Others include transportation, processing, construction and eventual demolition. Each step has economic and environmental ramifications that should be carefully considered.

Wood is by far the most environmentally friendly of materials. Preparing wood for use requires less non-renewable fossil-fuel to extract, manufacture and transport than aluminum, steel, brick, concrete or plastic.

From raw material extraction to finished product, the energy needed to produce ton of aluminum is 70 times higher than for a ton of lumber, and 17, 3.1 and 3 times higher for steel, brick and concrete block, respectively.

For each 1 billion board feet of wood replaced with manufactured substitutes, annual energy consumption would increase by about 720 million gallons of oil and carbon emissions would increase by 7.5 million tons.

If oil was a renewable resource perhaps the statistics above would have a different meaning, but the reality is our planet is one with finite resources and only one renewable resource -- wood.

Releases into the air

In addition to decreasing oil reserves when producing building materials, the use of oil also releases harmful air pollutants into the air.

Energy-intensive building materials such as steel, aluminum and concrete release significant amounts of carbon dioxide and various air pollutants during manufacture. Whereas, preparing wood products for the marketplace uses comparatively little energy and thus emissions of carbon dioxide is lessened.

For example, replacing one ton of steel by lumber in building construction results in approximately one ton less carbon being released into the atmosphere

As compared to the lumber industry, the chemical industry releases more than 7,000 percent more toxic substances into the air. The primary metal industry releases more than 1,800 percent, fabricated metal industry more than 444 percent and the plastic industry releases more than 400 percent more toxic substances than the lumber industry.

Additionally, some processes for the production of materials, such as plastics, require the use of hazardous chemicals that can leach into water supplies and landfills.

#### Trees to the rescue

Not only can the use of wood reduce the reliance on non-renewable fossil-fuels and lessen the emissions of carbon dioxide into the atmosphere, forests that are managed on a sustained basis can help reduce the amount of pollutants that are released.

Vigorous young forests consume and store carbon dioxide and through photosynthesis emit more oxygen than mature forests.

#### The bottom line

What it comes down to is this: While it may be convenient for some to say that harvesting trees is paramount to destroying the planet, the fact is that unless society stops consuming building materials, wood is by far the most environmentally friendly material on earth.

So the next time someone states that cutting down trees is paramount to destroying the planet, remember there is no comparison to wood.