

QUICK FACTS - SUSTAINABLE BUILDING SERIES

Life Cycle of WOOD Products

BACKGROUND

Life Cycle Assessment (LCA) is a "performance-based" approach to assessing the impacts building choices have on the environment. LCA quantifies the overall effects a product, process or activity has on the environment over its lifetime. This includes all activities from material extraction/harvesting through manufacturing, transportation, installation, use, maintenance, and final disposal/re-use.

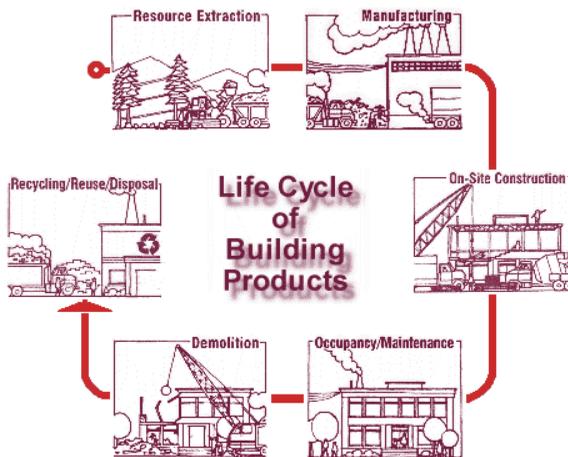
LCA has shown that wood products offer some clear environmental advantages over other building products. The tools used to evaluate LCA are continuously improving and allow users to make informed choices based on the latest data for commercial processes and their environmental impacts. LCA has existed in various forms since the early 1960s, but the protocol for completing LCA wasn't standardized by the International Organization for Standardization (ISO 14040-42) until the late 1990s.

ISSUE

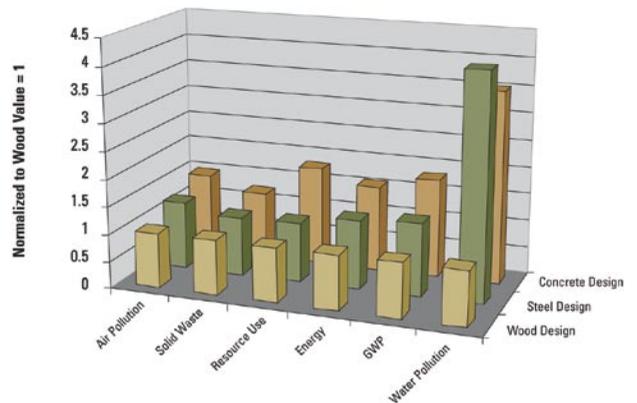
Where LCA tools are used to assess environmental impacts, they improve on the "point" systems that are currently provided in most green building rating programs.

LCA is performance-based, generating measurable data that can be used to assess the environmental impact of materials relative to one another, whereas point systems prescribe specific actions as the only way to achieve green building objectives.

The Canadian Wood Council, Forintek Canada Corp. and other organizations provide information on LCA work to supplement users' awareness of environmental impacts of product choices.



Athena Model - A life cycle focus



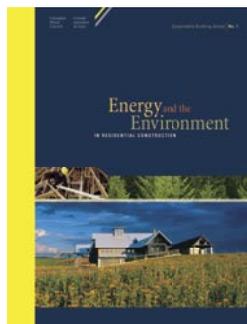
Embodied Effects Relative to the Wood Design across all Measures

WHAT YOU NEED TO KNOW

Life cycle assessment tools such as BEES (Building for Environmental and Economic Sustainability) and the ATHENA Environmental Impact Estimator (EIE) are tools that help make informed environmental decisions. BEES evaluates the environmental performance of individual products whereas the EIE deals primarily with whole building design.

The graph above compares the environmental impact of a typical wood-frame house to that of similar houses built out of steel and concrete (poured into insulated forms). It sets out total embodied energy and operating energy consumed over a 20-year period for each building type. Compared to wood construction, steel and concrete embody and consume 12% and 20% more energy, emit 15% and 29% more greenhouse gases, release 10% and 12% more pollutants into the air and generate 300% and 225% more water pollutants.

FOR MORE INFORMATION



The Canadian Wood Council has published several comparative environmental impact assessments. Please refer to the *Energy & the Environment in Residential Construction* publication available for download at www.cwc.ca.

