

# ENVIRONMENT AND MASS TIMBER

*“Wood is more sustainable and versatile than almost any other building material, not only because it sequesters carbon while producing oxygen, but because it is renewable and can be sustainably managed. While we can we build with wood, we can also enjoy the beauty of forests and their supporting ecosystems. Forests and wood are shining examples of a truly circular economy that is diverse, environmentally sustainable and enhances our quality of life in countless ways.”*  
*[Ted Kesik](#), Professor of Building Science at the University of Toronto.*

## A RENEWABLE, GREENER BUILDING MATERIAL

Building construction and operation and cement production account for as much as 30%<sup>[1]</sup> and 8%<sup>[2]</sup> of the world’s CO<sub>2</sub> emissions respectively. Consequently the search for solutions to lower the carbon footprint of building materials has accelerated the need for greener building materials to mitigate climate change.

Wood used for mass timber products stores carbon. Wood can also be salvaged from some diseased or burnt trees that would otherwise be left to decay and ultimately release carbon dioxide. By harvesting wood from sustainable forests, mass timber is the lowest carbon building material <sup>[3]</sup>

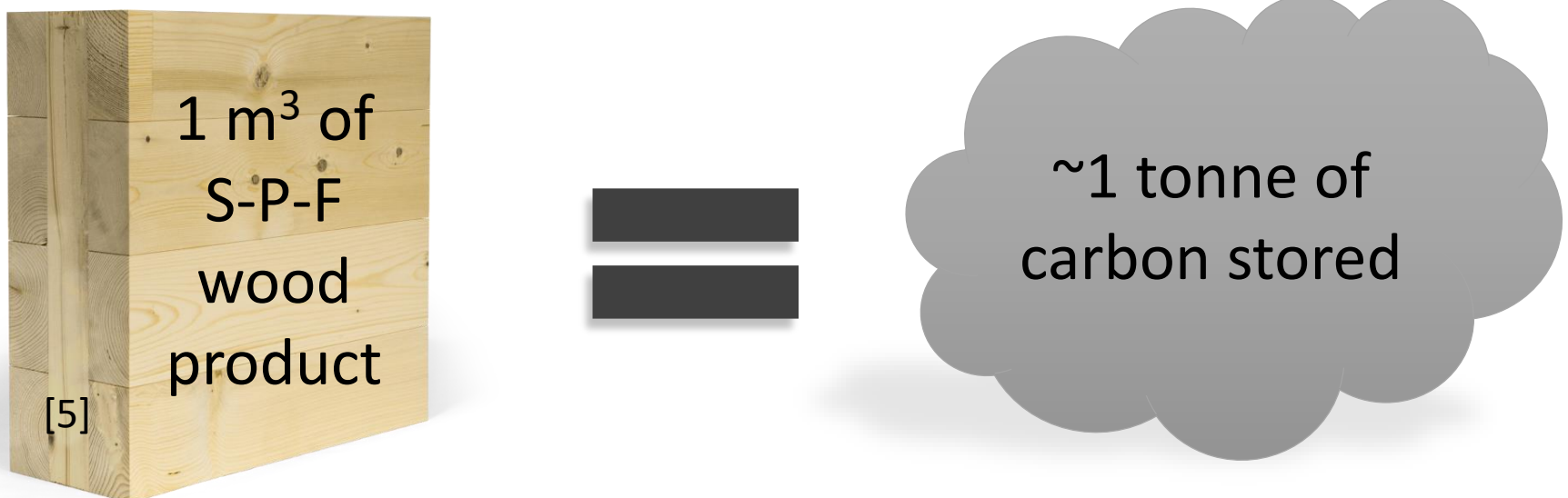
## LOWER OPERATIONAL ENERGY

Mass timber panel manufacturing can achieve high precision allowing tall wood buildings to be more airtight than, for example, a building made from concrete and steel. This makes buildings more energy efficient and reduces the operational energy over a building’s lifetime <sup>[4]</sup>

*Disclaimer: This summary of a complex topic is intended for educational purposes only and does not replace independent professional judgment or the need to delve further into the literature. The Mass Timber Institute neither endorses, approves nor assumes responsibility for the content, accuracy or completeness of the information presented.*

## CARBON STORAGE

Mass timber stores carbon throughout a building’s lifetime <sup>[5]</sup>



Recycling and reuse of wood products after a building’s lifetime can prolong the duration carbon is stored in wood <sup>[6]</sup>

## FUTURE RESEARCH

More research is needed regarding the carbon and ecological impacts and benefits of mass timber. With mass timber growing in popularity as a building material, the lifecycle analyses for mass timber buildings should be continually reviewed and updated for informing policy-makers <sup>[7]</sup>

## REFERENCES AND RECOMMENDED READINGS

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[6] G. Kalt, "Carbon dynamics and GHG implications of increasing wood construction: long-term scenarios for residential buildings in Austria", Carbon Management, vol. 9, no. 3, pp. 265-275, 2018. Available: 10.1080/17583004.2018.1469948.  
[7] International Institute for Sustainable Development, "Emission Omissions: Carbon accounting gaps in the built environment", 2019.

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