

# WHEN IT COMES TO BUILDING FOR THE FUTURE, MATERIAL CHOICE MATTERS



Population growth, environmental changes and urban expansion are putting pressure on our cities and our planet's resources.

Wood is a smart choice for cities and our future. Wood construction can help solve the issues our cities are facing.

2 billion square meters of new building space is needed every year between 2019 and 2025 to accommodate growth.<sup>2</sup>

40% of U.S. carbon dioxide emissions per year are from buildings.<sup>3</sup>

America's affordable housing stock dropped by 60% between 2010-2016.<sup>1</sup>

\$615B+ in damages due to extreme weather from 2016 and 2020 in the U.S.<sup>4</sup>



## URBAN DENSIFICATION

By re-purposing office buildings and constructing taller structures with wood, cities can accommodate more people.

- Up to 18 story buildings can be built using mass timber in accordance with 2021 code changes.
- Lighter weight timber makes adding stories to existing buildings more feasible and affordable.<sup>5</sup>
- Wood meets code for urban infill buildings, and may offer an economic advantage for developers who pay a premium price on infill real estate.<sup>6</sup>

## SUSTAINABILITY

Using wood instead of concrete and steel minimizes building carbon footprints and reduces environmental impact.

- Wood is the only building material made from renewable resources that also provides carbon storage.<sup>7</sup>
- 60% of GHG emissions on average can be reduced by substituting wood for concrete and steel.<sup>8</sup>

## RESILIENCE

Wood meets International Building Code standards for strength and can withstand extreme weather.

- Wood's ductility, light weight, and strength gives buildings an advantage during seismic activity - to yield and displace without sudden brittle fracture.<sup>9</sup>
- Wood's ability to withstand high loads for short periods of time and retain its elasticity can be an asset in high-wind zones.<sup>10</sup>

<sup>1</sup>America's affordable-housing stock dropped by 60 percent from 2010 to 2016, The Washington Post

<sup>2</sup>Rethinking Timber Buildings, Arup

<sup>3</sup>Buildings & Built Infrastructure, Environmental and Energy Study Institute

<sup>4</sup>Billion-Dollar Weather and Climate Disasters: Overview, NOAA

<sup>5</sup>Wood is Leveling up to Combat America's Housing Crunch, Think Wood

<sup>6</sup>Wood Brings the Savings Home, WoodWorks

<sup>7</sup>Buildings as a global carbon sink, Nature Sustainability

<sup>8</sup>Use of structural wood in commercial buildings reduces greenhouse gas emissions, Oregon State University

<sup>9</sup>Designing for Earthquakes, Think Wood

<sup>10</sup>Resilience, Think Wood

The benefits of wood go beyond the city limits. Wood not only delivers affordable and sustainable buildings for our cities, but it's a smart alternative and can help grow our economy.



## ENVIRONMENTAL BENEFITS

Wood's manufacturing creates less pollution and waste than other structural materials like concrete and steel, while emitting less greenhouse gases.

The lowest energy input is required to manufacture wood. Net carbon emissions in producing one ton of:<sup>9</sup>

Lumber:	33kg
Concrete:	265kg
Steel:	694kg

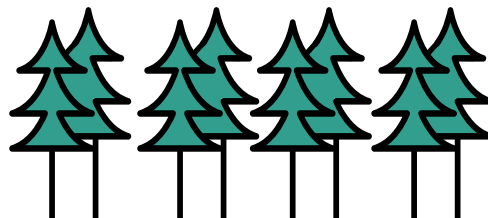
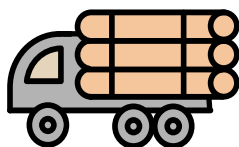
1% increase in demand for wood products can drive 77,000 square miles of new sustainably managed tree farms.<sup>8</sup>



## ECONOMIC GROWTH

By choosing wood, developers keep the cost of construction down while helping grow the economy and job market.

- One million jobs in the U.S. are wood contractors.<sup>10</sup>
- Four jobs are created for every U.S. lumber industry job. There are more than 775,000 direct and indirect jobs in harvesting and manufacturing related to lumber.<sup>11</sup>



The lumber industry is committed to advancing a built environment that is sustainable, resilient, and cost effective – addressing the needs of future and growing cities.

To learn more, visit [thinkwood.com](http://thinkwood.com)