Taller Wood Buildings
An Opportunity for Sustainable Growth
Global Climate Change

Buildings are responsible for nearly half of US CO2 emissions.

U.S. CO₂ Emissions by Sector

- Buildings 44.6% (2358 MMT CO₂e)
- Industry 21.1% (1116 MMT CO₂e)
- Transportation 34.3% (1816 MMT CO₂e)

Source: ©2013 2030, Inc. / Architecture 2030. All Rights Reserved.
A Yale University-led study has found that using more wood and less steel and concrete in building and bridge construction would substantially reduce global carbon dioxide emissions and fossil fuel consumption.

--Yale News, March 31, 2014

Yale School of Forestry & Environmental Studies
University of Washington College of the Environment
“With a carbon footprint that’s 75% less than that of concrete or steel, is it any wonder that wood has become a top contending material for green builders?”

US Green Building Council
Changing Attitudes

Michael Green:

Why we should build wooden skyscrapers

TED2013 · 12:22 · Filmed Feb 2013
Subtitles available in 20 languages

View interactive transcript

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Design and Construction in Mass Timber
Edited by Andrew Bernheimer

Timber in the City

Solid Wood
Case Studies in Mass Timber Architecture, Technology and Design

Joseph Mayo
Innovation - Why Tall Wood Matters

Chicago, US
42 stories hybrid
Proof of concept
Innovation - Tall Wood

US Tall Wood Competition

- Support early adopters
- Foster innovation
- Generate broad awareness and understanding of wood’s value proposition.

- **Budget: $3 million** (includes $1 million from USDA)
USDA Tall Wood Competition

FrameWork
Portland, OR

- Pearl district
- 12 stories – 130’
- Mixed use (retail/residential)
- Expected start: Jan ’16
- CLT plus glulam using NZ technology to address seismic issues.
- $1.5 million Prize
USDA Tall Wood Competition

West Chelsea
New York, NY

- Adjacent to Highline
- 11 stories – 120’
- Mixed use (retail/residential)
- Expected start: Dec ’16
- Team includes SHOP architecture: “most innovative firm in the world”
- $1.5 million Prize
USDA Tall Wood Competition

Carbon 12
Portland, OR

- 8 stories – 85’
- Mixed use (retail + office)
- Expected start: Fall ’15
- $250,000 funding for 6 research projects.
USDA Tall Wood Competition

T3 - Hines
Minneapolis, MN

- 7 stories – 85’
- High end office space
- 220,000 square feet
- Post & beam with NLT
- Under Construction
- $0 funding
- Next project planned for Atlanta, GA
Innovation - Cross Laminated Timber
Innovation - NLT
Innovation - Building Systems
Opportunity - Tall Wood

Incremental Volume: 5.0 BBF/Year

<table>
<thead>
<tr>
<th>Story Height</th>
<th>Non-Res</th>
<th>Residential</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>5-6 Stories</td>
<td>2.035 bbf</td>
<td>.958 bbf</td>
<td>2.003 bbf</td>
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<tr>
<td>7-10 Stories</td>
<td>1.229 bbf</td>
<td>.420 bbf</td>
<td>1.649 bbf</td>
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<td>11-15 stories</td>
<td>.425 bbf</td>
<td>.318 bbf</td>
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<td>16-20 stories</td>
<td>.195 bbf</td>
<td>.192 bbf</td>
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<td>21-30 stories</td>
<td>.113 bbf</td>
<td>.129 bbf</td>
<td>.242 bbf</td>
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</tbody>
</table>

Incremental Volume: 5.0 BBF/Year
“If the 19th Century was the century of steel, and the 20th century the century of concrete, then the 21st century is about timber.”

Alex de Rijke
dRMM Architects