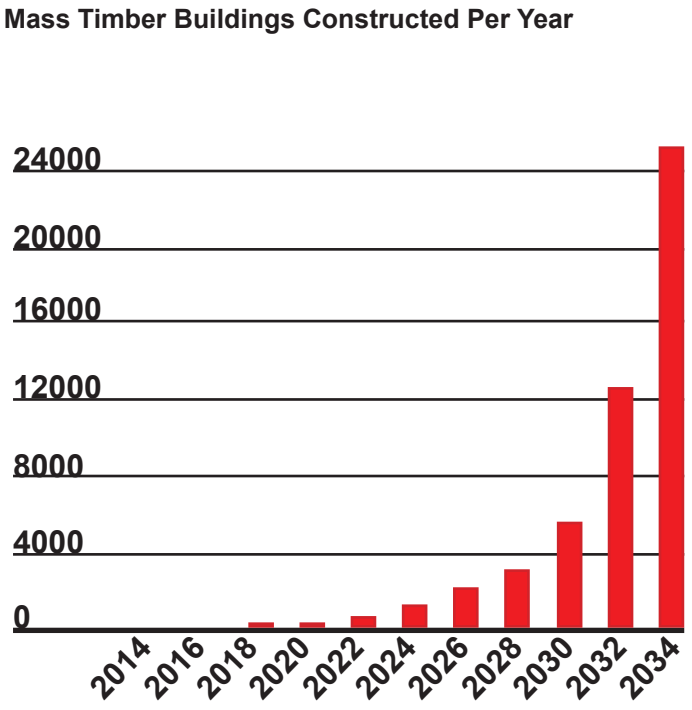
THE MARSHALL EFFECT

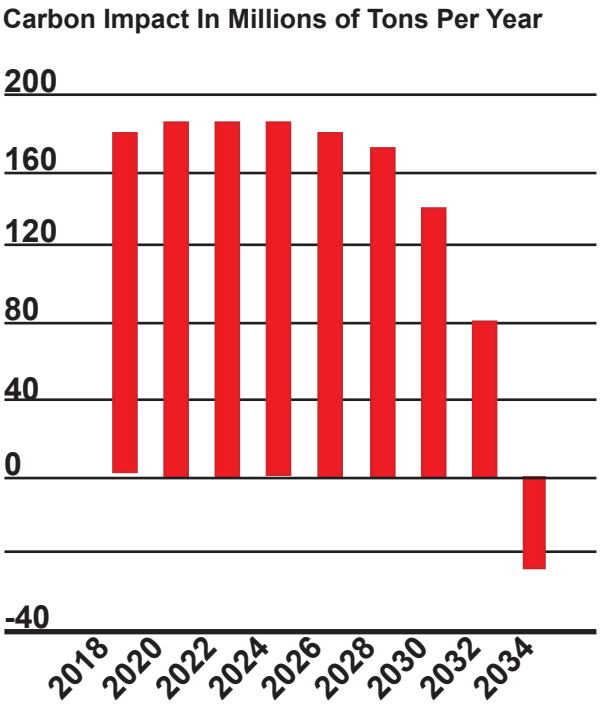
The 2020 edition of the North American Mass Timber State of the Industry Report introduced the concept of The Marshall Effect. The Marshall Effect projects the pace of global mass timber construction and the resulting North American carbon sequestration. It is named in honor of SmartLam's Steve Marshall for his mass timber market development contributions.

THE MARSHALL EFFECT

The number of new mass timber buildings will double every two years.

Data for North America





The result is that the North American building industry will store more carbon than it emits by the year 2034.

IMPACTS OF THE MARSHALL EFFECT ON...

ON THE FOREST RESOURCE:

Every **1 million board feet** of increased lumber demand will lead to adding **3,000 acres** of new working forest land.

ON RAW MATERIALS:

FT^2 of building = 0.9 Cubic Feet of Mass Timber (MT)
FT^3 of (MT) = 22.5 board feet

By 2034 lumber demand will increase
12.9 billion board feet

21.5% increase from 2019 to 2034

IMPACTS OF THE MARSHALL EFFECT ON...

MASS TIMBER PANEL MANUFACTURERS:

Mass timber manufacturing practical capacity will need to increase by a factor of nearly 40 by 2034 to meet the increase in demand for mass timber used in buildings.

*Practical capacity is currently estimated at 65% of nameplate capacity. The gap between practical and nameplate capacity may shrink in the future as mass timber panel production becomes more standardized (i.e., mass timber panels are produced to standard sizes and thicknesses as opposed to the current.

MASS TIMBER DESIGNERS AND SPECIFIERS:

Carbon neutrality is an important goal, but the building industry can and should go further, and by 2034 can store more carbon than it emits if mass timber market saturation is achieved.

a. There is an estimated 0.023 tons of carbon offset for every square foot of mass timber building instead of using steel and/or concrete.
b. There is an estimated 0.0047 net tons of carbon sequestered by mass timber for every square foot of mass timber building.

IMPACTS OF THE MARSHALL EFFECT ON...

MASS TIMBER BUILDERS:

Of the main structural material choices for buildings, **wood is the only option that can be sustainably sourced** and that can also store rather than emit carbon.

MASS TIMBER BUILDING OCCUPANTS:

Exposed wood surfaces **support biophilic responses in building occupants**, promoting health and productivity benefits in all building types.

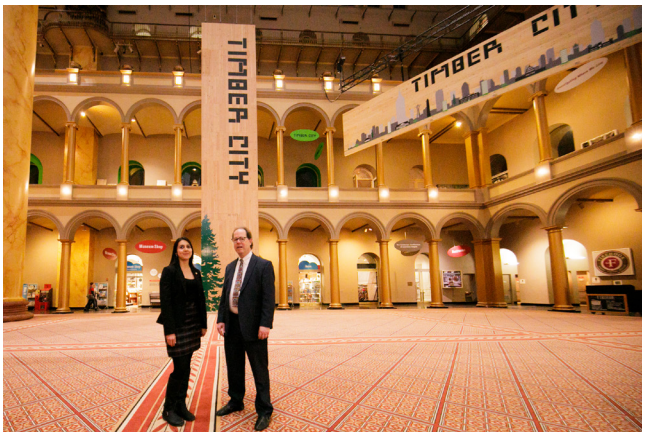
ON MASS TIMBER BUILDING OWNERS:

Mass timber consumers who support sustainable forestry practices and policies **will push the wood market towards maximum carbon storage potential** of forest products.

STEVE MARSHALL

VP SALES & MARKETING

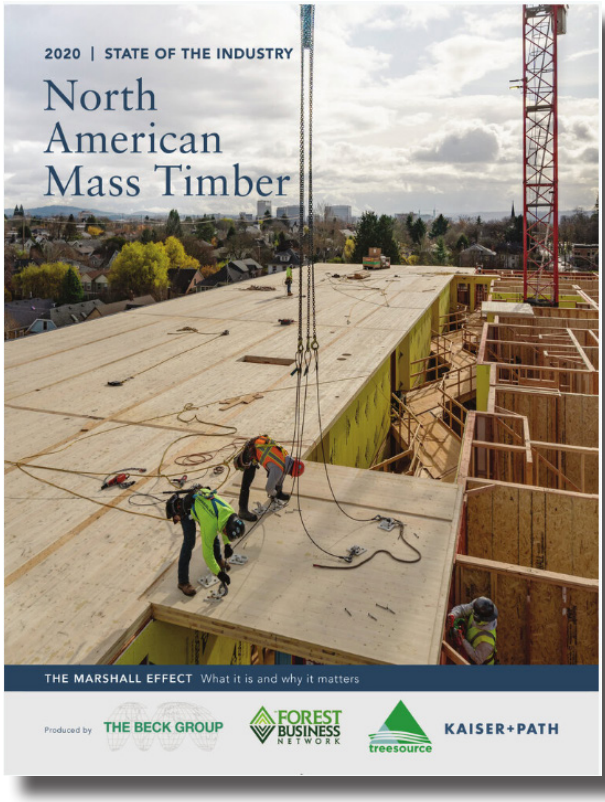
Before joining SmartLam, Steve Marshall worked for the U.S. Forest Service for 42 years. Together with the many other dedicated forest stewards within the USFS, Steve worked to establish a Wood Innovations Program, generated carbon metrics and reporting protocols, and helped author the progressive Timber innovation Act. The USFS continues as an integral partner in the further advancement of mass timber products as an environmentally sound, financially feasible, and aesthetically superior way forward.



Steve would like to thank the creators of The Marshall Effect for their recognition of his efforts and for the contributions they themselves are making.

SOURCE INFORMATION

All of the preceding Marshall Effect information is excerpted with permission from the 2020 Edition of the North American Mass Timber State of the Industry Report



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MASSTIMBERREPORT.COM

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