## SOFTWOOD LUMBER <br> A SUSTAINABLE BUILDING MATERIAL

## WHY BUILD WITH MASS TIMBER?

WOOD MYTH:
ISN'T IT DIFFICULT TO BUILD WITH MASS TIMBER?
MASS TIMBER PANELS CAN BE CUT AND JOINED WITH FAMILIAR TOOLS. PREFABRICATLN
REDUCES TIME, WASTE, AND ON-SITE LABO

## WOOD IS AN IDEAL BUILDING MATERIAL

## WOOD STRUCTURE

Wood is the strongest and most stable in the direction of the grain.
Wood is weaker and more pron
and shrinkage across the grain.
and shrinkage across the grain.
The tree trunk's long tubular cells-similar to
drinking straws-give wood its streng drinking straws-give wood its strength and stability. IS LIGHTER BUT $A$
STRONG AS
TRI TRADITIONAL
MATERIALS.
MATERIALS


NATED TIMBER (CLT) PANELS


## WOOD IS STRONG

## FIRE RESISTANCE

imber does no a protective char layer. Large timber be
interior of timber remains much cooler.

Heavy timber has a particular advantage in a fire because it chars on the outside while retaining strength. This charring effect offers increased safety and means mass timber is predictable when exposed to fire.

FIRE-RESISTANT TIMBER BEAM:
CHARRING DIAGRAM

A - Residual Section -
Structural Capacity Retained
No Structural Capacity Retained

## WOOD VS. STEEL:

COMPARATIVE FIRE PERFORMANCE
A standard fire exposure test showed that a wood beam ( $\left(7^{\prime \prime} \times 21^{\prime \prime}\right)$ maintained its endurance throughout the $30-$ minute test while an exposed steel beam (16 WF 40) lost nearly all its strength and stiffness.

## SOFTWOOD LUMBER <br> A SUSTAINABLE BUILDING MATERIAL

Naturally renewable, locally abundant, and easy to work with, wood once played a major role in the apid growth of cities in the U.S. But after devastating fires in Chicago and Boston in the 1800s, new building codes limited timber construction, resulting in the concrete and steel cities we see today.
novations in wood products are changing the game. New mass timber structural panels are not only fre resistant but allow for buildings that are cost effective to erect and energy efficient to maintain. Mass timber buildings can be built with unprecedented height, span, and seismic stability. Building codes are finally changing to permit this extraordinary material.

## WHY HARVEST WOOD?

WOOD PROVIDES BENEFITS THROUGHOUT ITS LIFE


HIS GRAPHIC IS BASED ON AN EXHIBIT DESIGNED BY IKD FOR THE FAIRBANKS MUSEUM \& PLANETARIUM WITH GENEROUS SUPPORT PROVIDED BY THE SOFTWOOD LUMBER BOARD; U.S. DEPARTMENT O GRICULTURE AND THE VERMONT WOODLANDS ASSOCIATION

DESIGN BY I-K-DESIGN.COM
HOSTED BY FAIRBANKSMUSEUM.ORG

WOOD MYTH: SHOULDN'T WELEAVE THE FORESTS ALONE?

CAREFUL HARVESTING LEADS TO
HEALTHIER FORESTS, FEWER FOREST S, AND LESS CARBON DIOXIDE IN THE AIR.

EACH YEAR, FORESTS IN NORTH AMERICA GROW SIGNIFICANTLY MORE WOOD THAN IS HARVESTED.

## WOOD STORES CARBON

Trees need CO2 to grow. They have the unique ability to absorb CO2 from the atmosphere and store it ong-term nin ree should be mbat when crrbon content is at its peak.

## A BENEFICIAL CYCLE

1. Young trees absorb carbon rapidly 2. Mature trees absorb carbon slowly
2. Decaying trees and fires release carbon 4. Carbon is reabsorbed into new trees

- HARVESTING TREES LOCKS $\mathrm{CO}_{2}$ INTO THE TIMBER


## HARVESTING WOOD:

 LOWER IMPACT

## ENERGY

INTENSITY
Wood builidings can dramatically reduce
carbon emissions inthe carbon emissions in the construction
industry. Wood products reauire less industry. Wood products require less total
energy, and in particular less tossil energy energy, and in particular less fossil energy
to make, than other materials including metals, concrete, or rbricicks.

ENERGY USED TO PRODUCE 1 TON OF MATERIAL


WOOD PRODUCTS MAKE UP 47\% OF ALL INDUSTRIAL RAW MATERIALS MANUFACTURED IN THE U.S., YET ACCOUNTS FOR ONLY 4\% OF THE SECTOR'S ENERGY USE

 FOR STEEL OR CONCRETE COULD SAVE 14-31\% OF GLOBAL CO MISSIONS AND 12-1
OF FOSSIL FUEL OF FOSSIL FUEL

## $\mathrm{SlL} \mid \mathrm{B}$

 SOFTWODD
## 2021 PROCRAM IMPACT

## ACCELERATING INVESTMENT

 AND GROWING DEMAND 

Helped the softwood lumber
industry to support over 775,000 LUMBER HARVESTING AND MANUFACTURING JOBS and 546 mills in 45 states.


108,000
VIRTUAL AND IN-PERSO
HOURS OF EDUCATION
to architects, engineers, designers, developers, and code officials
4.9 MILLION METRIC TONS

king $1,040,600$ CARS OFF THE ROAD

2012-2021 SLB CUMULATIVE IMPACT
$9.8+$ BILLION BOARD
FEET of new demand
has resulted from SLB
investments since 2012.

Incremental 79 BOARD
FEET generated for
every \$1 INVESTED SINCE 2012

The SLB has generated
84.9 BILLON
of revenue since 2012.

