

**Welcome to the**

# **NORTHWEST WOOD DESIGN SYMPOSIUM**

**Hosted by:**



**Providing Market Education and Design  
Resources for Wood Construction**

## FUNDING PARTNERS



# NORTHWEST WOOD DESIGN SYMPOSIUM INDUSTRY SHOWCASE

NATIONAL PARTNERS AT THIS EVENT



ADDITIONAL EXHIBITORS



## NORTHWEST WOOD DESIGN SYMPOSIUM

### REGIONAL EVENT PARTNERS



**CBRE**



**LMN**

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**SKANSKA**  
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**WRNS**STUDIO



# Designing a wood building? Ask us anything.



FREE PROJECT SUPPORT • EDUCATION • RESOURCES

Nationwide support for the code-compliant design, engineering and construction of non-residential and multi-family wood buildings.

- Allowable Heights/Areas
- Construction Types
- Structural Detailing
- Wood-Framed & Hybrid Systems
- Fire/Acoustic Assemblies
- Lateral System Design
- Alternate Means of Compliance
- Energy-Efficient Detailing
- Building Systems & Technologies



River Edge, Kitchell & Associates,  
photo courtesy of Mr. Kitchell Construction

[woodworks.org/project-assistance](http://woodworks.org/project-assistance) • [help@woodworks.org](mailto:help@woodworks.org)

MULTI-FAMILY/MIXED-USE • EDUCATION • OFFICE • RETAIL • INDUSTRIAL • CIVIC • INSTITUTIONAL

## ANY QUESTIONS?



Keep your **regional staff member** in mind for questions and support:

**Ethan Martin, PE**

Regional Director | OR, AK, HI, ID, WA

Project Support Field Division, West

**(855) USE WOOD (873-9663)**

**[ethan@woodworks.org](mailto:ethan@woodworks.org)**

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.



# Course Description

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In 2017, Microsoft announced plans for a multi-year modernization project on its Redmond, WA campus. The project, which will see 17 new buildings ranging from 180,000 to 220,000 square feet and four to five stories, will create healthy, inspiring workplaces that support the needs of Microsoft employees. The new buildings will be in building clusters that will be blended together to create a unified campus. One of the main factors driving the design of this project has been material selection and the need to utilize sustainable design strategies to support the symbiosis of people and place, while respecting the unique ecology of the region. To help meet these goals, the company has committed to using mass timber in many of the new buildings. In this opening plenary, Microsoft will share the rationale for choosing mass timber and discuss how it will be utilized across the campus redevelopment project.



# Learning Objectives

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1. Discuss the vision of Microsoft for a sustainable campus redevelopment project, and the role of mass timber in achieving these goals.
2. Highlight effective and code-compliant means of utilizing mass timber in a variety of project types and scales.
3. Explore how the use of exposed, natural building materials such as mass timber can contribute to positive workplace experiences for employees.
4. Review opportunities for implementing mass timber in hybrid structures, taking advantage of the specific material attributes that different systems can provide.

# CURRENT STATE OF MASS TIMBER PROJECTS

As of March 2019, **545** multi-family, commercial, or institutional projects have been constructed out of mass timber across the U.S., or they're currently in design.



**WoodWorks™**  
WOOD PRODUCTS COUNCIL

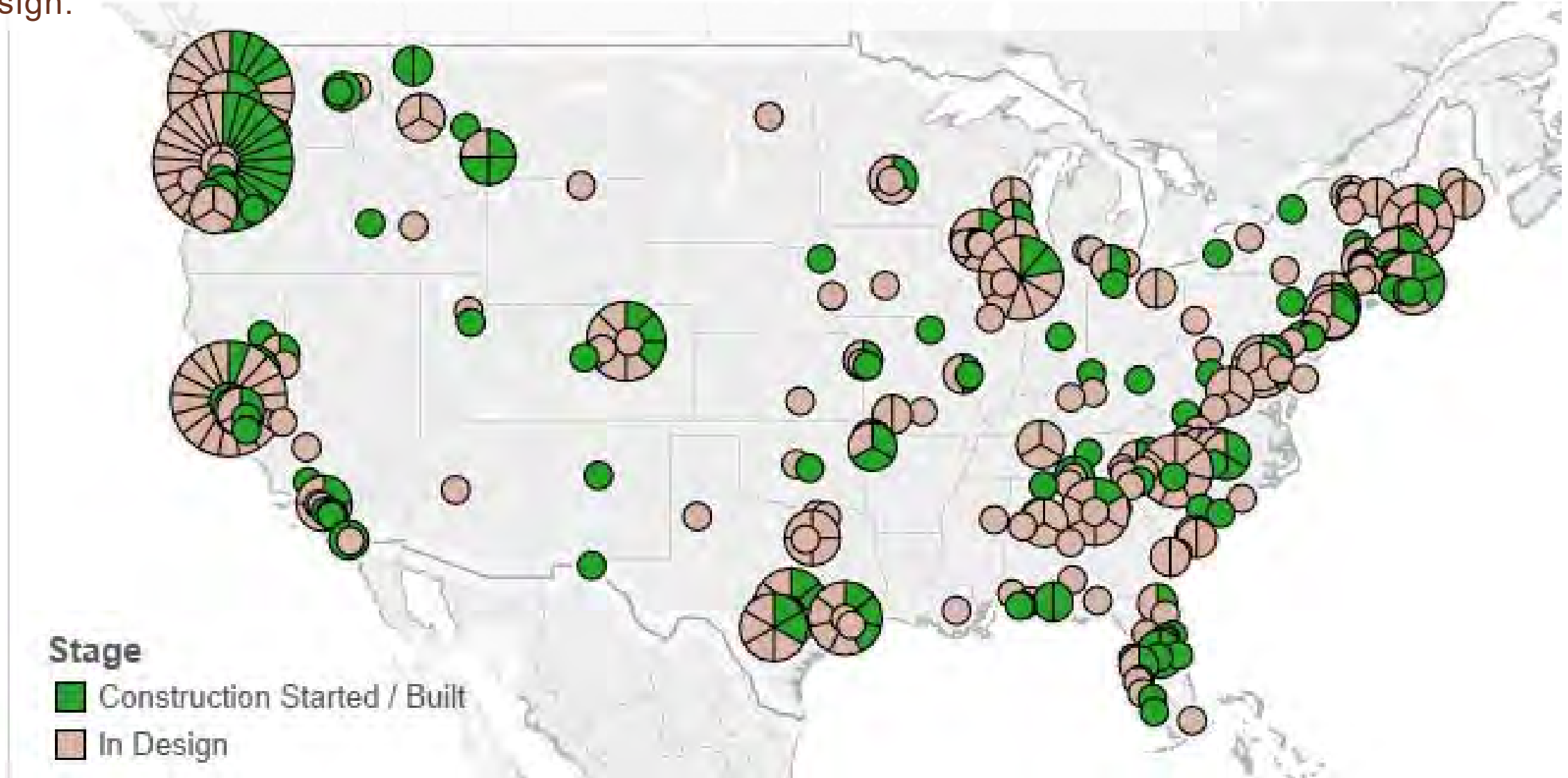




Photo: Fennick McCredie Architecture

**MASSACHUSETTS REGIONAL AIRPORTS | VARIOUS LOCATIONS, MA**

Project Team:  
Fennick McCredie Architecture  
ARUP  
CMGC Building Corp.



**MASSACHUSETTS REGIONAL AIRPORTS | VARIOUS LOCATIONS, MA**





Photo: Sierra Institute

**PLUMAS COUNTY BIOMASS BOILER| QUINCY, CA**



Project Team: AMLGM  
Holmes Structures  
Houston Construction

Photos: Sierra Institute

**PLUMAS COUNTY BIOMASS BOILER | QUINCY, CA**





Photos: LEVER Architecture

ALBINA YARD | PORTLAND, OR

Project Team: LEVER Architecture  
KPFF Consulting Engineers  
REWORKS

4 Stories, 16,000 SF  
Mixed Use



Photos: LEVER Architecture

**ALBINA YARD | PORTLAND, OR**





Photos: LEVER Architecture

ALBINA YARD | PORTLAND, OR





Photo: RMW Architecture

ICE BLOCK I | SACRAMENTO, CA



Project Team: RMW Architecture & Interiors  
Buehler Engineering  
Ascent Builders  
Ascent Builders  
LB Construction Inc

3 Stories Timber over 1 Story Podium, 87,460 SF  
Type IIIB Construction



Photo: Bernard André Photography

**ICE BLOCK I | SACRAMENTO, CA**





Photo: RMW Architecture

**ICE BLOCK I | SACRAMENTO, CA**





**JOHN W. OLVER DESIGN BUILDING | AMHERST, MA**

Project Team: Leers Weinzapfel Associates  
Equilibrium Consulting  
Simpson Gumpertz & Heger  
Suffolk

4 Stories, 87,000 SF  
Type IV Construction  
Classrooms, labs, offices



Photo: ©Albert Vecerka/Esto

**JOHN W. OLVER DESIGN BUILDING | AMHERST, MA**





Photo: Hines

**T3 OFFICE BUILDING | MINNEAPOLIS, MN**

Project Team: Michael Green Architecture, DLR Group  
Magnusson Klemencic Associates  
StructureCraft  
Kraus-Anderson Construction Company

6 Stories of Timber over 1 story podium, 220,000 SF  
Type IV Construction

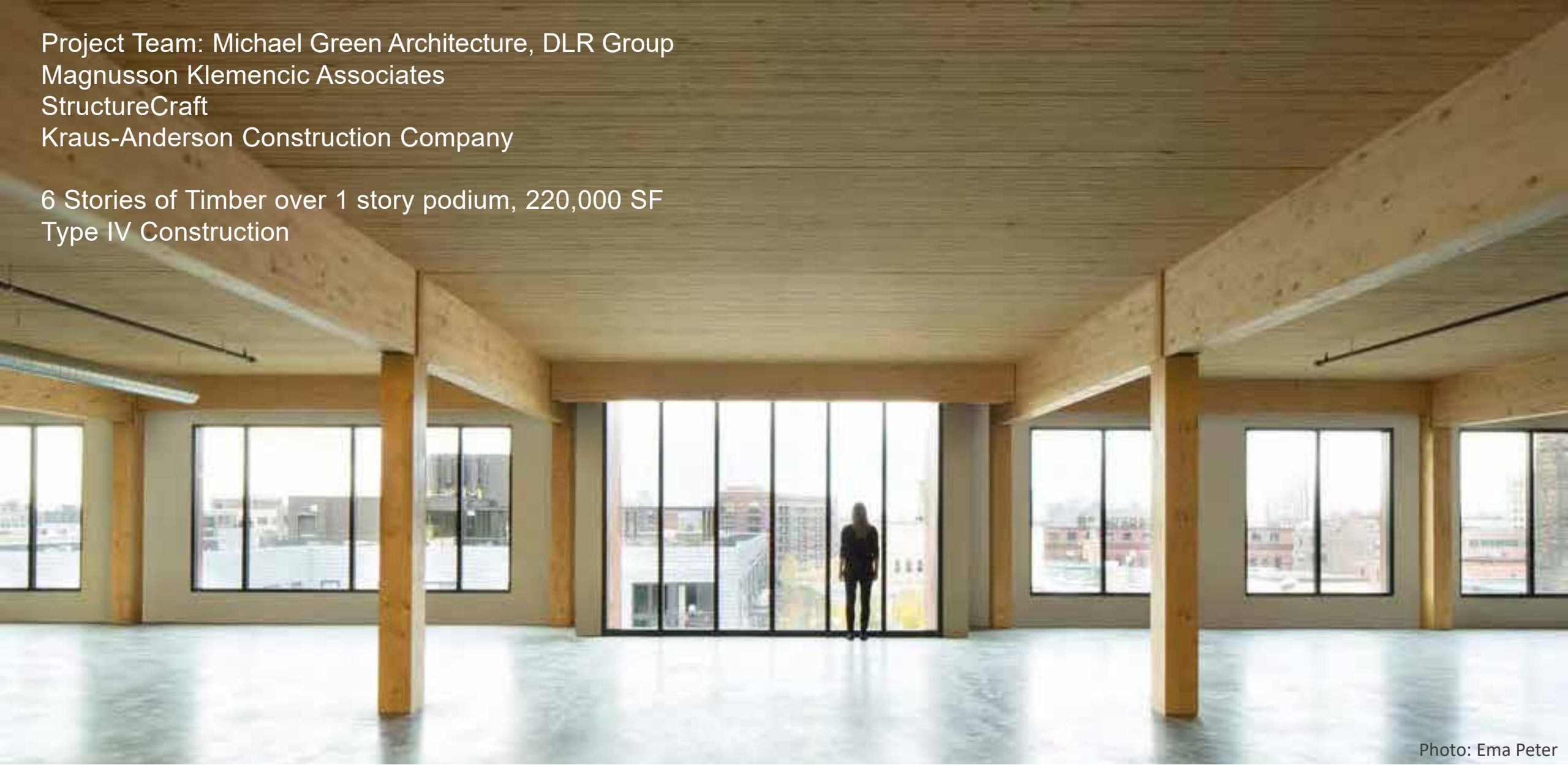


Photo: Ema Peter

**T3 OFFICE BUILDING | MINNEAPOLIS, MN**





Photo: Corey Gaffer courtesy Perkins + Will

**T3 OFFICE BUILDING | MINNEAPOLIS, MN**



Photos: Baumberger Studio/PATH Architecture

**CARBON 12 | PORTLAND, OR**





Project Team: Path Architecture  
Munzig Structural Engineering  
Kaiser Group

8 Stories, 32,000 SF  
Modified Type IIIA Construction  
Condominiums & Retail

Photo: Kaiser + Path

**CARBON 12 | PORTLAND, OR**



Photos: Michael Elkan | Naturally Wood | UBC

**BROCK COMMONS | VANCOUVER, BC**





Project Team: Acton Ostry Architects  
Fast + Epp  
Urban One Builders  
Seagate Structures

17 Stories Timber over 1 Story Podium  
Student Housing

Photo: Seagate Structures

**BROCK COMMONS | VANCOUVER, BC**





# Building a Sustainable Future

Lucas Joppa  
Chief Environmental Officer, Microsoft

*Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.*



# Our environmental focus areas

We focus our efforts in four areas where we can make the biggest difference.



## Operations

Reduce our operational impact while driving innovation



## Products, services, and devices

Design products, services, and devices with sustainability in mind



## Customers and partners

Empower customers and partners to drive change using cloud and AI



## Policy

Advocate for policies that drive sustainable outcomes



# Carbon Fee

```
graph TD; A[Carbon Fee] --- B[Carbon Neutral]; A --- C[Accelerate Renewable Energy]; A --- D[Technology Investment];
```



Carbon  
Neutral



Accelerate  
Renewable Energy



Technology  
Investment





Microsoft Silicon Valley



# Cross-laminated Timber (CLT)



Sustainable

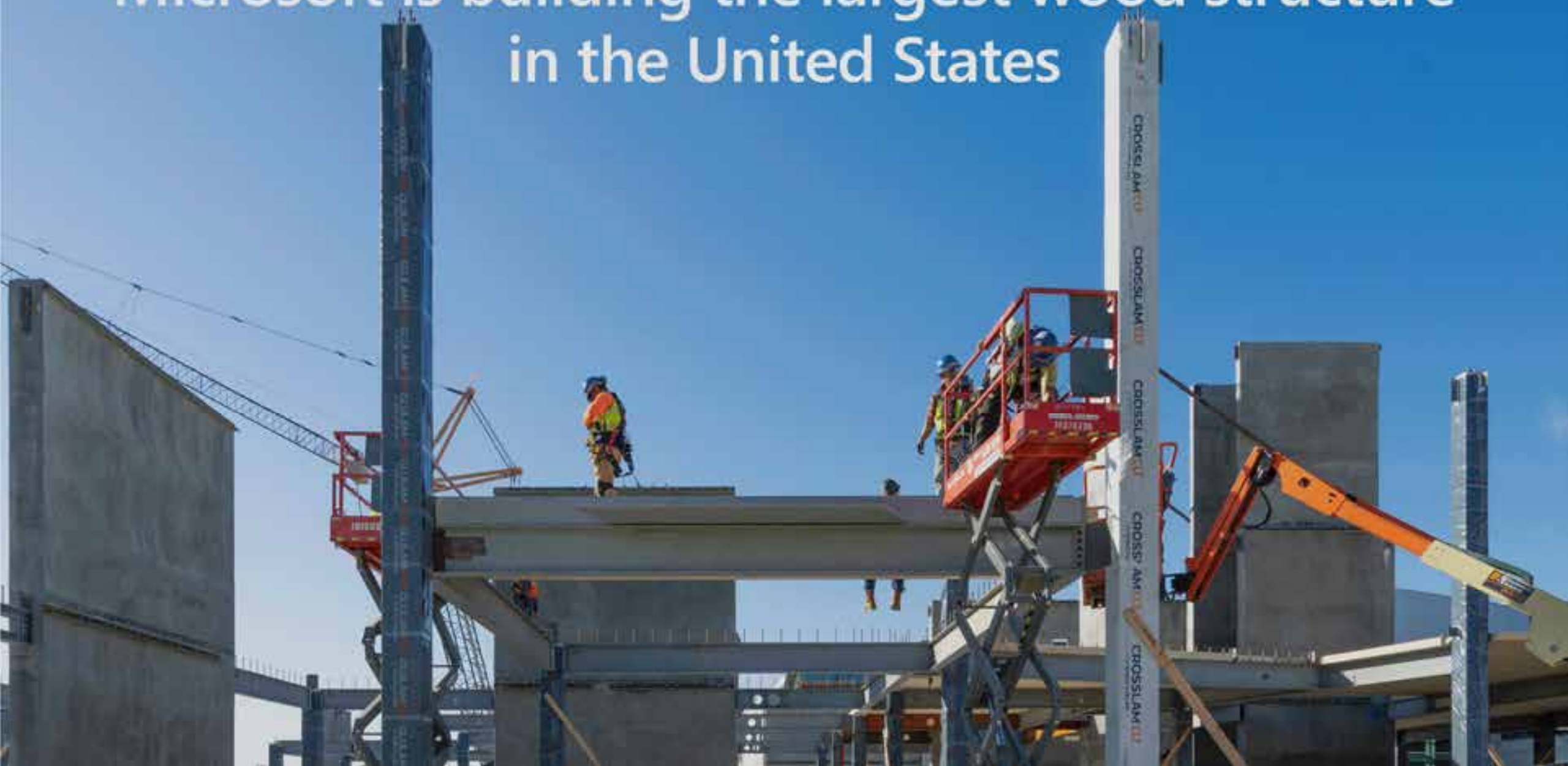


Durable



Beautiful

Microsoft is building the largest wood structure  
in the United States





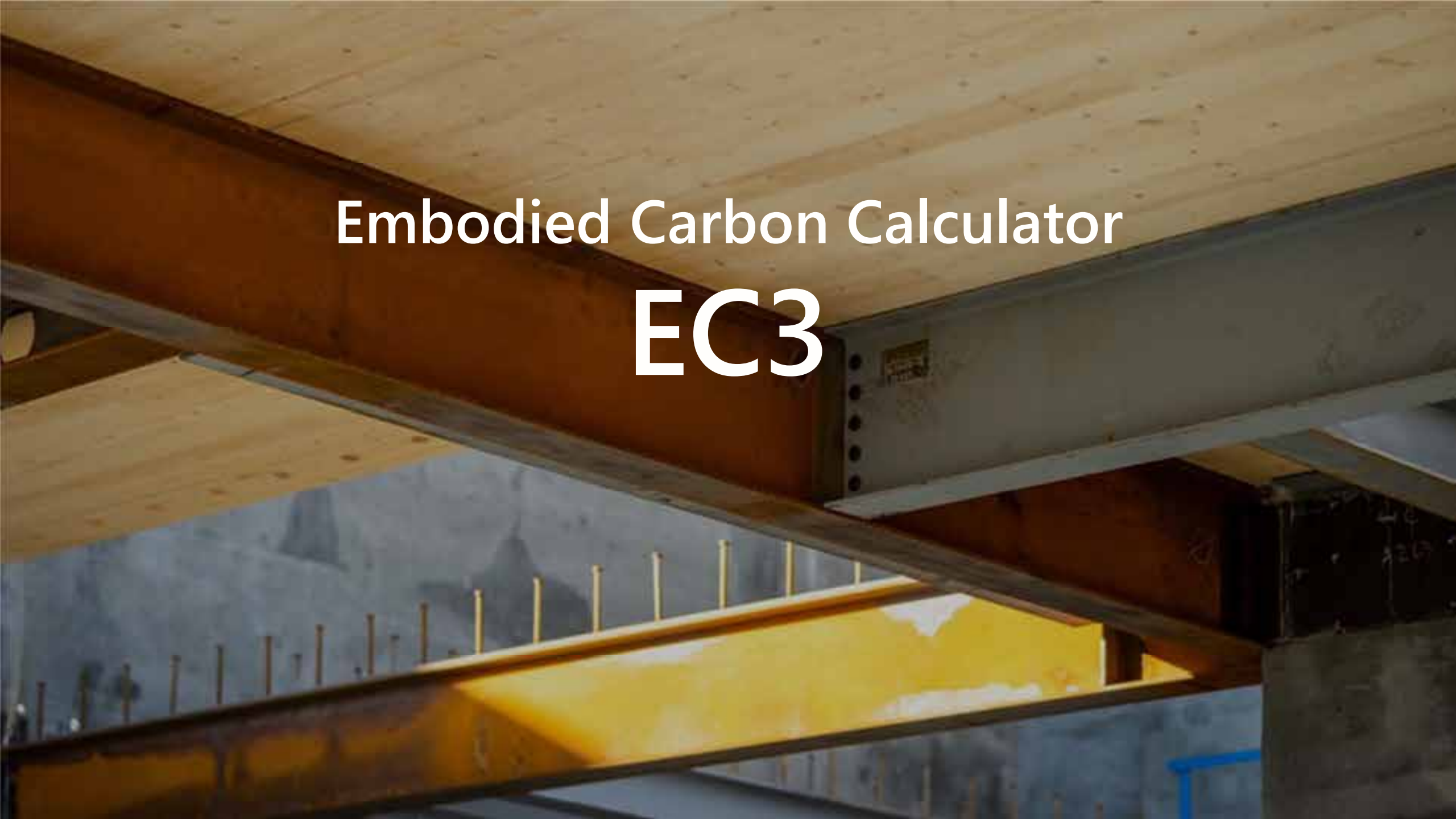
# Built Environment Statistics



Buildings represent  
28% of global  
energy-related CO2  
emissions

Building construction  
represents another  
11% of energy-related  
CO2 emissions

Global building stock  
is expected to double  
before 2050

The background image shows a construction site with a network of steel beams and concrete slabs. A prominent steel beam runs diagonally across the frame, with a concrete slab above it. Below the beam, there are more steel structures and a concrete wall with vertical reinforcement bars. The lighting is warm, suggesting an indoor or sheltered environment.

# Embodied Carbon Calculator EC3





Microsoft Redmond



The image features a Venn diagram with three overlapping circles. The left circle is labeled 'Environmental Science', the right circle is labeled 'Computer Science', and the central circle is labeled 'AI for Earth' with the subtitle 'Monitor | Model | Manage'. The background is a blurred image of tall grass against a blue sky.

**Environmental  
Science**

**AI for Earth**  
Monitor | Model | Manage

**Computer  
Science**

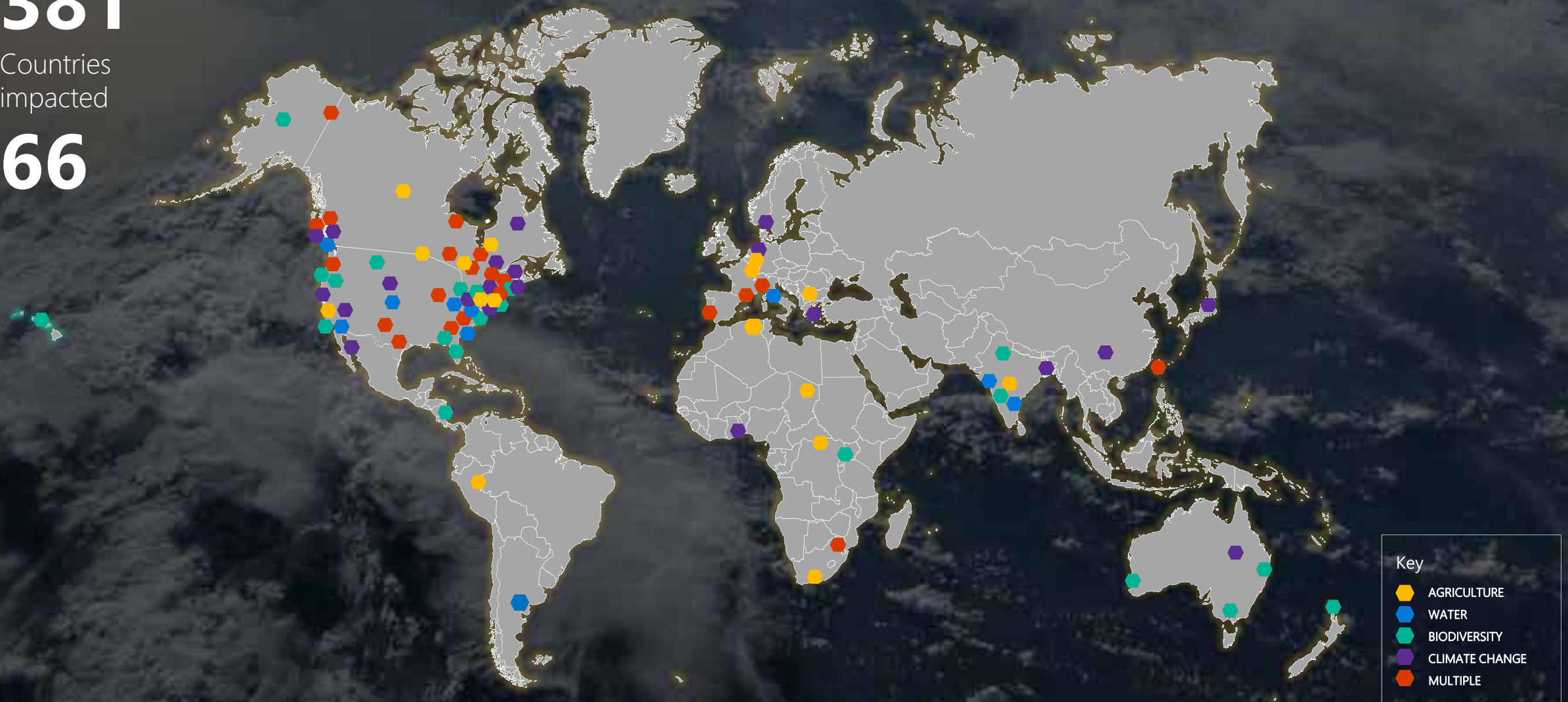



Grantees:

**381**

Countries  
impacted

**66**





GainForest

Columbia  
University

Cornell  
University

Rainforest  
Alliance





**SILVIATERRA**

537 million  
acres

92 billion  
trees

800 terabytes  
at 10x speed



Climate  
Goals



Conservation



King  
County



Economic  
Growth





THANK YOU

<https://www.microsoft.com/en-us/environment/carbon>