Mass Timber Blitz Hawai‘i

TRAINING & EXHIBITION

OCT. 16 TO NOV. 21, 2025

MAHALO TO OUR PARTNERS

TIMBERLAB
AMERICAN WOOD COUNCIL
SIMPSON Strong-Tie
m.thrailkill.architect.llc
SWINERTON
WOODWORKS
HAWAII CARPENTERS APPRENTICESHIP & TRAINING FUND
HHFDC
NAHELE LUMBER CO.
RALPH S. INOUYE CO LTD GENERAL CONTRACTOR
SCHOOL OF ARCHITECTURE UNIVERSITY OF HAWAI'I AT MĀNOA
AIA Honolulu
HIOG HAWAII OFF-GRID Architecture & Engineering
VAPRO SHIELD

Mass Timber Blitz Hawai‘i

SHADE INSTITUTE

Sponsors

Mahalo!

Kanaka mahiʻai (planter)

KAI HAWAII STRUCTURAL & FORENSIC ENGINEERS

PRP PACIFIC RESOURCE PARTNERSHIP

Mea nāna i hana (maker)

HPM BUILDING SUPPLY

WOODWORKS WOOD PRODUCTS COUNCIL

NORDIC PCL CONSTRUCTION

Mea hoʻolālā (planner)

ARMSTRONG BUILDERS LLC

m.thrailkill.architect.llc specifications estimating research documentation

WRNS STUDIO

RALPH S. INOUYE CO LTD GENERAL CONTRACTOR

HONSADOR LUMBER

Haumāna (apprentice)

SIMPSON Strong-Tie

DEAN sakamoto ARCHITECTS LLC

FERRARO CHOI

TIMBERLAB

Introduction to Mass Timber

Janelle Leafblad, *Woodworks*

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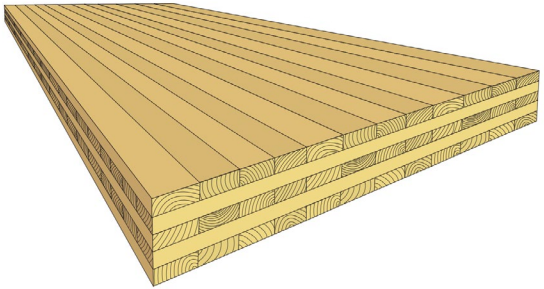
Considering wood?
Ask us anything!

Mass Timber Products

Glue Laminated Timber (Glulam)
Beams & columns

Boise Cascade

Cross-Laminated Timber (CLT)
Solid sawn laminations



Cross-Laminated Timber (CLT)
SCL laminations

Freres

111 East Grand / Neumann Monson Architects / Raker Rhodes Engineering / StructureCraft / Photo Mike Sinclair

1 De Haro / Perkins&Will / DCI Engineers / Photo Kyle Jeffers

1510 Webster / oWow / DCI Engineers / Photo Flor Projects

Prefabricated and Precise

- Tight fabrication tolerances
- Computer Numerically Controlled (CNC) connections

Photo: Structurlam

Photo: Alex Schreyer

Photo credit: naturally:wood

Labor Benefits

- Small crews for timber frame installation
- Utilize more entry-level laborers when systems fully designed, coordinated & pre-planned
- Safer construction sites

T3 Atlanta
Hartshorne Plunkard Architecture / DLR Group / StructureCraft / New South Construction / *Photo StructureCraft*

Healthy Buildings & Biophilia

Disaster Resilient

Photo: Scott Breneman/WoodWorks

Disaster Resilient

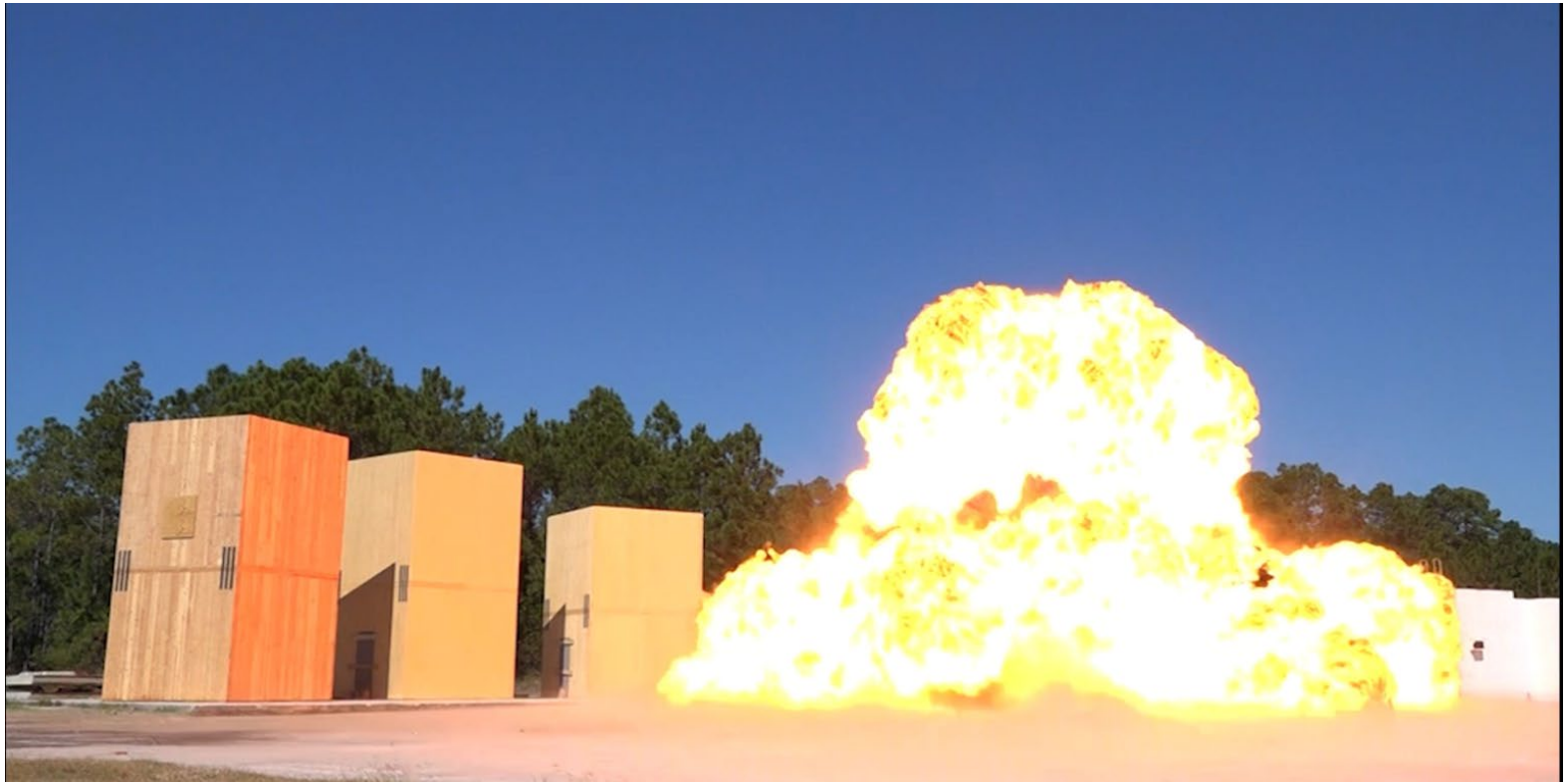
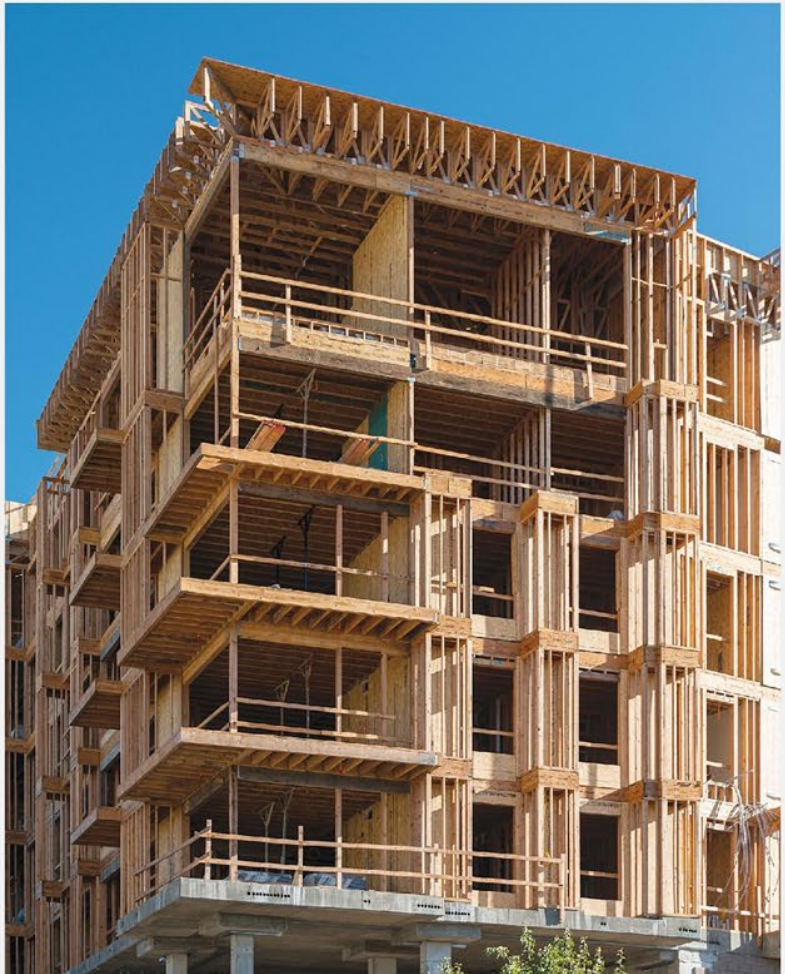


Image Credit: USDA FS FPL/SLB/WoodWorks Live Blast Testing at Tyndall Air Force Base
http://www.woodworks.org/publications-media/blast-testing-research/

Section of exposed ceiling (90º angle)

SOLUTION PAPER



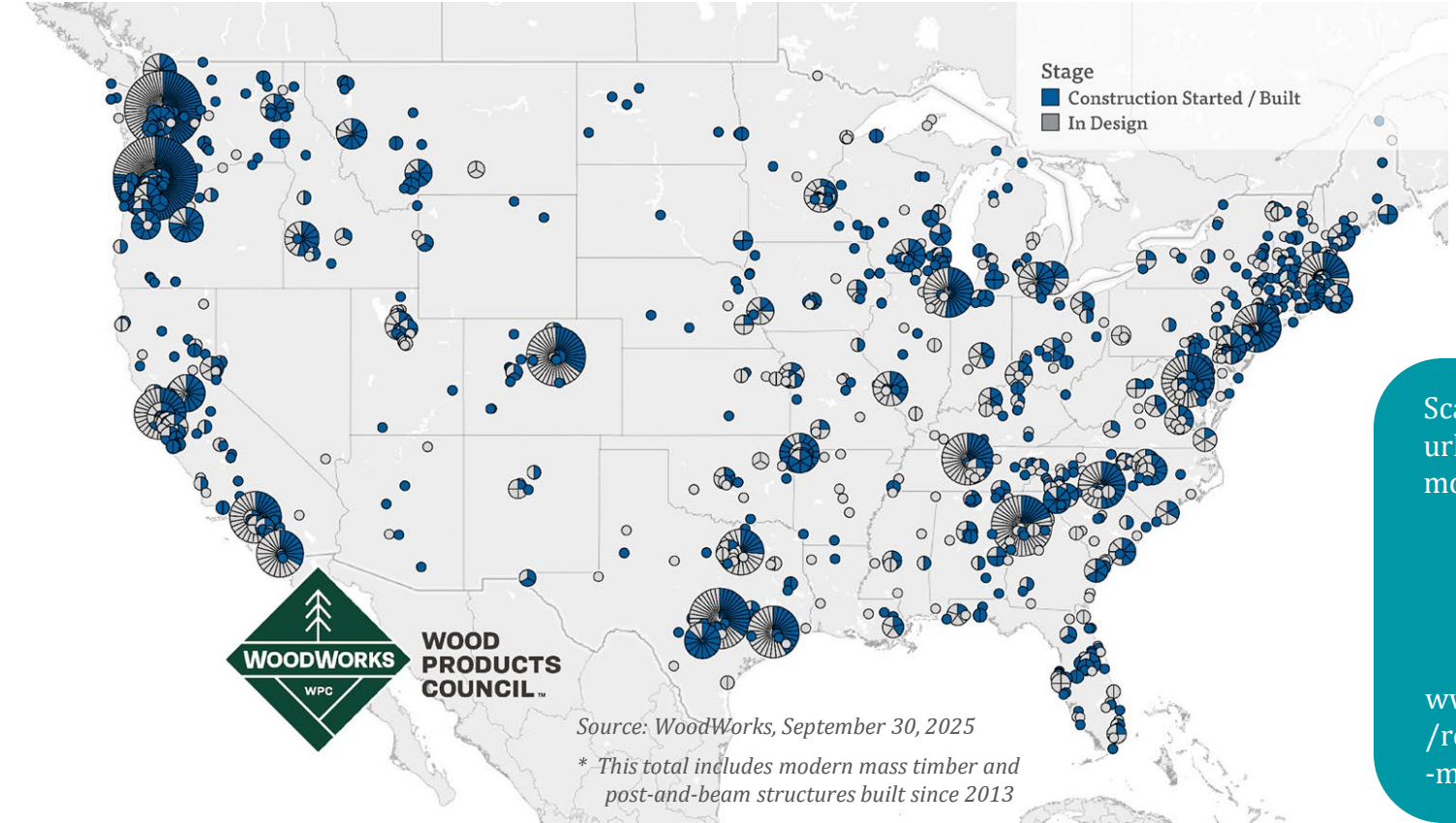
Effective Termite Protection for Multi-Family & Commercial Wood Buildings

Techniques for Keeping Wood-Frame Buildings Pest-Free

Photo Brett Drury

Current State of Mass Timber Projects

As of Q3 2025, in the US, **2,598** multi-family, commercial, or institutional projects have been constructed with, or are in design with, mass timber.



WOODWORKS WPC
WOOD PRODUCTS COUNCIL™

Source: WoodWorks, September 30, 2025

** This total includes modern mass timber and post-and-beam structures built since 2013*

Scan this code or use the url to find the map and more details online.

www.woodworks.org/resources/mapping-mass-timber/

Mass Timber Manufacturing

Samuel Dicke, *Timberlab*

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MASS TIMBER PARTNER

- General contractor roots
- Vertically integrated, full-service mass timber provider
- Products Available: Cross Laminated Timber, Glulam, GLT
- 210 employees
- 65+ mass timber projects completed
- 5.5 million square feet of mass timber delivered

LOCATIONS – CHOOSE A PARTNER WHO OFFERS FULL SUITE OF SERVICES

SAWMILL/PLANER MILL

Philomath, OR

Size: 80 acres

A full service provider will have a sawmill and planing mill intended to support the company's cross-laminated timber (CLT) and glue-laminated timber (glulam) operations. The facilities could include large area with equipment for milling, planing and kiln drying for lamstock production. When it comes to selection and specifying mass timber, sourcing, milling and fabrication locations matter.

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GLULAM FACILITY

Swisshome, OR

A full service mass timber manufacturing partner will have glulam manufacturing operations in the heart of the timber producing region in the Pacific Northwest, or American Southeast. These are the key producing regions for timber that are certified to be used in mass timber construction. These facilities will import lumber from sawmills for manufacturing of the glulaminated timber and light fabrication work. This minimizes the carbon footprint of the final product through efficient local transport, offers higher quality control and minimizes cost.

Species Available:

Douglas Fir | Alaskan Cedar | Southern Yellow Pine

GLULAM FACILITY

Drain, OR

A specialty glulam mill may also be available to produce curved or custom beams. They may also be able to produce glulam trusses in the facility that could help in more traditional construction, separate from most mass timber post and beam construction. A specialty glulam mill may also be able to produce long span glulam beams over 100 feet in length. Using locally milled and fabricated wood offers designers more access and freedom when it comes to specification.

Species Available:

Douglas Fir | Alaskan Cedar | Southern Yellow Pine

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NW Fabrication

Portland, OR

A full service provider should also have fabrication services at their production facility, or somewhere nearby to be able to receive pieces for highly coordinated CNC work. These machines fabricate to 1/16 of an inch tolerance and therefore provide the last piece in the puzzle when getting ready for install.

-Glued-laminated Timber (Glulam) Fabrication-
-Cross-laminated Timber CLT Fabrication
-Mass Plywood Panel (MPP) Fabrication

Species Available:
Douglas Fir | Southern Yellow Pine | Spruce Pine Fir Alaskan Cedar | European Spruce

SE Fabrication

Greenville, SC

Having a regionally specific fabrication facility can also help assist in making mass timber more affordable due to decreased cost in transportation and shipping logistics. In addition, having a local presence across the US, makes mass timber manufacturers easier to assist with local design and construction teams.

-Glued-laminated Timber (Glulam) Fabrication
-Cross-laminated Timber CLT Fabrication
-Mass Plywood Panel (MPP) Fabrication

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CLT MANUFACTURING (2026)

Millersburg, OR

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Ascent: Designing the World's Tallest (For Now) Timber Hybrid

Guest Speaker: Jason Korb, AIA, *Korb Architecture*

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Why Mass Timber: Sustainability

1. The building will sequester approximately 7,200 metric tons of CO_2.
2. It will take approximately 25 minutes to grow this volume of wood in North American forests.

This CO_2 benefit is also equivalent to taking approximately 2400 cars off the road for a year or the energy to operate over 1100 homes for a year.

ASCENT MILWAUKEE

NINETEEN STORIES OF TIMBER OVER A CONCRETE PODIUM

HEIGHT:
284 FT/ 86.56 M

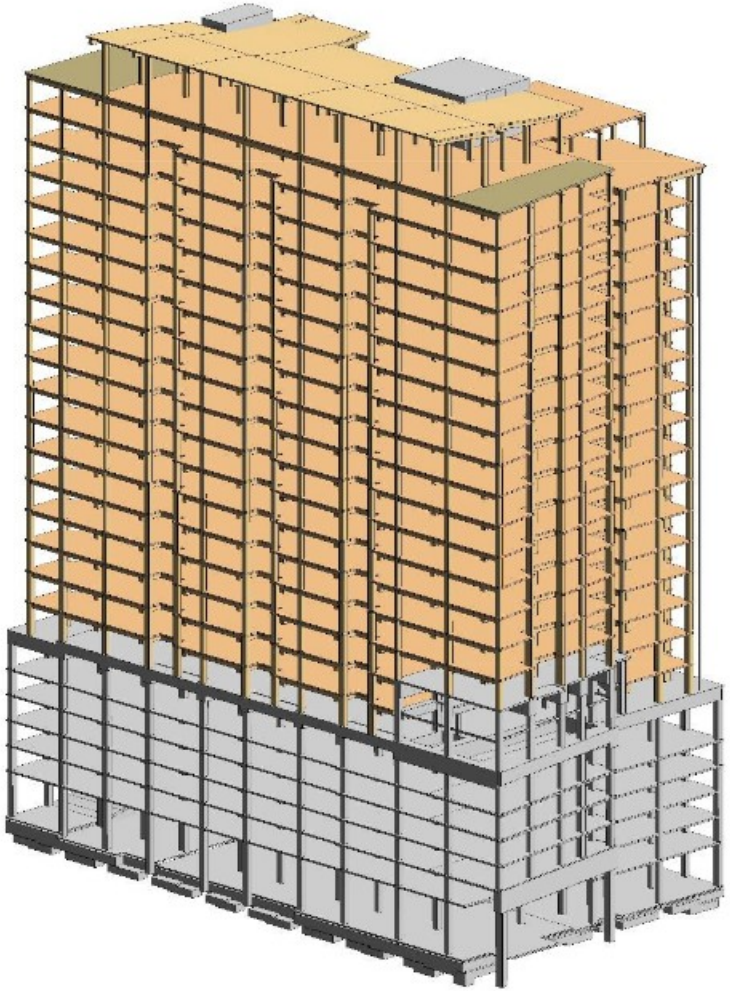
FLOOR AREA OF TIMBER:
APPROX. 324,400 SF /30,136 SM

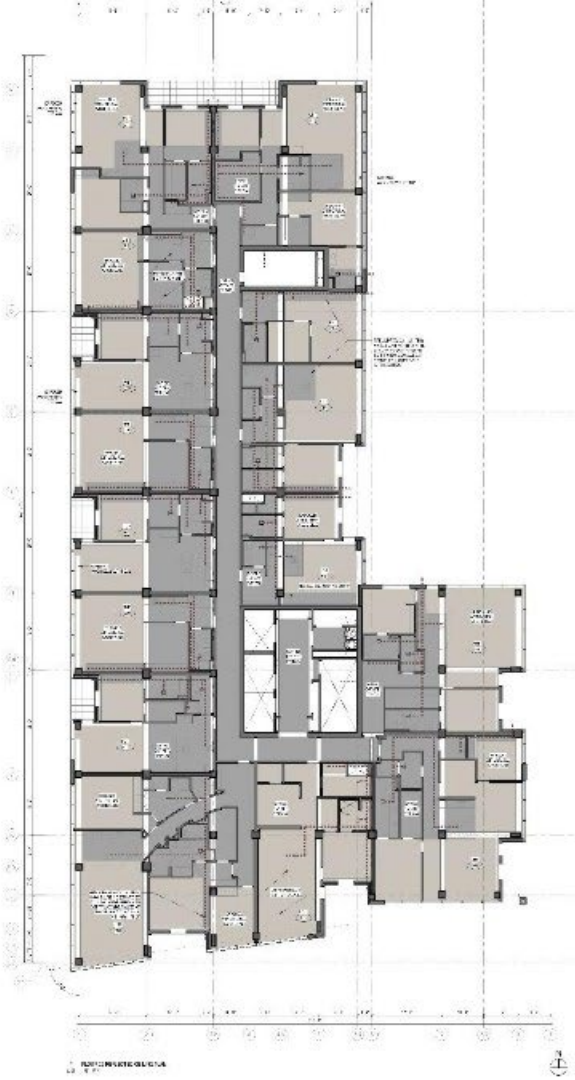
APPROVALS PURSUED UNDER 2015 IBC'S "SPECIAL ASSEMBLY" SECTION

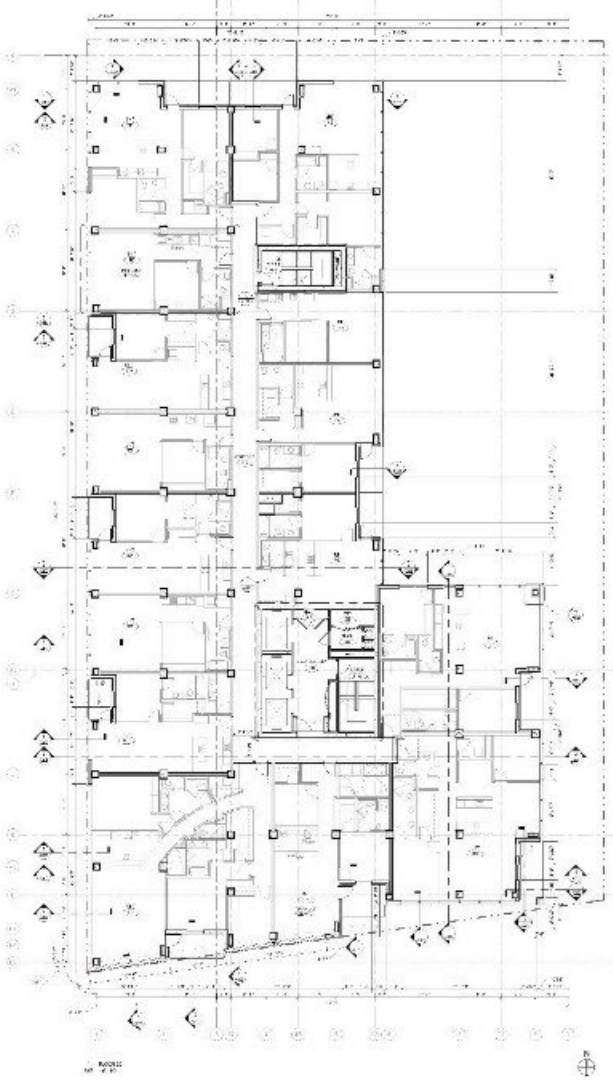
HYBRID STRUCTURE – STAIRS AND ELEVATOR CORES ARE CIPC

ACHIEVES CLASS FIRE RESISTANCE THROUGH BOTH EXCAPSULATION AND SACRIFICIAL/ CHAR METHOD – APPROX. 50% OF TIMBER COLUMNS, BEAMS, AND SLABS ARE EXPOSED – PRIMARILY IN LIVING SPACES

VERTICAL STRUCTURAL MEMBERS MUST MEET A THREE HOUR FIRE RATING, FLOORS ARE TWO HOUR







Ascent
Housing Floor Plans
19 Levels
259 units

Construction Cost:
$130M
$253/sf

2022 Completion

PRESCRIPTED CHAR RATE:
1.5IN/ HR

TESTED CHAR RATE:
1.29-1.31 IN/ HR

Required Tests for Ascent:

3 hour Column test
(first ever completed)

2 hour concealed
connector test
(2015-Oregon)

2 hour fully loaded test
on CLT Panel
to meet PRG 320
(European)

- 3 Species Tested:
  Austrian White Spruce
  Douglas Fir
- Southern Yellow Pine

- Standards: European Testing vs. US Testing

Project Timeline:

01 March 2018:	Directive from New Land Enterprises to pursue MTF Tower
03 May 2018:	Presentation to DNS Commissioner and Alderman
24 July 2018:	Introduction to DNS Staff
21 October 2018:	Project unveiled at CTBUH World Conference, Dubai
11 November 2018:	Presentation to MFD leadership
22 July 2019:	First working meeting with DNS Staff
07 November 2019:	Second working meeting with DNS Staff
17 December 2019:	Witnessed three hour fire test (4th of 9)
13 February 2020:	Variance review meeting with DNS Staff
21 February 2020:	Four variance petitions filed with DNS
21 February 2020:	Footings and Foundation Permit applied for
7 May 2020:	Final Variance Conference
24 July 2020:	All Permits and Variances required for construction issued
10 August 2020:	**Construction commencement**
01 September 2022:	**Project Completion**

Intermediate design May 2019

Panel Discussion

Future of Mass Timber in Hawai‘i

3:20-4:30 PM

Moderator: Dean Sakamoto, *SHADE Institute / Dean Sakamoto Architects*
Speakers: Aaron Yamasaki, *Swinerton*, Randy Chu, *Hawaii Housing Finance & Development Corp*, Blake Inouye, *Ralph S. Inouye Co., Ltd.*, David Sellers, *Hawaii Off Grid*

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Is Mass Timber right for Hawai‘i?

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Panel Discussion
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PC Interactivity

Code, Fiber, Cost

TABLE 601
Fire Resistance Rating Requirements for Building Elements (Hours)

Building Element	I-A	I-B	II-A	II-B	IV-A	IV-B	V-C	V-CO	V-A	V-B
Primary Structural Frame	3*	2*	1	0	3*	2	2	HT	1	0
Ext. Bearing Walls	3*	2*	2	2	3*	2	2	2	1	0
Int. Bearing Walls	3*	2*	1	0	3*	2	2	1/HT	1	0
Floor Construction	2	2*	1	0	2	2	2	HT	1	0
Roof Construction	1.5*	1*	1	0	1.5*	1	1	HT	1	0
Exposed Mass Timber Elements					None	20-40%	Most	All		All

Understand the cost implications to different code paths between Type III-B vs. Type IV-C

*These values can be reduced based on certain conditions in IBC 403.2.1, which do not apply to Type IV buildings.

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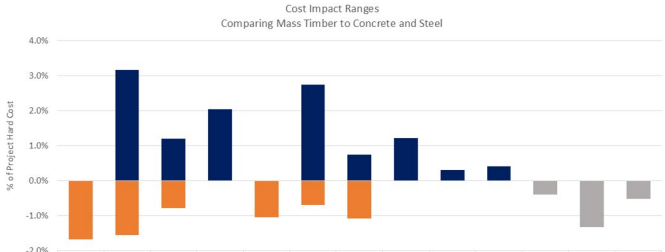
Potential Trade Impact on Project Hard Cost



	Foundations	Vertical Structure	Lateral Structure	Floor Acoustics	General Conditions	Fire Protection	Facades	Podium	Roofing	Builders Risk	Carbon	Biophillia	Market Differentiation
Savings	-1.7%	-1.6%	-0.8%	0.0%	-1.1%	-0.7%	-1.1%	0.0%	0.0%	0.0%	-0.4%	-1.3%	-0.5%
Premium	0.0%	3.2%	1.2%	2.0%	0.0%	2.8%	0.8%	1.2%	0.3%	0.4%	0.0%	0.0%	0.0%

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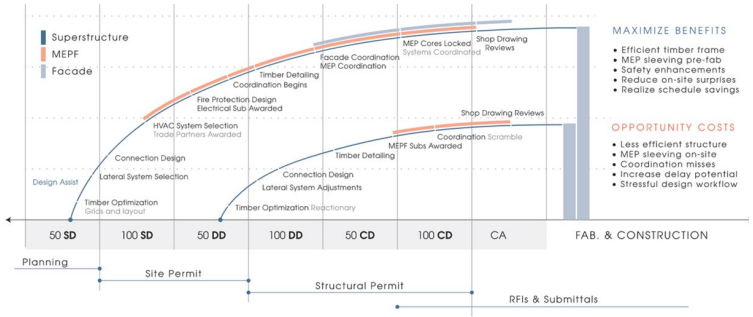
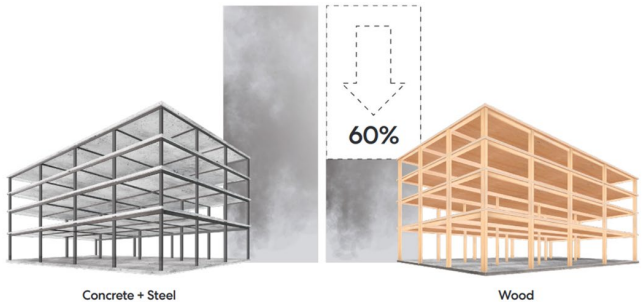
Decision Timeline for Mass Timber



Timber Use Reduces Embodied Carbon



Aaron Yamasaki, *Swinerton*

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Blake Inouye, *Ralph S. Inouye Co., Ltd.*

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David Sellers, *Hawaii Off Grid*

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Design, Manufacturing, Fabrication, Construction
Critical Issues
Design, Manufacturing, Fabrication, Construction
Design, Manufacturing, Fabrication, Construction

Mahalo

Thank you for attending!

Our full training day qualifies for 7 AIA/CES LUs (HSW).
AIA Honolulu is the registered provider.

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