Light Wood-Frame Shaft Wall Detailing for Code Compliance and Constructability

Presented by: Nick Diggins, Mosaic Architecture
Aubrey Yerger, Morrison-Maierle

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

Aubrey Yerger, PE

Morrison-Maierle

ayerger@m-m.net

Nick Diggins, AIA

Mosaic Architecture

nick@mosaicarch.com

Aubrey Yerger is a structural engineer at Morrison-Maierle who provides a wide variety of structural services including the firm’s expansion into mass timber design. Although her background is diverse, her passion is the structural design of architectural buildings. Aubrey enjoys a challenge and loves to work through specialized structural detailing to help her clients’ visions come to life.

Nick’s background as a former Marine brings a focus for keeping projects efficient, innovative, and client-centric. His teams are innovative and not afraid of fast schedules and tough timelines by harnessing new technology for streamlined design delivery to construction documentation. Pushing the profession to new heights and collaborating early are ideas in action with Mosaic’s collaborative planning, design and construction teams.

United States Forest Service: Mission

- Use of product harvested
- CLT uses small diameter timbers
- Showcase use of product

Nez Perce-Clearwater National Forest Supervisor’s Office: The Story

Today’s case study origin point.

- The Forest Service wanted to showcase wood construction in their new facility.
- The building needed to tell a story to the public and other FS regions, but also fit into its context of Kamiah.
- New shared type spaces and scaled to house all their staff under one roof. Better public service in a single location.
- Wood, wood, wood! “It’s who we are”.

Nez Perce-Clearwater National Forest Supervisor's Office: The Story

- Occupancy Classification: B
- Type of Construction: V-B
- 16,000 GSF
- Sprinklered: Yes
- 2 levels utilizing Topography, Elevator required

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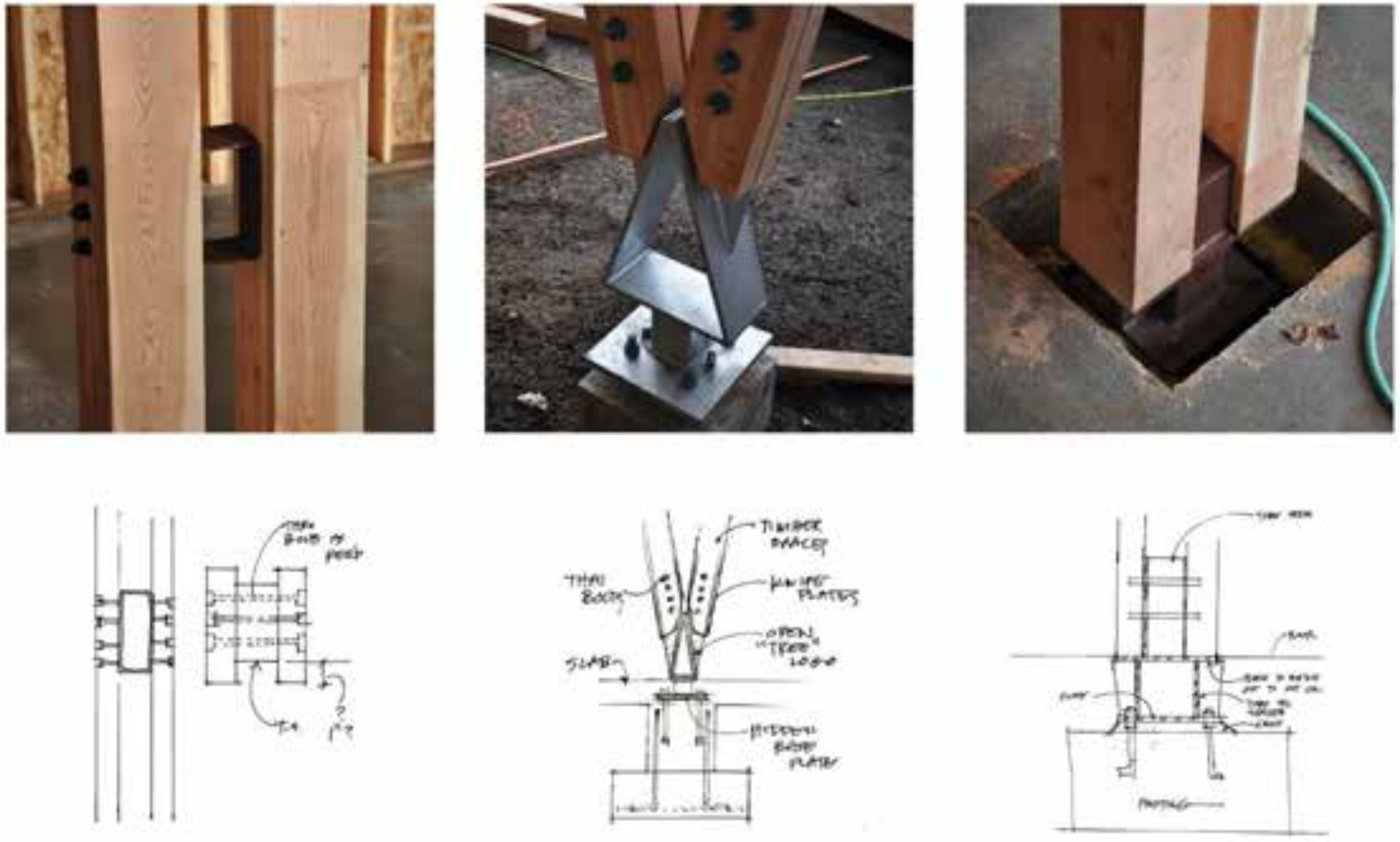
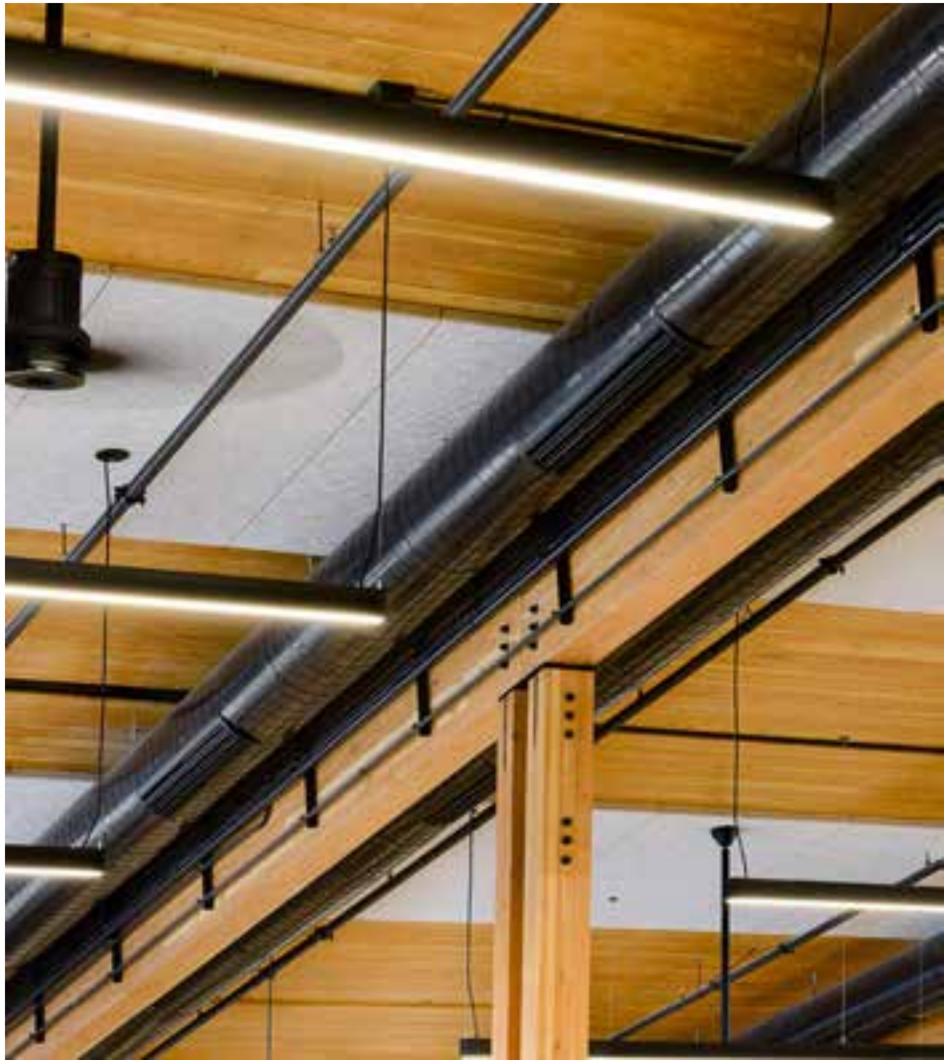
Structural System Selection

- Tall vaulted space, reconfigurable/flexible, structure as the organization for design elements.
- Initial LCA showed reduced carbon in a lighter framed building of wood (reduction in concrete foundations).
- The topic of using wood innovations pushed the options of CLT and post and beam construction ahead.
- Remote location and minimal labor force prefabrication type products was a benefit for schedule as well.
- Factors to consider along the way – completely new systems for contractor but intuitive nature of wood construction reduced complexity.
- Strong support from manufacture and supplier (3D BIM Reviews).

Exposure/Showcasing of Wood





Exposure/Showcasing of Wood

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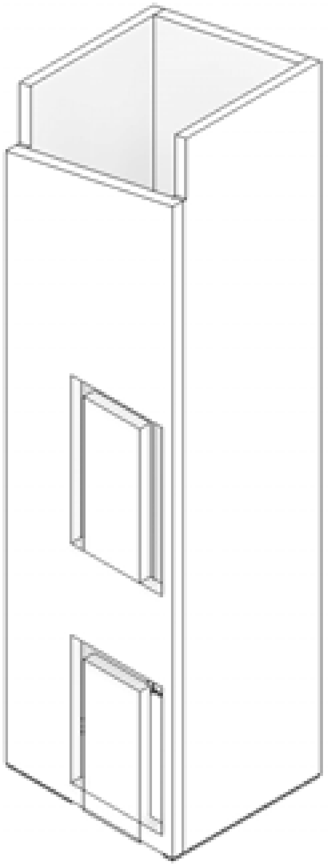
Elevator Shaft Framing Alternatives

Shaft Wall Framing Options: 1-hour Assembly

- Conventional wood-framed shaft
- CMU shaft
- CLT shaft

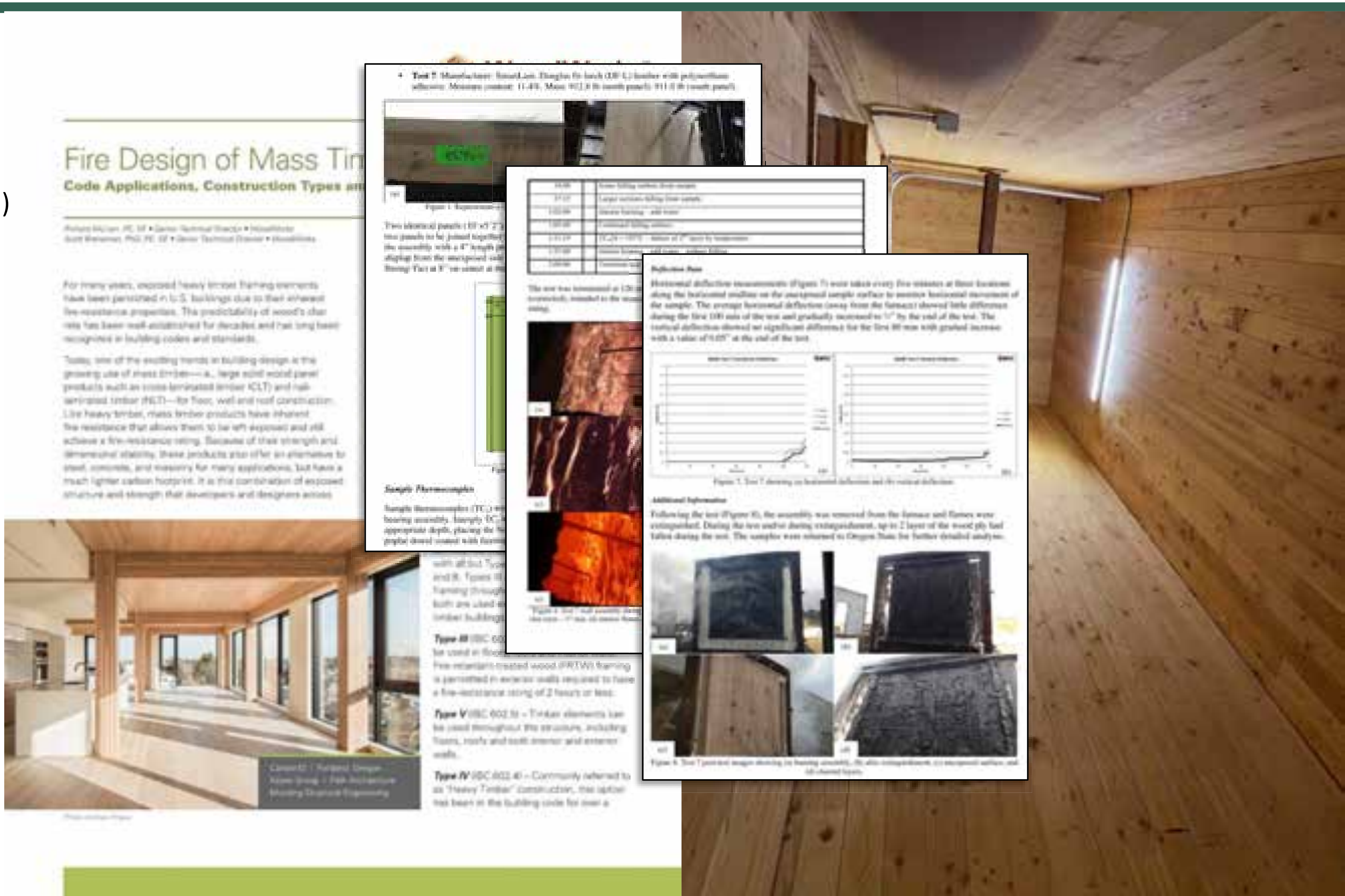
Elevator Shaft Details

- Bent Plate base attachment for flush CLT to finish floor
- Continuous Shaft
- Openings framed in with typical rated wall details, and trimmed with mass timber
- Beam penetration at top was sealed and confirmed with simple Engineering Judgment detail
- ifc 3D shop drawing review process



Elevator Shaft: The Story

- Initial shaft inspection (remote location)
- CLT supplier provides documentation
- Reports delivered = inspection passed



❯ QUESTIONS?

This concludes The American Institute of Architects Continuing Education Systems Course

Nick Diggins

Mosaic Architecture

nick@mosaicarch.com

Aubrey Yerger

Morrison-Maierle

ayerger@m-m.net