

# Mass Timber

Nashville  
Warehouse Co.



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



# Meet the Presenters



**Kyle Wortendyke**

DPR Construction

256.503.3580

[KyleW@dpr.com](mailto:KyleW@dpr.com)

- Based in the DPR Construction Nashville Office for seven years with construction experience in Atlanta, Savannah and Washington DC.
  - Industry experience in core markets including commercial, healthcare and manufacturing
  - Project manager for the coordination of mass timber installation and manpower assignments for Nashville Warehouse Co.
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**Nick Garzini**

DPR Construction

615.499.6612

[nickg@dpr.com](mailto:nickg@dpr.com)

- Leads the interior construction group (SSG) for the DPR Construction Nashville Office
- Industry experience includes over 3.5 million SF in office construction
- Managed preconstruction and procurement for Nashville Warehouse Co. Mass Timber

# Nashville Warehouse Co.

- 190,000 SF Core & Shell Office building
- 4 and 5 Stories Tall
- Up to 26' Column Bays
- Full Mass Timber Structure
  - Gluelam Columns & Beams
  - Dowel-Laminated Timber Decks
  - Concrete Stair Cores
  - Steel Elevator Shafts

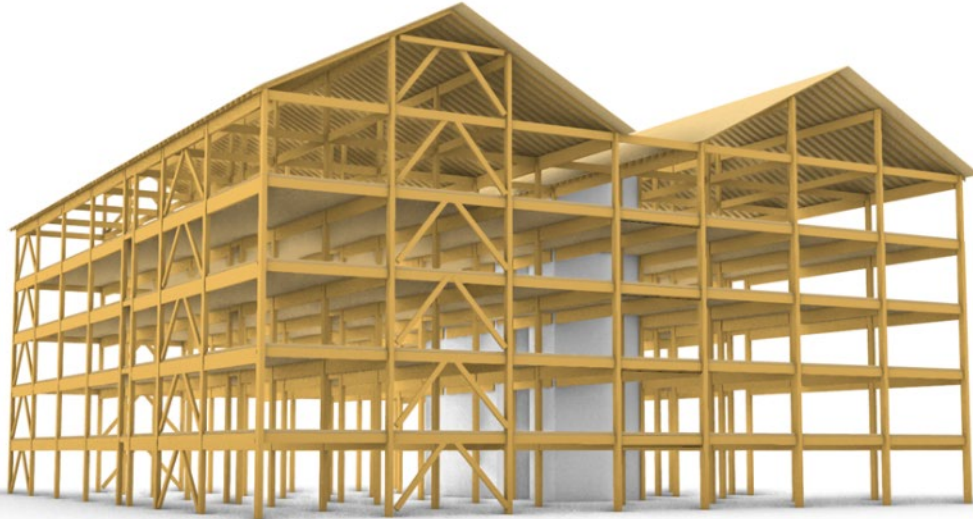




# Designing with Mass Timber

## Lateral System

- Concrete Cores – CIP



# Design Considerations

Early Decision Making is Key

- Bracketry and joinery details
- Ceiling details
- Integration with steel and concrete structural elements



# Design Considerations

Early Decision Making is Key

- Flush Purlins vs. Drop Purlins
- Decking options





# Erection Approach



# Shipping / Logistics





# Lessons Learned

## Core & Shell

- Quick as-builts of adjoining work
- Tolerances for concrete core
- How to handle lateral load
- Constructability - decking system reduces support below and speed up schedule.







# Lessons Learned

## Core & Shell

- Waterproofing columns or penetrations
- Zip board and tape on top of panels to reduce water runoff from deck to deck
- Caulk column-to-concrete to minimize water



# Lessons Learned

## Core & Shell

- Head of curtainwall/storefront interaction with timber
- Consider upsizing timber elements to carry lateral load from skin items
- Design responsibilities for steel that hangs off of wood or wood-to-concrete/steel loads



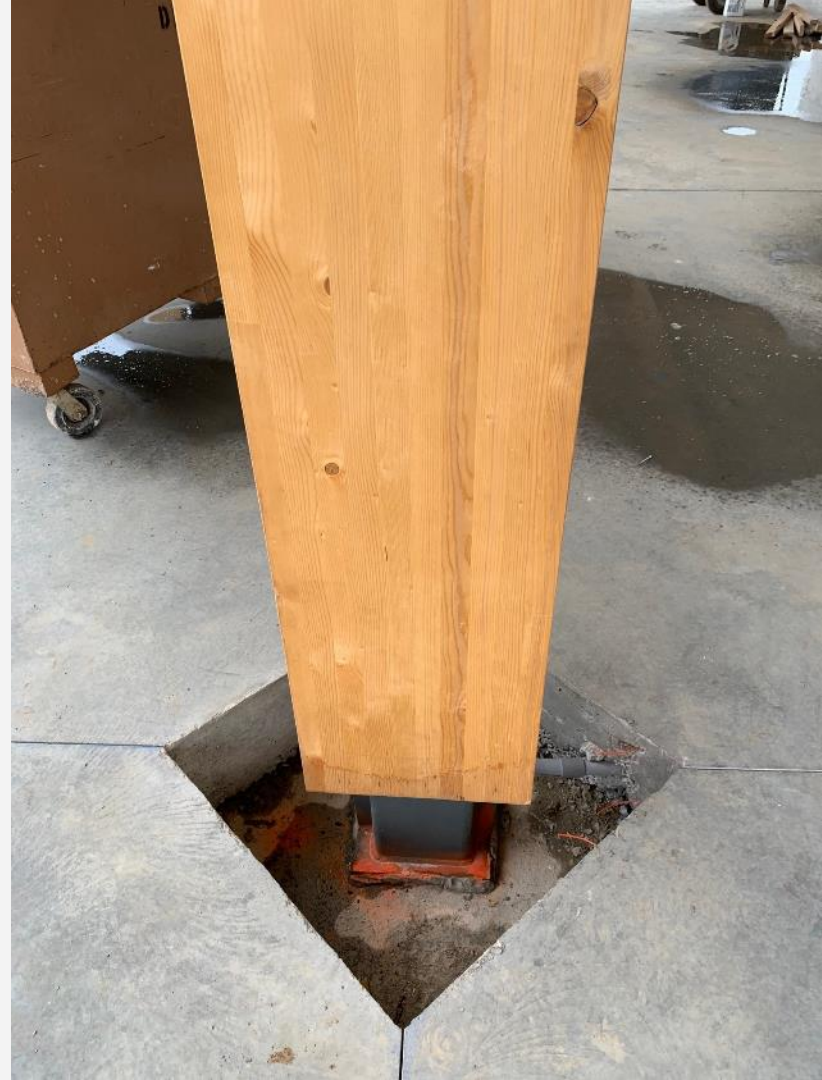




# Lessons Learned

## Core & Shell

- Foundation integration





# Lessons Learned

## Core & Shell

- Constructability - Roof panels took 2-3 times as long as installer intended









# Lessons Learned

## Core & Shell

- Fire Rating
  - Used fire rated zip bead ILO fire caulk
  - Consultant provided firestop details to Fire Marshal at beam-to-column intersections
- Early design accommodations for MEP (fire sprinkler and plumbing in particular)
- Modeling all parts and pieces allows to convey that our installation was highlighted, not to be covered up



# Lessons Learned

## Tenant Improvement

- Structural considerations for lofted/gabled ceilings. Adequately bracing walls without unsightly framing all the way to the deck presents a challenge.
- Hang from deck - center fasteners from laminations, no single-point hangers, etc.

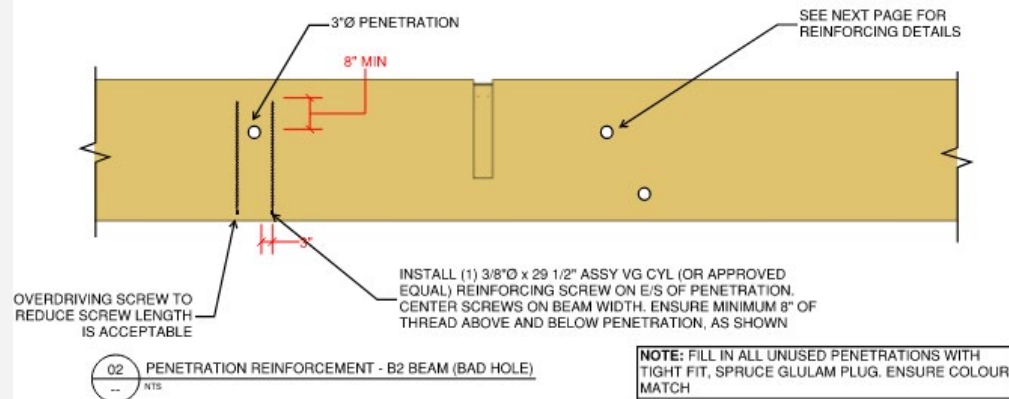




# Lessons Learned

## Tenant Improvement

- No drop ceilings without fire sprinkler above and below
- No ceilings to hide overhead MEP
- Plan early to penetrate beams if you can't keep fire sprinkler/plumbing high



**Questions?**