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

- 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.

**Nick Garzini**
DPR Construction
615.499.6612
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
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 speeds 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