Wellington Mixed-Use Case Study
How the first major housing development in Mt. Auburn (Cincinnati, Ohio) was developed

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Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.
Initial Schemes
Initial Schemes
Initial Schemes
Initial Schemes
Final Scheme
Original Site
Completed Project
Owner/Contractor/Architect/Structural Coordination

- Design/Build
- Weekly OAC meetings
- One Goal – Minimize Structural Steel
  - Challenge with large project – lots of amenities
  - Only Building B Required Steel
Owner/Contractor/Architect/Structural Coordination

1st FLOOR PLAN – BUILDING B
2ND FLOOR FRAMING PLAN – BUILDING B
Lateral Design – Shear Walls
Lateral Design – Shear Walls

FIRE WALL LOCATION - BUILDING SEPARATION

CHORDS AND COLLECTORS
Lateral Design – FTAO - Shear Walls

ELEVATION A S5.03
1/4" = 1'-0"

TYPICAL ROD AT SHEAR WALL END STUD CONNECTION TO STEEL BEAM DETAIL
NTS
Lateral Design – FTAO - Shear Walls

- Shear Walls

Key Points:
- Cont. Simpson strap for extents of shear wall per plan. Provide solid blocking as required.
- 4th floor = C816
- 3rd floor = C814
- 2nd floor = CMSTC16
- 1st floor = CMSTC16

- 2x bottom plate. See shear wall schedule for nailing requirements (typ).
- End studs ea side of rod. See schedule (typ).
- Wood floor sheathing

Diagram Details:
- Shear wall edge nailing to header post
- 5'-0" MAX
- 5'-0" MIN
- Shear wall at exterior window elevation
Lateral Design – FTAO - Shear Walls

- Shear Walls

- Cont. Simpson strap for extents of shear wall per plan. Provide solid blocking as required.
- 4th Floor = CS16
- 3rd Floor = CS14
- 2nd Floor = CMSTC16
- 1st Floor = CMSTC16

- Shear wall edge nailing to header post

- 2x bottom plate, see shear wall schedule for nailing requirements (TYP)
- End studs EA side of rod, see schedule (TYP)
- Wood floor sheathing

- Shear wall at exterior window elevation
Fire Separation Requirements

3-Hour Podium
- Separates the garage from the wood structure above per IBC 510.2
Fire Separation Requirements

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Evaluate Area
- One fire area with NFPA 13 sprinklers
- Two fire areas with NFPA 13-R sprinklers
Fire Separation Requirements

2 Fire Areas
- Separated with a 2-hour fire wall and doors
- Evaluate cost of firewall and doors with cost of NFPA 13 Sprinklers
Fire Separation Requirements

Firewall Details

- Firewall must allow structure to “break away”
Shaft Wall Detailing

Continuity is required
- Consider installation difficulties at floor/ceiling assembly
Shaft Wall Detailing

Continuity is required
• Consider installation difficulties at floor/ceiling assembly
Shaft Wall Detailing

Stair Walls
- Avoid tricky structural connections
- Add bearing wall adjacent to stair wall
Shaft Wall Detailing

Stair Walls
- Avoid tricky structural connections
- Add bearing wall adjacent to stair wall
Acoustic Considerations

Noise is the Biggest Complaint
• Decouple the flooring
• Try to avoid structural members crossing demising walls
Different jurisdictions have different rules

- Wood Special Inspections
  - None required for this project by the City of Cincinnati
  - Policy is changing to require more than in Chapter 17
  - Owner chose to have “Enhanced Observations”
Field Observations
Field Observations

Stair Shafts
- Structural Connections
- Fire Rating Continuity
Field Observations

Stair Shafts
• Structural Connections
• Fire Rating Continuity
Field Observations

Uplift Connectors
Field Observations

Uplift Connectors
Field Observations

Diaphragm
Chords and
Collectors
Field Observations

Diaphragm Chords and Collectors
Field Observations

Plumbing Penetrations

GAP REQUIRED ABOVE & BELOW FOR DIFFERENTIAL MOVEMENT, SEE GENERAL NOTES FOR ANTICIPATED SHRINKAGE OF WOOD STRUCTURE. CONSULT W/ MEP ENGINEER FOR ANTICIPATED MOVEMENT OF CONDUIT OR PIPE

OPENING IN WOOD STUD, MAKE TOP & BOTTOM OF OPENING ROUNDED

CONDUIT OR HORIZONTAL PLUMBING RUN

5/8" MIN

MAX OPENING IN BEARING OR EXTERIOR STUD:
1 1/2" FOR 2x4 STUD
2 1/4" FOR 2x6 STUD
Field Observations

Gravity Framing
Completed Project
Completed Project
This concludes The American Institute of Architects Continuing Education Systems Course

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