Is Wood-Frame Modular the Future of Multi-Family Construction?

Structural Design: Detailing Strategies

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June 2020

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

1. Explore example structural details
2. Discuss building layout design considerations
3. Clarify the interface between site and factory work
Modular Assembly Dimensions

- Exterior:
  - 5 1/2" Min
  - 11 1/4" Floor
  - 7 1/4" Ceiling

- Interior:
  - 12 1/2"
  - 11 1/4" Floor
  - 7 1/4" Ceiling
  - 22 1/2"
Example Structural Details - Mateline

Typical Mateline at Modular Stack (Factory)

Typical Mateline at Modular Stack (Site-Installed)

Scale: 1" = 1'-0"
Example Structural Details - Corridor

TYPICAL CORRIDOR AT MODULAR STACK

(FACTORY)

SCALE: 1" = 1'-0"

NOTE:
CORRIDOR SHEATHING IS SITE-INSTALLED AT CORRIDOR SIDE

TYPICAL CORRIDOR AT MODULAR STACK

(SITE-INSTALLED)

SCALE: 1" = 1'-0"
Example Structural Details – Roof Mateline

TYPICAL MATELINE AT MODULAR ROOF (FACTORY)

 SCALE: 1" = 1'-0"
Example Structural Details – RTU Curb

TYPICAL ROOF TOP EQUIPMENT SUPPORT (FACTORY)

TYPICAL ROOF TOP EQUIPMENT SUPPORT (SITE-INSTALLED)
Exterior Articulation Options

SHAPE

Bump outs

Jog

Cantilever

Most Efficient

Less Efficient

Least Efficient

PLAN

SECTION

3'-0" Typ
Supporting Structure

DIRECT TO FOUNDATION

- Crawl space on continuous concrete footings
- Concrete mat slab foundation

PODIUM

- Concrete podium transfer slab
- Steel podium with concrete over metal deck
- Precast options such as hollow-core plank are feasible but not typical
Site-Built Structure

SITE BUILT FIRST LEVEL

- Conventional wood framed first floor with modular on top
- Steel, wood, or masonry framing to accommodate local transfer areas
This concludes The American Institute of Architects Continuing Education Systems Course

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