Learning Objectives

At the end of this program, participants will be able to:

1. Participants will be able to understand what is wall panelizing.
2. Participants will be able to understand the benefits to utilizing wall panelizing.
3. Participants will be able to understand how BIM modeling plays a key role in the use of wall panelizing.
4. Participants will be able to understand how wall panelizing can be used on future projects.
Pre Fabricated Wall Panels aka Panelization

- History of Panelization.
- A highly developed system using a BIM (Building Information Modeling) environment to model and coordinate rough framing issues such as: architectural requirements vs. structural, plumbing, HVAC, and electrical.
- Using BIM up to 95% of the framing issues can be resolved after which then you can build the major structural framing components at off site Facility.
Some Benefits of Panelizing

• Consistent layout and framing unit to unit and floor to floor.
• Reduction in on site man power needs by 30% a major benefit in these times of labor shortages.
• Reduced demand to site utilities, toilets, parking and refuse generated by employees.
• Reduction in on site injuries.
Why Panelize

- To save time on critical path and schedule by as much as 50%.
- Greatly reduce field driven Change Orders.
- Reduces on site material waste by 50 to 70%, Contributes up to 4 Leed Points*.
- By panelizing builder can meet current Cal Green waste reduction requirements*.
- Save Thousands $$ on waste removal.

What do we look for?

- ADA issues.
- Thickness of wall finishes, shear panel, layers of drywall, stucco, wall heights etc.
- Non stacking point loads and structural steel.
- Window / door sizing vs. structural requirements.
- Concrete slab or podium dimensions vs. superstructure.
FLOOR SYSTEM DESIGN
All joists, beams, structural rims are detailed with exact placement to allow for plumbing, HVAC, recessed lighting, etc. Exact cut to length can be generated for a PET (precision and trim) floor system that requires less field labor and reduces on-site waste by 20%.

STRUCTURAL RIM JOIST
- joist layer turned off to allow for accurate review of structural rims and beams

BLOCKING FOR HVAC, HANDICAP, FIXTURES
Are designed in prior to build and coordinated with all trades.
H-C Blocking

Example of a WALL ELEVATION/MATERIAL CUT LIST, every wall in the building has an elevation sheet that can be reviewed during coordination.

FLOOR STACKING
Ability to review all stack/non-stack conditions prior to build, identifying any conflicts before hand

ROOF PLANES
We have the ability to lay the roof pitch design over the building model to determine any conflicts.

Low level Roof Systems
Derive exact locations of posts, beams and block lines.
Wood Podium
This is the first large scale wood podium over 30,000 sq/ft. footprint supporting 4 story residential structure.

12”x36” Glu-lam Beam
Steel Column

Snap sheets are generated on a floor by floor basis, layout men work off of new per floor, eliminating mistakes that can be made by not working with the latest drawings.

Accurate placement and sizing of heavy steel connectors
Site layout includes locations of wall panels as shown in project design book.
Two man teams can erect several units per day.

TIE DOWN LAYOUT - every tie down anchor bolt is exactly dimensioned.

Exact anchor bolt layouts, no misplaced bolts. Concrete companies love it!

UNIT ANCHOR BOLT LAYOUT EXAMPLE.
Lumber components are laser etched and cut to size in one operation. Tolerances are ± 1/16", this makes for consistent units and walls throughout the project.

Layout for studs posts etc are all laser etched in to the plates.
Structural components are organized and assembled on flat tables. This allows for squaring of the walls, clean tight joints and assemblies. Each crew is working off of the wall books to insure that the correct grades are in place or fire treated materials are being used only where required. Each table has a QC supervisor monitoring the work. If the wood is defective or has white mold it is culled prior to assembly and never contaminates the site.

The stacking/shipping report assures efficient loading and site placement of panels.
Lumber as delivered has high moisture content.

By the time the walls are delivered to the site, the moisture content drops into the single digit range.

Company Trucks & Outside Haulers
LESS SITE CONGESTION

CLEANER & GREENER

Tower or Hydro Crane loading

Forklift loading

CLEANER & GREENER
Units: 220 – Los Angeles Palmer – Our 5th project for them and the 1st that we panelized. They will no longer accept stick framing and asked why it took us so long to become a panelized framer.

Units: 84 Townhomes – West LA Bernard’s – Panelized. The 1st job we fully panelized. They did not start out as believers, by the time we were done they became big fans of it.

Units: 84 Townhomes – West LA Bernard’s – Panelized, 9 weeks to the roof per 4 story section. This project is non stacking and very complicated.

Units: 435 – Irvine CalPac – Panelized
Your upcoming projects

- Cost, Same as a stick framed project
- Project size, 50 units and up
- Lead time is the key, at least 3 to 4 months prior to pre deck
- Select the team, Not all have a proven track record

Questions?

This concludes The American Institute of Architects Continuing Education Systems Course

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