



Plant Modular Design Guidelines (May 2017)

These are basic guidelines for creating building designs that are optimized for modular construction by Plant.

Governing Bodies

Structural calculations are based upon most current version of CBC. The State of California will have jurisdiction for the modular structures.

Physical Characteristics

- **Overall Dimensions**

- Varying Lengths: based on 2 ft increments for material waste factor.
- Varying Widths: Widths for this project will be fixed at 9'-6" outside face of finish.
- Any portion of a module wider than 12'-0" will require a pilot car escort, including overhangs/decks.
- Roof overhangs/decks may be hinged to accommodate shipping widths.
- Max Height: 13'-4" bottom of structure to top of structure.

- **Structure**

- Exterior walls 2x6.
- Interior partitions 2x4.
- Plumbing walls – if located against an exterior wall or 'mate line' (module – module connection) plan additional 2x4 wall for plumbing only to bypass module rim joists.
- 2x3 walls for non-load bearing walls.
- Columns are located at each module's four corners – glass to glass connections are not allowed at corners.
- Floor – 2x10 wood with welded hangers.
- Ceiling – 2x10 or 2x8 wood with welded hangers.
- Two lateral resistance systems are used @ a separation of 90° to avoid structural code penalties.
 - Moment frames in the module's short direction (for walls with no shear values).
 - Shear walls in the module's long direction:
 - One shear wall per building length at building's exterior.
 - One shear wall per building length at seam between modules.
 - Note: Each module must be individually structurally sound.
 - Shear walls in the modules short direction when no moment frame.

- **MEP punctuations**

- Stack plumbing for ease of connection vertically mod to mod.
- Accommodate vertical chase for MEP connections down to ground level and up to roof.

Usage

- **Basic module assembly rules**

- Aligned in same orientation.
- Stacked with edges of long sides aligning.
- Joined on long sides, not on short sides.
- Can slip in long direction.
- One bay-width shear wall at the outside of the building, and at each module seam.