



# optimize

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## VALUE By Design™

### County Correctional Complex Precast Modular Cells v. Steel Wall Panel Cells

Flintco's preconstruction services included comparing Precast Modular Cells against Steel Wall Panel Cells at the Master Plan Phase on the Prison Project to determine which system would best fit the project's requirements. Flintco met with multiple manufacturers and installers of both systems to further understand the advantages and disadvantages of each system.

In evaluating the two systems, major considerations included:

- The procurement time and the possible impact to the project schedule
- The cost for each system
- Quality of the two systems

#### Project schedule impact.

Based on developing an early cell package, the procurement time for both systems becomes a non-issue for the project schedule.

- In the **steel wall panel** system, actual placement of cells in the field requires a longer duration than the precast concrete cell system.
- Due to the remote location of the site, two potential construction obstacles that could affect the project schedule are the cast-in-place mezzanine and the amount of on-site labor. With **precast cells**, the construction team can utilize the cell walls as the actual exterior wall

system of each housing unit, eliminating concerns over the cast-in-place and labor challenges. Because of these significant advantages, we are confident that the precast cells will lead to fewer delays, ease coordination efforts, reduce accidents and lead to an overall condensed construction schedule for the project.

**Cost on a per cell basis.** Flintco's comparison included the cost of the cell walls including the exterior walls, interior painting, security caulking, additional MEP labor, and space savings.

- Our cost comparison showed the **steel cells** could reduce the overall square footage of a Housing Unit Building by approximately 1,216 SF; however, the reduced square footage does not result in a significant cost savings.
- In comparing hard construction cost only, **precast cells** were able to produce a savings of 22.4% over the steel wall panel system.

#### Quality of the systems.

Both systems have very comparable levels of quality, so neither

system had an advantage over the other in this category.

Based on the information developed between the two systems, the project was able to select the best overall option for this project with accurate schedule, cost and quality information. The project selected the Precast Modular Cell option for this project.

#### Precast Modular SYSTEMS

Advantages

- Expedites Erection; 632 cells = 316 pieces
- Separate Core/shell structure not required
- Mezzanine monolithic to first floor cell
- No caulking of wall to wall panel joints; 632 cells = 0'
- Less prone to inflation
- Greater impact to local economy

Disadvantages

- Long production time; 36 weeks
- Limited field adaptability / no future remodel capabilities
- Requires additional building square footage
- Less consistent finish @ cell walls
- Exterior wall / cell wall same component

#### Steel Wall PANEL CELLS

Advantages

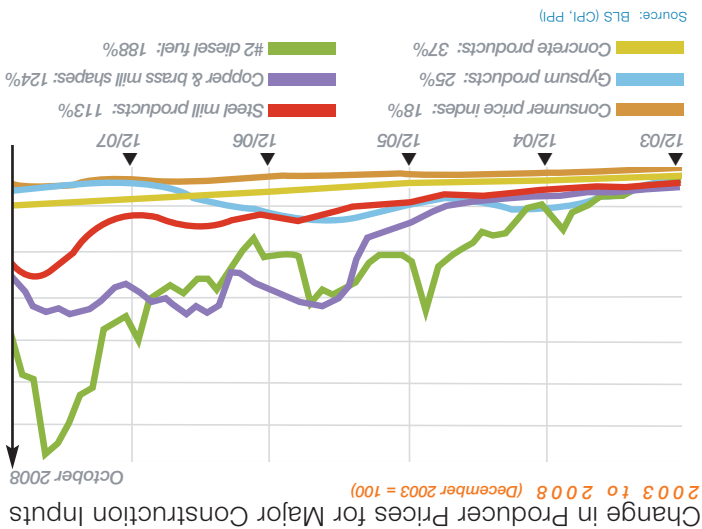
- Production time; 25 weeks
- Ability to be field modified/reconfigured for future retrofits
- Requires less building square footage
- Less weight than precast; 32#/SF vs. 80-120#/SF
- Consistency in quality control of finished cell walls

Disadvantages

- Erection time; 632 cells = 4,424 pieces
- Requires separate core/shell
- Requires separate cast-in-place mezzanine
- Requires additional 35,392' of caulking at wall panel joints
- Highly susceptible to inflation
- Less Impact to local economy
- Cost

# Cost Index\*

In recent years, labor and material shortages across the country have made obtaining the factors in construction challenging. Today, demand and supply are in more in alignment. Costs for labor and materials are now steady and some are decreasing. This new phase could offer the best value in construction the market has seen since the early 1990s.



\*Charts provided by Associated General Contractors of America. These reflect national trend data which vary by region. For area-specific trends, please contact a member of The Flintco Companies, Inc.'s preconstruction team.

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