



Fraser Centre
State College, PA

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Structural Option
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Introduction to Fraser Centre

Presentation Outline

General Information

- Location.....State College, PA
Fraser Street and Beaver Ave
- Size.....230,000 sf
- Project Cost.....Unreleased
- Project Team
 - Architect.....Wallace Roberts & Todd, LLC
 - General Contractor.....Leonard S. Fiore, Inc.
 - Structural Engineer.....David Chou & Associates, Inc.

- 11 story mixed-use building
 - First story is parking
 - Second story is retail
 - Third story is a theatre
 - Fourth story is MEP
 - Fifth-tenth stories are residential
 - Eleventh story is suites



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- Existing System
- Proposal
- Gravity System Redesign
 - Composite Floor
 - Steel Connections
- Schedule and Cost Analysis
- Lateral System Redesign
- Architectural Analysis
- Conclusion

Composite Floor

Presentation Outline

Composite Floor Layout

Steel Deck: 3VLI Deck 18 Gage

B1: W12x16

B2: W10x12

G1: W18x76

G2: W16x31

Codes:

- Original design code used ASCE 7-05
- New design code used ASCE 7-10

Material Strengths:

- Concrete: 4000 psi
- Steel: 60000 psi

Load Combinations

- 1.2 Dead +1.6 Live
- 1.4 Dead



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Schedule and Cost Analysis

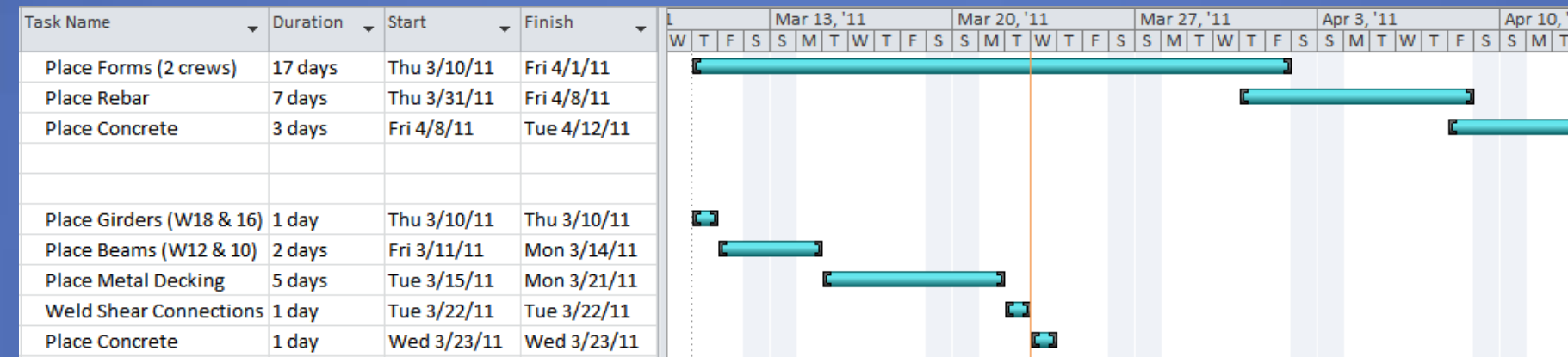
Presentation Outline

Cost Analysis

Chart Breakdown/Cost of Current System

Chart Breakdown/Cost of Alternative System

Schedule Analysis



- Alternative system takes 10 days to complete a single floor with a linear progression.
- Current system takes 24 days to complete a single floor with slight overlap.



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