



Courtesy of Smith Group JJR

Final Presentation Outline

NORTHEAST HOSPITAL EXPANSION
123 Medical Lane, USA

Joshua Miller
Construction Management Option
Advisor: Craig Dubler

March 30, 2015

- I. Introduction**
 - a) Project Background
 - b) Analysis Overview

- II. Analysis 1: Implementing an Integrated Project Delivery**
 - a) Current Delivery Method
 - b) Case Studies of Similar Projects Using IPD
 - c) Contractor Exposure to IPD Methods
 - d) Suggested Methods for Implementation

- III. Analysis 2: Patient Room Re-Design for Shared Wet Wall**
 - a) Existing/Proposed Patient Room Layout
 - b) Patient Room Layout
 - c) Mechanical Breadth: Piping Re-Sizing (2 slides)
 - d) Cost Reduction and Schedule Acceleration

- IV. Analysis 4: Preassembled Steel Connection Bridge**
 - a) Current Erection Method
 - b) Potential Lifting Options
 - c) Structural Breadth: Lift Verifications
 - d) Safety Evaluation

- V. Conclusions & Recommendations**

- VI. Acknowledgements**

Total Expected Number of Slides: 17 slides

Northeast Hospital Expansion

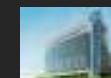
Courtesy of Smith Group JJR



Penn State AE Senior Thesis Project
Joshua Miller | Construction Management Option
Faculty Advisor | Craig Dubler

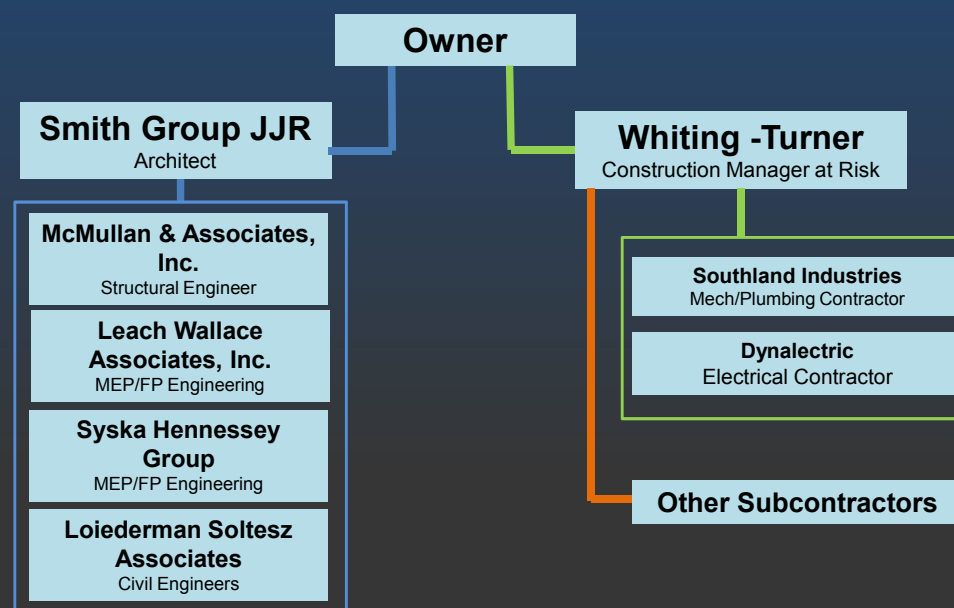


Analysis 1: Implementing an Integrated Project Delivery



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Current Delivery Method



	Multi-party contract	Liability waivers	Risk/Reward pool	Integrated team structure	Early Involvement of key players	Co-location	Network Sharing
Cardinal Glennon Children's Hospital Expansion	●		●	●	●	○	
St. Clare Health Center	●		●	●	●		●
Encircle Health's Ambulatory Care Center	●		●	●	●		●
Cathedral Hill Hospital	●	●	●	●	●	●	●
Health Sciences Facility III	●			●	●	○	●
Northeast Hospital Expansion				●	●		●

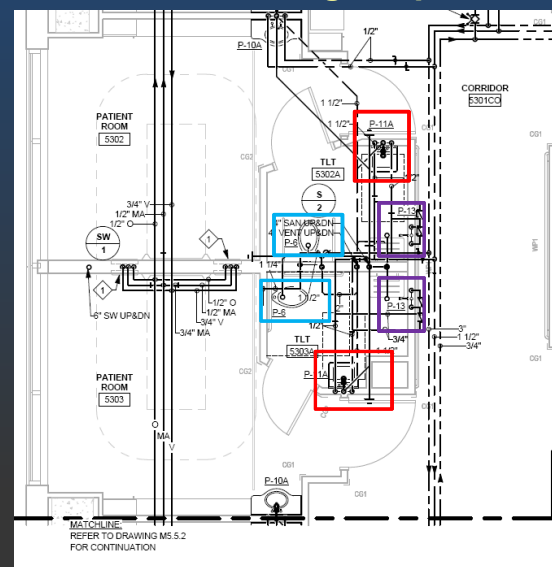


Analysis 2: Patient Room Re-Design for Shared Wet Wall

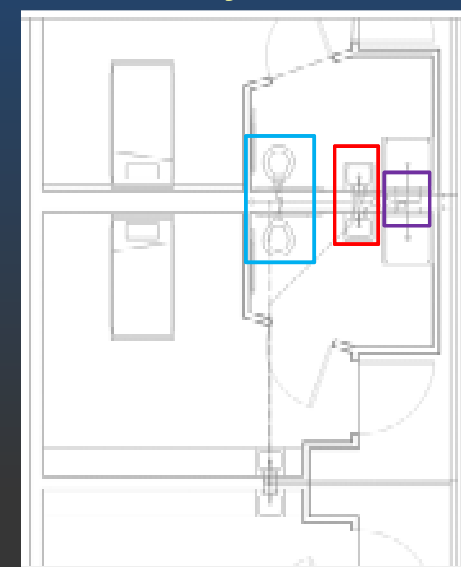


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Existing/Proposed Patient Room Layout

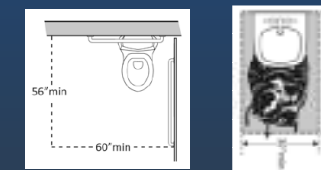


Existing Patient Room Layout



Proposed Patient Room Layout

ADA 2010 Considerations



Change of Water Closet and Carrier



Patient Quality of Care

- Pittsburgh's UPMC Study on Patient Room Size
 - Patient Room Area = 220SF is Optimum
 - Reduces Patient falls
 - Decrease in readmission rate
- Proposed patient room area = 228SF

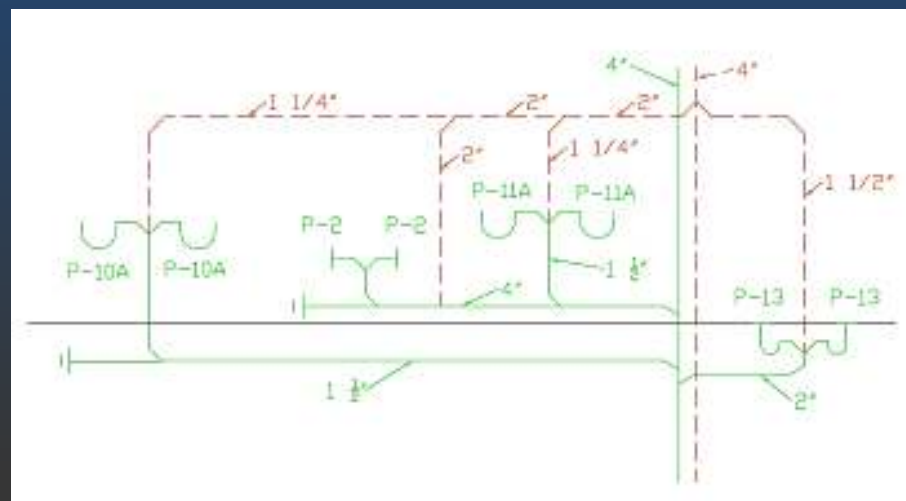


Analysis 2: Patient Room Re-Design for Shared Wet Wall



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Mechanical Breadth: Piping Re-Sizing



Sanitary and Vent Piping Schematic

Calculating Number of Drainage Fixture Units (dfu)

Fixture Type	Dfu Value
Lavatory	1
Shower (Flow Rate < 5.7 gpm)	2
Water Closet, public (1.6 gpf)	4

Table 710.1 (2): Sanitary Drainage Sizing

This table provides technical specifications for sanitary drainage piping. It includes columns for pipe diameter (in inches), fixture units, and other technical specifications. The table is organized into sections for different pipe diameters and fixture unit ranges.

Table 916.1: Vent Size and Developed Length

This table provides technical specifications for vent piping. It includes columns for vent diameter (in inches), developed length (in feet), and other technical specifications. The table is organized into sections for different vent diameters and developed length ranges.

*Tables referenced from the 2009 International Plumbing Code