Controlling Our Own Destiny

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OVERCOMING OUR INDUSTRY CHALLENGES WITH LEAN SOLUTIONS

OCTOBER 16, 2019
Infrastructure Replacement
duPont Pavilion circa 1980
Nemours A. I. duPont Hospital for Children
OVERCOMING OUR INDUSTRY CHALLENGES WITH LEAN SOLUTIONS

Project Site

- HVAC & Electrical Infrastructure Replacement for 1,000,000sf of Occupied Space
Project Description

• Replacement of Electrical System – Normal and Emergency Substations & Distribution System
• Migration of All Electrical Loads onto the New Distribution System
• Replacement of 72 Air Handling Units
• 6 Year Project
• Focus on a Connection to Purpose – Hospital for Children
• Nemours – Environment of Continuous Improvement Dedicated to the Health of Children
In the Beginning

- Design Team was Hired for GMP with Intent to Embrace Lean Principles
  - Plan
  - Do
  - Check
  - Act
  - Continuous Improvement

- Decision was Made to Convert to True IPD Contracting Method
- New Contract Format for Health System
- Design Development Documents Existed for Building Target Value
- Early Collaboration Success – Active Surveying Directly into Budgeting Model
- Early Issue – Became Too Much a Traditional Estimate – Reinforced Silos
- Starting Construction Before Target Value Finalized – Created Too Many Allowances
How We Started

• We Wanted to Do Things the “Right Way”

• Hired Lean Consultants – For Contracting and Understanding Principles and Tools

• Kick-off Day
  - Resources
  - Training
  - Collaboration

• Started Meetings and Found We Were Falling into Traditional Habits

• Starting Construction Before Target Value Finalized – Created Too Many Allowances

• We Quickly Found That “There Is No One Right Way” and So Began the Journey…
The First Six Months
Obstacles 1.0

• Just as We Got Up-to-Speed, We Hit Obstacles
• New Confined Space Designation
• Hazardous Material Abatement
• Seismic Classification Change
• Traditional Delivery Habits –
  • All of Team Not 100% on IPD Work
• Initial Huddle Failure
• Promise Log Failure

Solutions 1.0

• Methods to Overcome Difficulties
• Project Reset for Scope Change
• Lean Methods
  • Pull Planning – PIT to the Rescue
    • Targeted Component Mtgs – Small Groups
  • Improved Submittal Process
    • Working to Change Meeting System
  • Performance Tracking – 150 Cost Centers
Obstacles 1.0

Work Plan Coordination and Sequencing

Typical/Traditional Issues
• Noise Restrictions / Work Stoppages
• Multiple Crews in Multiple Locations

Traditional Submittal / Shop Drawing Process
• Time Consuming
• Redundant Steps

Solutions 1.0

Pull Planning – PIT to the Rescue
Resolved with Lean Tools
• Improved Coordination with Clinical Ops
• Optimized Crew Size and Scheduling
• Minimized Confined Space Monitoring Costs
• Post-its vs. Software

Improved Submittal Process
• Collaborative Approach
• Reduced Review & Approval Duration
• Added Value: Eliminated Design Team Permit Drawings Using Trade Partner Shop Drawings
No Shortage of Hurdles
Obstacles 2.0

Over a Year of Good Momentum & Success with Lean Tools…But We Found New Challenges

• Master Plan Priorities Changed – Influencing
  • Temporary HVAC Overruns of Projected Allowances
  • AHU Sequence Changes Due to Renovation Sequence Adjustments
  • Overtime Hours Projections Exceeding Allowances
• Noise Impacts to CICU and NICU = Work Stoppages & Creative Solutions
• Fixed Yearly Funding = Pace of Work Restrictions & Need to Optimize Team
## Solutions 2.0

- Control Our Own Destiny Plan  
  🤝 Collaboration  
  🚭 Removal of Waste
- Detailed Work Crew Projections for AHU Sequences & Temporary Air Projections
- Coordinating Electrical Re-Feeds
- Multi-Year Cash Flow Analysis  🤝  🏡  🇺🇸  🏛️
  - Providing to Hospital - Option for Controlling Budget and Finishing in 2021
- Huddles Reinstated with Success

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Plan, Do, Check, Act - Repeat
OVERCOMING OUR INDUSTRY CHALLENGES WITH LEAN SOLUTIONS

3rd Floor
Game Plan

AHU REPLACEMENT PLAN
INFRASTRUCTURE IPD PROJECT

Updated: 8/22/19

Legend:
Blue: Complete
Grey: In Progress
Yellow: Planned
Red: Potential Deletion
Tracking the Project

- Dashboard

PROJECT STATUS REPORT — AUGUST 2019 MONTH 45/75

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PROJECT HEALTH

Schedule

Budget vs. Cost

KPI
1. Critical Patient Disruptions: 0
2. Non-Critical Service Disruptions: 0

Work in Place

• Continuous Improvement Can Never Stop
Current State

Project is Approximately 60% Complete with About 2 ½ Years to Go

Lessons Learned:

• The Lean Journey is a Bit of a Social Experiment Where You Look for Methods that Work for Your Team and Your Project’s Specific Circumstances and Challenges

• Just Because Something Didn’t Work the First Time Doesn’t Mean It Won’t

• Lean Tools Work – Sometimes It is the Approach that Doesn’t Work (Silo or Traditional Thinking)

• Continuous Improvement Must Be Continuous = You Can Never Stop Trying to Improve
Thank You for Your Time!

Can We Answer Any Questions?
In the spirit of continuous improvement, we would like to remind you to complete this session’s survey in the Congress app! We look forward to receiving your feedback. Highest rated presenters will be recognized.