Planning / Phasing / Patient Safety During Renovation

VCU Health | Perioperative Services Operating Room Renovations & Expansion

2017 VSHE Safety Seminar | Fredericksburg, VA
Agenda

- Project Overview
- Pre-Construction / Planning
- Construction Strategy
- Project Successes
- Discussion
Speaker Introduction

George Christ
DPR Construction

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DPR Construction
Project Overview
Project Justification
Aging infrastructure (Prior to Construction)

- 16 ORs In Use*
- Existing ORs 300-400 sq.-ft.*
- Constructed in 1982*
- No Surgical Waiting / Lobby*

*Refers to Main Hospital Only

Challenge:
how to update facility without losing revenue and maintain patient safety
Project Justification
Project Justification
Aging infrastructure

• Inefficient use of space
• Current ORs too small
• OR Forecasted Volume
  • 2011 Survey 20,052 cases/yr
  • 2021 Projected 27,623 cases/yr
• Updated medical technology
• Patient Satisfaction Surveys

Challenge:
how to update facility without losing revenue and maintain patient safety
Existing State
Procuring for Safety

Request for Proposal

• A/E Services

• CM Pre-Construction Services (within weeks of design)
  • CM at Risk (Elements of Integrated Project Delivery)

• Requirements
  • Phasing Plan Development
  • Zero Revenue Impact (maintain 14 ORs)
  • BIM Modeling
Procuring for Safety

Pre-Construction Requirements

• Integrated Project Delivery (CM at Risk)
• Laser Scanning and As-Built Creation / Verification
• Project Budgeting
• Project Scheduling
• Design Assist
PSR Project overview

- Thousand Square Feet: 85
- Million Construction Value: $70
- Phases: 18
- Month Construction: 48
Project Highlights

- NEW ORs (3 additional ORs)
- Inter-operative OR suites
- 30,000 CFM Fanwall air handling units
- Cleansuites
- Siemens Artis Zee-go Hybrid OR
- Maintained ORs through construction
- PACU + 7 Flex pre/post anesthesia care
Pre-Construction / Planning
Pre-Construction – Project Goals

• Patient Care
• Patient Satisfaction
• Safety of Perioperative Services Unit
• Construction Safety
Pre-Construction - Big Room / Collaboration

- Team Colocation 12 months
- A/E Design Team
- Construction Team
- VCU Health Project Management

- MEP Design-Assist Partners
- Physicians
- Nursing Staff
- Equipment Vendors
Pre-Construction - Phasing Strategies

- Patient safety and ICRA
- Maintaining Utilities
- Interim Life Safety
- Smoke Compartments
- 14 OR’s operational at all times
- New waiting room
- BCOM Alignment
Phasing Strategies

- Maintaining Patient Care Services
- Keeping OR counts at no less than 14
- Keeping the corresponding number of PACU spaces available
- Making sure there were anesthesia workrooms
- The proper amount of storage
- Making sure the smoke compartments are always intact.
Phasing – Existing Smoke Compartments
Phasing – Smoke Compartment Final
Phasing – Smoke Compartment 1
Phasing – Smoke Compartment 2
Phasing – Smoke Compartment 3
Phasing – Smoke Compartment 4
Phasing – Smoke Compartment 6
Phasing – Smoke Compartment 7
Phasing – Smoke Compartment Final
Phasing Strategies – Egress / Life Safety
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Phasing Strategies – Egress / Life Safety
Construction Strategy

Phasing strategies to move a perioperative transformation project forward without impacting FTEs, patient flow, patient safety, or patient care.
Construction Strategy

• Communication / coordination

• Weekly Team Meetings
  • Users
  • Facilities
  • Directors
Construction Strategy

- ICRA / ILSM

  - Pre-construction ICRA Training
  - Interim 3rd Party ICRA Review – Fresh Eyes - MSL
  - Individual Permitting
Construction Strategy - Permitting
Construction Strategy

- Continued schedule coordination
- Early Investigations
- Work-hours
- Shut-downs
- Flexibility
- Sub-phasing
Construction Strategy - Communication
## Construction Strategy - MOPs


<table>
<thead>
<tr>
<th>Estimated Times</th>
<th>Who</th>
<th>Plumbing Work</th>
<th>Demo Linen Chute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday 11-13-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00pm Fri</td>
<td>VCU</td>
<td>Remove furniture and equipment from work areas</td>
<td>Remove furniture and equipment from work areas</td>
</tr>
<tr>
<td>7:00 pm Fri</td>
<td>ODAD</td>
<td>Build containment</td>
<td>Build containment</td>
</tr>
<tr>
<td>8:00 pm Fri</td>
<td>C&amp;C, CSI, Commtech, etc</td>
<td>Remove ceiling devices</td>
<td>Remove ceiling devices</td>
</tr>
<tr>
<td>9:00 pm Fri</td>
<td>Ocean</td>
<td>Start to remove ceilings</td>
<td>Start to remove ceilings</td>
</tr>
<tr>
<td>11:00pm Fri</td>
<td>ODAD</td>
<td></td>
<td>Demolish linen chute</td>
</tr>
<tr>
<td>Saturday 11-14-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00am Midnight Sat</td>
<td>Drillcore</td>
<td>Start coredrilling penetrations through slab</td>
<td>Install steel angles and supports to infill hole</td>
</tr>
<tr>
<td>1:00am Sat</td>
<td>Atlantic</td>
<td>Start rough in for new sanitary and cut/cap/make safe</td>
<td></td>
</tr>
<tr>
<td>6:00am Sat</td>
<td>CTI</td>
<td>Steel weld inspection</td>
<td></td>
</tr>
<tr>
<td>7:00am Sat</td>
<td>ODAD</td>
<td>Demo sanitary/compressed air/steam and condensate above ceiling</td>
<td></td>
</tr>
<tr>
<td>7:00am Sat</td>
<td>Atlantic</td>
<td>Day crew come in to relieve night crew</td>
<td></td>
</tr>
<tr>
<td>7:00am Sat</td>
<td>ODF</td>
<td>Fire caulk 2 new floor penetrations</td>
<td>Hand pack fire proofing on new angles</td>
</tr>
<tr>
<td>4:00pm Sat</td>
<td>Ocean</td>
<td>Start re-install ceilings</td>
<td>Start re-install ceilings</td>
</tr>
<tr>
<td>6:00pm Sat</td>
<td>C&amp;C, CSI, Commtech, etc</td>
<td>Start re-install ceiling devices</td>
<td>Start re-install ceiling devices</td>
</tr>
<tr>
<td>7:00pm Sat</td>
<td>DPR SPW</td>
<td>Remove containment</td>
<td>Remove containment</td>
</tr>
<tr>
<td>Saturday 11-15-15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00am Sun</td>
<td>VCU</td>
<td>Return furniture and equipment for work areas</td>
<td>Return furniture and equipment for work areas</td>
</tr>
<tr>
<td>3:00pm Sun</td>
<td>VSC &amp; CSI</td>
<td>Reinstall Sprinkler Heads</td>
<td>Reinstall Sprinkler Heads</td>
</tr>
</tbody>
</table>

**DPR Supervision**
Construction Strategy – Critical Planning
Construction Strategy – 4D Scheduling

Appearance Profiles
- Demo
- Existing Architecture and Steel
- Install
- Maintain
- Relocate Fire Alarm
- Remove
- Temporary
- Temporary Ceilings

DPR Construction
Project Successes

BEFORE

DURING

AFTER
Project Successes

- Patient Safety
- Increased Volume
- Partnership / Teamwork
- Communication
- 15 of 18 phases completed – minimal disruption
- Joint commission review
Discussion