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

Eric Rasmussen
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
VCU Medical Center

Gateway Building

Critical Care Hospital

Main Hospital

Nelson Building
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 Team

VCU Health

DPR Construction
JLL
HKS
C&E Electrical Service, Inc.
Atlantic Constructors
VSC
WSP + gcrd
DMW PV
PSR Project overview

85
Thousand Square Feet

$70
Million Construction Value

18
Phases

48
Month Construction
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 5
Phasing – Smoke Compartment 6
Phasing – Smoke Compartment 7
Phasing – Smoke Compartment 8
Phasing – Smoke Compartment Final
Phasing Strategies – Egress / Life Safety
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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

Add Electrical Room A5-359 to Scope of Work

Anteroom

Phase 5B Construction
Construction Strategy

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

<table>
<thead>
<tr>
<th>Estimated Times</th>
<th>Who</th>
<th>Plumbing Work</th>
<th>Demo Linen Chute</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Friday 11-13-15</strong></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><strong>Saturday 11-14-15</strong></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>7:00pm 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><strong>Saturday 11-15-15</strong></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 – 4D Scheduling
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