Five Steps to a Successful Hospital Construction Project

• Martin Mielke, B.Sc., CRSP, C-NRPP

• Technical Practice Leader at MTE Consultants Inc.
For many hospital projects, the measure of success is based on whether it was “on-time and on-budget”

As Facilities Managers and Engineers, you are entrusted with public funds to provide improvements to health care services, maintain integral systems and install upgrades to infrastructure.
Background

• But, this can be at odds with providing patient care
Background

- Construction work is inherently disruptive and can impact patient care in many ways including:
  - Reduction of or delay in essential care services;
  - Restricted access to care areas; and
  - Exposure risk from airborne pathogens released during construction activity.
So how can you switch your focus and how will that lead to overall project success?
• A “patient first” approach must be integrated into the project process to fully realize success in this unique environment.
Overview

1. Do Your Homework
2. Build Your Dream Team
3. Lay Down the Ground Rules
4. Take a Hands-On Approach
5. Evaluate Your Successes… and Failures
1. Do Your Homework

Understand your Hospital’s “Flow”

How are materials, equipment and patients moved?

Are there critical corridors and pathways that need to be maintained?

How will altering “flow” for the duration of a project effect how care is administered?

What are the alternatives to minimize these effects? i.e. decanting patients
1. Do Your Homework

Assess building conditions

Review historic construction challenges, take stock of, or track, aging infrastructure so you can prioritize and forecast

Putting “new” adjacent to “old” can have serious and costly consequences
1. Do Your Homework

- Identify vulnerable or “pinch point” locations
- Are there locations where construction isolation will be difficult?
  - “Land-locked” locations:
    - Increased interaction between contractors and patients
    - No access to negative air unit venting
1. Do Your Homework

- Identify vulnerable or “pinch point” locations:
  - Complex access points – signage!
  - Shared or overlapping HVAC systems
  - Patient and materials traffic restrictions
  - Hours of operation
  - Integrated care locations
1. Do Your Homework

- Create a “Risk” map
- Use risk evaluation descriptions (CSA or Health Canada)
- “Colour” coding helps make this easier to visualize
1. **Do Your Homework**

- Review with Infection Control – not all areas are easy to “weigh”

- Ex. Janitorial closet in an ICU Wing, Mechanical Room with AHUs that service high risk areas
1. Do Your Homework

- Know and understand the Designated Substances and Hazardous Materials that may be present:
  - Asbestos, lead, silica and mercury
  - Historic mould
1. Do Your Homework

- Nothing highjacks a project, both in budget and schedule, like overlooked asbestos or mould remediation requirements
- Keep in mind that Federal, Provincial and Territorial Regulations and Guideline may differ
1. Do Your Homework

• Review your own Infection Control Policy:
  • Is it out of date?
  • Is it out of step or overreaching with regards to the Standard or Guideline you are applying to your project?
  • Was facilities involved in the Policy?
  • Are there requirements for air testing and Baseline sampling?
2. Build Your Dream Team

• Multi-disciplinary Team:
  • Develop a core construction team prior to undertaking a construction project, including:
    • Facilities
    • Engineering
    • Housekeeping
    • Department Heads
    • Infection Prevention and Control
    • Outside Consultants
2. Build Your Dream Team

- Determine levels of involvement in the project for each team member:
  - Active or passive roles?
  - Aid in decision making regarding design?
  - Will IC or Facilities actively monitor site(s) as part of their commitment?
  - Attend construction meetings
2. Build Your Dream Team

• Members must understand commitment has to be maintained for the *duration* of the project
2. Build Your Dream Team

• Involvement can:

  • Strengthen bonds between and across Departments
  • Help identify challenges to construction work such as scheduling, access and patient sensitivities
  • Create better understanding of Department needs
2. Build Your Dream Team

• Outside Consultants can be an invaluable resource for projects:

  • Baseline Studies
  • Designated Substances and Infection Control
  • Can provide audit and assessment services
  • Aid in providing abatement budgets
  • Oversee and provide closure for abatement such as air clearance and air verifications
2. Build Your Dream Team

• Choose contractors who are trained and experienced in hospital projects:

  • All supervisors and foremen **must** have upper level knowledge of Construction-Related Infection Control measures and procedures and how to implement them
2. Build Your Dream Team

• Make sure these expectations are built in to your project specifications – it’s not enough to anchor your project to an IC Standard!
2. Build Your Dream Team

• Provide proof of training for senior construction staff – Minimum of CSA Z317.13-17 both basics and implementation

• Who will be in charge of monitoring IC requirements for the project from the contractor side?

• Training for trades and subs
2. Build Your Dream Team

• Contractors:
  • Provide a detailed IC plan as part of their RFP
  • Emergency response for flooding
  • Provide certificates for equipment
  • Approved materials used for hoarding – will it conform to CSA or Health Canada Standard?
  • Contractor Inspection Reports
3. Lay Down the Ground Rules

- Everyone involved in the Project needs to be held accountable for their role in protecting patient health and interests:
  - Nail it Down!
  - Every preventative measures analysis needs to be reviewed and signed off prior to starting the project to ensure everyone understands their commitment
3. Lay Down the Ground Rules

• Take a strong stance on scheduling – show how delays will affect substantial completion

• Review Ghent charts at the beginning of each meeting
3. Lay Down the Ground Rules

• Review minutes with the team and show prior action items and whether they were met – make it a visual cue – nothing motivates like shame

• Sign off on completed projects as a team
4. Take a “Hands-On Approach”

- Ensure contractors are following through with Infection Control measures and procedures
4. Take a “Hands-On Approach”

• Are Contractors conducting tailgate meetings similar to or in conjunction with H&S?
• Who is inspecting work areas and enclosures? IC, Facilities, outside consultant
• Consistency in approach will prevent delays – disagreements between IC and Contractor
• Review inspection sheets provided by the Contractor – are they accurate?
4. Take a “Hands-On Approach”

- Consider having separate construction related infection control meetings if there are significant issues with CRIC

- Get things back on track!
5. Evaluate Your Successes… and Failures

• “Hindsight is a gift”

• Take stock of your project
• Conduct exit audits and meetings
• Evaluate what went right/what went wrong – this should not be about assigning blame
5. Evaluate Your Successes… and Failures

• Talk to Contractors:
  
  • Was there miscommunication regarding responsibilities?
  • Ambiguous or unclear project expectations?
  • Were specifications clear?
  • Was there sufficient information regarding existing site conditions – could the contractor anticipate challenges encountered during the project?
5. Evaluate Your Successes... and Failures

• Talk to Department Heads – did the project improve patient services?
  • Undelivered expectations
  • Design flaws
  • Incompatible equipment

• Conduct internal surveys:
  • What could be improved regarding communications?
5. Evaluate Your Successes… and Failures

- Conduct external surveys
- Patient advocacy groups
- Hospital Volunteers Associations
Conclusion

• Running a Hospital Construction Project is not one Department’s responsibility

• There has to be a common vision for improving patient care

• Hospital Construction Project are opportunities to connect with your collective vision – to see beyond costs and schedules and place patients first
Conclusion

• Thank you!

Martin Mielke
Technical Practice Leader
Indoor Environments
MTE Consultants Inc.
520 Bingemans Centre Drive
Kitchener, Ontario
(519)-743-6500 ext. 1318
Email: mmielke@mte85.com