Off-Site Construction Case Study

Off-Site Construction Council
March, 2014
PHARMACEUTICAL R&D BUILDING

- 186,000 sf
- Two wings
  - lab
  - office
- 2009 – 2011
- Traditional AEC
- Complex building type
THE CHALLENGES

- Quality: high degree of excellence, no punchlist
- Schedule: hypertrack, need to create reliability
- Cost: create reliability
- Safety: think differently
- “Tight site,” no disruption to adjacent facilities
- Achieve LEED Gold
- Meet Labs 21 criteria
Think differently – change in philosophy

- Invest in planning and verification
- Collaborate, really collaborate with entire team
- Use BIM
- Consider alternatives to optimize the whole
What can we prefab or “componentize”? 
• Curtainwall
• Lab components
• MEP

Today: Focus on M and P
Early planning and coordination

997 of 1,000 beam penetrations by steel fabricator

10,000 anchors cast in slab vs. drilled
Engagement with design team

**Detail showed 20+ soldered joints**

**800 units**

**Identified prefabricated option**
AHU piping: 2 people two weeks vs. 4 people four weeks

Mechanical room piping – onsite time cut in half
CORRIDOR RUNS 180’

DELIVERED 21’ SECTIONS

ONSITE INSTALL TIME TWO DAYS VS. TWO WEEKS
HORIZONTAL DUCTWORK: 30-40’ SECTIONS

RISERS: ONE PIECE
WERE THE CHALLENGES MET?

- **Quality**: high degree of excellence, no punchlist
  - 150 “rolling completion list” items, zero punchlist.
  - No impediments to schedule and commissioning, no callbacks

- **Schedule**: hypertrack, needed to create **reliability**
  - Reliable
  - But also improved the schedule:
    - Rough-in took 5 days per trade per floor vs. multiple weeks
    - Crews flowed (sequenced) vs. working stacked
WERE THE CHALLENGES MET?

Cost: create reliability
- Lowered mechanical/plumbing bids by more than 1%
- One change order for $3,000 on $40M in MEP work
- Project delivered 7% under client’s budget
- Vs. other 9 “like” projects: 10% lower cost

Safety: think differently
- Dramatically reduced first aid incidents
- Dramatically reduced “hot work” onsite – welding, cutting, soldering
- 447,000 manhours with no lost time incidents
WERE THE CHALLENGES MET?

10

(client’s satisfaction survey response)
Gilbane Cares
Because we’re all one family.