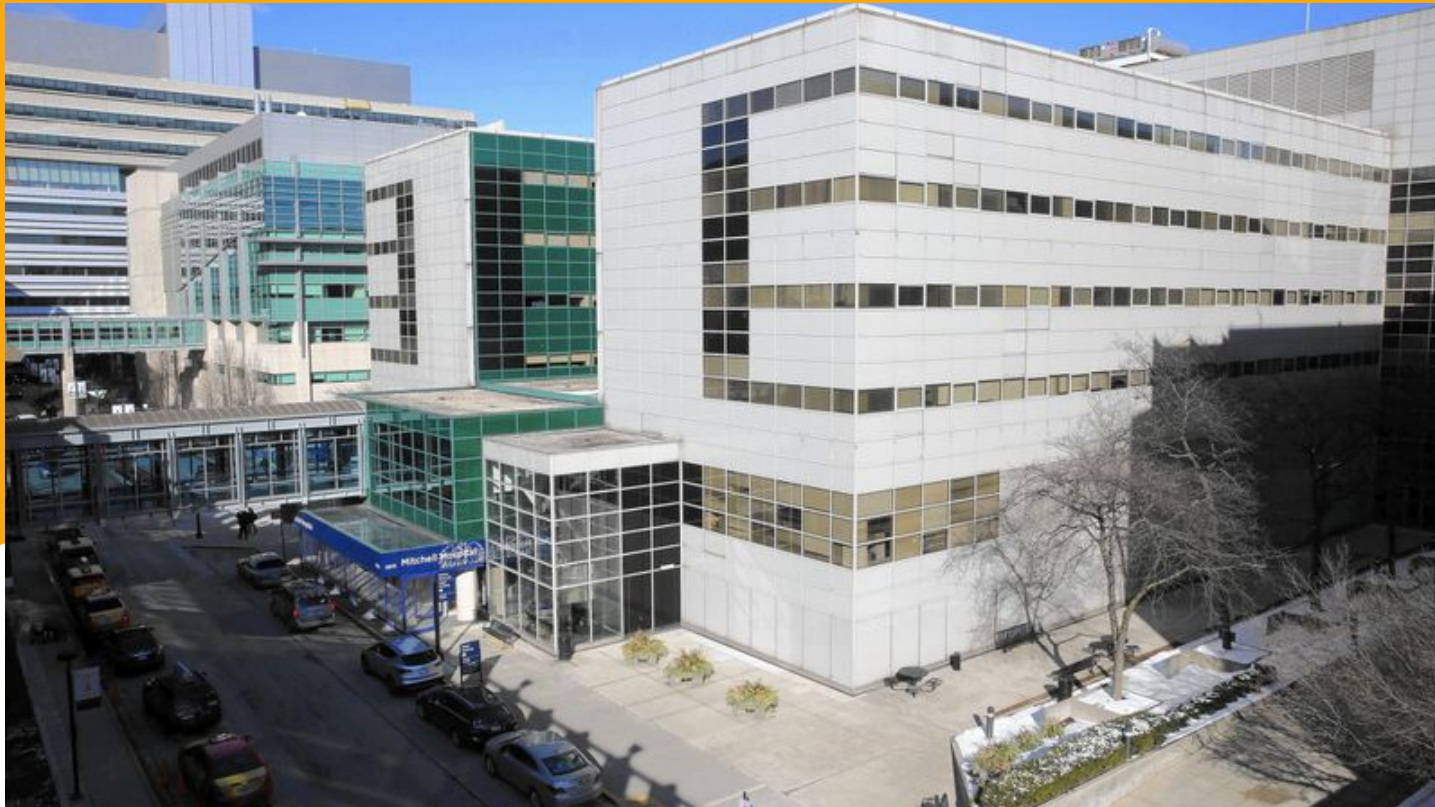


Mitchell Hospital Renovation

Lean Construction Implementation



BERGLUND
CONSTRUCTION



LOCATION
5841 S. Maryland Ave.
Chicago, IL 60637

SIZE
130,000 sqft

DURATION
30 Months

DELIVERY METHOD
CM at Risk

SCOPE
Revitalization / Renovation

ARCHITECT
Anderson Mikos

University of Chicago Medicine Mitchell Revitalization Project

The Project

University of Chicago Medicine needed to revitalize their space wherein they can make provisions for safe and efficient patient care with updated technology supported by the necessary infrastructure improvements. The project scope included a finish renovation of patient floors, minor renovations to core spaces, IT upgrades for nurse call, telemetry, clinical communication, basic IT infrastructure and major MEP upgrades and improvements. Project was \$105,000,000 total cost to owner with a \$60,000,000 in construction,



**Change Order
Reduction**



**Schedule
Compression**



Pull Planning



**Elimination
of Waste**



Speed to Delivery



**Continuous
Improvement**

Change Order Reduction

Case Study:

AHU and Chilled Water Infrastructure Replacement



- > Bid Package **\$1.7M**
- > Total Change Orders **\$19K**
- > Change Order % **1%**

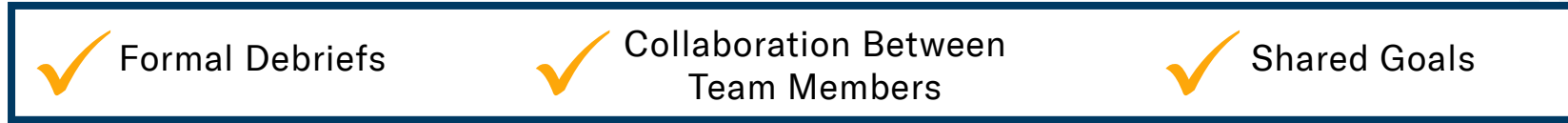
**Potential Change Order savings
of \$154K over traditional delivery**

Change orders of 7-10% is the industry standard on traditional mechanical infrastructure replacement



Schedule Compression

Inpatient Rooms Renovation

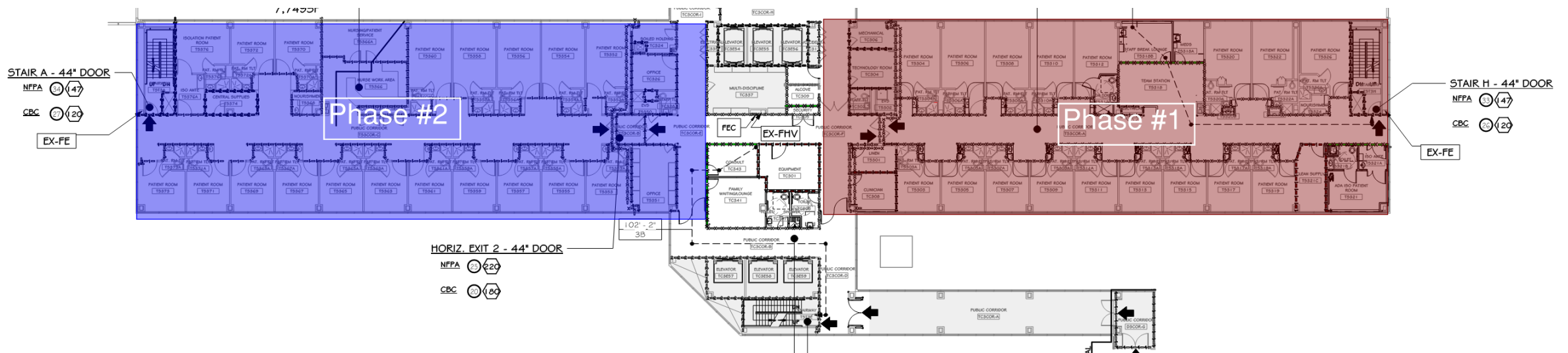


20% Schedule Reduction

Gained **Two Months** of Hospital Revenue

Phase 2 72 Single-Bed Rooms
8 Months

Phase 1 72 Single-Bed Rooms
10 Months

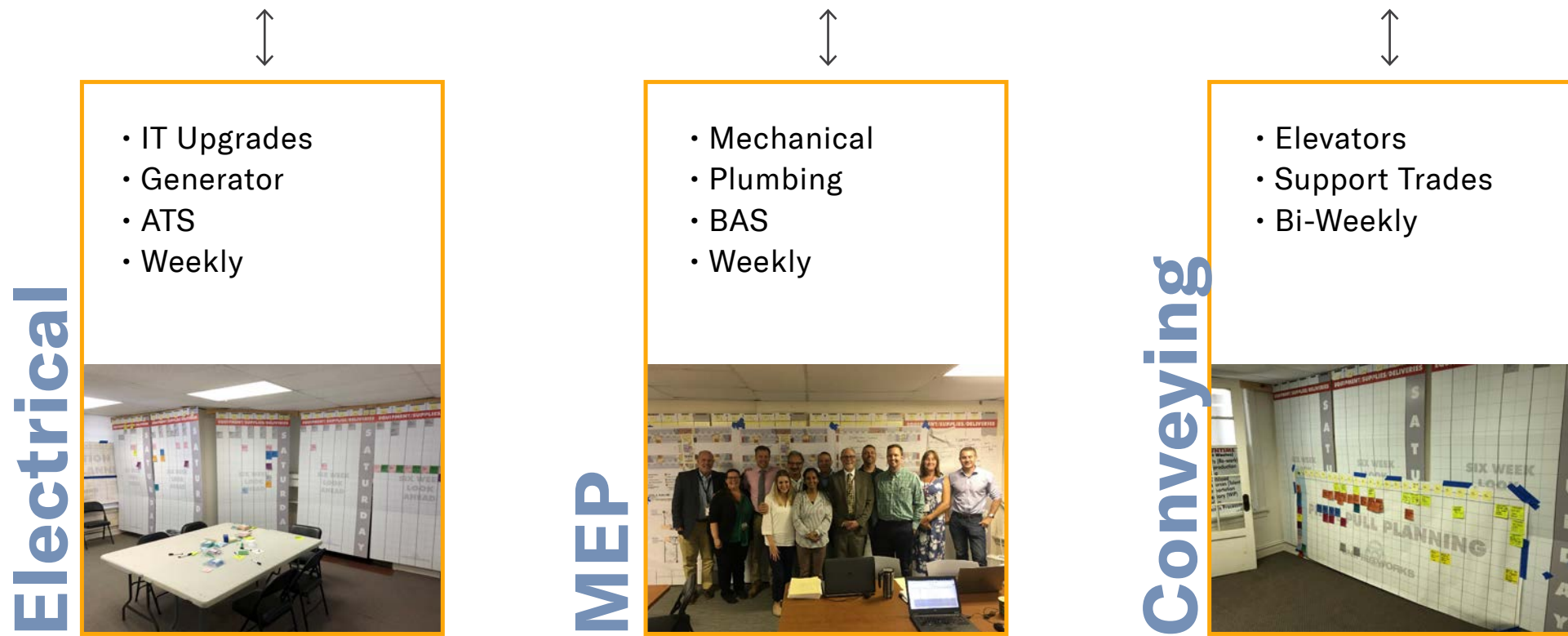


Pull Planning

Predictable Workflow

- Attendees:**
- Owner
 - Design Team
 - CM
 - Trade Partners
 - Vendors
 - Outside Consultants
 - User Groups

BIG Room: Overall Project | Weekly



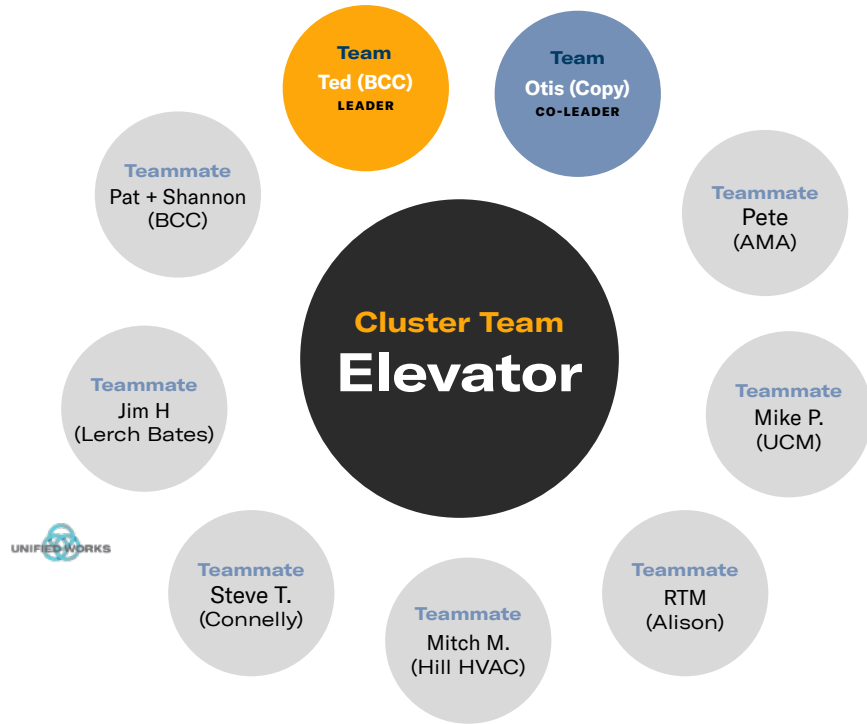
Speed to Delivery

Techniques Utilized:

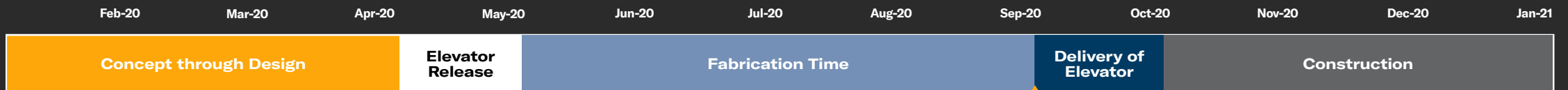
- Visual Decision Plotter (VDP)
- Trade Partner Design-Assist
- Subject Matter Expert (SME) Groups
- Submittal Parties

Example: Elevator

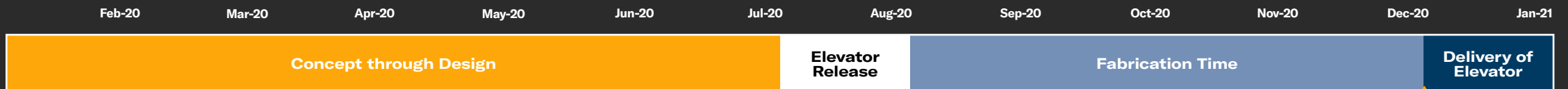
- Concept to release of major equipment in 3 months
- Concept to elevator delivery in under 6 months



Speed to Delivery



Normal Design Process



Elimination of Waste



Waste Avoided: Overproduction

Due to trade partner early investigation, we didn't over-specify equipment, achieving the "right-size"

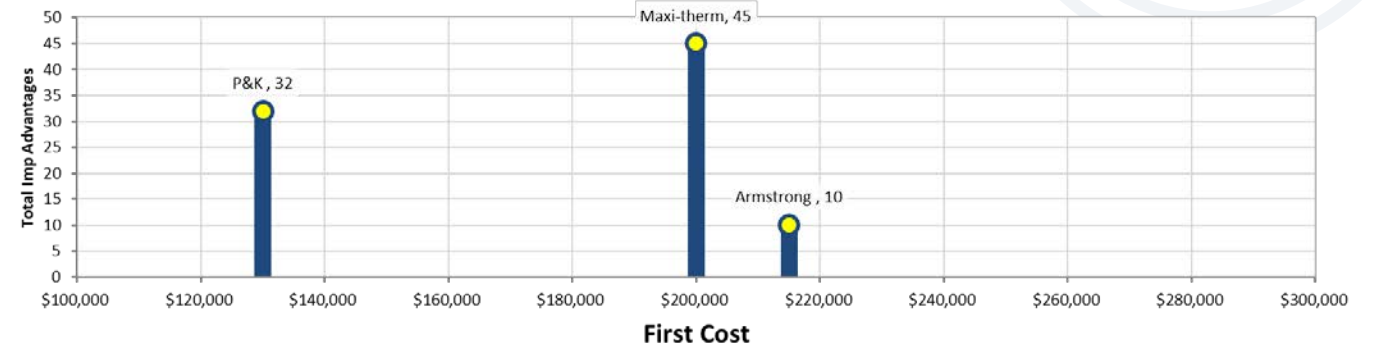
VDP Example Domestic Water Heater:

Hospital Plant: Usually leave decision up to the Engineers, preferred the Maxitherm at face value as it was known as a premier manufacturer

Options:

Armstrong, P&K, Maxitherm
Specified Maxitherm is the top of the line; the team decided the traditional P&K was appropriate for the project.

Importance Advantage vs. Price



The Process Took 3-4 Hours and Resulted in a \$70K Savings

# of components to maintain		Manufacturer Support/Response Time		Rebate Availability		Operational Costs					
Imp.	ATTRIBUTE	ADVANTAGE	Imp.	ATTRIBUTE	ADVANTAGE	Imp.	ATTRIBUTE	ADVANTAGE	Imp.		
0	15 Components	(-7) Components	0	3rd party service with in 24 hrs but UCM vendors by 1 hr	(-23) hrs response	0	None	0	0	97,000/year	0
0	27 Components		0	2 techs in the area with same day 24 hr response		0	None	0	0	95,000/year	(+2,000)/year
0	8 Components	(-19) Components	0	3 techs in the area with a max 4hr. Response time	(-20) hrs response	0	Yes	30k per skid from Peoples Gas	0	90,000/year	(+7,000)/year
0			0			0			0		

PRV-CV, Traps, Iso-valves, Pumps, Floats





Continuous Improvement

Plus Delta Meetings



- IPD affords CM to be involved from concept, which allows for better knowledge of the project Team Collaboration
- Improved constructability due to builder input



- Engage Trade Partners earlier in rapid assessment
- Significant time commitment from all team members during preconstruction and planning

