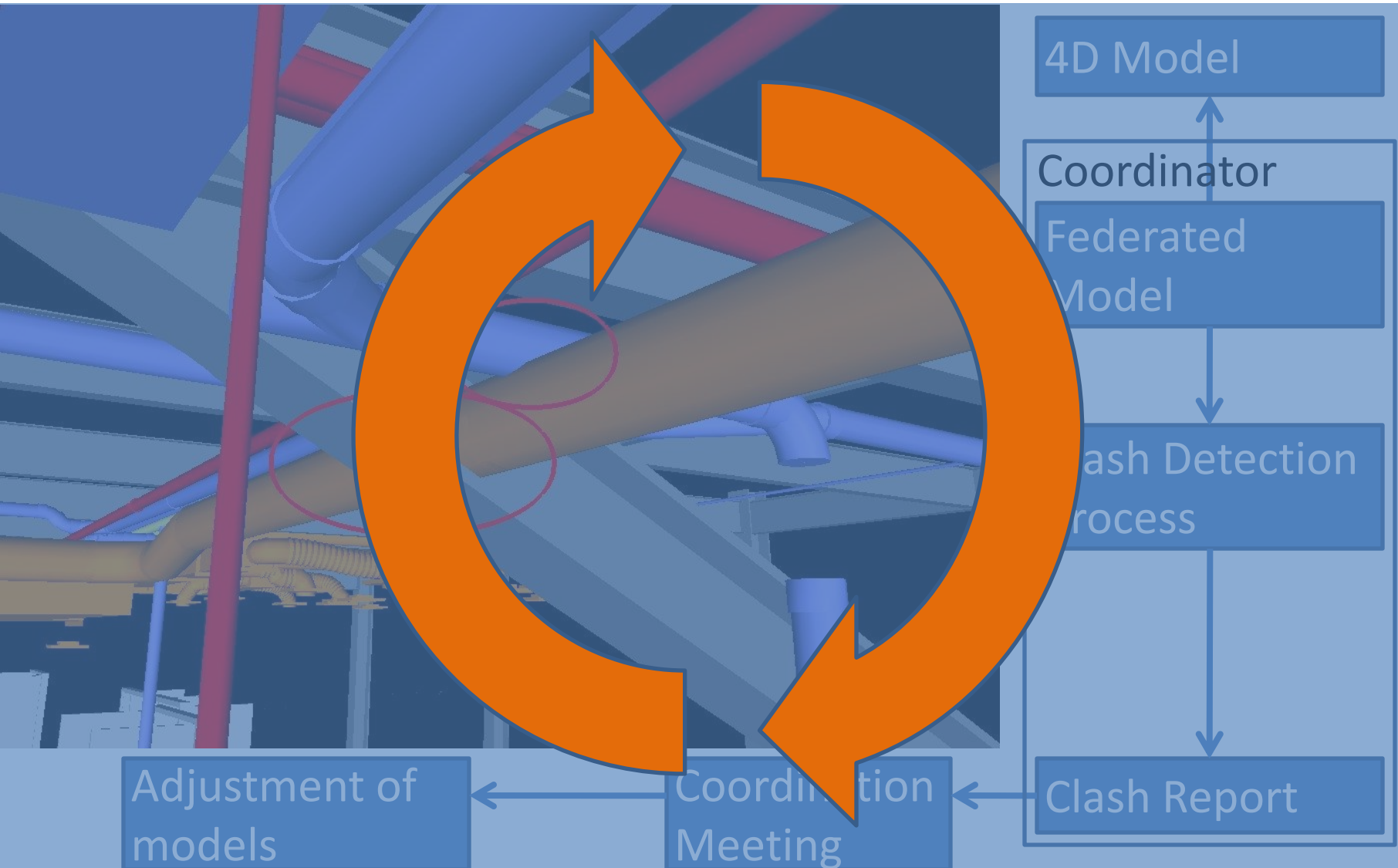
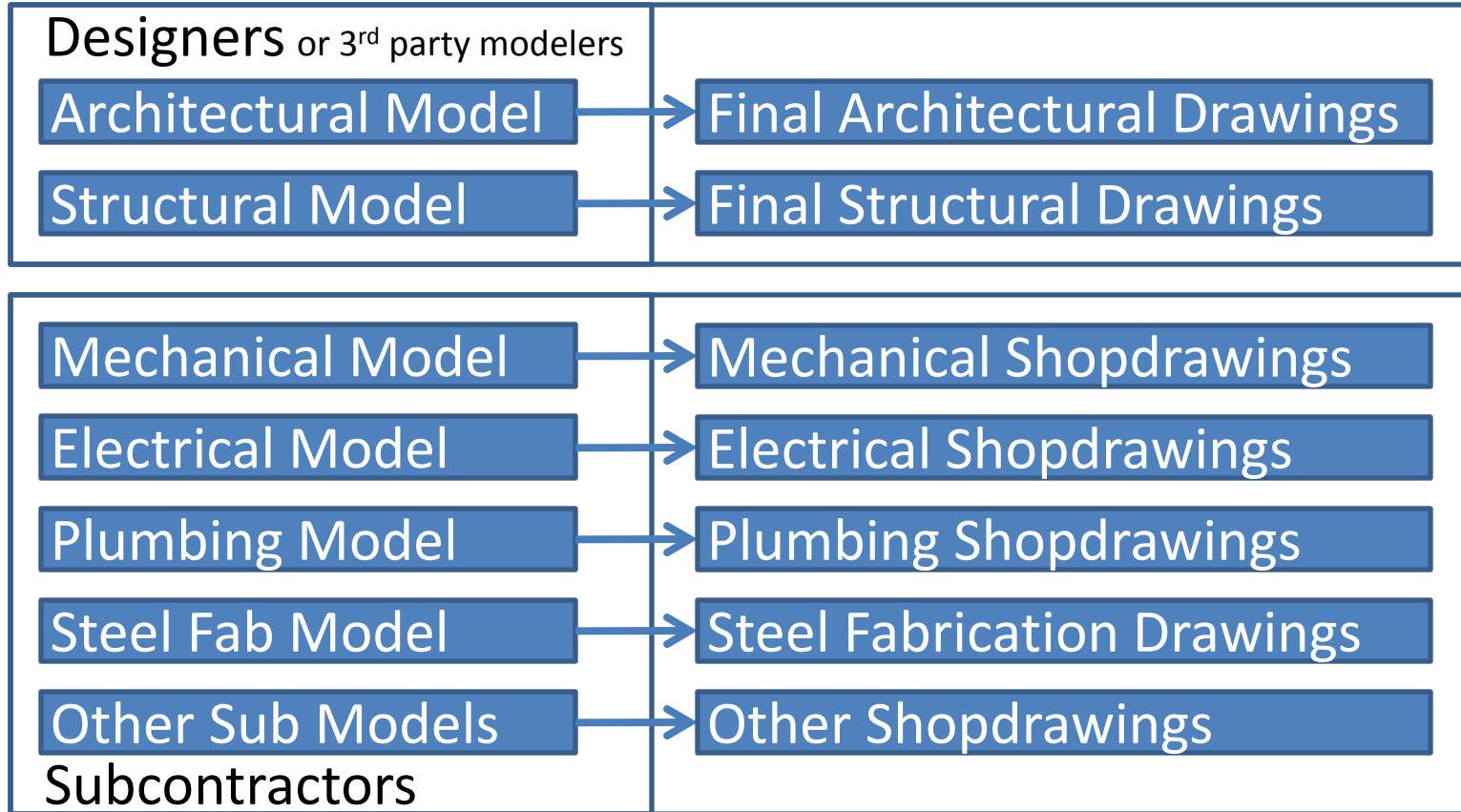


3D Trade Coordination



3D Trade Coordination



Drawings are coordinated based on a Model

	1601
	BSMT
	STL-FP
	2009-11-03

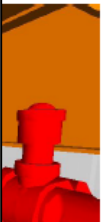
Clash Report

Clash Matrix:

	ELE
ELEC	
FP	1
MDUCT	
PLMB	1
STL	1

Clash Matrix:

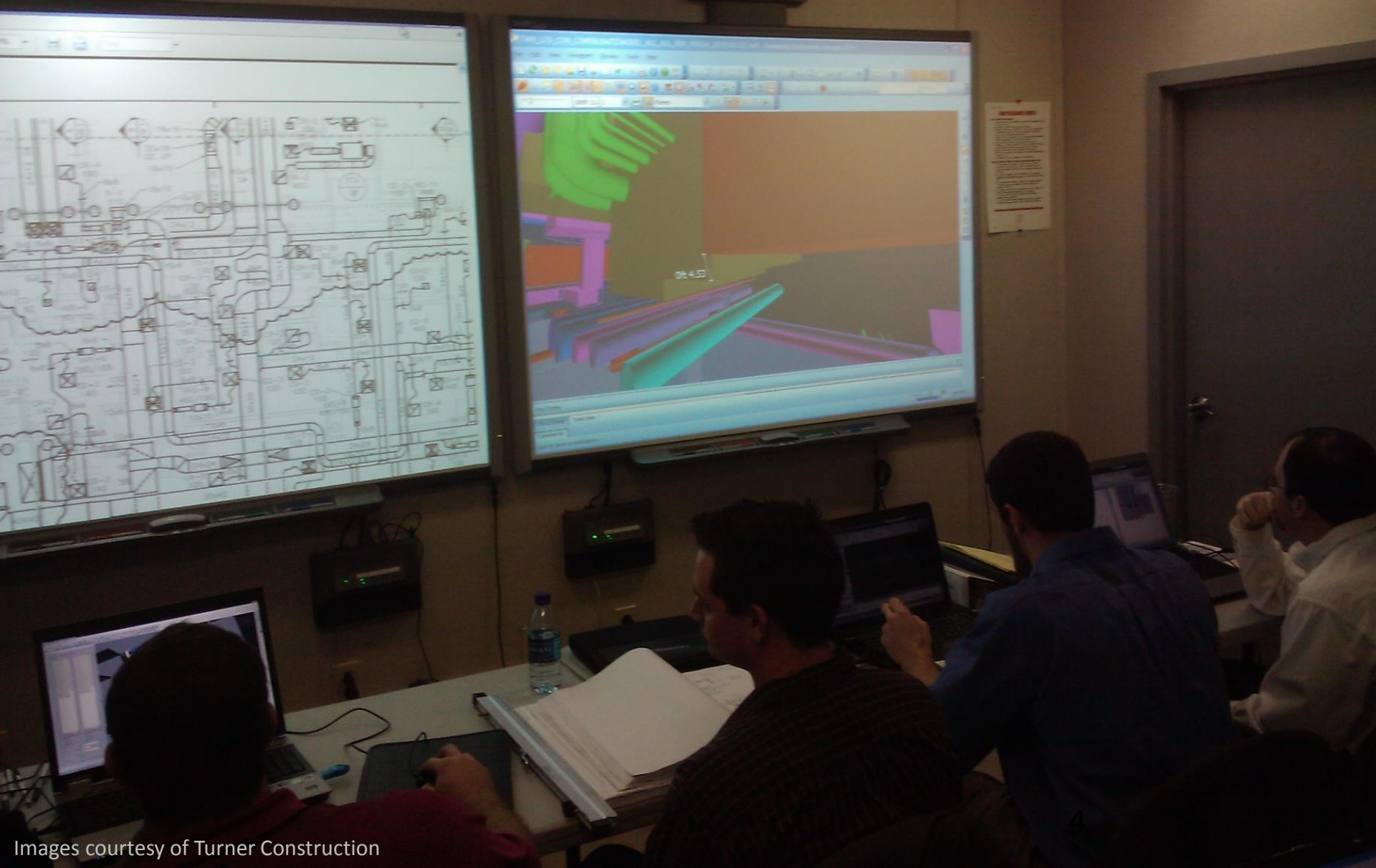
	ELEC	FP	MDUCT	PLMB	STL
ELEC					
FP	1				
MDUCT					
PLMB	1		2		
STL	1	1		1	



Mutual to lower pipe to avoid steel.

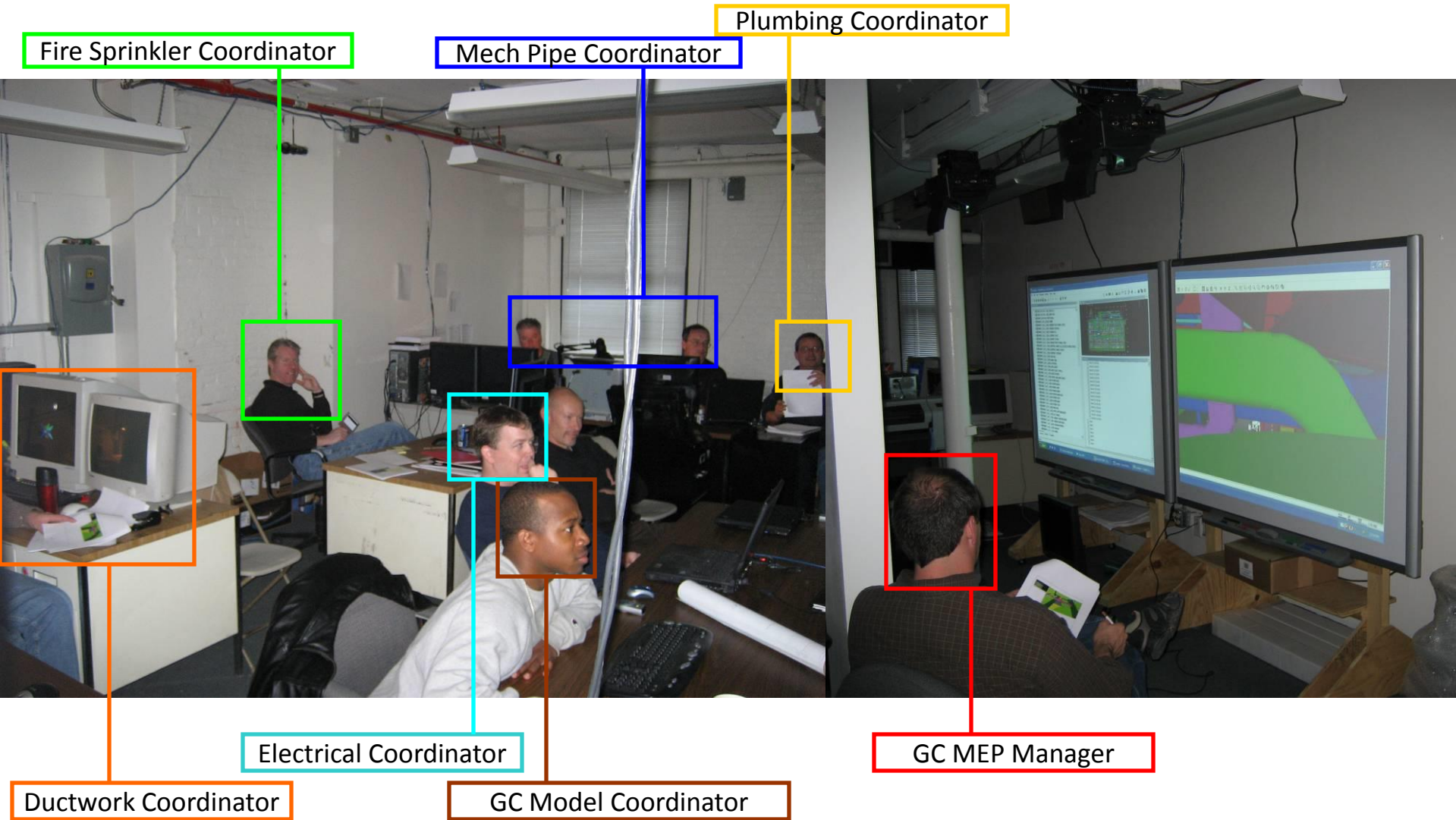


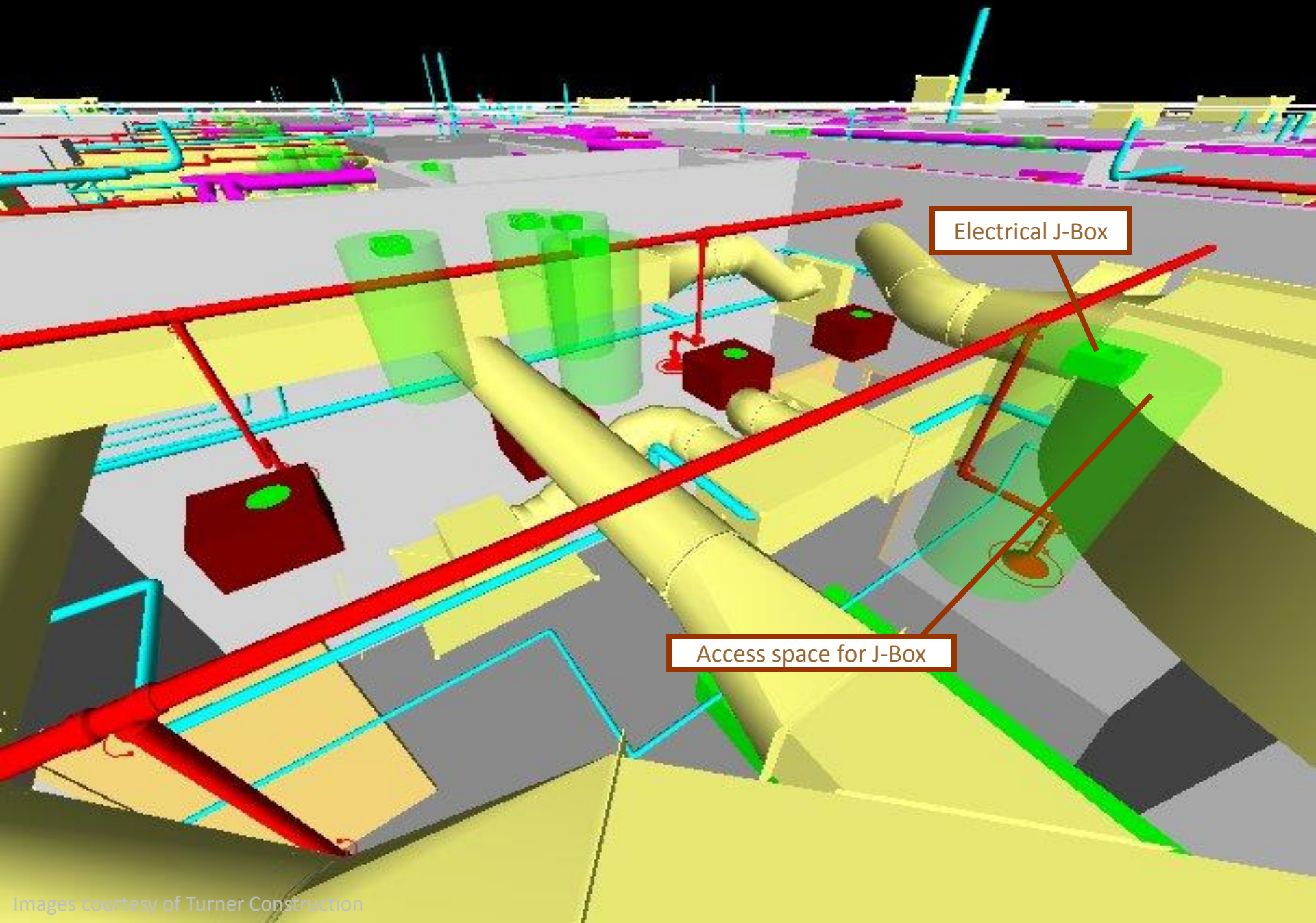
Smart Room



Images courtesy of Turner Construction

Smart Room





Electrical J-Box

Access space for J-Box

Installation process

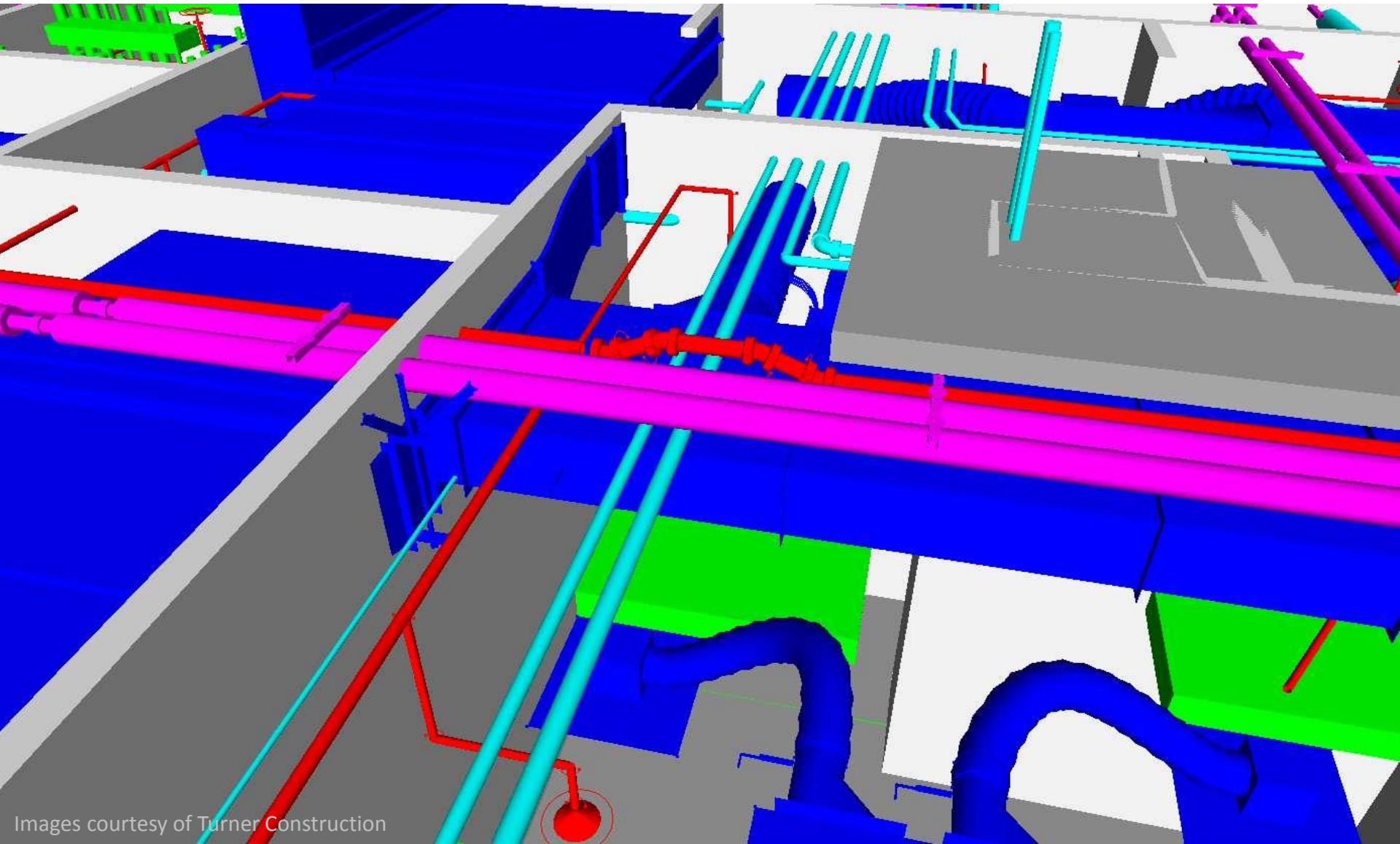
Electrical J-Boxes

Fire Protection

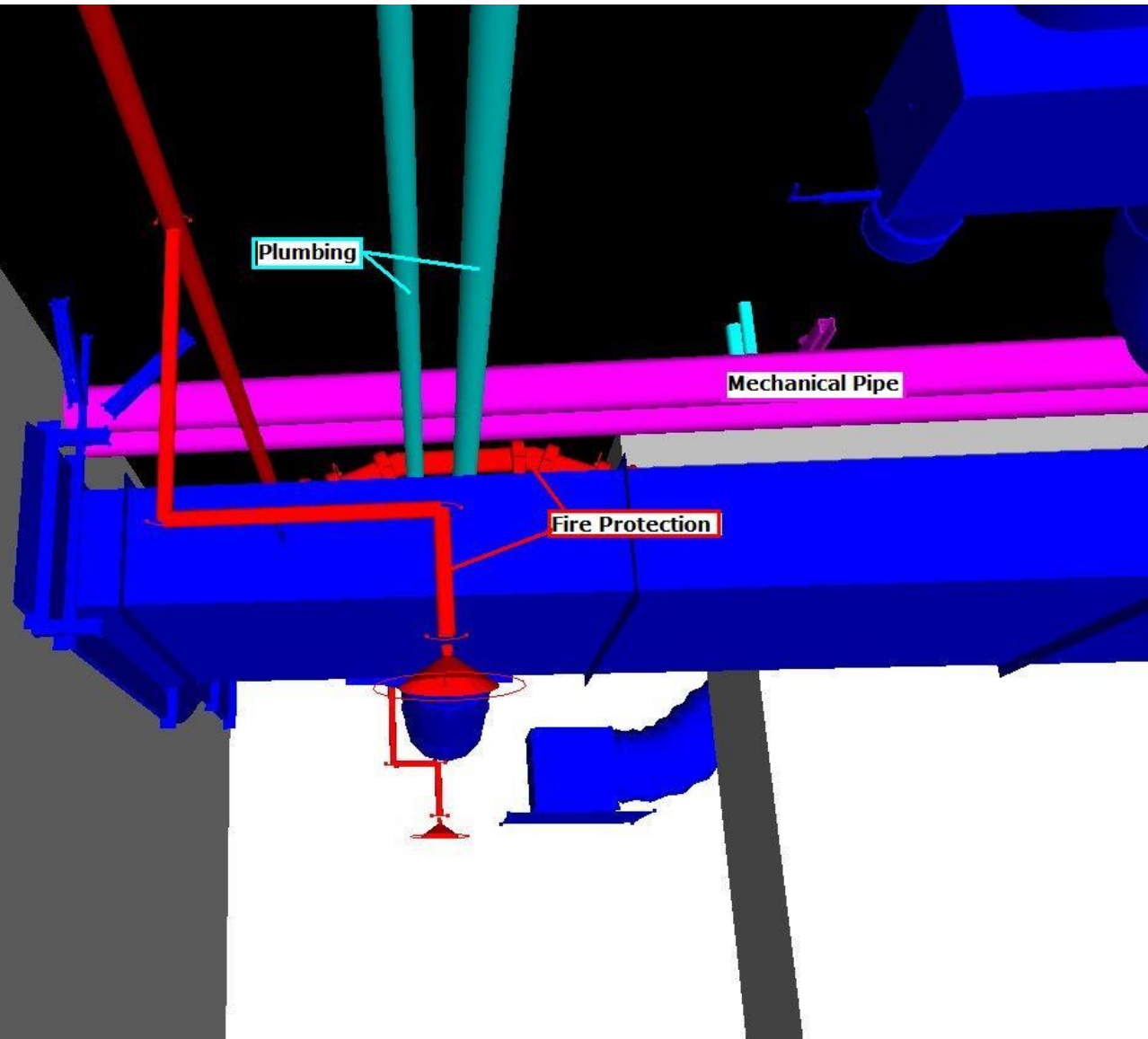
Installation process



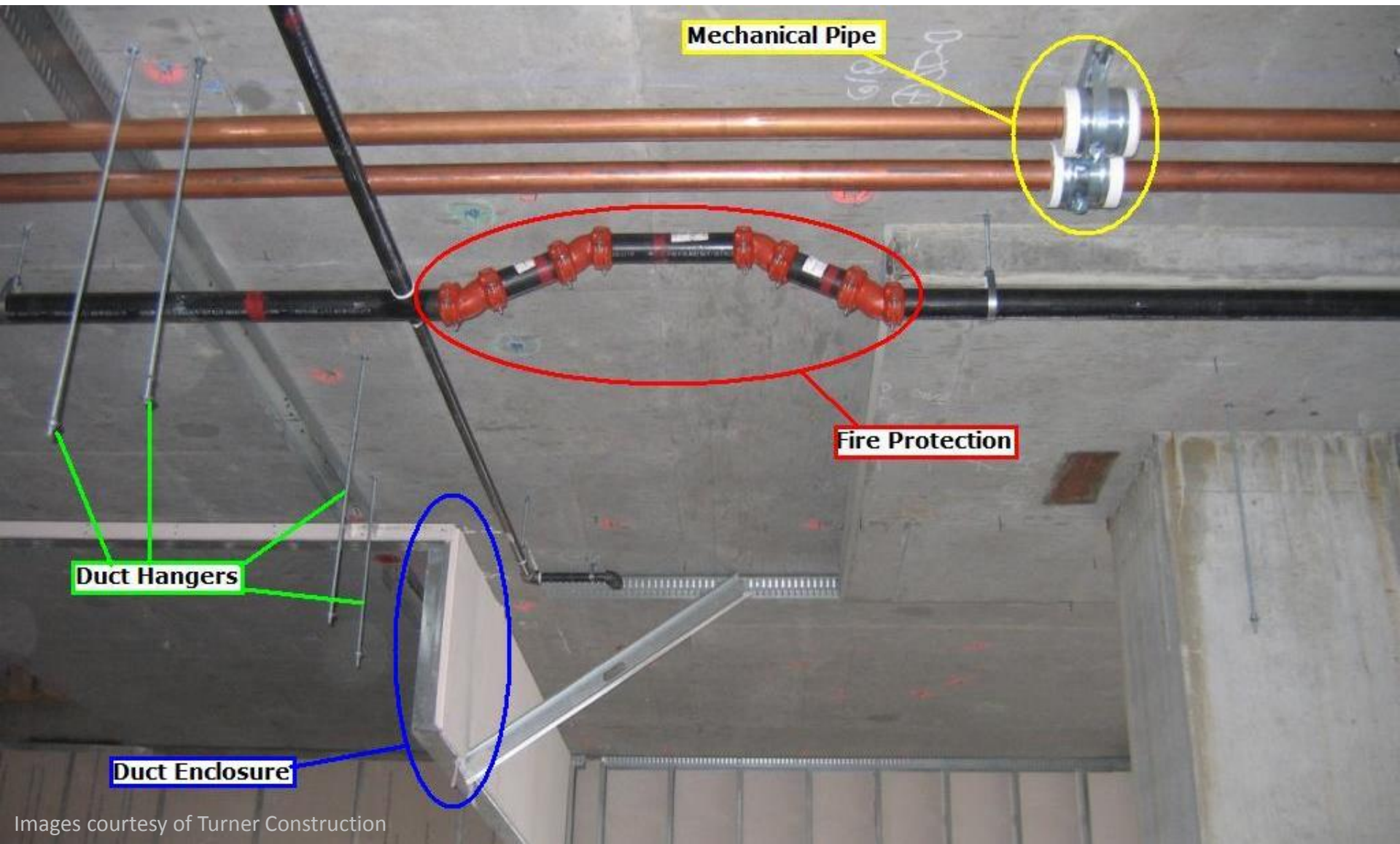
Installation process



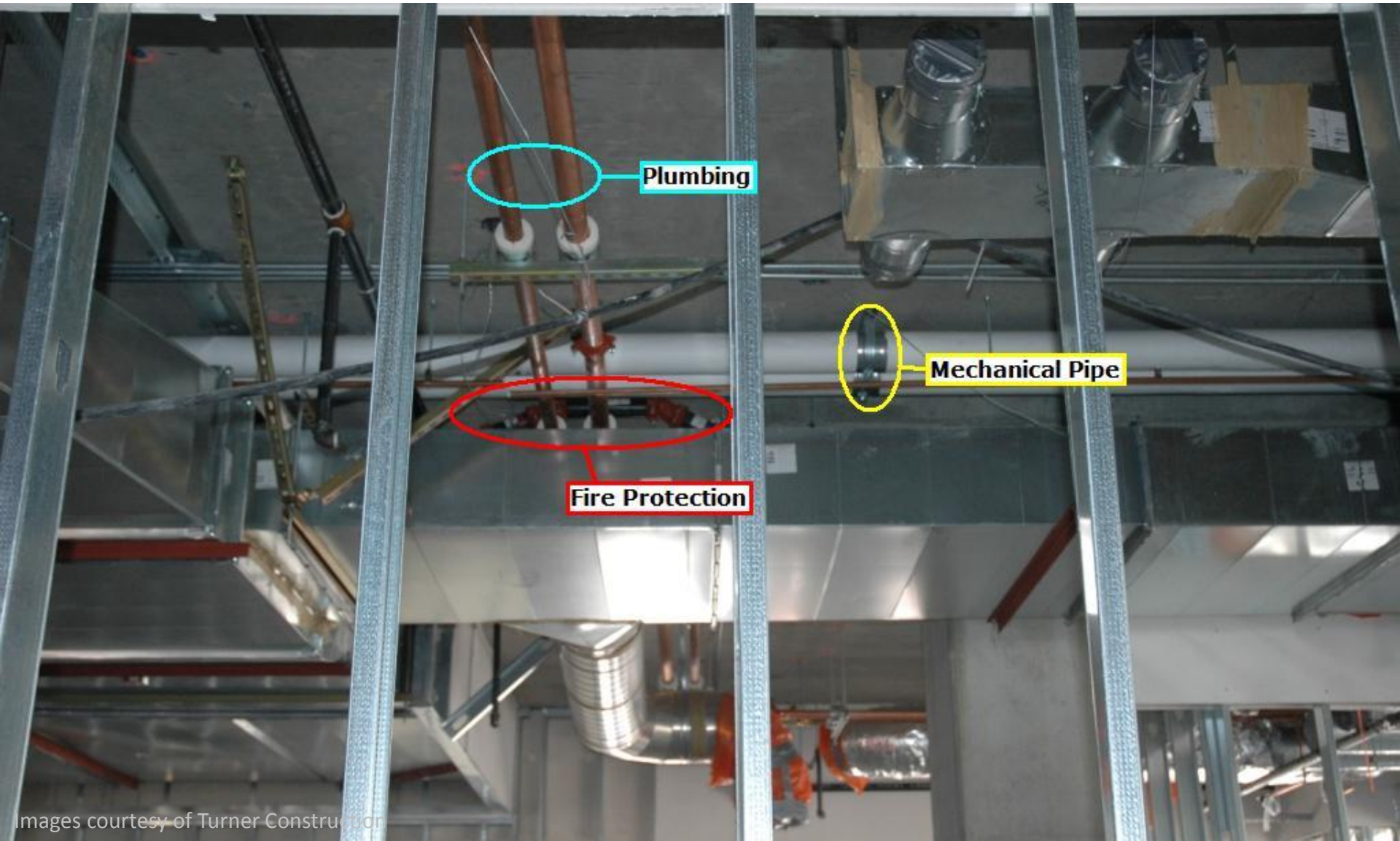
Installation process



Installation process



Installation process



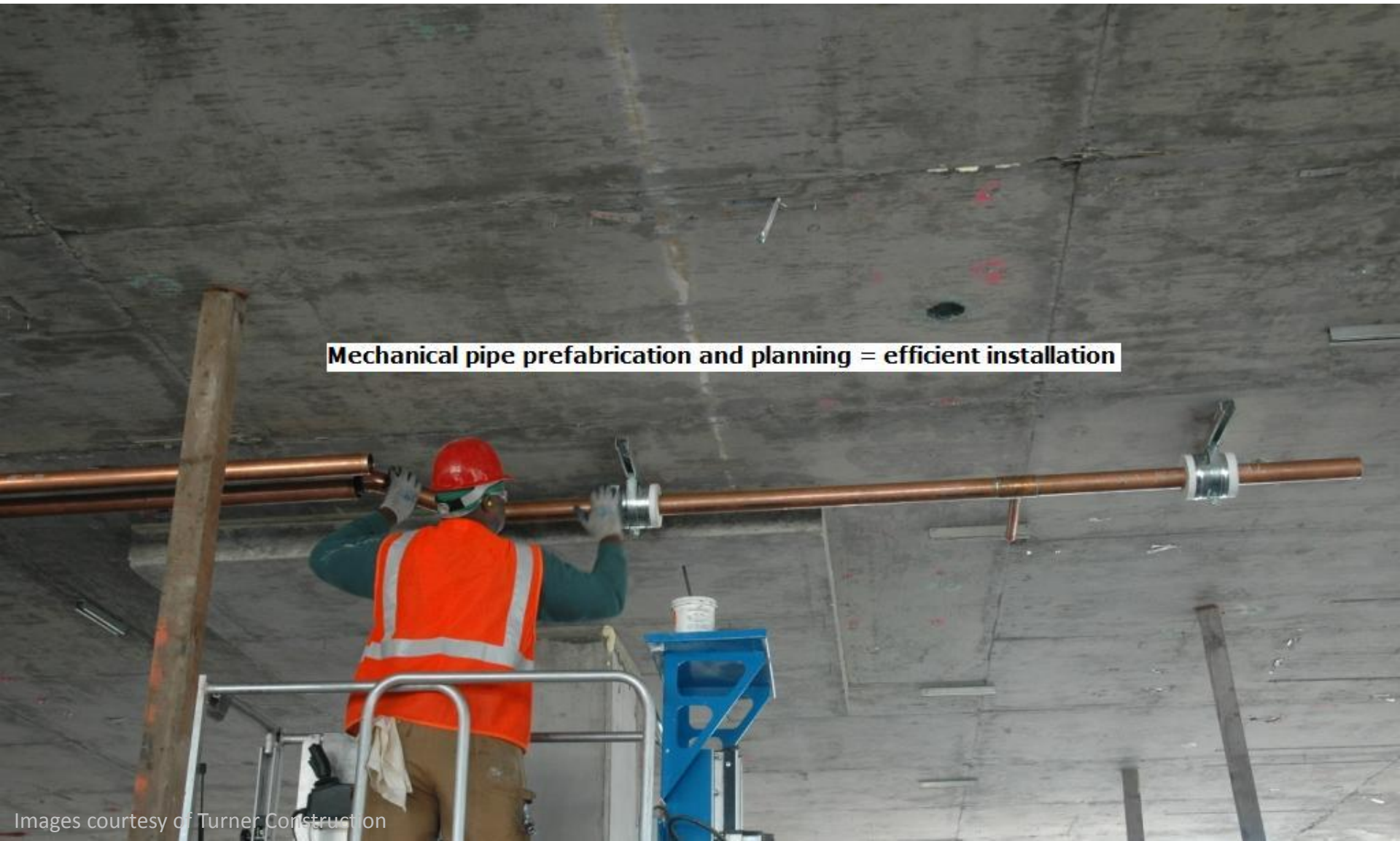
Lean Construction



Pre-fabricated mechanical pipe assembly - ready for placement

Installation process

Mechanical pipe prefabrication and planning = efficient installation



Results

- \$180m hospital project
- 50 significant design changes
- 700 RFIs in coordination process
- No installation conflicts in the field
- Zero constructability related change orders
- Zero Field RFIs

Ingredients for Success

- BIM is a management task
- Eliminate reasons not to collaborate
 - Empowerment
 - Transparency
 - Simplicity
 - Efficiency
 - Protocol
 - Accountability
 - Involvement
 - Support

Metrics

- Meaningful metrics
 - Rework in the field
 - Number of constructability related RFIs
 - Items pre-fabricated
 - Site safety
 - Meeting satisfaction
- Less meaningful metrics
 - Duration of coordination
 - Number of coordination RFIs

Benefits

- Find the right level of BIM for a project
- Benefits
 - Consistency
 - Predictable results
 - Confidence in project execution
 - No rework
 - Efficient installation