

26TH ANNUAL



26TH LCI CONGRESS
OCTOBER 22-25, 2024

Sutter Health Santa Clara

Guiding the Design Wave with VDC, Prefab, and Takt

SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

October 24, 2024

Introductions



Dan Tran
Project Executive
DPR Construction



Cal Lieb
Senior Project Manager
Sutter Health



John Eberhard
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Chad Arthur
Design to Build Lead
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JoAnn Brookes
Architect of Record
HGA



Isvet Paz
Medical Planner
HGA



Ron Migliori
Structural Engineer of Record
Buehler



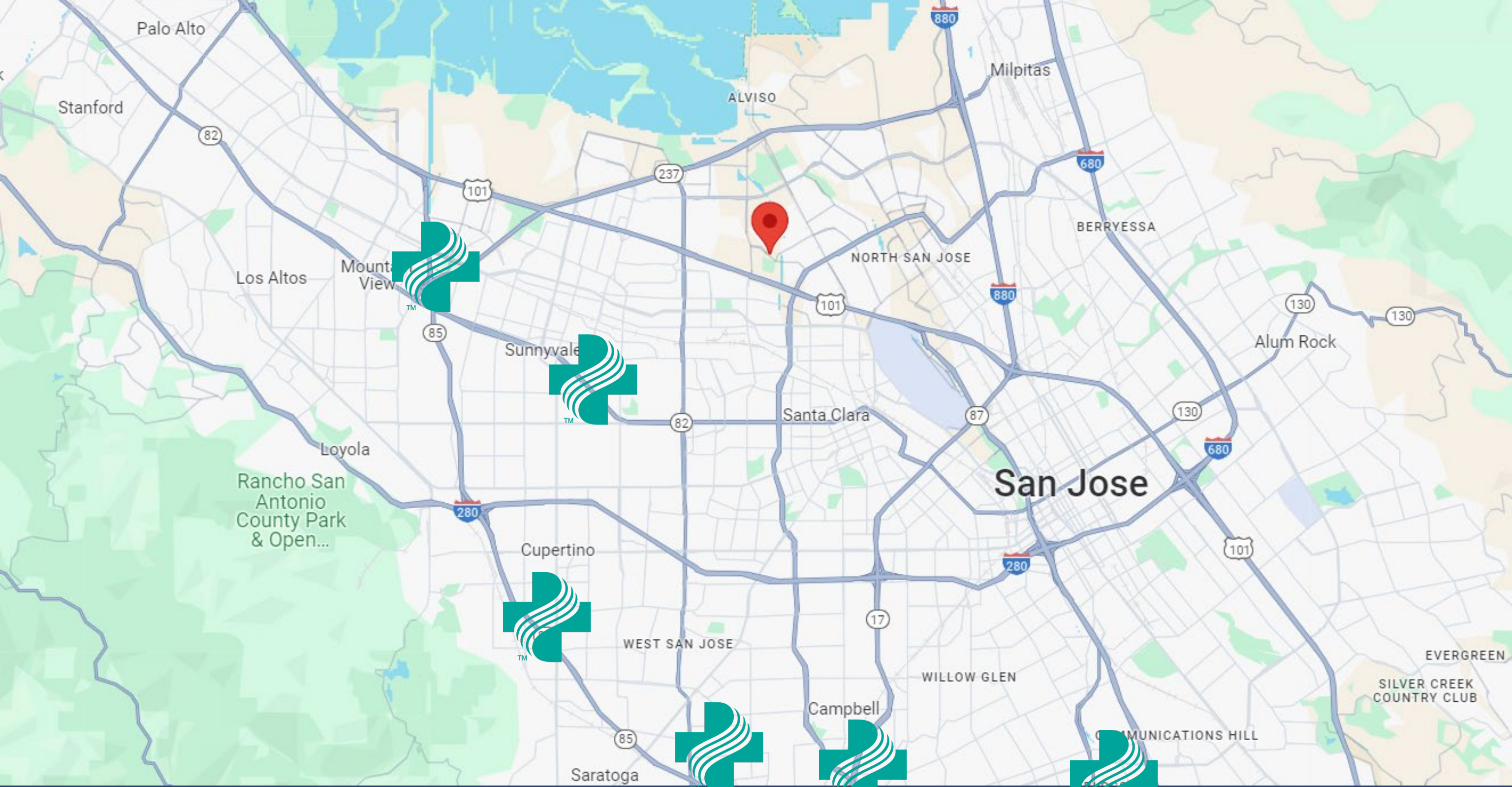
Dominic Esparza
Mechanical and Plumbing Project Executive
Southland Industries

Key Themes

- Speed to Market
- Adaptive Reuse
- Design for Manufacturing and Assembly
 - Prefabrication
 - VDC
- Integrated Project Delivery

"If you build it, **they will come**"
- *Field of Dreams*





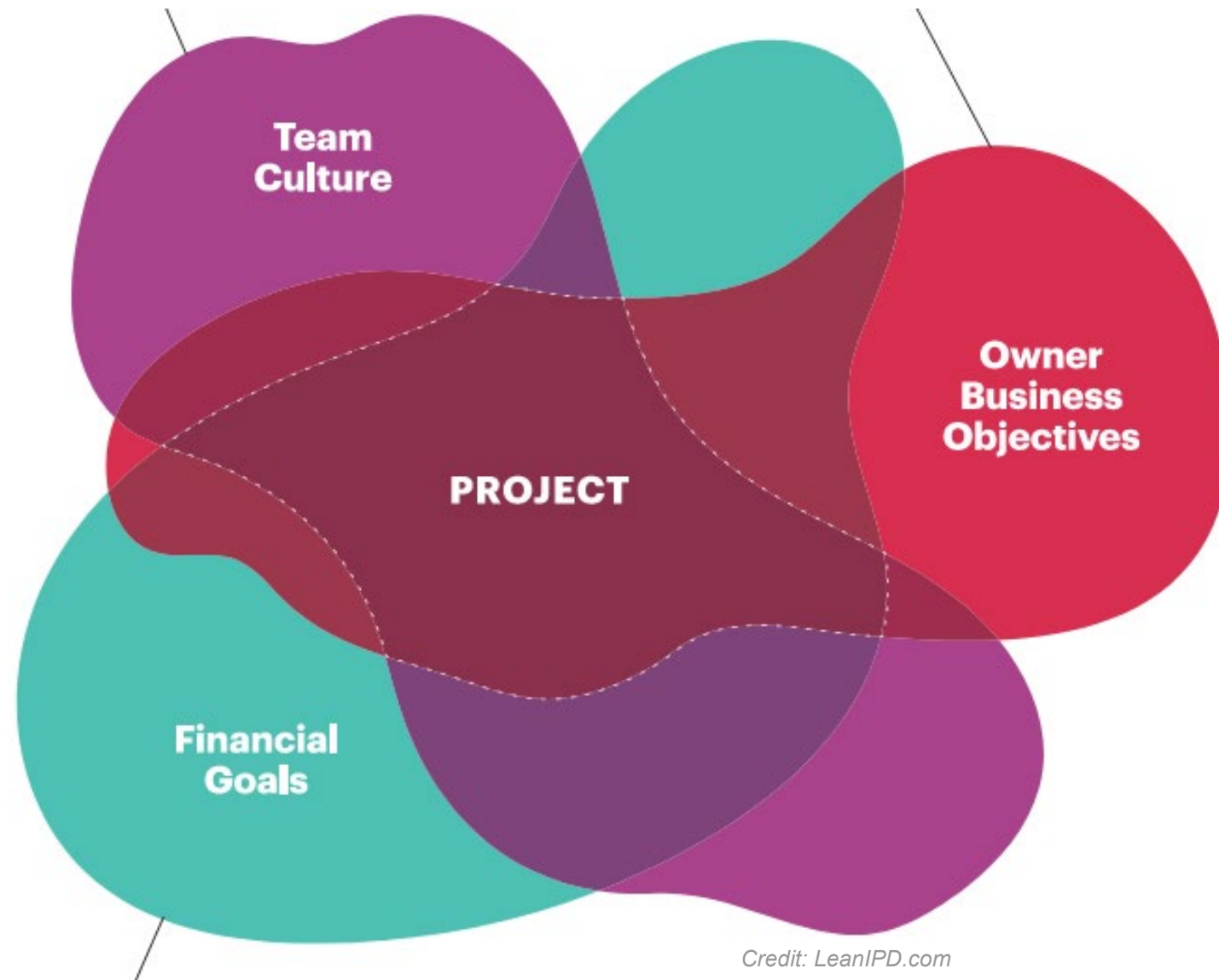
SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

PROVIDE SERVICE AREA GROWTH & INCREASE AMBULATORY SURGERY & STERILE PROCESSING CAPACITY



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Selecting the Right Team

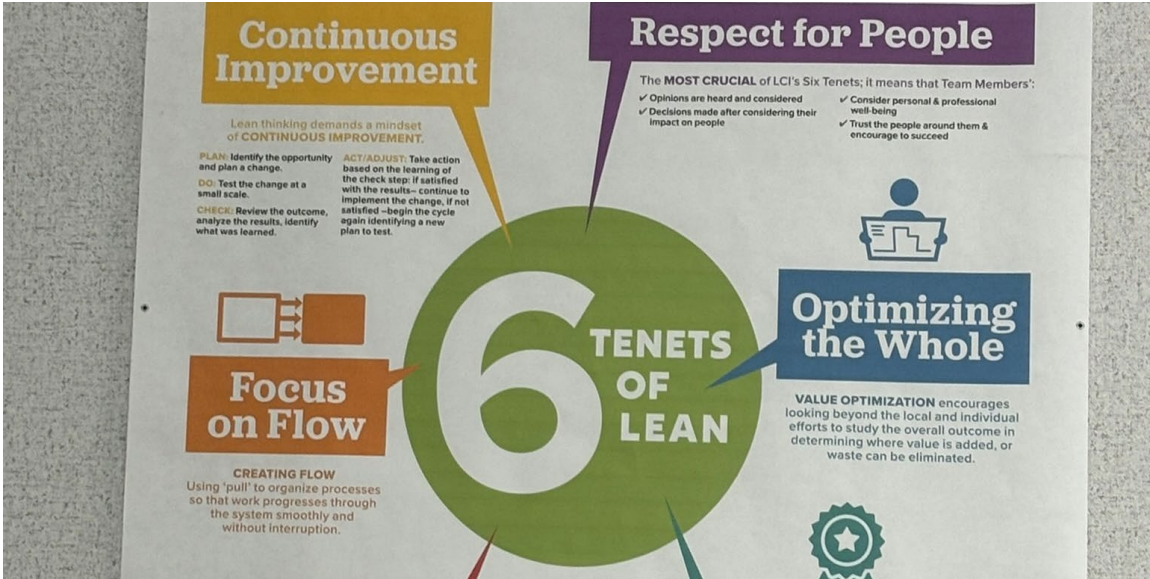
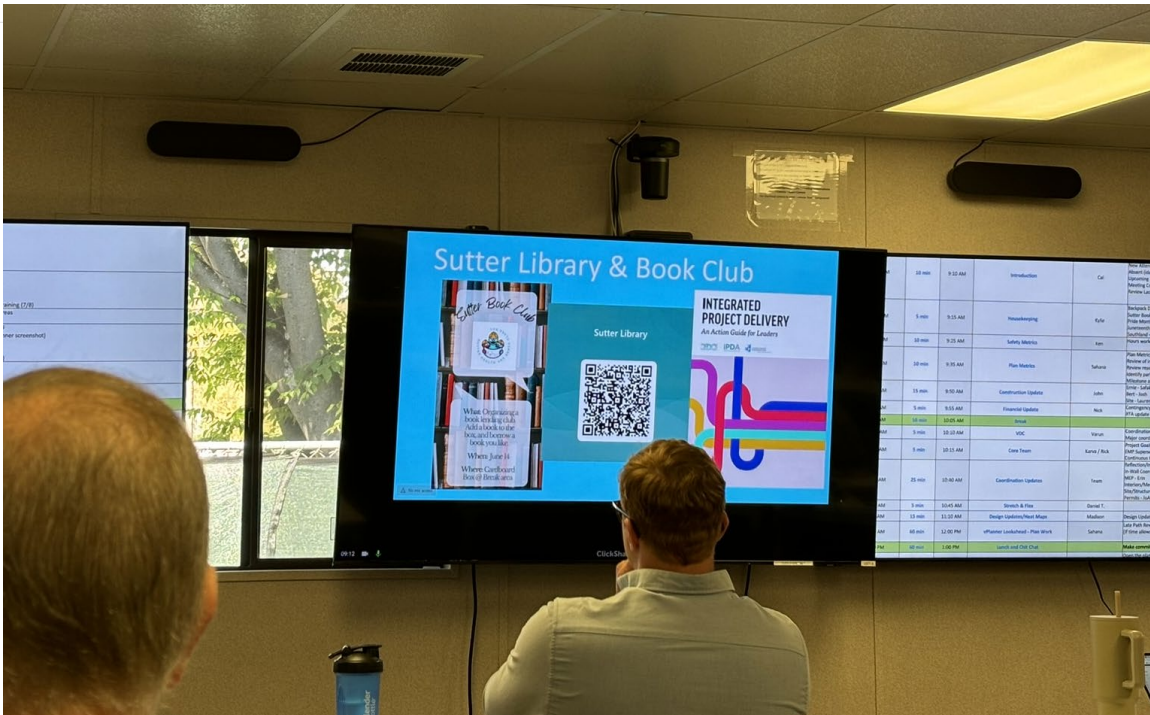


Team Characteristics

- 1) Highly engaged
- 2) Collaborative
- 3) Competent
- 4) Committed



Learn as a Team



Initial Approach – Design for Manufacturing & Assembly



Prefab Wall Panels



Multi-Trade MEP Racks



Electrical Skids



Headwalls

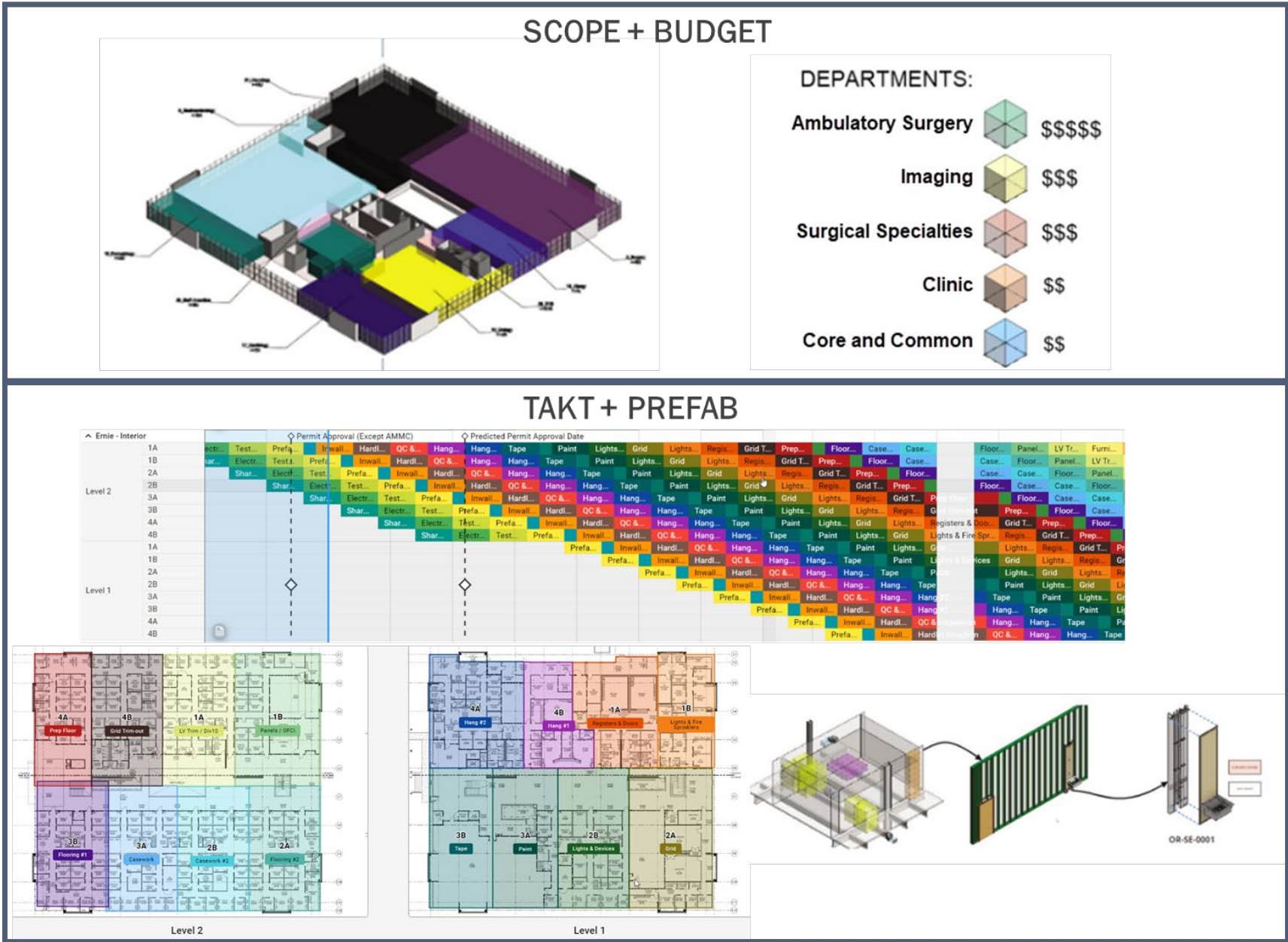


Integrated Surgical Ceilings



SurePods

Initial Approach – Design for Manufacturing & Assembly

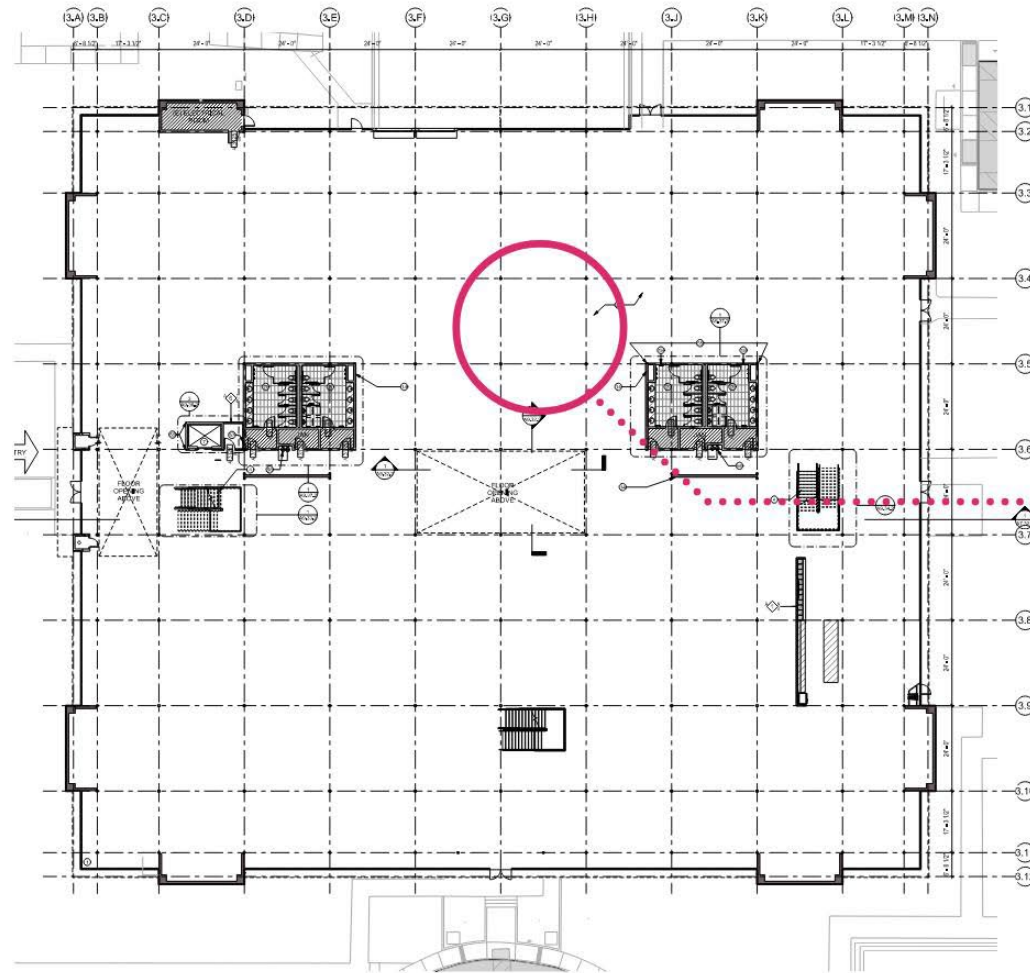




It's a bumpy ride



Adaptive Reuse Challenges



AHU serving ASC needs to be MERV 14, higher than the MERV 13 provided. Consideration to N+1 to avoid downtime for maintenance or replacement of surgery AHU. Outside air to ASC may require ground mounted unit.

Sitework to be modified for emergency generator and fuel tank.

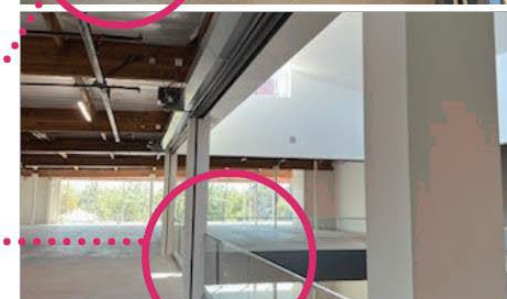
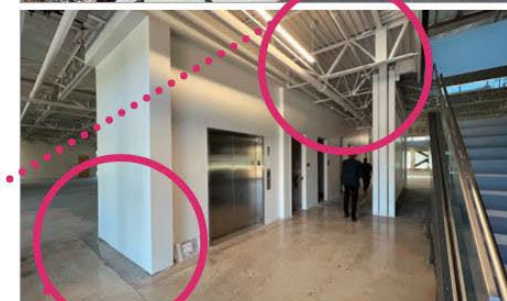
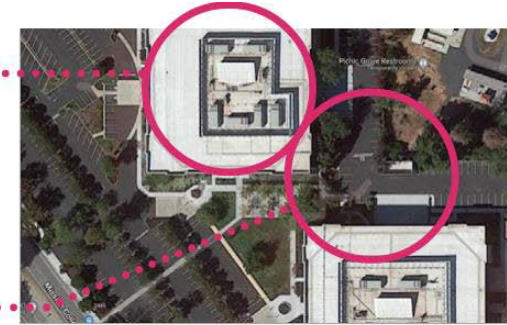
Full height glass around perimeter challenging for certain clinical uses. Construction access may require temporary removal of 3 floors of glass

Shaft openings not built into base building

Existing truss system may be too lightweight for overhead mounted equipment and mechanical.

Plumbing may require first floor slab removal or vacuum system.

Existing floor openings create building systems "no fly" zones.

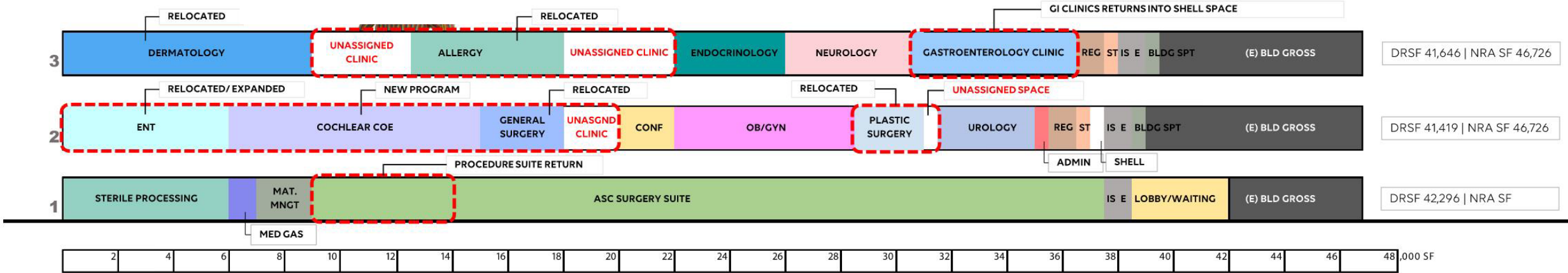


Planning Challenges

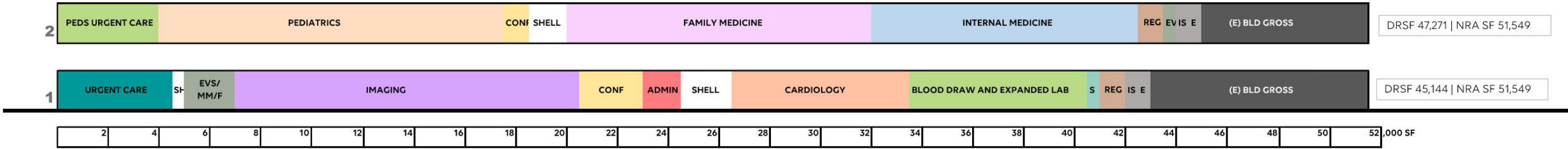


Programming Development

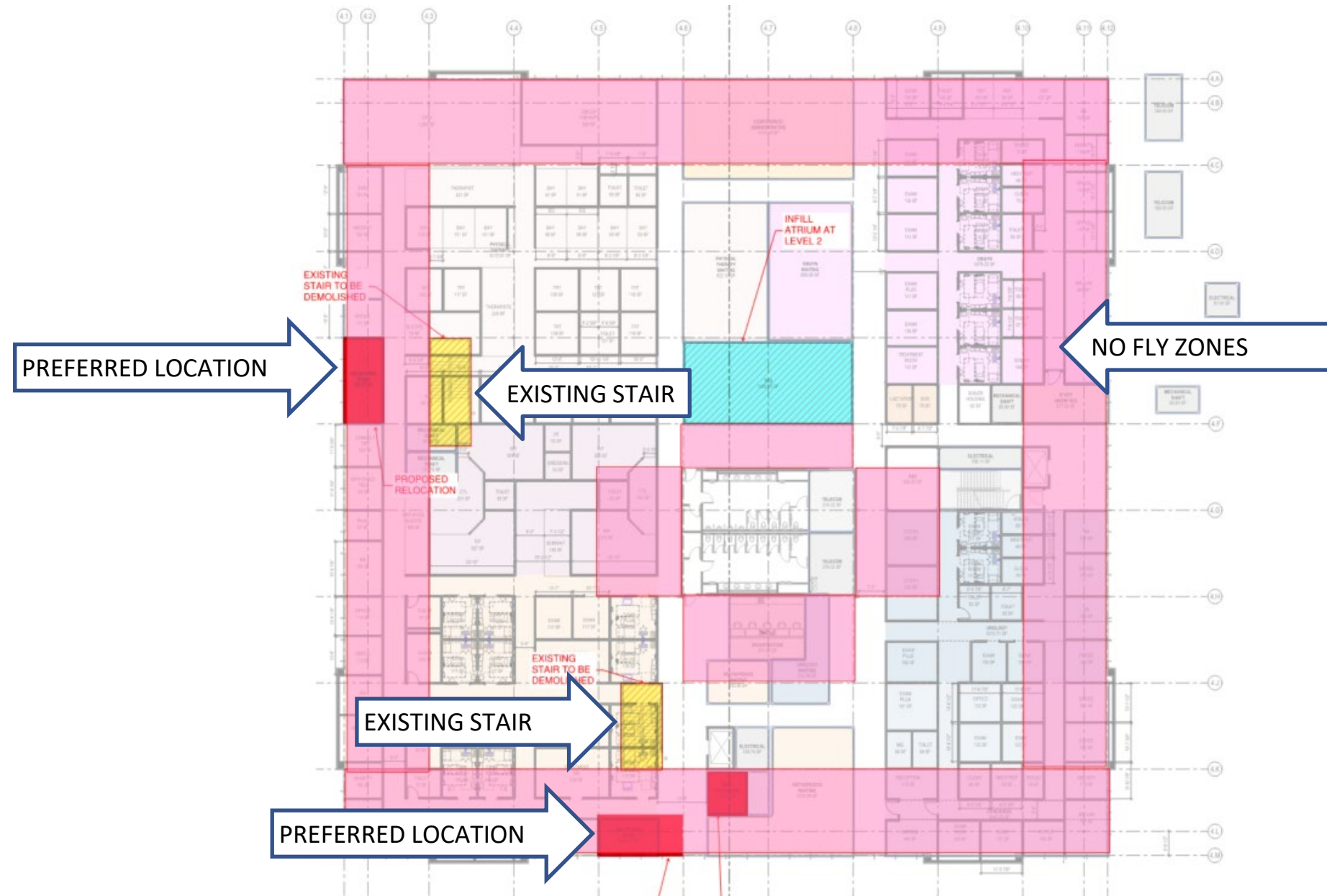
BUILDING 2451



BUILDING 2441



Existing Building Limitations – Impact on Program and Circulation



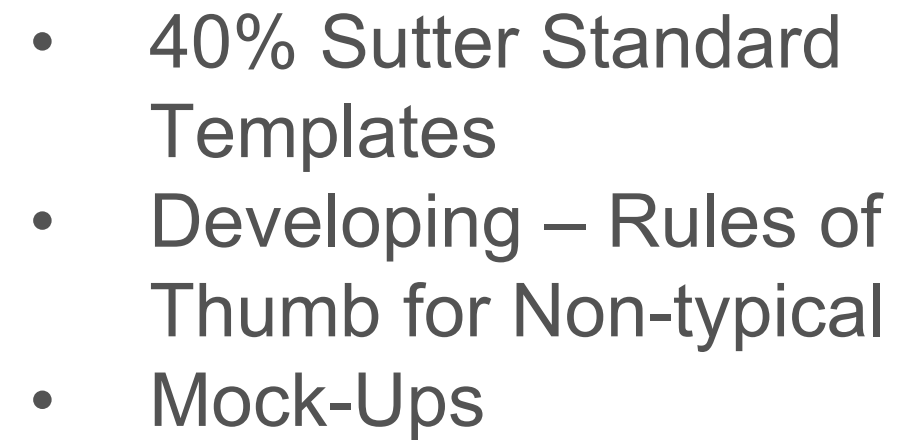
Existing Building Limitations



SLOPING GLULAM

THIN CONCRETE DECK

STEEL WEB JOISTS



Incremental Release Strategies



- Heat maps to visually convey in progress design

HGA

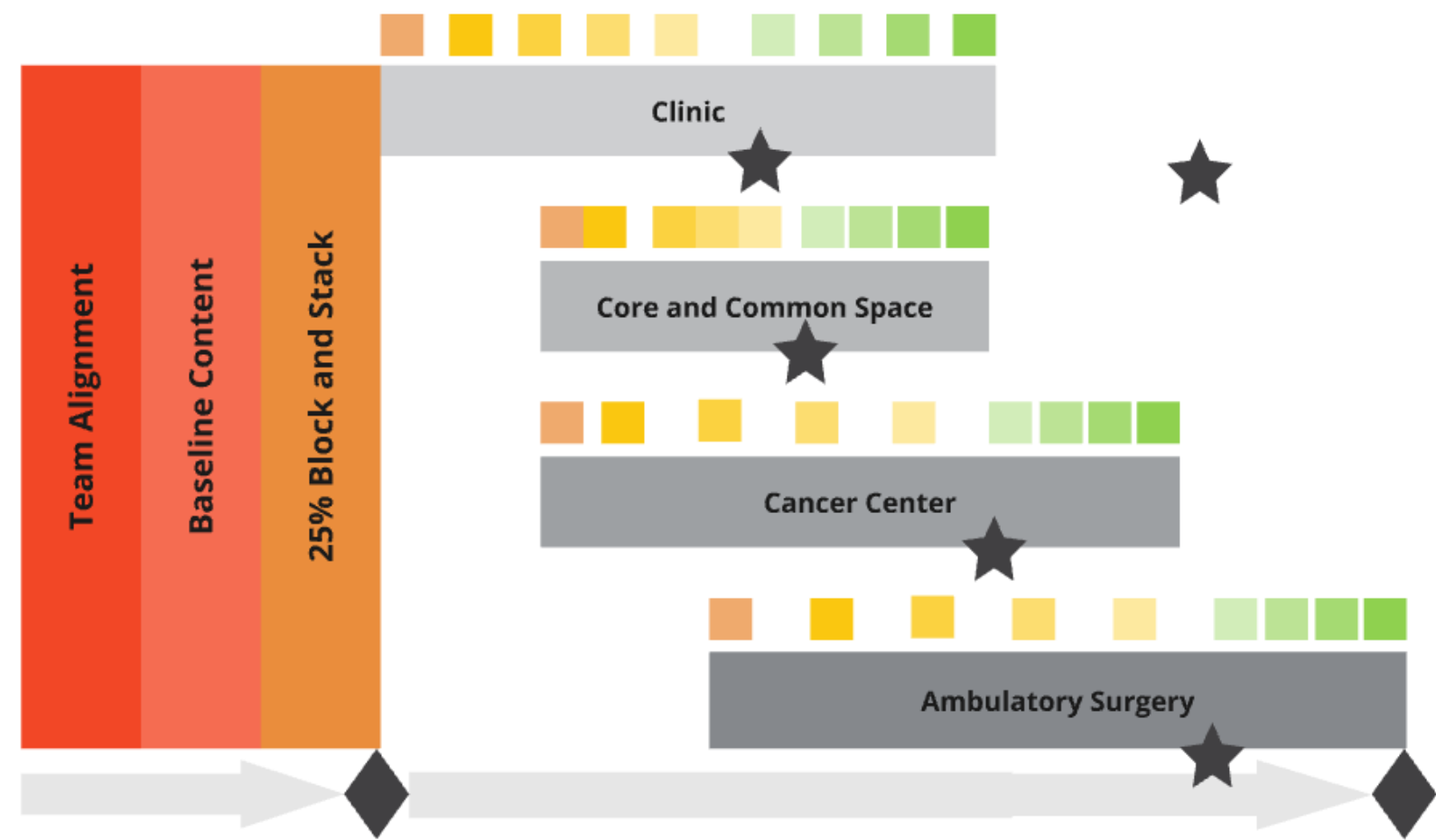
1/26/23

1/8" = 1'-0"

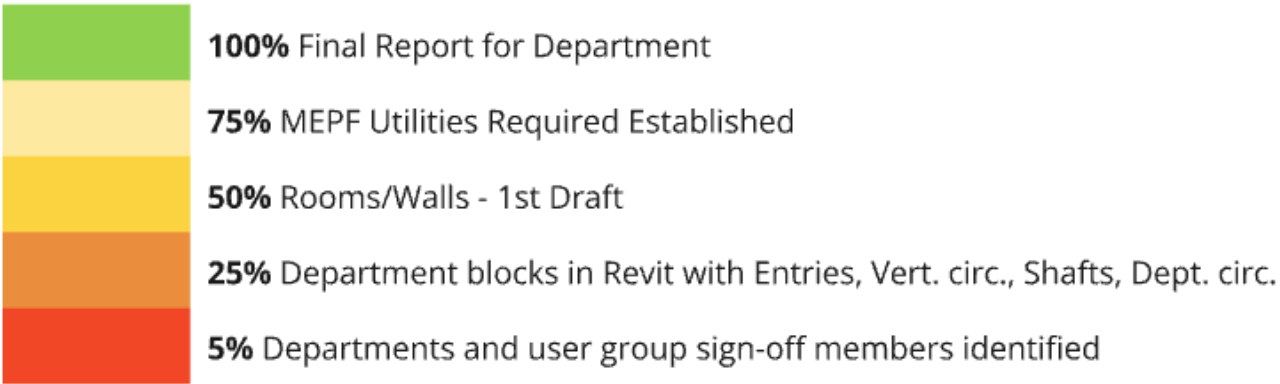


Incremental Release of Design Information

OVERALL DESIGN SCHEDULE:



MAJOR DESIGN RELEASE INCREMENTS:



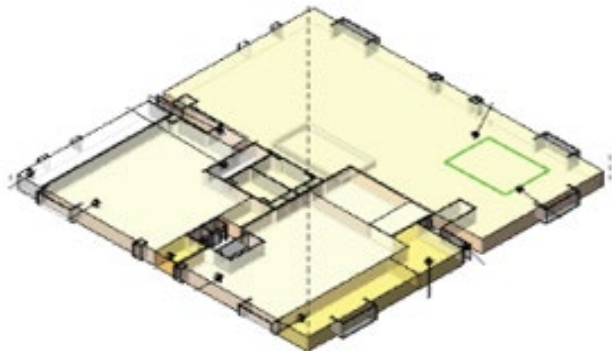
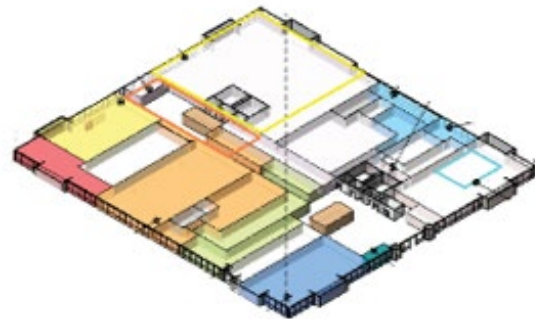
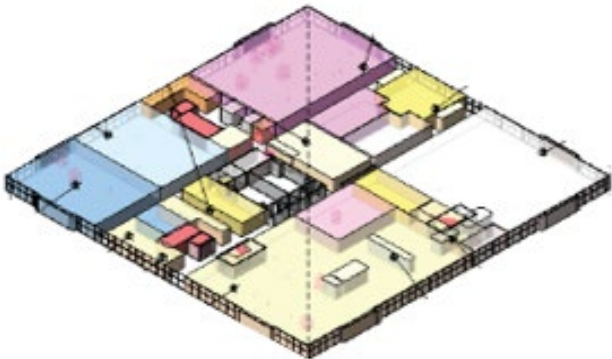
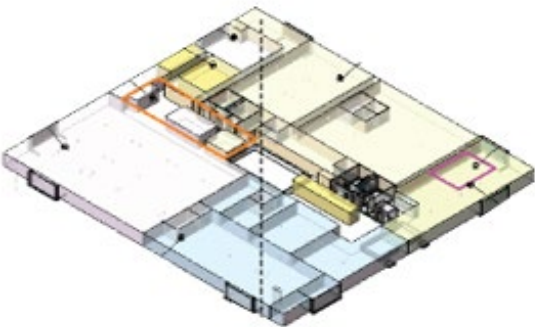
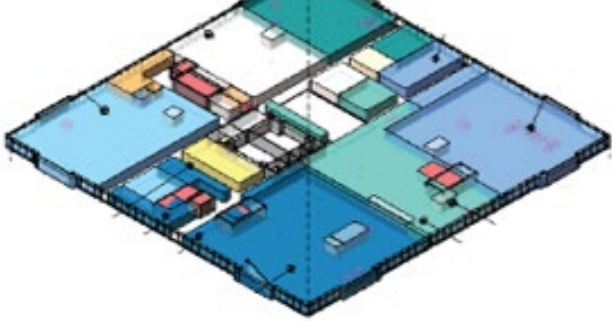
Construction Informing Design

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Top Level Typ. Clinic Pod

Typ. Common Space

Typ. OR w/ Support Spaces

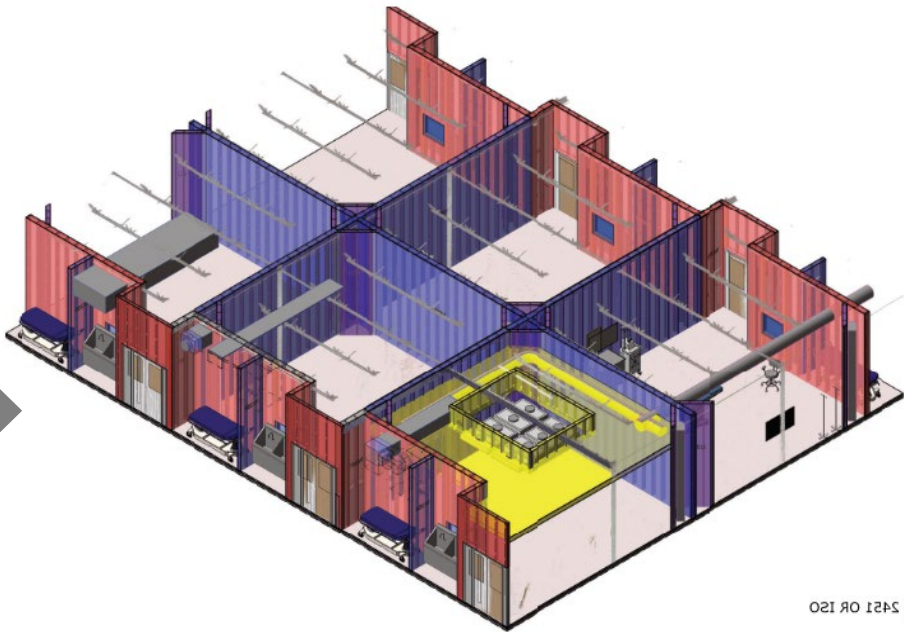
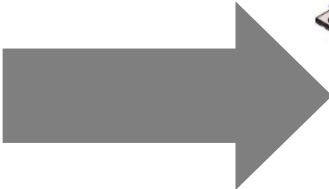


Building 2441

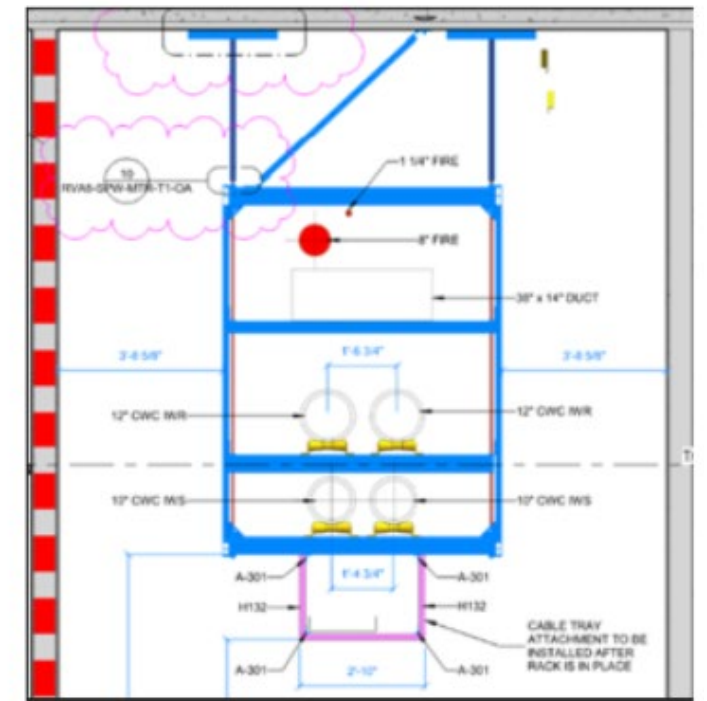
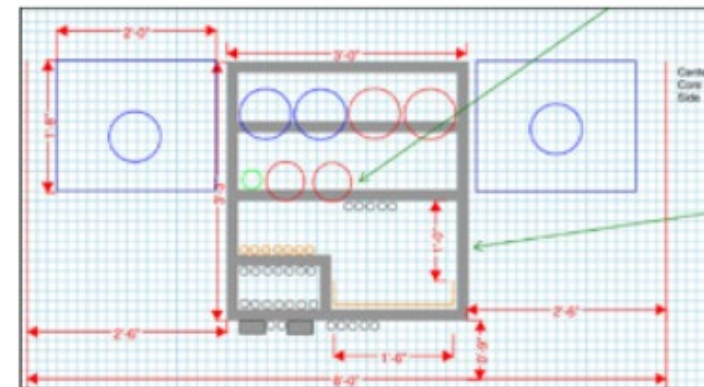
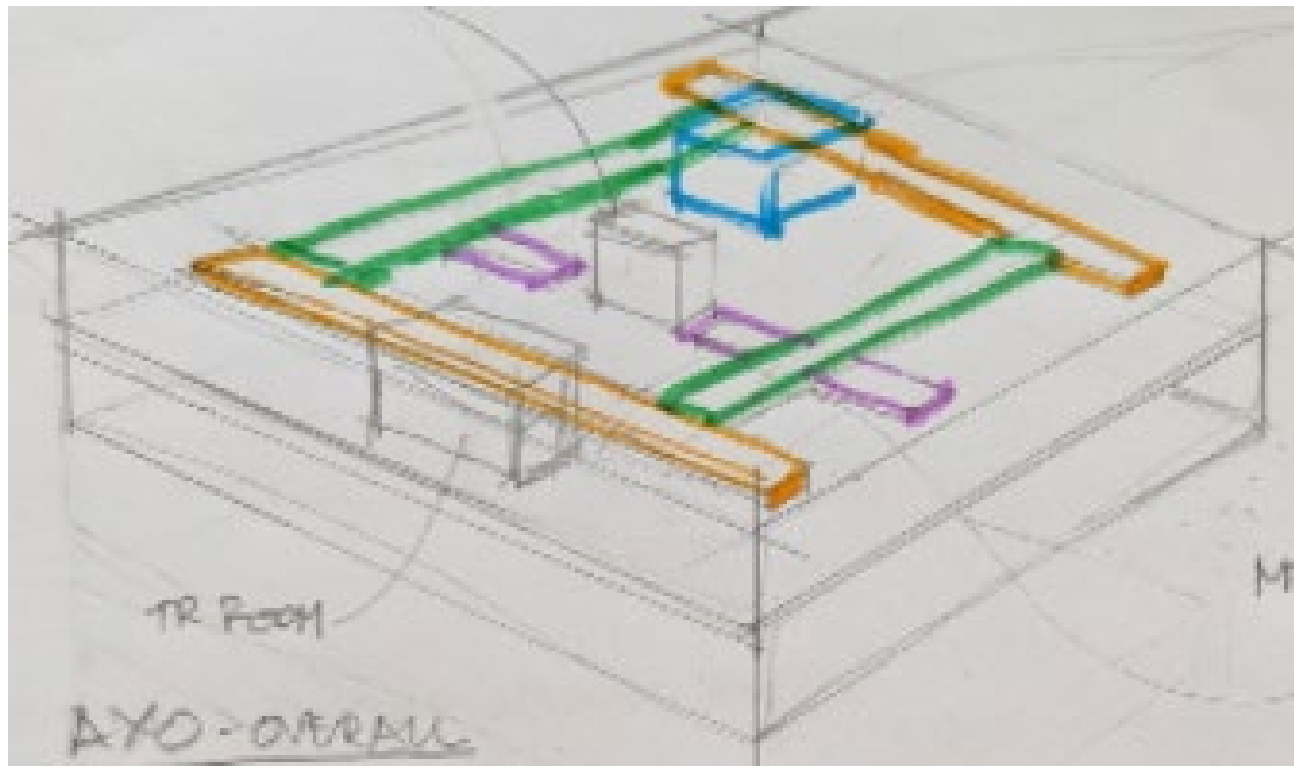
Building 2451



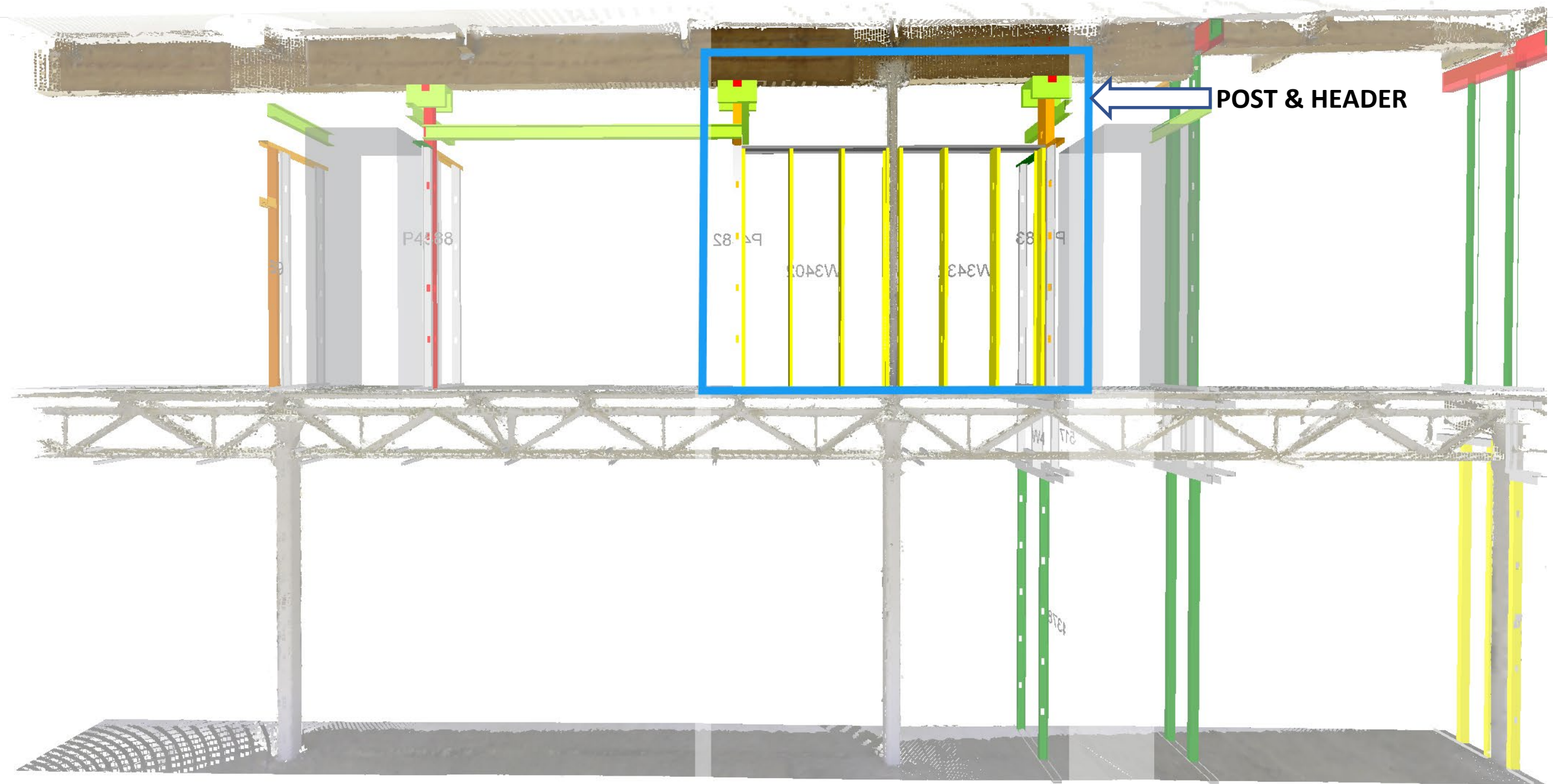
Typ. OR w/ Support Spaces



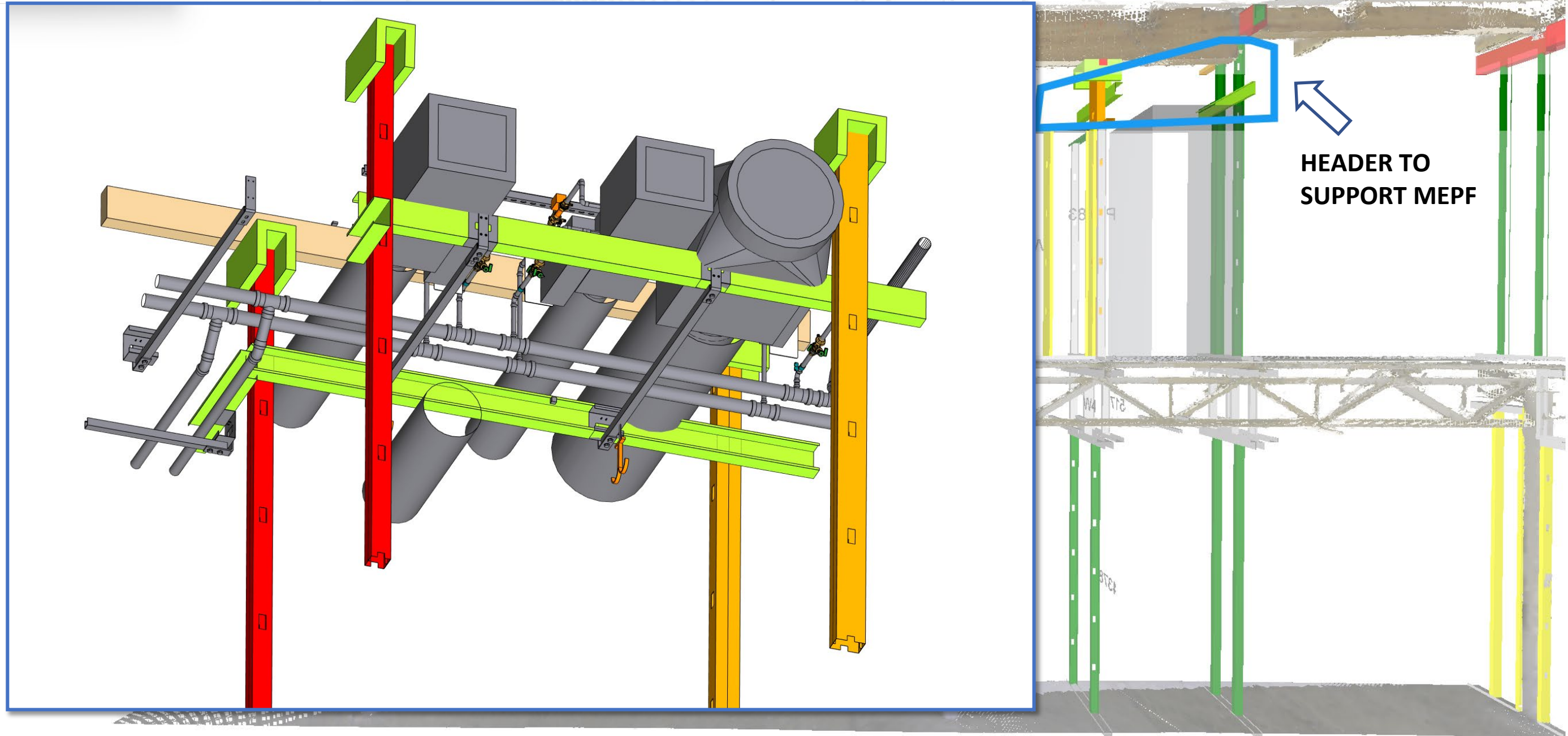
Failing Fast w/ Rapid Iteration



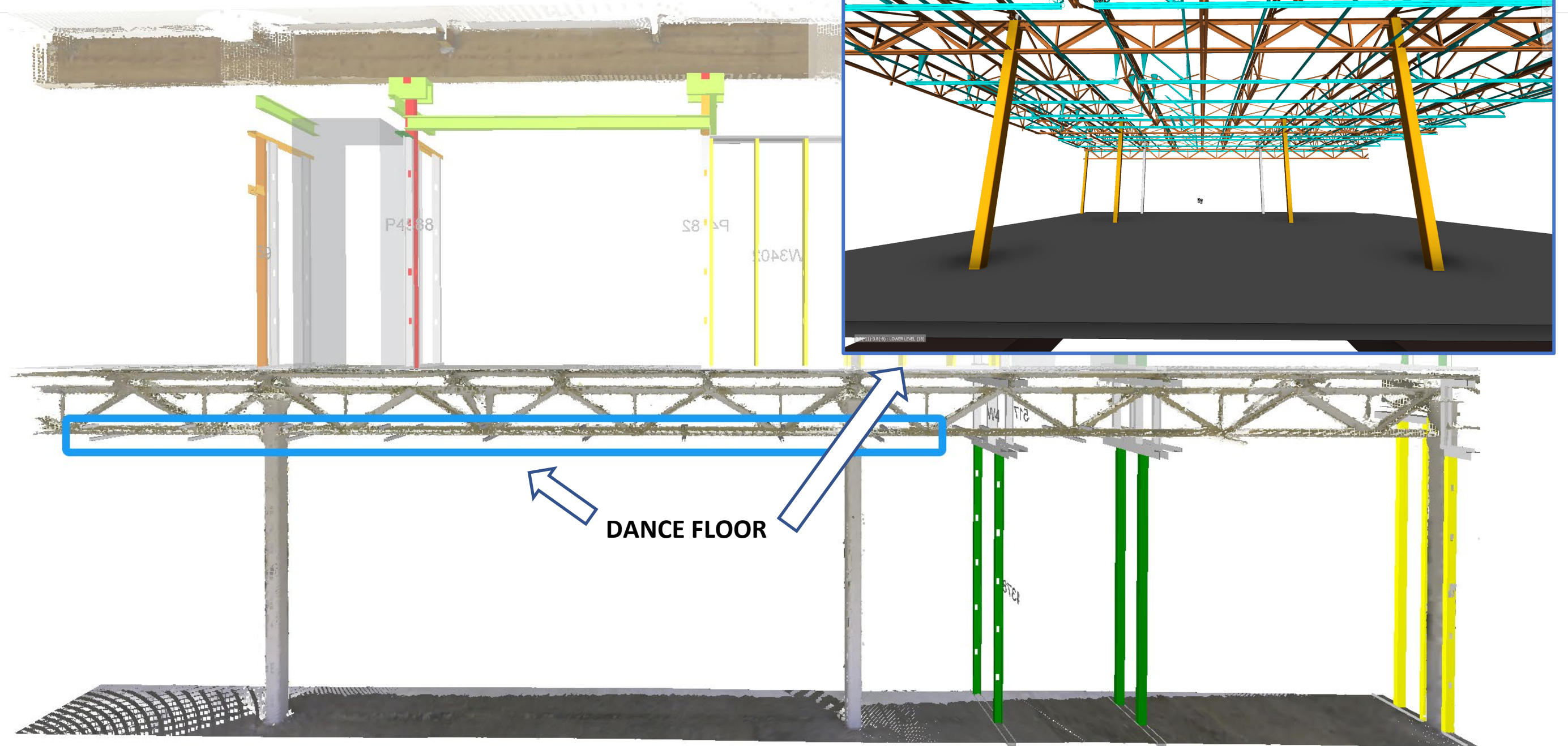
Post & Header – Solution



MEP Overhead Racks – Solution



Unistrut Dance Floor – Solution

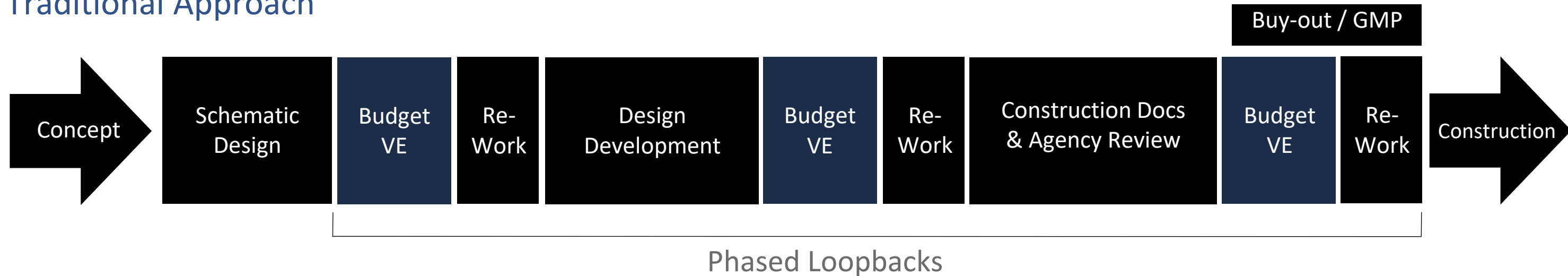


Pull Planning in Design



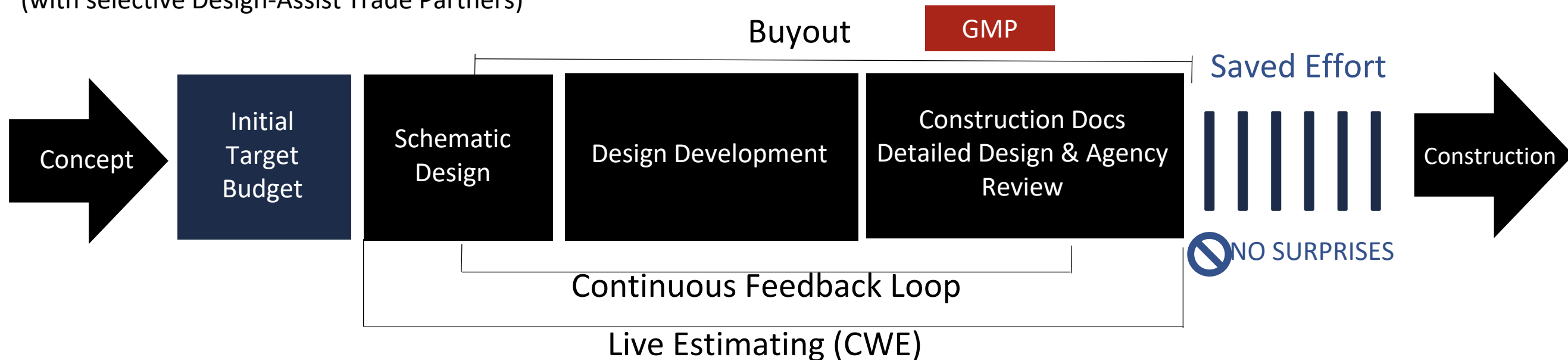
IFOA/Target Value Design/Estimating

Traditional Approach



IFOA/ Target Value Design Approach

(with selective Design-Assist Trade Partners)



A high-angle, aerial photograph of a surfer riding a massive, curling blue wave. The surfer is a small figure in the center, wearing a dark wetsuit and holding a rope. A surfboard is seen flying through the air in the upper left corner, having just left the surfer. The wave's crest is a large, white, foamy wall of water. The sky is a clear, pale blue.

Sometimes it's **overwhelming**



A high-angle, action shot of a surfer riding a massive, curling blue wave. The surfer is positioned near the base of the wave's face, riding a bright yellow-green surfboard. The wave is a deep, vibrant blue, and the crest is breaking into a large, billowing cloud of white foam. The background is a clear, deep blue sky.

We created **flow** to surf the Lean wave



