

25TH ANNUAL



25TH LCI CONGRESS
OCTOBER 24-27, 2023

Changing Healthcare Project Delivery through Team Culture, Commitment, and KOPs

Makayla Oei, M3
Angela Bowman, The Boldt Company
Chris Burun, Sutter Health
Tracy Gordon, Boulder Associates

25 YEARS OF LEARNING: SUPERCHARGE YOUR LEAN JOURNEY IN THE MOTOR CITY

October 25, 2023

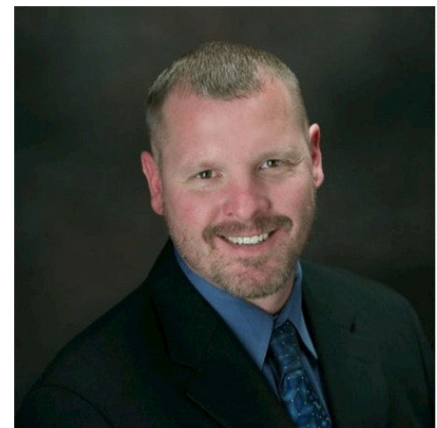
Introduction



Makayla Oei
Director of Preconstruction
M3 Components, LLC



Angela Bowman
Senior Project Manager
The Boldt Company



Chris Burun
Regional Manager, Project Delivery
Sutter Health



Tracy Gordon, AIA
Principal
Boulder Associates

SIX TENETS OF LEAN CONSTRUCTION

- 1 Respect for People
- 2 Optimize the Whole
- 3 Generate Value
- 4 Eliminate Waste
- 5 Focus on Flow
- 6 Continuous Improvement



The Road Traveled



Continuous Improvement

- Strategic Partnership
- Strategic R&D
- Plan, Do, Check, Act

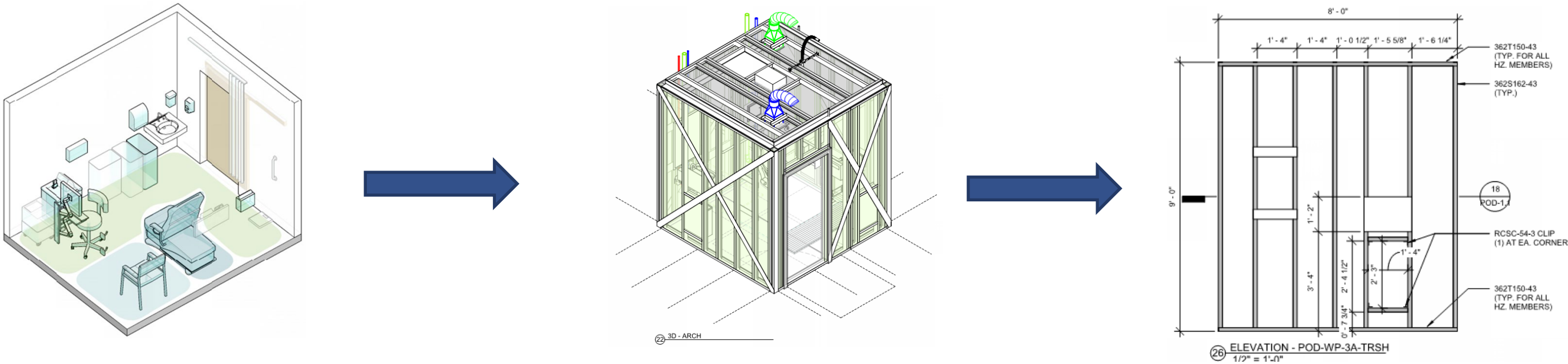


PLAN

- **Established team**
- **Mission**
 - Collaborate
 - Turn Standards into library of components
 - Improve process – better, faster, less cost
- **Long Term Goals**
 - 25% cost savings by 2025
 - 25% time savings from Program approval and 1st patient date
- **Conditions of Satisfaction**
 - Process Improvement – planning and construction
 - Create Kit-of-Parts & Pods – catalogue of components
- **Determine Metrics**
- **Expectations for all parties**

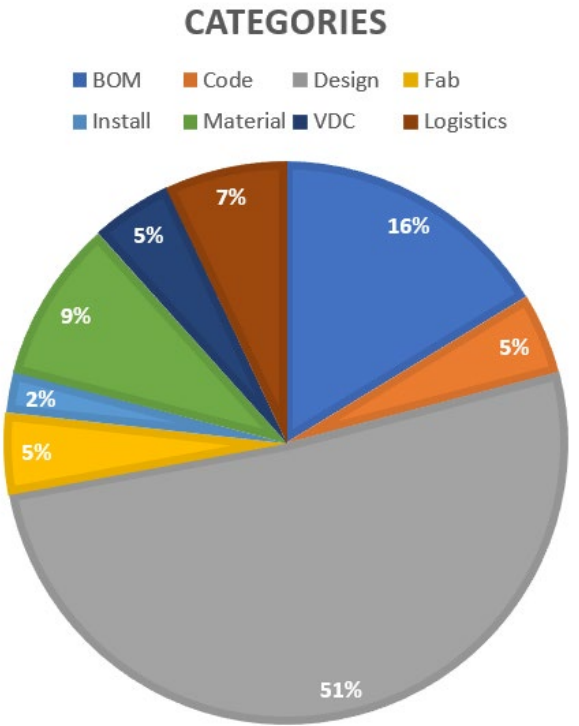


DO



CHECK

- **Quality Evaluation**
 - 43 Issue & Opportunity Entries
- **Speed to Market Evaluation**
 - Pod 16% Faster than KOP
 - KOP 35% Faster than Stick
- **Reusable Components Evaluation**
 - 2 M-Pods
 - 15 M-Walls



KOP DELIVERY METHOD		
MANUFACTURING & INSTALLATION DURATIONS		
	EXAM ROOM	PATIENT/STAFF TOILET
MANUFACTURING TIME	2.9 days	1.9 days
INSTALL/ASSEMBLY TIME	8.3 days	7.9 days
TOTAL MAN DAYS	11.2 days	9.8 days

VOLUMETRIC POD DELIVERY METHOD		
MANUFACTURING & INSTALLATION DURATIONS		
	EXAM ROOM	PATIENT/STAFF TOILET
MANUFACTURING TIME	8.9 days	7.4 days
INSTALL/ASSEMBLY TIME	.6 days	.6 days
TOTAL MAN DAYS	9.5 days	8 days



ACT - FOLSOM CARE COMPLEX AT BROADSTONE CROSSING PHASE II

- PROJECT STATS

- 3-story
- 106,696 SF
- Primary care clinics, specialty care clinics, urgent care, diagnostic imaging, nuclear medicine, clinical lab, infusion clinic and pharmacy, an ambulatory surgery center, radiation oncology with a linear accelerator vault and an outdoor enclosure for a mobile imaging trailer

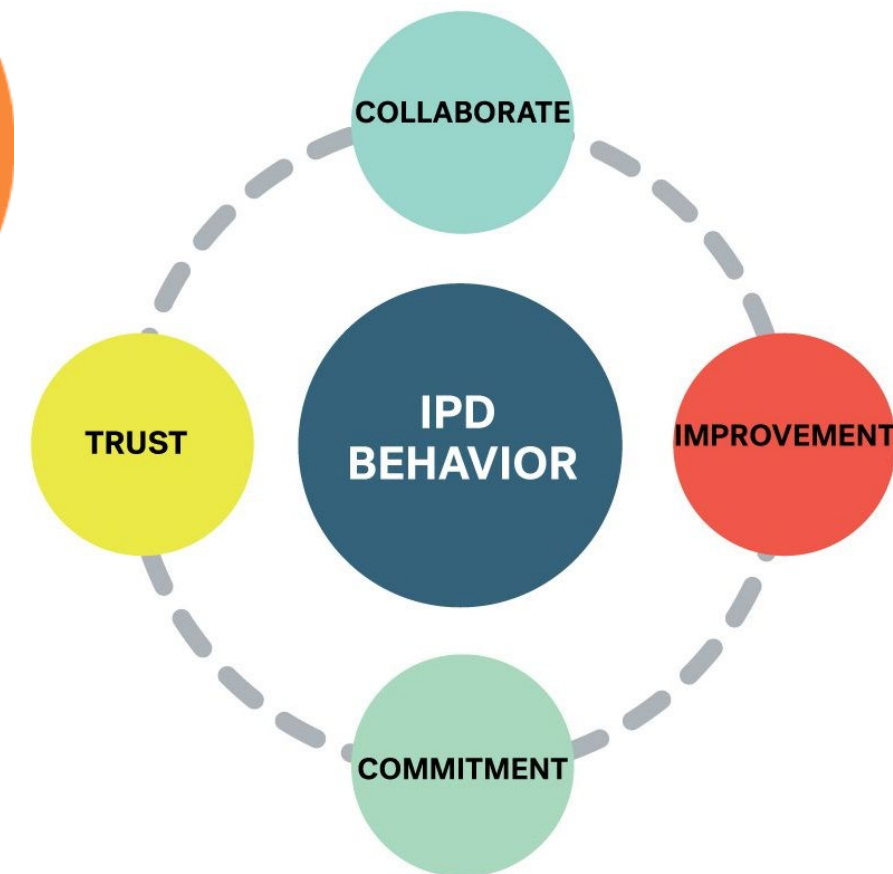


ESTABLISHING PROJECT GOALS & CONDITIONS OF SATISFACTION



CONTRACT STYLE

- IFOA – Binds the project owner, architect and primary contractor into a three-party agreement—in a single contract
 - Sutter + Boldt + Boulder Associates
- RISK REWARD PARTNERS
 - M3 Components
 - M3 MEP
 - More TBD



TEAM GOALS

1. PROJECT SCOPE
2. PROJECT DURATION
3. PROJECT COST
4. PREFABRICATION
 1. Improve Cost/Schedule by 10%
 2. 90% of MEP & Framing
 3. Utilize Files from R&D
 4. Commitment to Continuous Improvement
 5. Clash-free Model
5. CLINIC LAYOUT
6. ACCESS



CONDITIONS OF SATISFACTION

1. PROJECT SCOPE
2. PROJECT DURATION
3. EMP COST
4. PROJECT APPEARANCE
5. PERMITTING
6. COMMITMENTS –
 - a. Last Planner
 - b. PRCO & PPCO
7. CULTURE
 - a. Onboarding Process
 - b. Learning Moments
 - c. 5Dynamics
8. PROJECT QUALITY INDICATORS



TEAM CULTURE



What Culture are we after?

- Collaborative
 - Common Goals
 - Continuous Improvement & Celebrate Wins
 - Choosing Words Wisely
- FUN
 - Ice Breakers
 - Uploading Dog Photos
 - Happy Hours
 - Snacks



Focusing on more than Budget and Scope

- Conditions of Satisfaction & Goals
 - Culture
 - Prefabrication
 - WWP & PPC goals
- Incomplete information, often
- Banned words
- + / Delta every meeting

Banned Words / Phases

Likely
Should
Usually
Typically
Normally
I Think So
I'm 99% Sure
The "Intent" Is
I'm Pretty Sure
The As-Builts Show
I'm Almost Positive
In My 25 Years of Experience
If This Weren't an OSHPD Project
It's Standard
That's the way it has always been done
Hopefully

TEAM RETROSPECTIVE BELOW

Plus: Got through a lot today
Plus: Engaged
Plus: Great Conversations
Plus: Reserved parking spaces
Plus: In person meeting
Plus: Food!
Plus: Agenda Planning in Meeting
Plus: Comfort Level/Safe space to talk
Plus: A5.2 Progress!
Plus: Planning -Removing Delay

Delta: Missing team members
Delta: Carpet Smell
Delta: Virtual is not the same
Delta:
Delta:
Delta:

Countermeasure: Better planning for meeting (in person vs virtual)
Countermeasure: New flooring
Countermeasure:
Countermeasure:



Team Groundwork

- 20 people = 20 different personalities
- 5 Dynamics
 - Who do we have in the room?
 - Explore
 - Excite
 - Examine
 - Execute
- Understand one another – who is bringing what to the table, leverage strengths
- Reel each other back-in
- Elevated awareness



Team Leadership Reports

Learn how to adjust your natural leadership style to meet your team's needs.



1:1 Leadership Guides

Select a team member to understand how you can best lead them in any scenario.



Team Dynamics Guide

Predict how a team will perform throughout a project, identify their potential productivity risks and learn what inspires them at every project stage.



Manage Multiple Teams

Multiple team interfaces allow you to add and manage multiple teams within your organization or across multiple organizations in one place.



Work and Learning Preferences

Understand your natural work style and those of your teammates so that you can collaborate with ease.

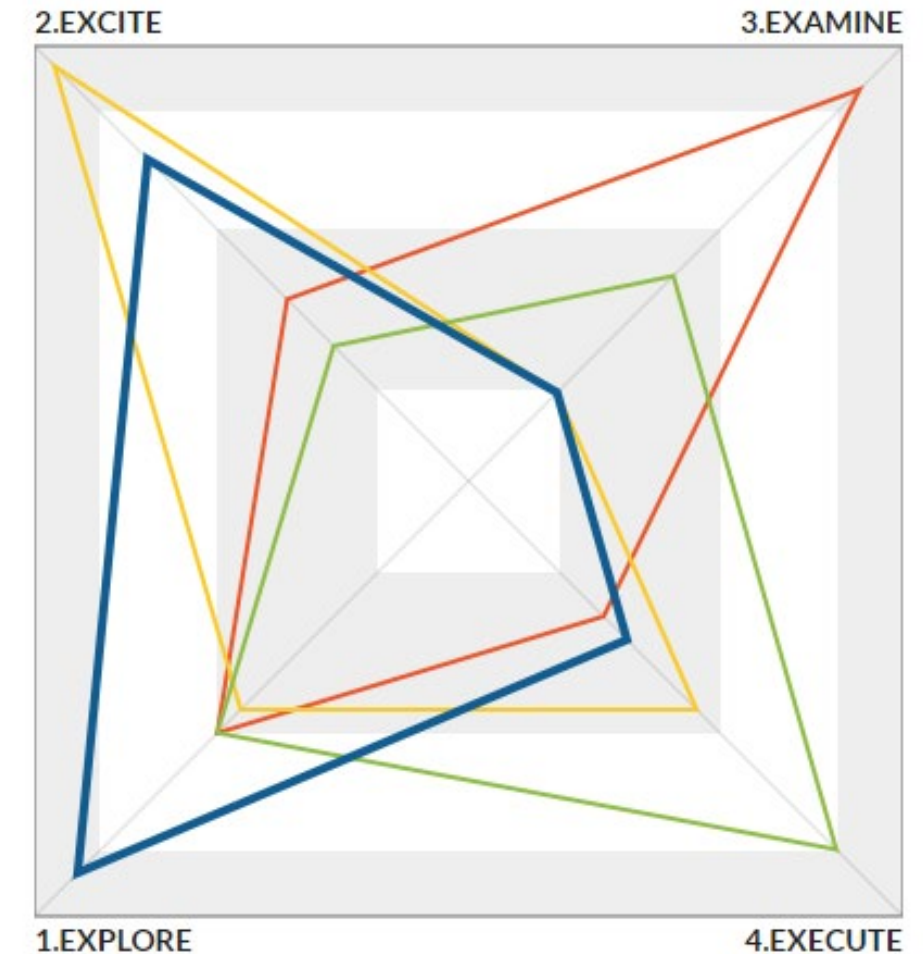
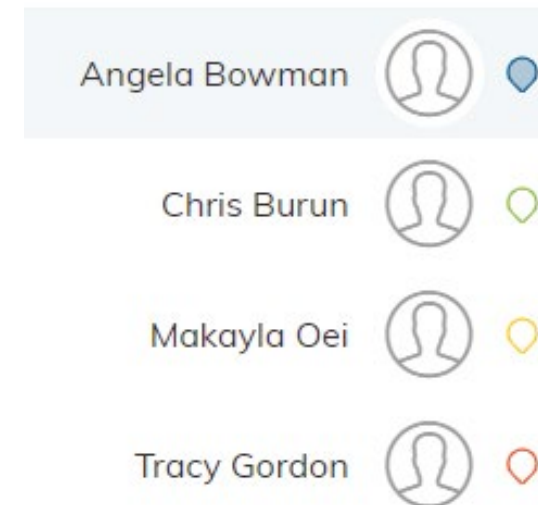


Leadership Style Report



Pinpoint your areas of strength and potential pitfalls based on your natural work style.

5 Dynamics – How do we work together

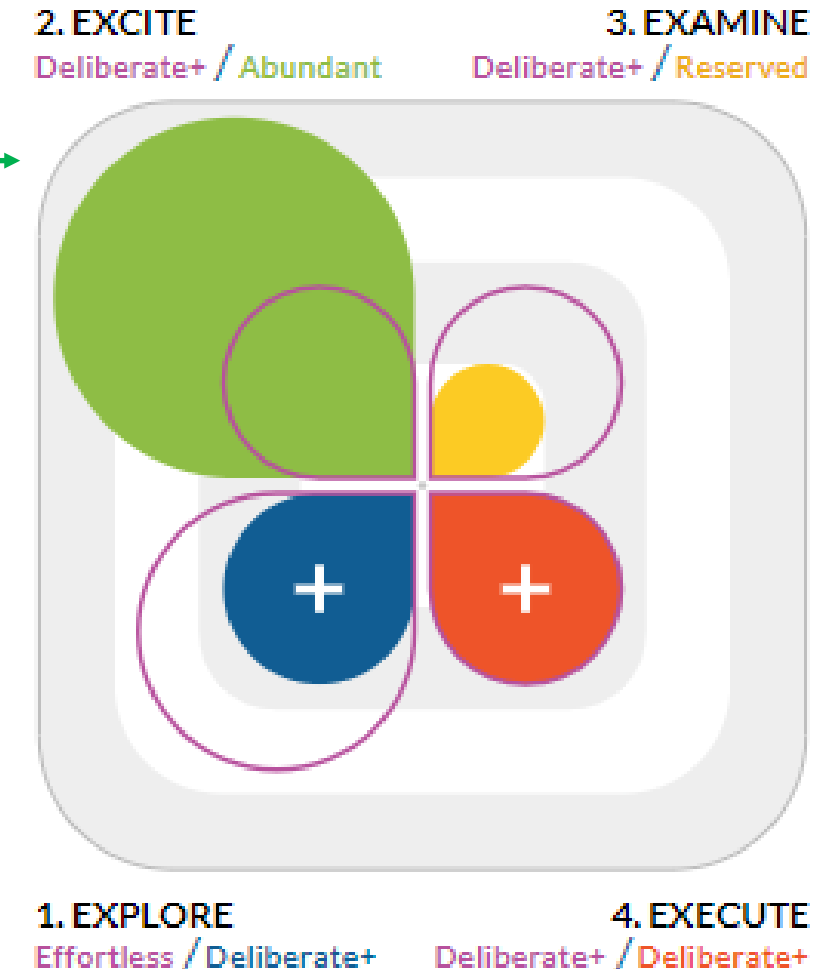
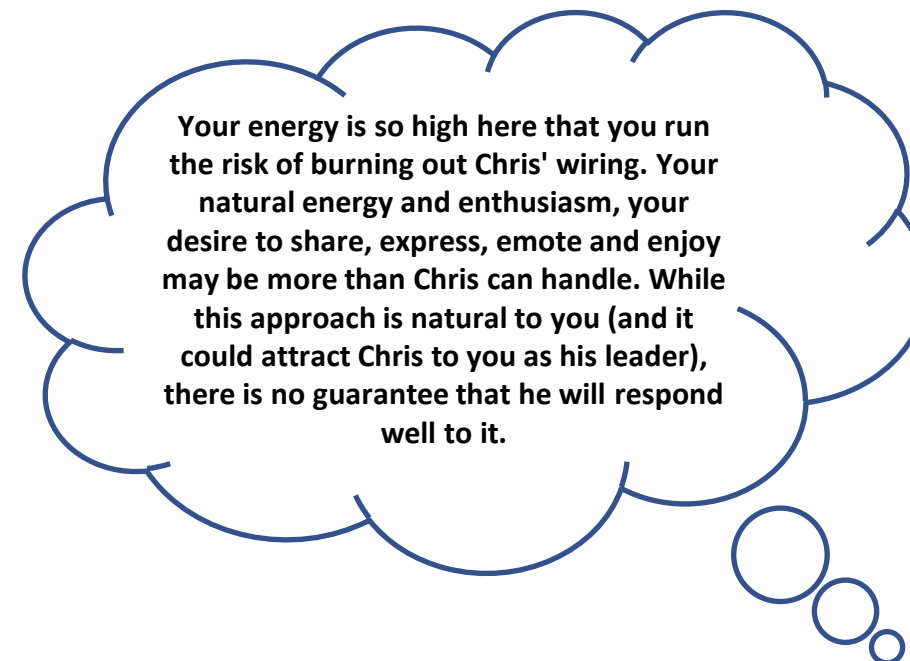
- Working Together & Finding Synergy
- Spider Diagram
 - Are we out of balance?



5 Dynamics – Leading the team

- Overview
- Where will be struggle? 
- Where will we excel? 
- Where could there be friction?

- 1:1 Leadership



INDUSTRIALIZED CONSTRUCTION & PREFABRICATION



VALIDATION DELIVERABLE FOR I.C. & PREFABRICATION



VALIDATION STUDY
Folsom Care Complex at Broadstone Crossing Phase II

4.3 Cost Saving/Innovation Tracking

INDUSTRUALIZED CONSTRUCTION AND PREFABRICATION

M3 PREFABRICATION AND MANUFATURING

Moving construction off-site to a controlled environment promotes safer working conditions, increased efficiency, and produces a higher quality product. M3’s manufacturing team occupies a 24K SF facility in Sacramento, CA. The facility houses five trades under one roof – HVAC, mechanical piping, plumbing, electrical, and light gauge steel (LGS) framing line. The team produces single and multi-trade kit-of-parts (KOP) for just-in-time delivery and final installation in the field. Kits are designed to integrate seamlessly into the existing construction process, allowing for a smooth transition from fabrication to installation.

APPLICATION OF MANUFACTURING, PREFABRICATION & TEAM SELECTION

This hand-selected project team launched a collaborative research and development initiative in late 2021 to compare a volumetric pod and kit-of-parts approach to build a standard clinic exam room and patient toilet room. Leveraging existing Sutter standard templates and industrialized construction, this team worked together to develop a method that would increase speed to market without sacrificing quality. The data collected by the team showed that a manufactured and heavy prefabricated approach drastically decreased on-site build durations. Due to the positive results of these efforts, this team was selected to utilize these means and methods on the Sutter Health Folsom Care Center project.



SINGLE TRADE ASSEMBLIES & PREFABRICATION


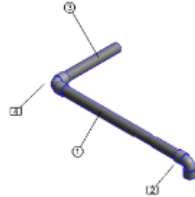

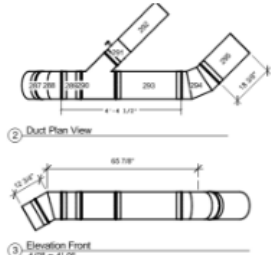






VALIDATION STUDY
Folsom Care Complex at Broadstone Crossing Phase II

SCOPE NARRATIVE

Prefabrication and manufacturing for this project will include, but will not be limited to the following:

SINGLE TRADE ASSEMBLIES & KITS

PLUMBING ASSEMBLIES	DUCT SPOOLS	ELECTRICAL KITS	HANGERS & SUPPORTS
<p>All plumbing pipes (domestic water, drain, waste, vent, rainwater leaders, overflow drain pipe) is complete modeled, detailed and fabricated into pre-determined sections. All horizontal pipe sections are placed on carts and sent to site with installation drawings for final installation. All vertical pipe/risers are sent within wall assemblies. Final connections between horizontal and vertical pipe are made in the field.</p>	<p>Ductwork is completely modeled, detailed, and fabricated by the M3 manufacturing facility. All rectangular and spiral ductwork is spooled into manageable sized sections allowing for easy material handling and final installation.</p>	<p>All cardboard and plastic material wrap are removed and recycled at our manufacturing facility or at the vendor's facility. Fixtures are analyzed for the proper amount and level of kitting. After kitting level is determined, material is loaded onto material carts with rolling wheels. These carts can be easily moved around the site as necessary. Everything is "off the floor". Each material cart is color coded and labeled with the floor map as to where they are to be delivered</p>	<p>All MEP hangers are pre-cut to exact lengths, labeled, and carted by area. Hanger maps accompany the hanger carts to site for installation.</p>
  <p>1 DCV-404-SW Iso View_Template</p>	  <p>2 Duct Plan View</p> <p>3 Elevation Front 1/2" = 1'-0"</p>	 	 


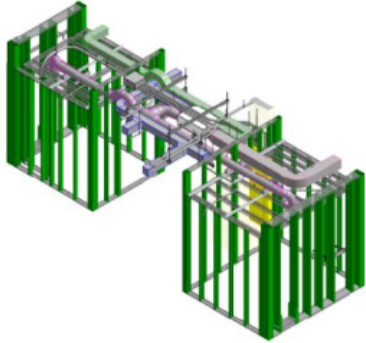
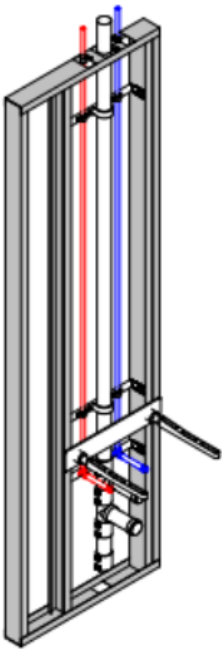
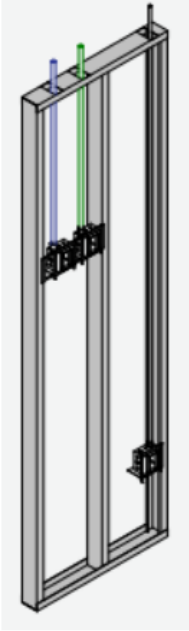
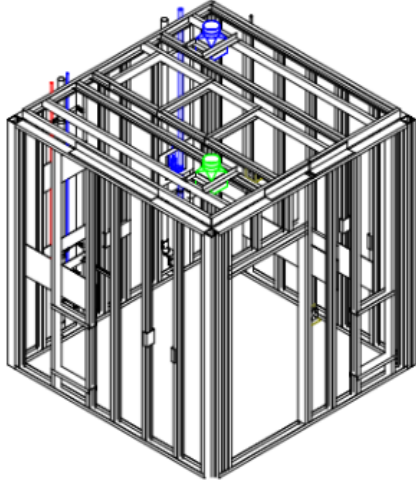


MULTI-TRADE ASSEMBLIES & PRODUCTS



VALIDATION STUDY
Folsom Care Complex at Broadstone Crossing Phase II

MULTI-TRADE ASSEMBLIES

MULTI-TRADE RACKS	M-WALLS	M-PODS
<p>An overhead assembly that contains mechanical, electrical, plumbing, and various other overhead utilities. These manufactured assemblies accelerate the on-site installation of overhead utilities. Each section includes necessary clearances and access to components within the assembly</p>	<p>M3C wall panels are precisely manufactured in a controlled factory environment. Each unit is manufactured utilizing custom roll formed light gauge steel studs and components that reduce build up to improve wall board installation and finish. M-walls include in-wall utilities such as backing, electrical, low voltage, and plumbing within the assembly.</p>	<p>M3C's structural self-supporting pods are precisely designed and manufactured in a controlled environment to provide the highest quality using code-complaint materials that meet current California building codes. Each unit is manufactured with fully furnished interiors to meet the client's specific needs and aesthetics.</p>
 	 	

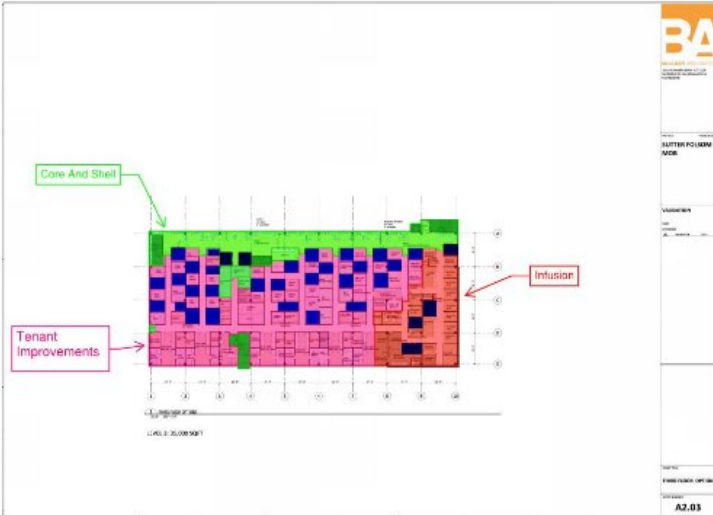
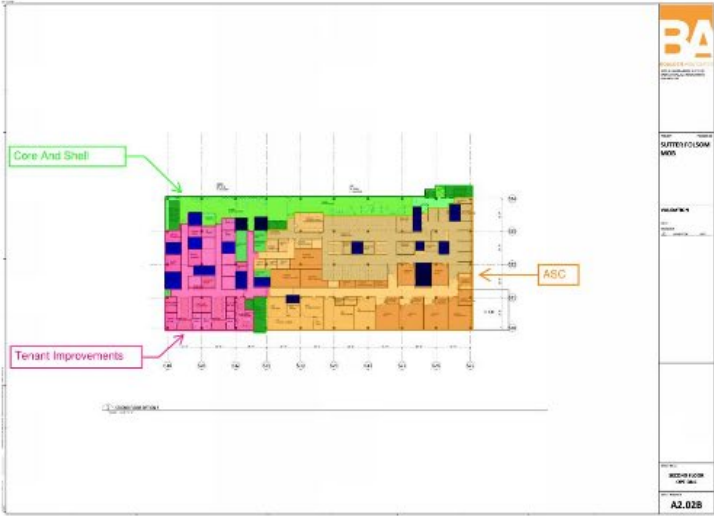
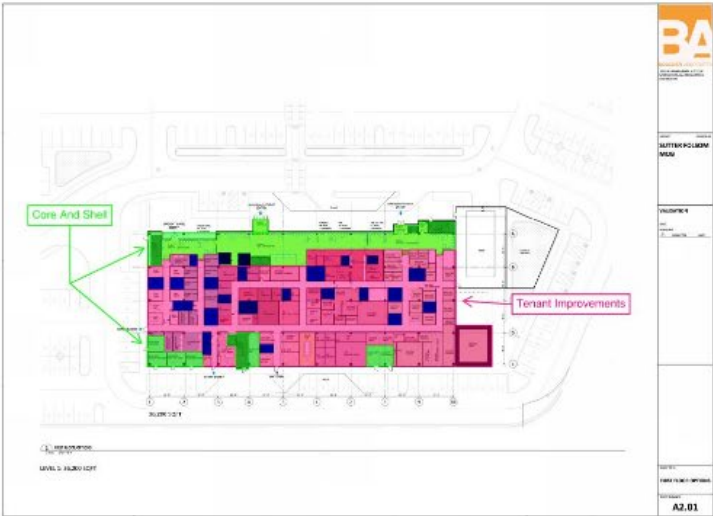


QUANTITY OF M-POD & M-PANELS



VALIDATION STUDY
Folsom Care Complex at Broadstone Crossing Phase II

M-Pod/M-Panel Floor Plan Takeoffs



	1ST FLOOR		2ND FLOOR		3RD FLOOR		TOTAL	
	M-PODS	M-WALLS	M-PODS	M-PANELS	M-PODS	M-PANELS	M-PODS	M-PANELS
CORE & SHELL	2	85	2	35	2	42	6	162
T.I.	24	2926	8	927	28	1976	60	5829
ASC	0	0	7	1687	0	0	7	1687
INFUSION	0	0	0	0	4	775	4	775
							77	8453



TRACKING

- Improve cost/schedule by 10%
 - Compare actual cost and install durations for this project vs. a project of similar program
 - 90% of the Mechanical, Electrical, Plumbing, Framing for the project to be delivered via a manufactured or prefabricated delivery method.
 - Utilization of the established Exam Room and Toilet Room product files,
 - A commitment to Continuous Improvement and transforming additional 2D templates into 3D constructable product files
 - BIM – utilize model for design coordination and shop fabrication (early transition to fabrication modeling at end of DD phase)
 - “No-clashes”



How can you apply this tomorrow?

- *Elevate collaboration*
- *Focus on behaviors*
- *Share common goals*
- *Build the team before you build the project*





25TH LCI CONGRESS
OCTOBER 24-27, 2023



In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.

Contact Us

Makayla Oei

Mark III Construction / M3 Components

moei@m3components.com

Chris Burun

Sutter Health

Christopher.burun@sutterhealth.org

Tracy Gordon

Boulder Associates

tgordon@boulderassociates.com

Angela Bowman

The Boldt Company

Angela.bowman@boldt.com



25TH LCI CONGRESS
OCTOBER 24-27, 2023

Thank you for attending this presentation. Enjoy the rest of the 25th Annual LCI Congress!