



# Offsite Wood Solutions for Schools

WOODWORKS AIA LEARNING LOUNGE

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.



# Course Description

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This session will provide a comprehensive overview of offsite construction applications for academic buildings and K-12 schools. Participants will learn how wood products such as cross-laminated timber (CLT) and glued-laminated timber (glulam) are reshaping how educational spaces are designed and constructed, along with how offsite construction lends to their advantages. The session will also address key considerations such as fire safety, structural performance, and code compliance. Real-world examples and implementation strategies will provide attendees with insights into how conventional wood framing and mass timber can support project goals related to sustainability, aesthetics, and occupant well-being in educational settings.

# Learning Objectives

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1. Identify the primary types of mass timber systems—such as cross-laminated timber (CLT) and glued-laminated timber (glulam)—and their structural applications in academic and K-12 school buildings.
2. Explain the key construction methods and sequencing strategies used in mass timber projects, including their impact on construction timelines, site logistics, and labor efficiency.
3. Evaluate the performance benefits of mass timber in educational environments, including fire resistance, acoustic performance, biophilic design qualities, and indoor environmental quality.
4. Assess how mass timber construction contributes to sustainability goals through reduced embodied carbon, renewable material use, and alignment with green building certifications and standards.

# The Power of *Biophilic Design*

- Biophilic design fosters a connection to nature.
- Natural light and exposed wood enhance students' cognitive function.
- Natural elements reduce stress and improve overall well-being.
- TimberQuest creates learning environments where practical thought and creativity flourish.





## IMPROVED LEARNING OUTCOMES

# The impact of biophilic learning spaces on student success



3.3x higher test score gain



14% improvement in short-term memory performance



7.2% more students tested at grade level



## STUDENT + TEACHER SATISFACTION

# The impact of biophilic learning spaces on student success



7.8% increase in teacher retention



5% reduction in absenteeism



Teacher attendance increased



Mood-boosting, comfortable,  
inviting, calming

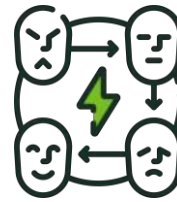


## STUDENT HEALTH + SAFETY

# The impact of biophilic learning spaces on student success



Being placed in nature-inspired indoor spaces **lowered stress response within 4 minutes.**



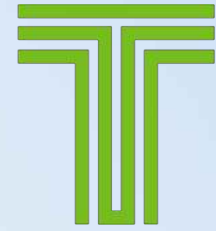
Reduction in aggressive behavior + bullying



Lower blood pressure



Feelings of **safety + security**



**TIMBERQUEST™**

**BUILT FAST.**  
*Designed to last.*

Prefabricated Mass Timber Education Buildings

**Matt Larson**  
VP of Product





# DESIGNED TO INSPIRE

## *a Better Future*

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We deliver environments where teams thrive, leveraging mass timber prefabrication to minimize construction impacts and optimize value for organizations.

# TimberQuest Benefits

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50% Faster and at a lower cost than traditional construction



75+ Year permanent building



DSA Pre-check approved options



PLA Compliant. Build with Union labor.



Limited disruption to your school and community



Sustainable – Energy efficient, low carbon, less waste, solar ready

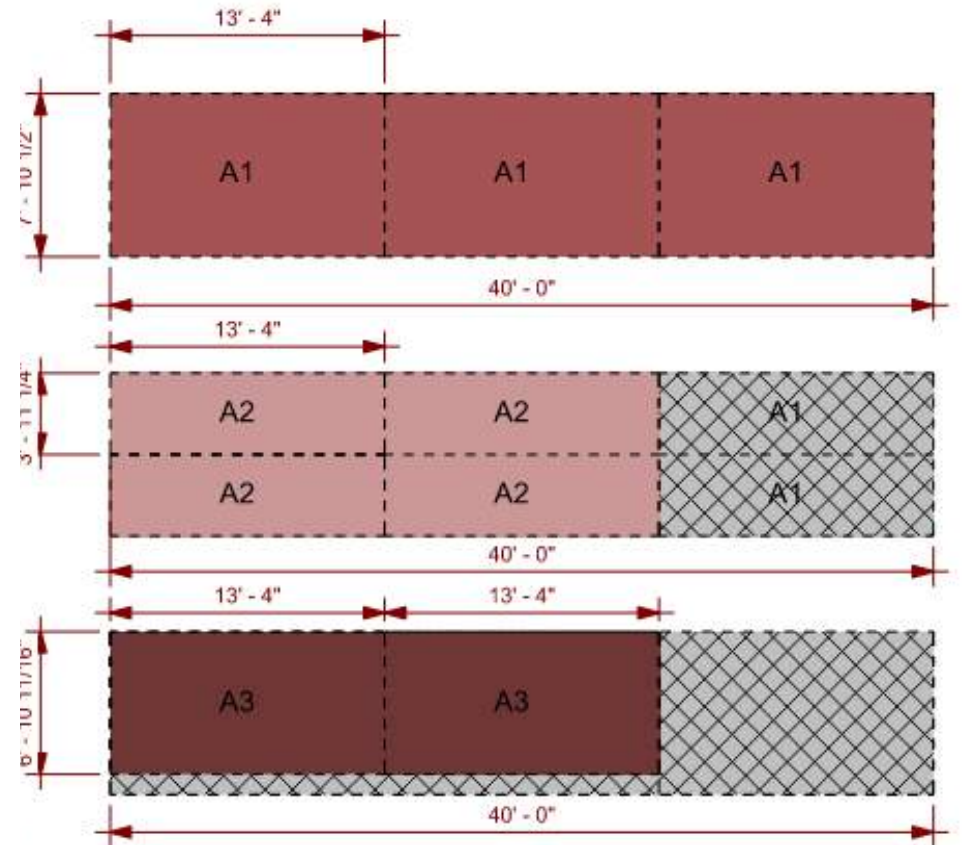


Flexible design

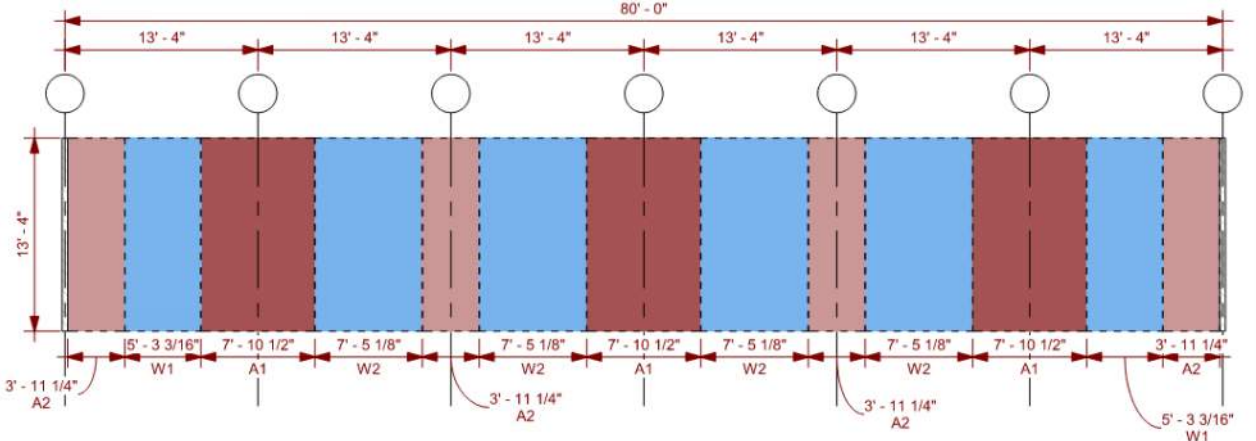


Benefits of biophilia | A superior learning environment

# Zero Waste: Exterior Shell Concept



# Zero Waste: Exterior Shell Concept

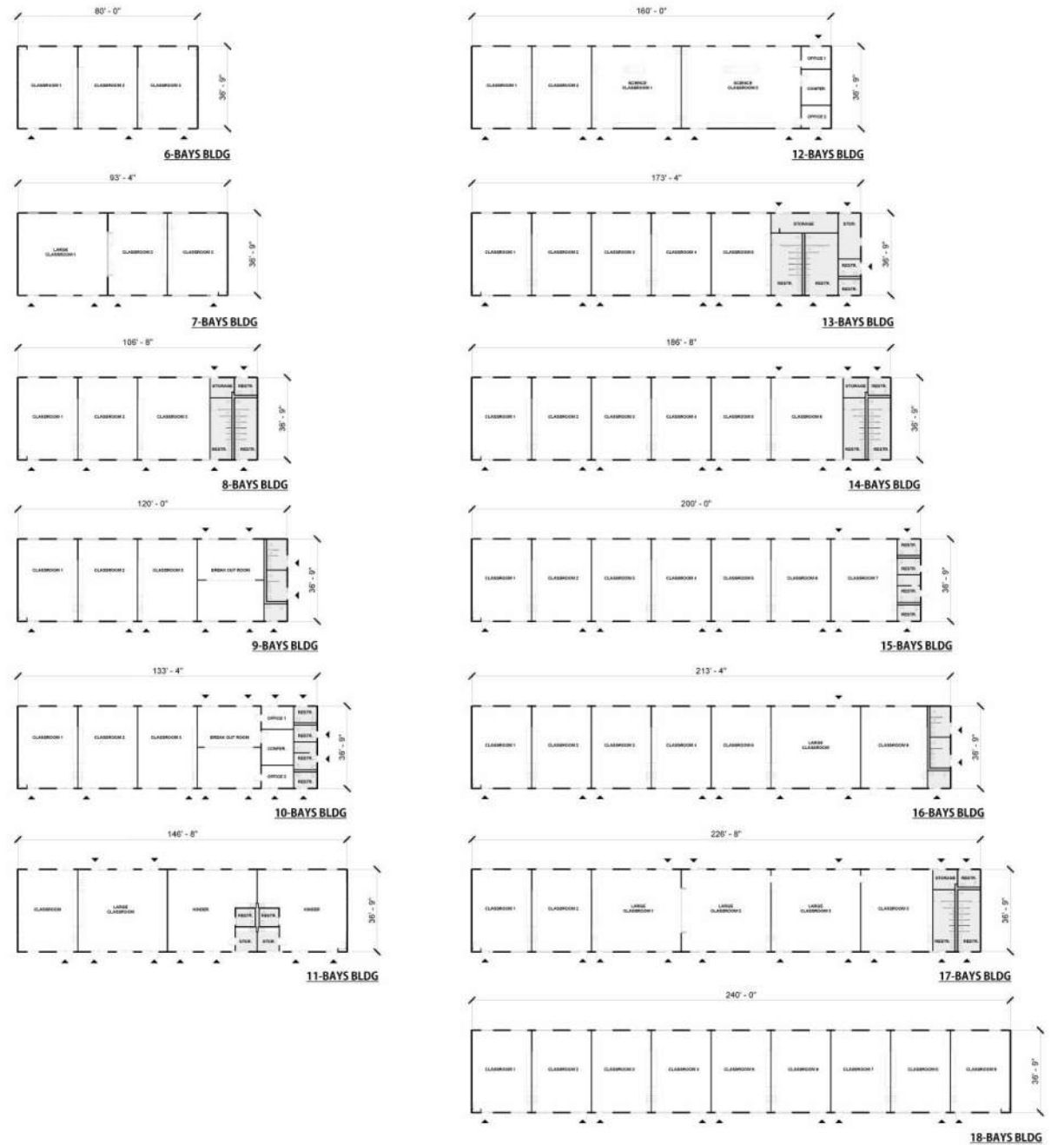


FRONT ELEVATION - EVEN BAYS

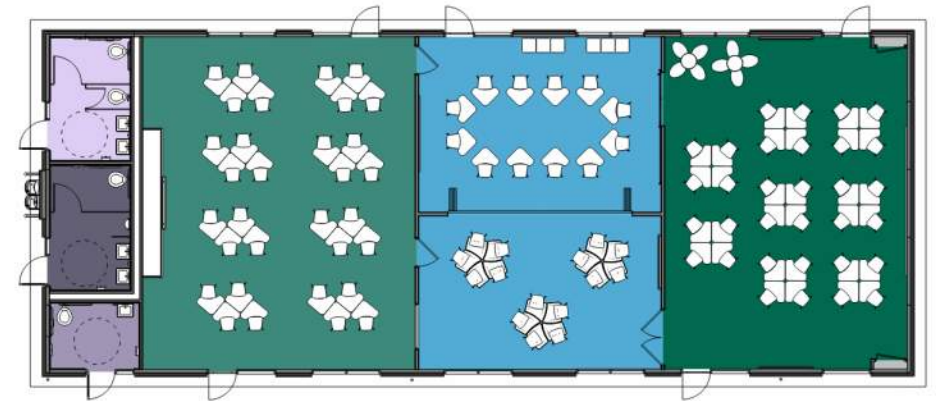
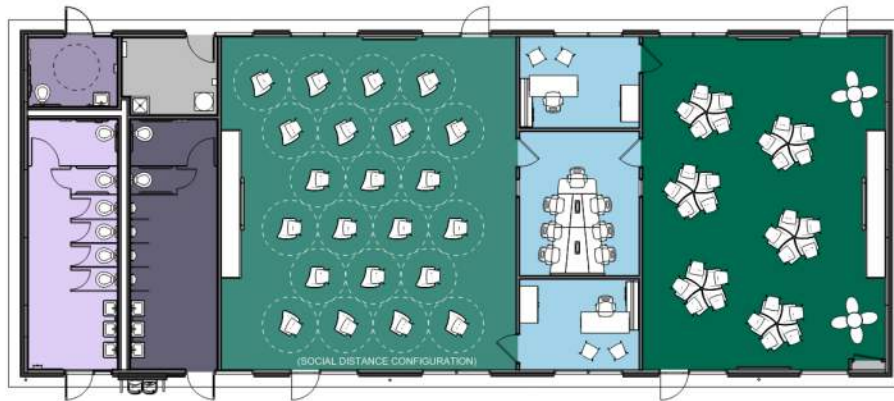
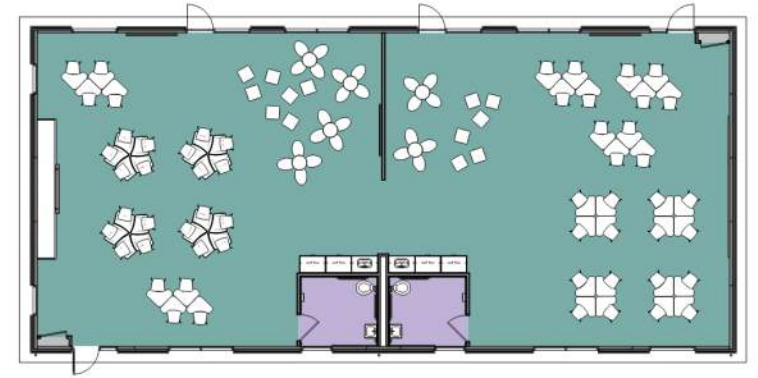
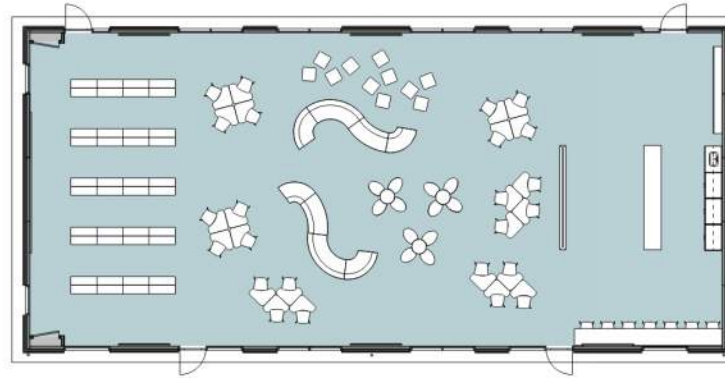
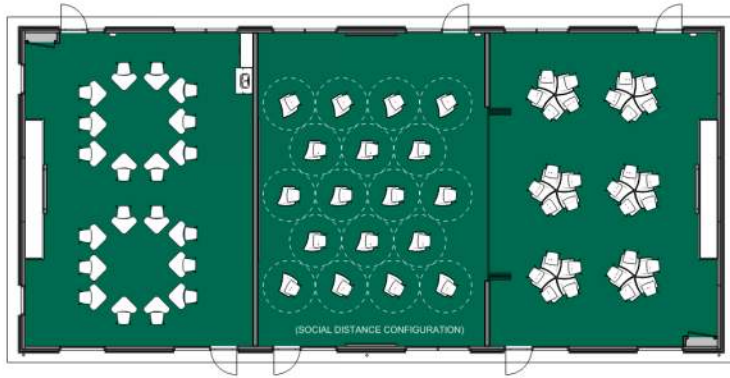


# 13 Building Sizes

- Classroom sizes in 490 s.f. increments
- Maximum shear wall spacing (8) bays / 4,000 s.f.



# CLASSROOM LAYOUT OPTIONS



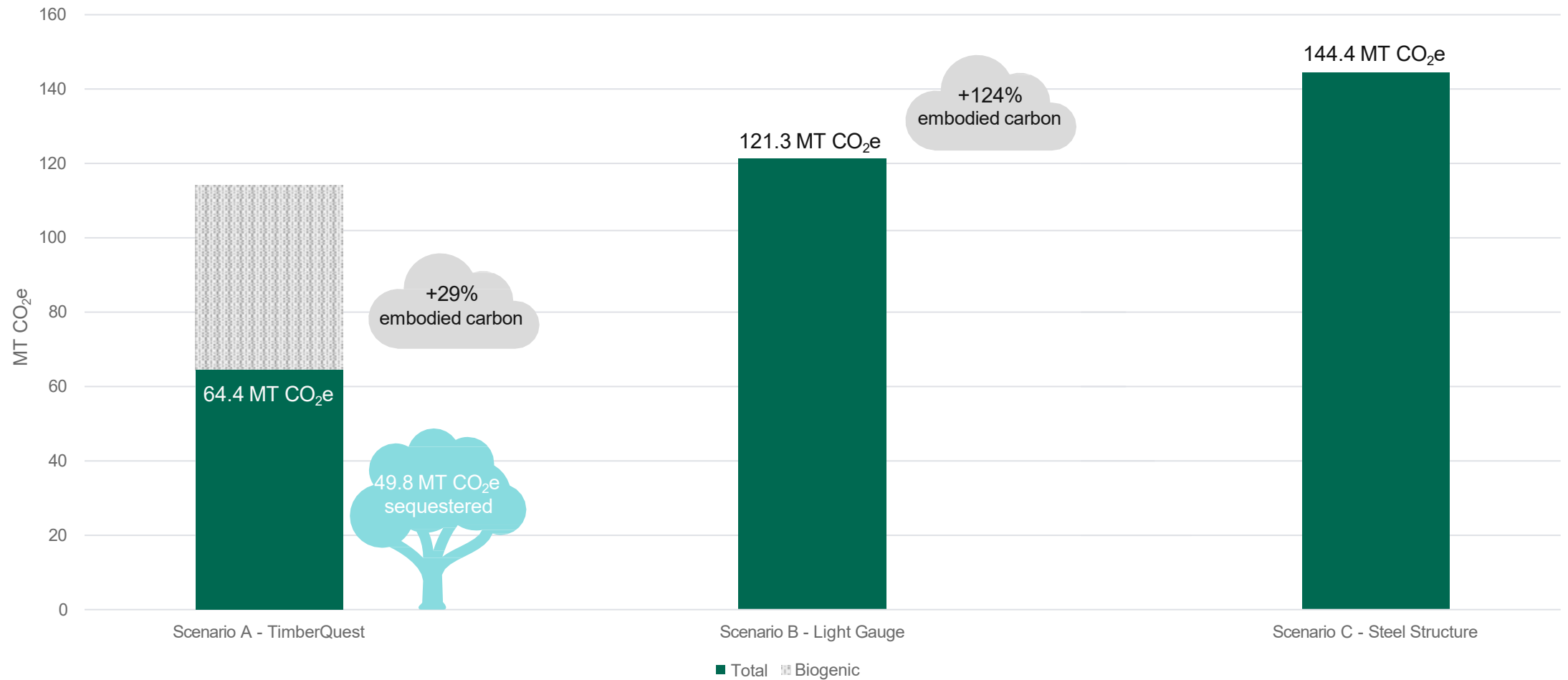


# Sustainable Attributes

- ✓ Exceeds Title 24 standards by 35-60%
- ✓ A minimum of 45% less carbon than steel & concrete
- ✓ Built with responsibly sourced wood
- ✓ Solar ready
- ✓ All electric
- ✓ CHPS Ready / LEED Silver + / LBC
- ✓ Reduced waste
- ✓ Biophilic design for user well-being

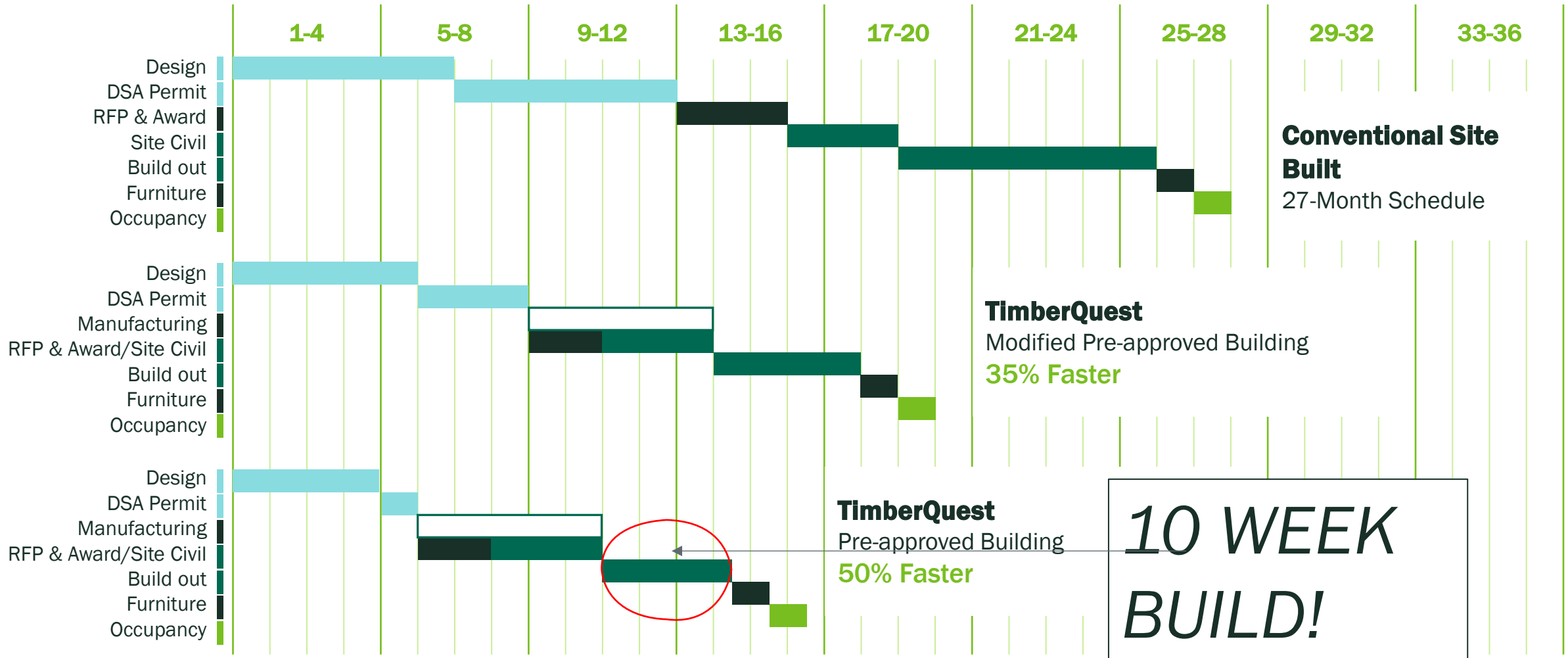
# Embodied Carbon Analysis

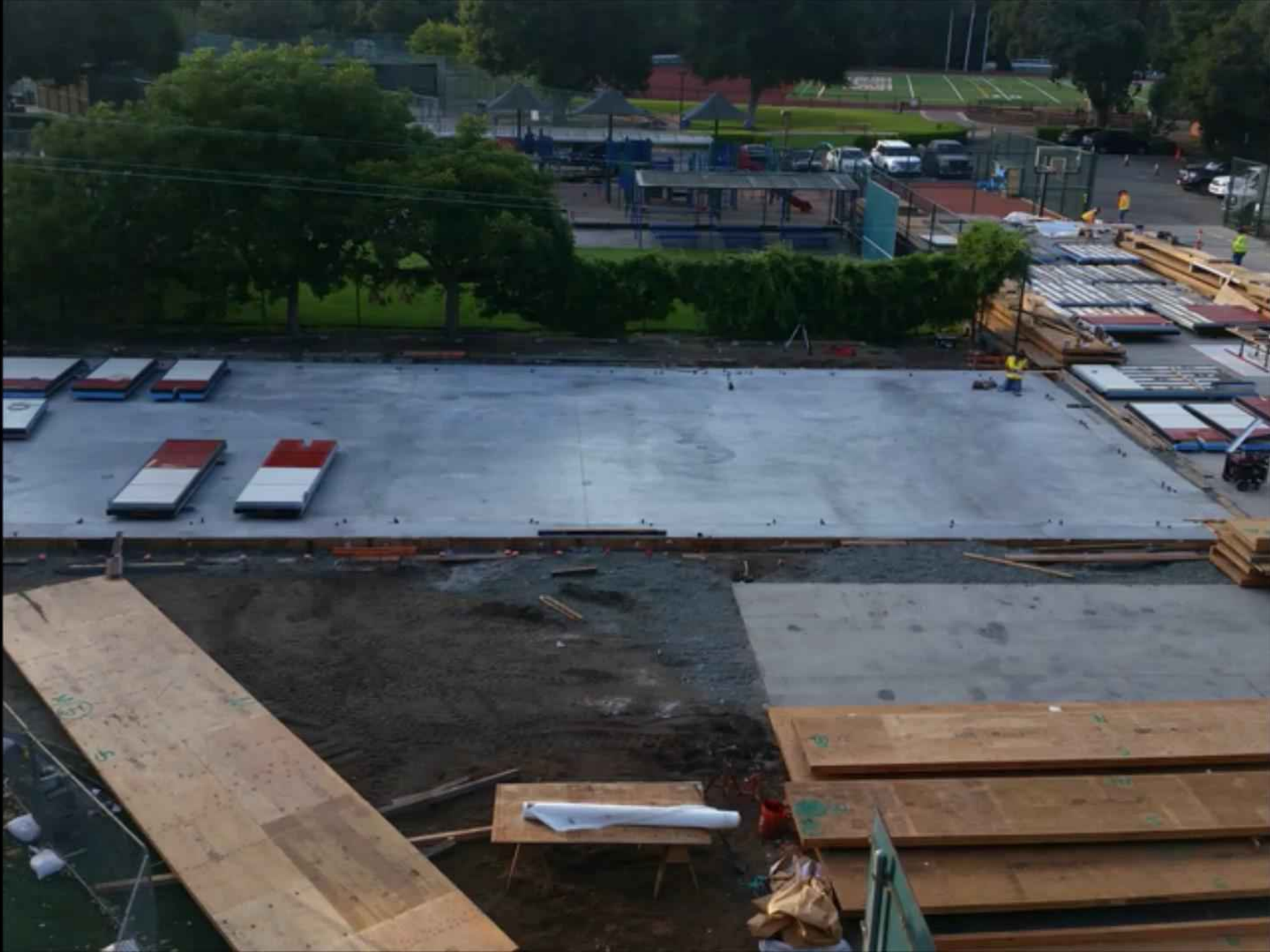
55% Reduction Compared to Steel Structures



# TimberQuest Schedule Benefits

## Building Design and Construction Schedule





# Shipped: Flat Pack



# Erect CLT Prefabricated Walls First



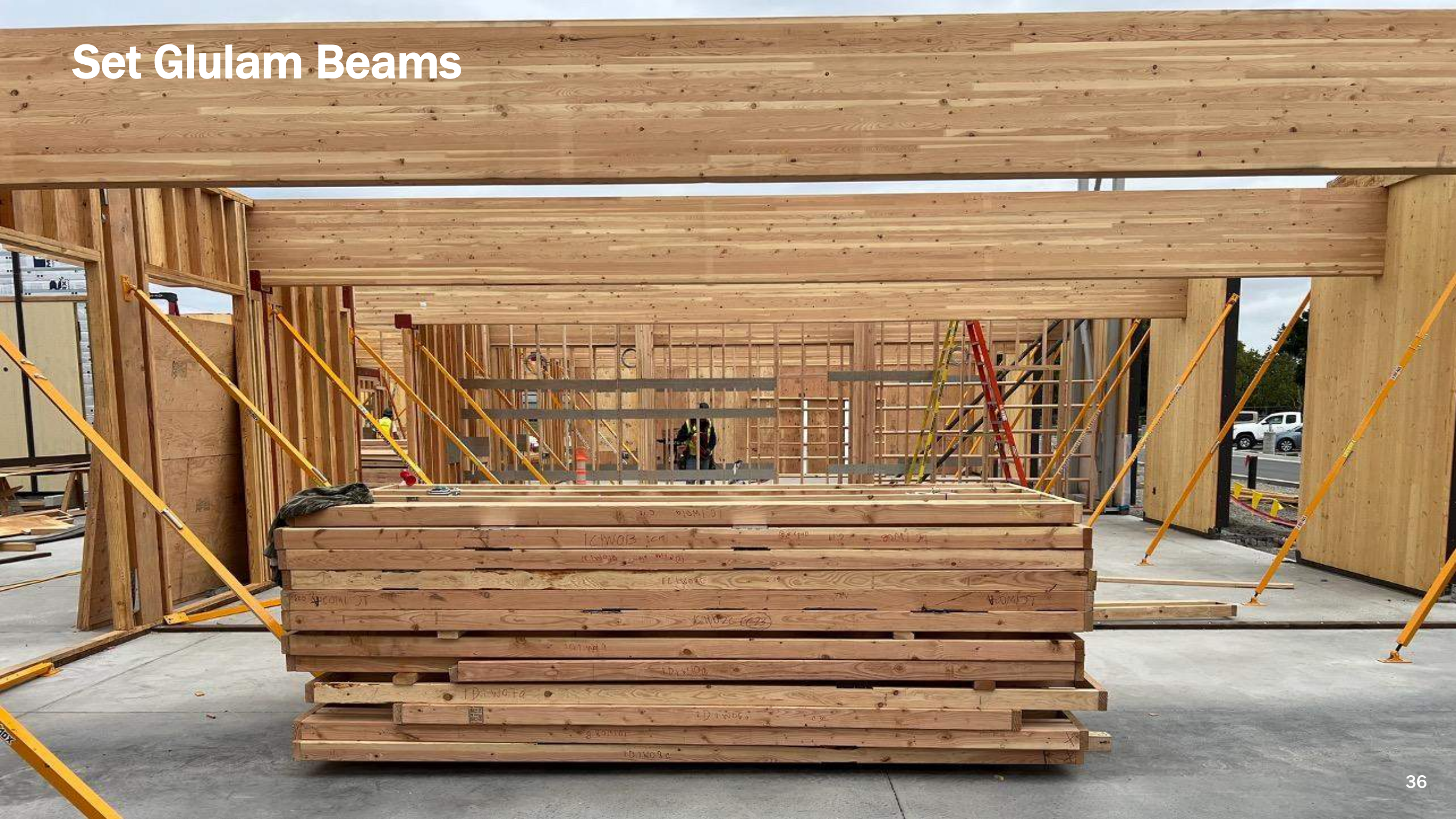




# Panel Install



# Set Glulam Beams



# Integrated MEP Raceways



# Bulkhead Connecting Walls to Ceiling



# Prefabricated Ductwork



# Prefabricated Storefront Inserted Between CLT Wall Panels



# Integrated CLT Overhangs



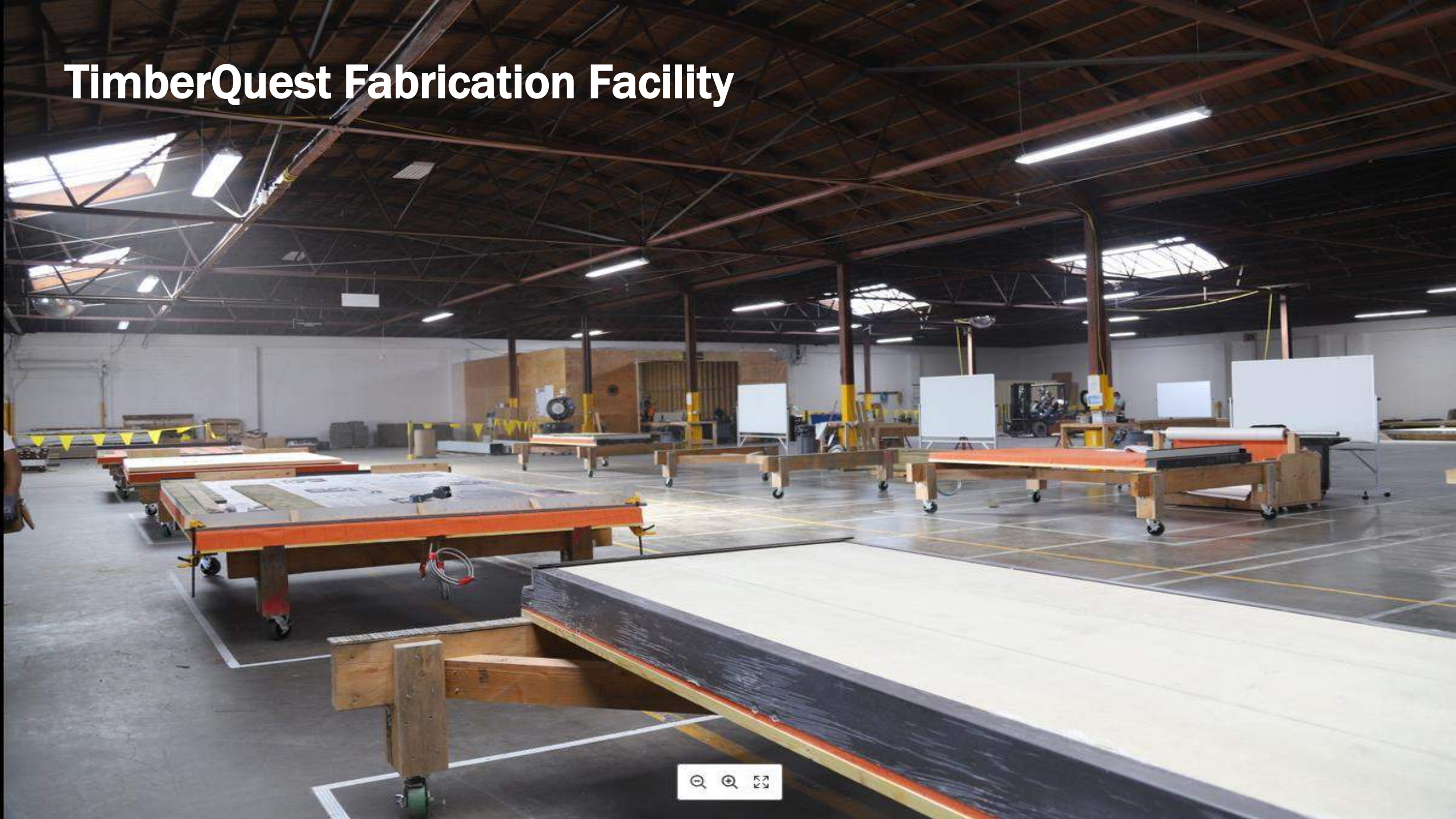




# Prefabricated Roof Screens



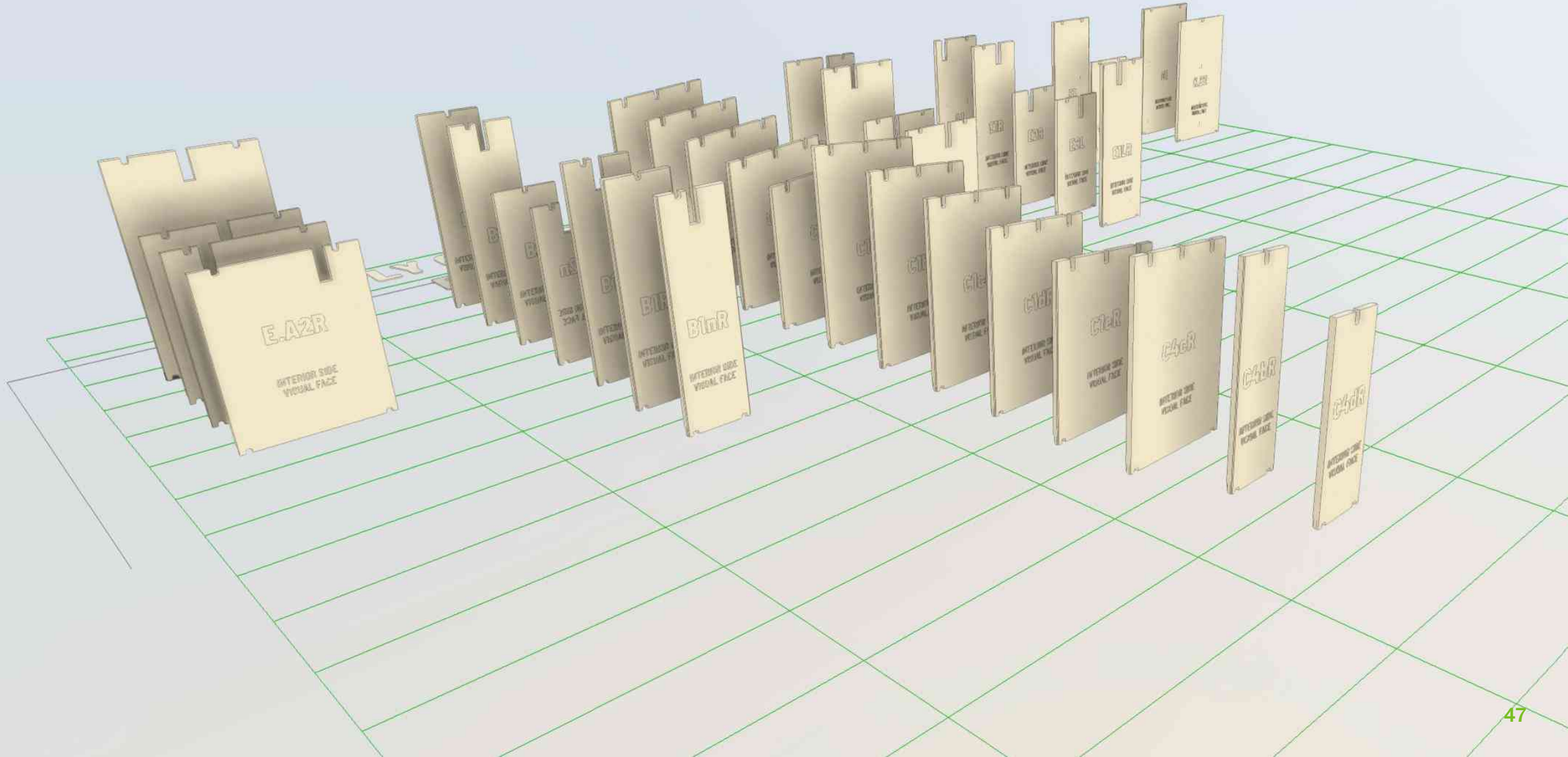
# TimberQuest Fabrication Facility



# Prefabricate Interior Walls



# Panel Kit of Parts



# TimberQuest: Addressing Barriers to Mass Timber in Education

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- ✓ Pre-Checked design reduces design / permitting risk
- ✓ Price certainty
- ✓ Schedule certainty
- ✓ Kit of parts reduces mass timber lead time
- ✓ Permanent Quality Buildings
- ✓ MEP integration, future flexibility
- ✓ Sustainability story, community acceptance

# TRAVIS UNIFIED SCHOOL DISTRICT



- Fairfield, CA
- Serves eastern Fairfield, Southern Vacaville, and Travis Air Force Base
- 5,400 students
- 8 schools
- K-12
- Top 20 most diverse school district
- 2026 California Distinguished School
- Military presence



## Golden West Middle School

*Home of the Mustangs*

- 2024, TUSD approves addition of sixth grade for 2025-2026 school year
- 19,000 sf, Four classroom buildings
- Utilized DSA pre-check
- Utility and site upgrades



*“It’s not often, given today’s fiscal pressures, that schools can provide learning spaces that match the excellence of their instructional program – but that’s what makes this accomplishment so significant”*  
*Tiffany Benson, TUSD Superintendent*

# Travis Unified School District Golden West Middle School Expansion

Fairfield, CA

**TimberQuest Buildings:**

Four 1-Story Building

**Project Duration:**

Complete

**Programming:**

Middle School classrooms,  
a teacher workroom, and  
restrooms



# Schedule

## 12 month timeline

From day 1 to the Ribbon cutting ceremony

Design Phase :	August – November 2024
DSA Review & Approval :	December 2024
ReBid / Award:	Feb 2025
TQ Shop Drawings :	November 2024 – January 2025
Construction :	January - July 2025
Move in :	August 2026











# Golden West Middle School Welcomes 6th Graders for First Time in Decades

August 11, 2025



**SchoolConstructionNEWS**  
design+construction+operations

Renovation / Modernization

## From Approval to Opening: Inside Travis Unified School District's Fast Tracked Campus Expansion

*How Mass Timber Construction Delivered Permanent Classrooms at Record Speed*

By Aaron Rhodes | 03/24/26

### Key Takeaways

- Travis Unified School District rapidly expanded Golden West Middle School by adding permanent sixth-grade facilities in under a year using prefabricated mass timber construction and streamlined permitting.
- The project demonstrated that innovative building methods can deliver high-quality, sustainable, and cost-effective school infrastructure up to 50% faster than traditional construction.
- Beyond classrooms, the expansion included major site and utility upgrades, creating a modern, energy-efficient campus designed to support long-term educational excellence.



# Travis Unified christens new Golden West sixth-grade wing

Todd R. Hansen Aug 9, 2025



Cheerleaders welcome visitors into a new classroom building at Golden West Middle School, Friday, Aug. 8, 2025. (Aaron Rosenblatt/Daily Republic)

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**PALO ALTO**  
UNIFIED SCHOOL DISTRICT

- Palo Alto, CA
- 10,318 students
- 18 schools
- K-12
- Top 20 most diverse school district
- 2026 California Distinguished School



# Herbert Hoover Elementary School Replacement

# Palo Alto USD Hoover Elementary School Campus Replacement

Palo Alto, CA

## TimberQuest Buildings:

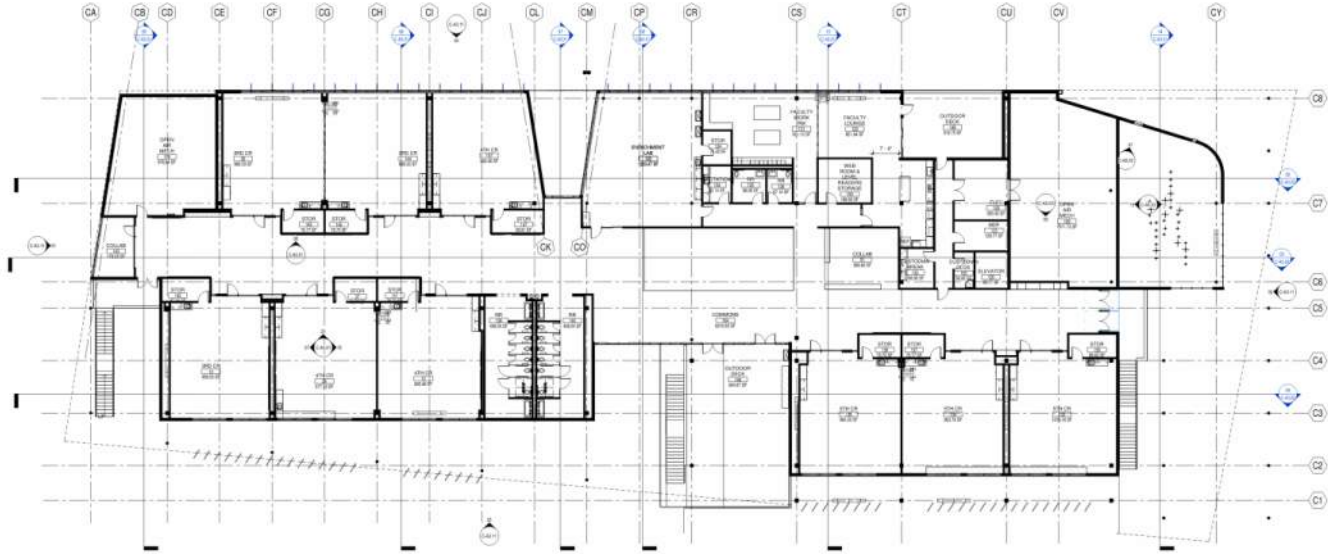
Two 1-Story, One 2-Story,  
and One Multi-Purpose  
Building

## Programming:

Kindergarten, library,  
administration, classrooms,  
specialty learning and therapy  
spaces, staff rooms, custodial  
spaces, restrooms, and a  
multi-purpose building



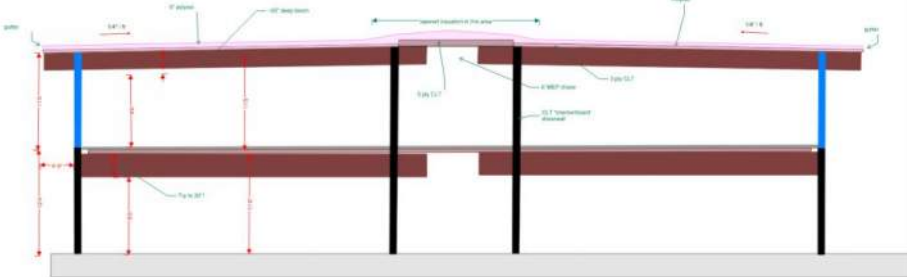
# TimberQuest Integration



Adaptation of Custom Design

Modifications of TimberQuest one story pre-check

Development of 2 story and MPR (Multi Purpose Room) designs



# Challenges

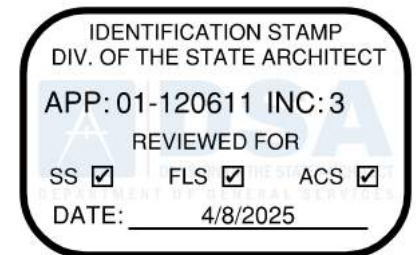
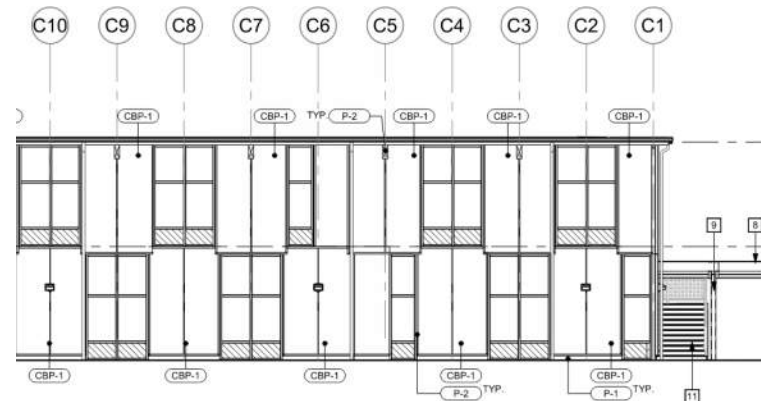
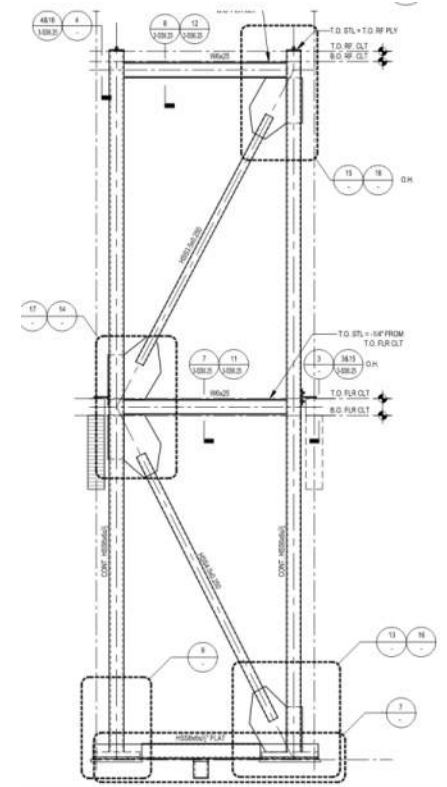
DSA timber lateral approach was a major delay on the 2 story

Adding Prefabricated “Bolt in” Brace frames was the solution

Maintained ‘Checkerboard” façade even though it was no longer structurally necessary

Permitting

Design Lessons Learned

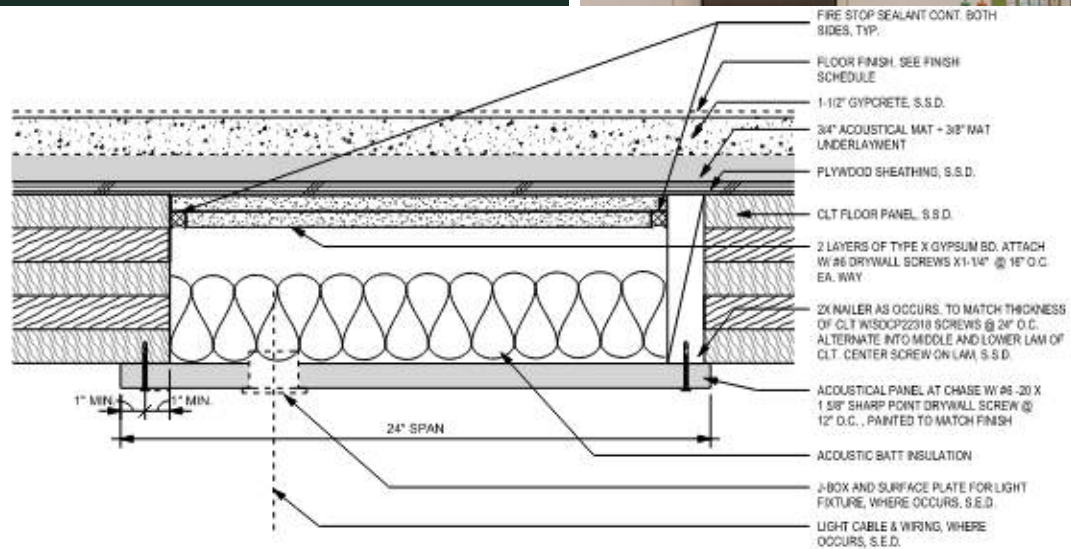
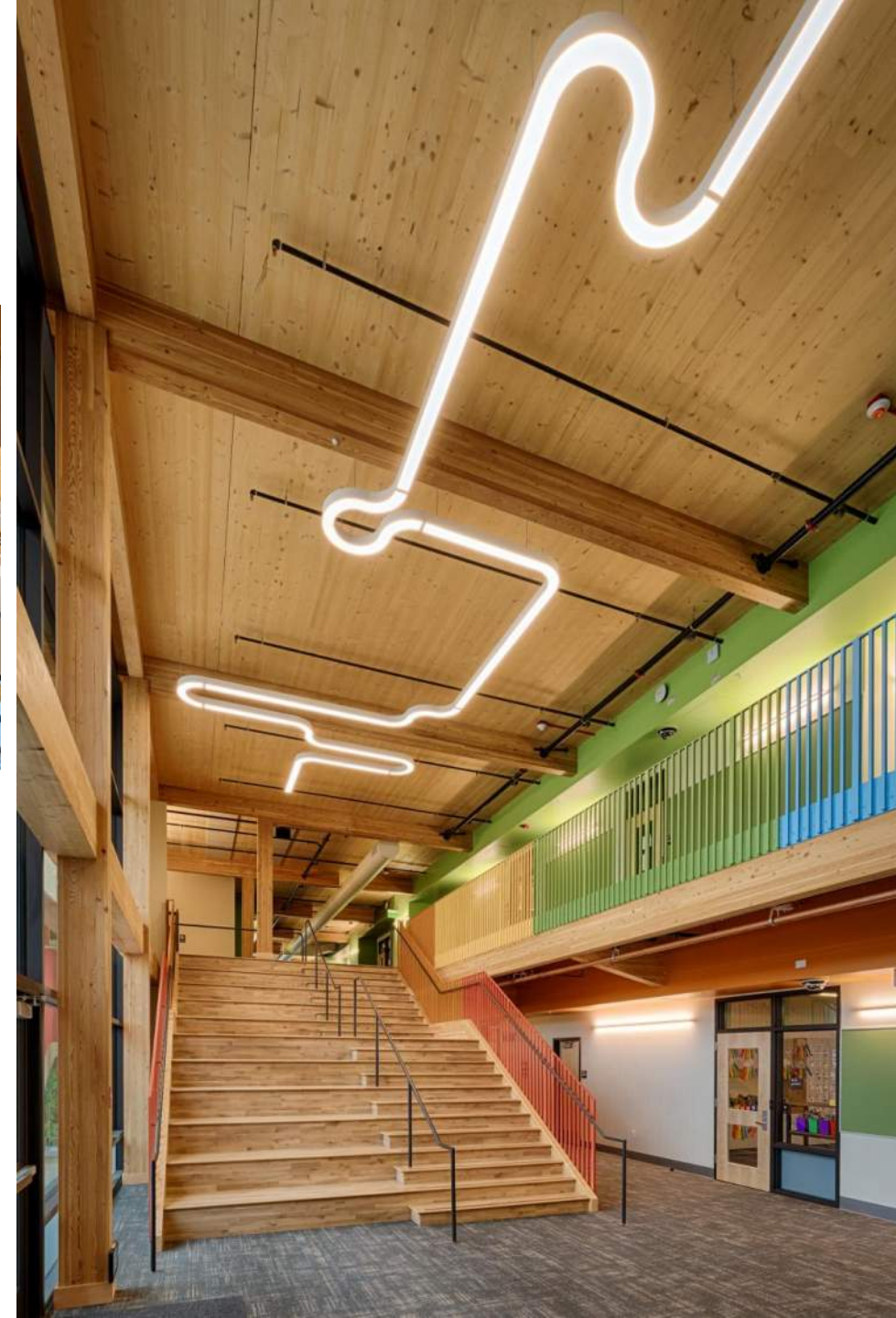


# Challenges

Area allowance

Fire rating

Acoustical Design















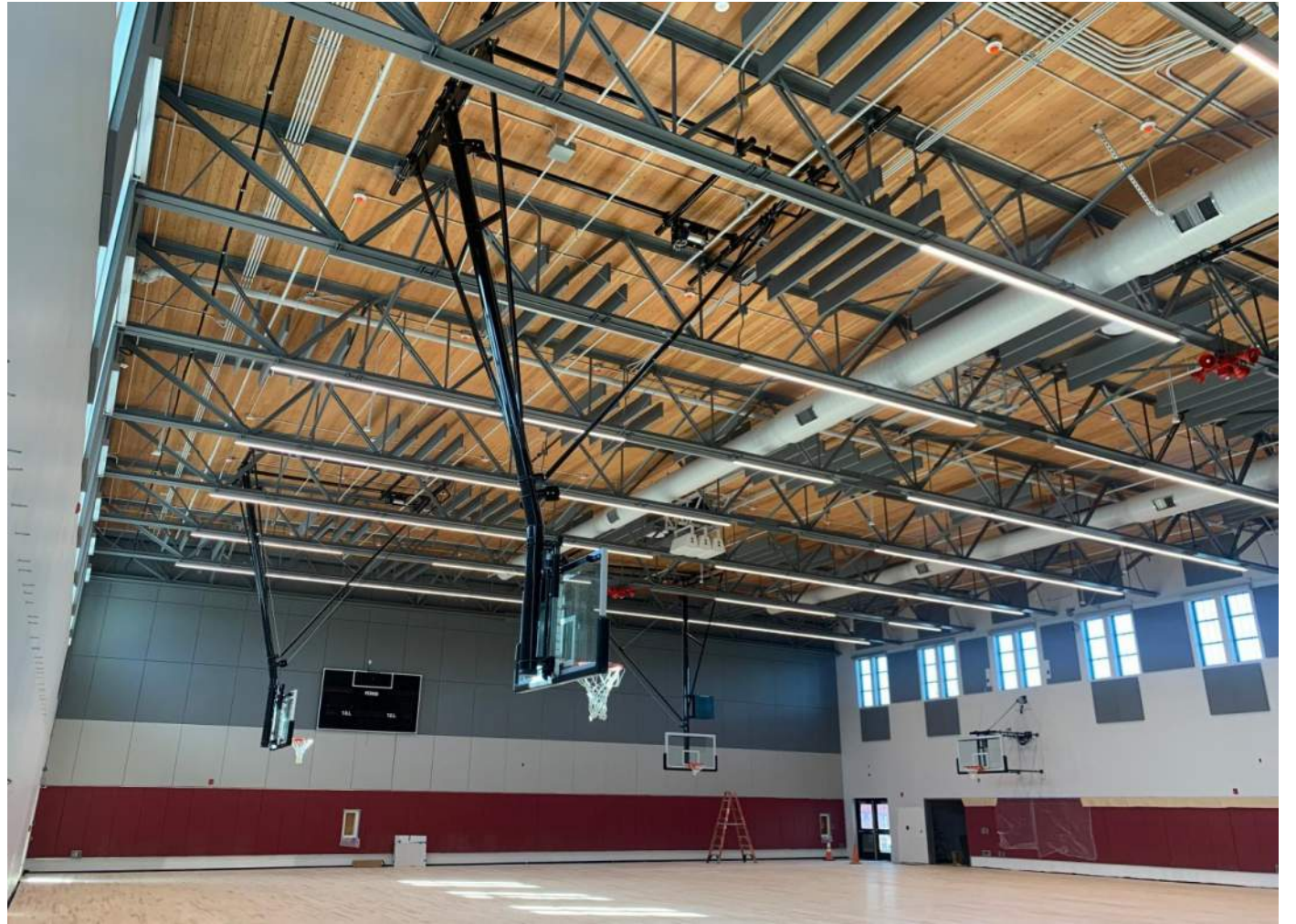




*The new classroom building has completely transformed our daily experience. It's beautiful – such an incredible upgrade from the portables. The rooms are bigger and filled with natural light. Having that brightness makes a real difference for both teaching and learning.*

*3rd grade teacher*

FREMONT UNION HIGH SCHOOL DISTRICT



# Fremont High School Field House





# Prospect High School Classroom Additions



# QUESTIONS?

This concludes The American  
Institute of Architects Continuing  
Education Systems Course

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