Agenda

1. Project overview
   - Carolyn Day
     Senior Associate
     Perkins Eastman

2. Sustainability
   - Dan Arons
     Principal
     Perkins Eastman
   - Jackie Reising
     Traverse Landscape Architects

3. Building Design Update
   - Omar Caldron Santiago
     Principal
     Perkins Eastman

4. Site Design
   - Kris Bradner
     Principal
     Traverse Landscape Architects

5. Interior Design Update & Walk through
   - Caitlin Gilman
     Senior Associate
     Perkins Eastman

6. Construction Update
   - Brian Santos
     President
     W.T. Rich
1 - Project Overview

CAROLYN DAY, PERKINS EASTMAN
Crossroads

RELATIONSHIP BETWEEN THE PARTS

- All entries organized around “Heart of School”
  - Pedestrian entrances facing Vassal Lane and Concord Ave
  - Car arrival below grade
  - Bus arrival from west
- Short travel distances
- Easy to separate wings
  - Increased security
  - Weekend/evening use can be segregated
Site Elements

- BASKETBALL
- CONCORD AVENUE
- FIELDS
- COMMUNITY PATH/BIKE LANE
- SERVICE
- BUS DROP-OFF
- LEARNING COMMONS ON UPPER FLOOR
- COMMUNITY SCHOOL & PRESCHOOL ON 1ST FLOOR
- BELOW-GRADE CAR ENTRY
- AUDITORIUM
- DINING
- GYMS
- PLAYGROUNDS
- VASSAL
- TOBIN
2 - Sustainability

DAN ARONS, PERKINS EASTMAN

JACKIE REISING, TRAVERSE LANDSCAPE ARCHITECTS
Sustainability

Strategies Used

- Maximum on-site renewable energy
- Zero on-site greenhouse gas emissions
- On-site stormwater management
- High-performance building envelope
- Solar shading
- Reduced heat island
- Minimize embodied carbon
- Low-energy LED lighting
- Education
- Energy metering
- Low-flow plumbing fixtures and rainwater re-use
- Resilience for flood management
- Sustainability strategies used
- Resilience for flood management
- Energy recovery systems
- Solar orientation
- Renewable energy
- Stormwater management
- High-performance building envelope
- Solar shading
- Reduced heat island
- Minimize embodied carbon
- Low-energy LED lighting
- Education
- Energy metering
- Low-flow plumbing fixtures and rainwater re-use
- Resilience for flood management
Sustainability

**STRATEGIES USED**

- **Reduced Heat Island**
- **6 Green Acres**
- **Resilience for Flood Management**
- **9,000 CF Bioswale**
- **Low-Flow Plumbing Fixtures and Rainwater Re-Use**
- **Maximize On-Site Renewable Energy**
- **500 KW Array**
- **1.25 Million Gallons**
- **On-Site Stormwater Management**
- **Zero On-Site Greenhouse Gas Emissions**
- **0 to 20 Degrees South Solar Orientation**
- **Minimize Embodied Carbon**
- **Energy Recovery Systems**
- **High-Performance Building Envelope**
- **Triple Glazed**
- **Low Energy LED Lighting**
- **Low Energy Plumbing Fixtures**
- **Rainwater Re-Use**
- **Energy Metering**
- **High-Performance Building Envelope**
- **Time Management**
- **Maximize On-Site Renewable Energy**
- **Educations**
- **Minimize Embodied Carbon**
- **Energy Recovery Systems**
- **High-Performance Building Envelope**
- **Triple Glazed**
- **Low Energy LED Lighting**
- **Low Energy Plumbing Fixtures**
- **Rainwater Re-Use**
- **Energy Metering**
Daylight and Glare

OVERVIEW

DAYLIGHT
SDA (Spatial Daylight Autonomy)
Percentage of space receiving at least 300 lux (28 FC) for at least 50% of occupied hours

SDA: >75%

GLARE
ASE (Annual Solar Exposure)
Percentage of space receiving at least 1000 lux (93 FC) direct lux for at least 250 occupied hours

ASE: <10%
South Façade Current Design Performance (28% glazing)

LEVEL 1 SOUTH FACING CLASSROOM – DAYLIGHT (SDA) & GLARE (ASE)

- **DAYLIGHT**
  - **Actual SDA:** 83.42%
  - **Target SDA:** >75%
  - **Difference:** +8.42%

- **GLARE**
  - **Actual SDA:** 5.35%
  - **Target ASE:** <10%
  - **Difference:** -4.65%
Potential Design – South Façade 100% Glazing (rejected)

LEVEL 1 SOUTH FACING CLASSROOM – DAYLIGHT (SDA) & GLARE (ASE)

- **DAYLIGHT**
  - **ACTUAL** SDA: 94.65% +11.23%
  - **TARGET** SDA: >75% +19.65%

- **GLARE**
  - **ACTUAL** SDA: 55.61% +50.26%
  - **TARGET** ASE: <10% +45.61%
High Performance Building

- Measured in Energy Use Intensity (EUI) = energy per square foot of building per year (kBTU/sqft/yr)
- Before renewable energy (solar, wind, etc)

Most Efficient School in Cambridge
Solar Panel Coverage

CURRENT = 80% OF ROOF

Solar Panels

North Wing

South Wing

Mechanical

Penthouse
PV Canopy

CURRENT STUDY

Solar Panels

North Wing

South Wing
Potential PV Canopy at Front of School on Vassal Lane
View from the end of Standish Street
Potential PV Canopy at West end of Auditorium wing

Student bus drop-off entrance (some landscape omitted for clarity)
Aerial view of Potential PV Canopy
Above Vassal lane looking North
Wellness

- Balance Indoor Air Quality, Thermal Comfort and Energy
- COVID-19 readiness
- Prioritize safety
PRE + POST CONSTRUCTION COMPARISON

Tobin Montessori + Vassal Lane Upper Schools
CANOPY COVERAGE COMPARISON

Tobin Montessori + Vassal Lane Upper Schools
Green Space

- **Half acre more open area than existing**
- **Heat island area reduced**
- Rain gardens for retention of water
- Envision Cambridge Community Path at western edge
- Increased play space
3 – Exterior Design Update

OMAR CALDERON SANTIAGO, PERKINS EASTMAN
Precedent Images
Color Palette

FAÇADE BRICK

banding
badlands smooth

field
desert blend velour

STONE BASE
weymouth granite

exterior sun shades

metal panel @
mech. screen

metal panel @
heart of school

metal panel @
spandrels
Typical Façade – View at Tobin Montessori School Entrance
Approach from pedestrian path near Vassal Lane sidewalk
Typical Façade – View at VLUS Entrance

Window and Brick banding (some landscape omitted for clarity)
Window and Brick banding (some landscape omitted for clarity)
West end of Auditorium wing

Student bus drop-off entrance (some landscape omitted for clarity)
TMVL COMMUNITY MEETING

North Side of building
Approach from Community Path
Access to cafeteria, gyms, and auditorium.
Northeast side of Gym
View from path along Alpine Street
4 - Site Design

Kris Bradner,
Traverse Landscape Architects
5 – Interior Design Update & Walk Thru

CAITLIN GILMAN,
PERKINS EASTMAN
6-Construction Update

BRIAN SANTOS, W. T. RICH
EARLY CONSTRUCTION

Test Pit
- Complete

Soil/Waste Pilot Program
- Field Work Complete – Testing Period Ongoing

Enabling/Site Mobilization
- Mobilize 7/1/21
  - Perimeter Barriers and Fencing - Complete
  - Tree Protection - Ongoing
  - Air Monitoring - Ongoing
  - Existing Utility Demo/Removal - Ongoing

Commence Full Soil/Waste Scope
- November 2021
  - Installation of Soilcrete Wall
  - Insitu-Soil Remediation and Treatment (ISS)

8 MONTHS
OVERALL CONSTRUCTION

**APPROX. START 11/2021**

- **Geothermal Wells**
  - Scope:
    - Heating and Cooling of the New Building.
    - Drilling and Excavation

- **Abatement & Demolition**
  - Mobilize 11/1/21
  - Abatement of Existing Structure
  - Demolition of Existing Structure

**APPROX. START 1/2022**

- **Water Tank**
  - Scope:
    - Installation of the Water Tank *1.2 Million Gallon
    - Sheet Piling
    - Excavation and Onsite Stockpiling

**APPROX. START 4/2022**

- **Commence Full Construction**
  - Installation of New Foundations, Structural Steel
  - Exterior Enclosure
  - MEP Systems
  - Finishes
  - Site Work / Landscaping
LOGISTICS
Current View from Alpine Towards Concord

Fence Location
9/1 - 8/31/25

Bikes Relocated

Waddles and Silt Fencing
Concord Lane
Pedestrian Walk and Bus Stop Remain Open. Construction Entry and Exit Gates are Open
Ongoing Site Demolition and Rodent Control

Dust Control

Rodent Control

Immediate Loading
Ongoing Construction
Soilcrete Wall, Insitu Soil Stabilization - Pilot Test

ISS Pilot Test
Mixing
At this Phase all Construction Access will be on Concord, with Utilization of Police Details.

Pedestrian Access will Remain Open with Periodic Shutdowns for Safety During Demolition.
Summer-Fall 2022, Site Configuration
Steel

Building Location

Concord Avenue

Construction Access

Vassal Lane