

Community Presentation

An architectural rendering of a school building with a landscaped courtyard. The building is a multi-story structure with a mix of brick and light-colored panels, featuring numerous windows. In the foreground, there is a well-manicured lawn, a paved walkway, and a landscaped garden area with various plants and trees. A few people, including a child and an adult, are walking on the path. An American flag is visible on a pole near the building. The sky is a clear, light blue.

CITY OF CAMBRIDGE
TOBIN MONTESSORI AND VASSAL LANE UPPER SCHOOLS PROJECT

OCTOBER 2021

**PERKINS —
EASTMAN**

Human by Design

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

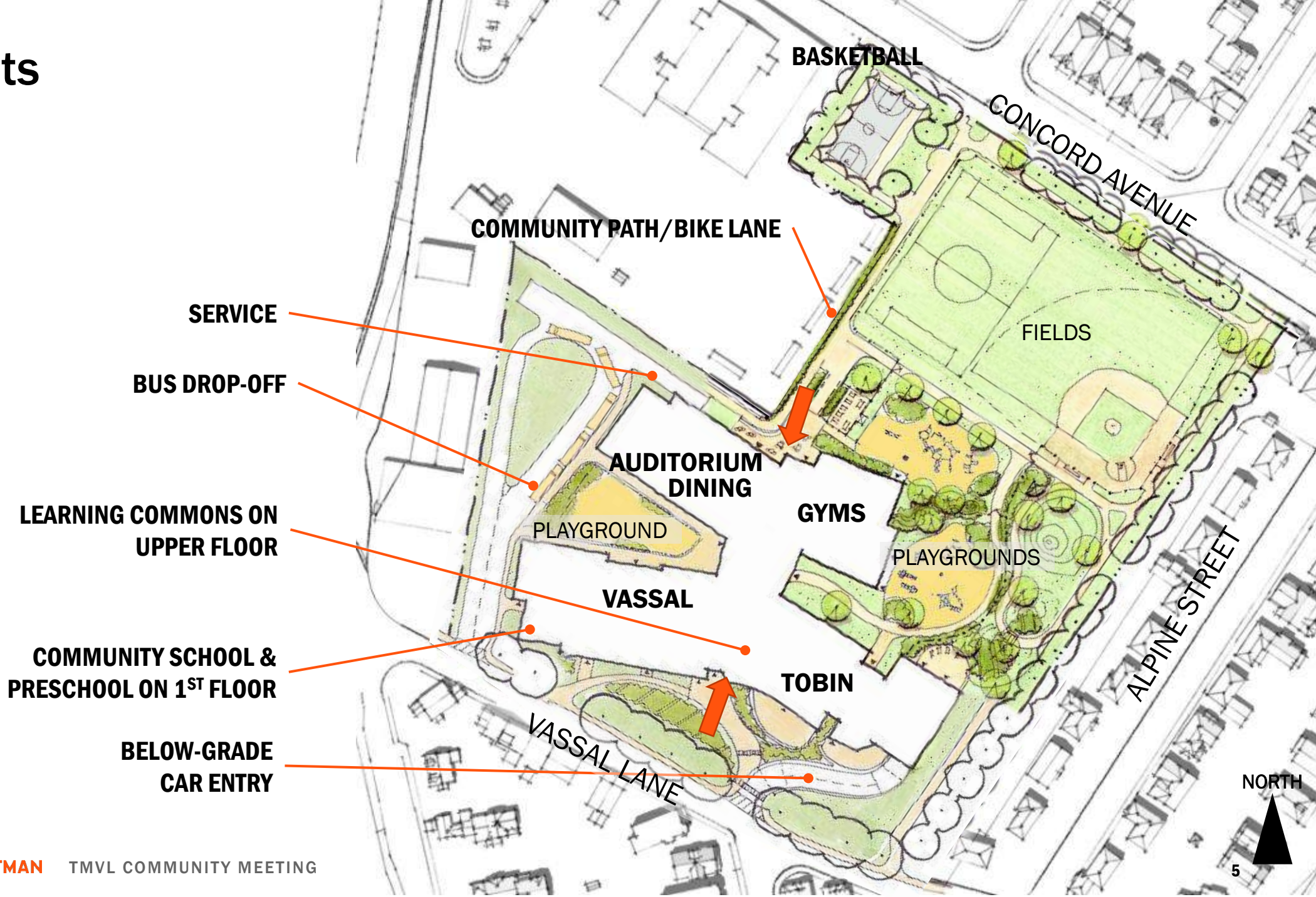
Crossroads

RELATIONSHIP BETWEEN THE PARTS

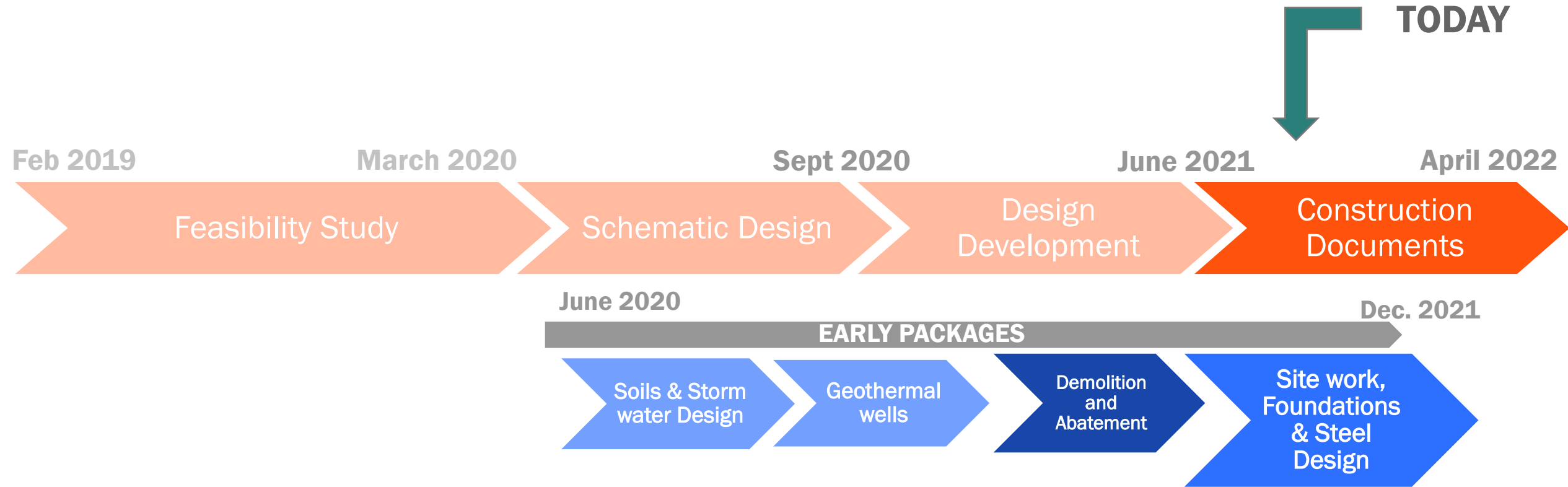
- All entries organized around “Heart of School”
 - Pedestrian entrances facing Vassal Lane and Concord Ave
 - Car arrival below grade
 - Bus arrival from west
- Short travel distances
- Easy to separate wings
 - Increased security
 - Weekend/evening use can be segregated



Site Elements



Current Design Schedule



2 - Sustainability



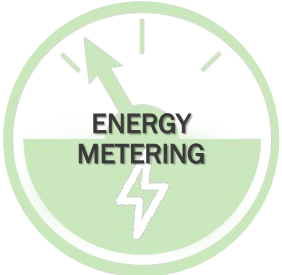
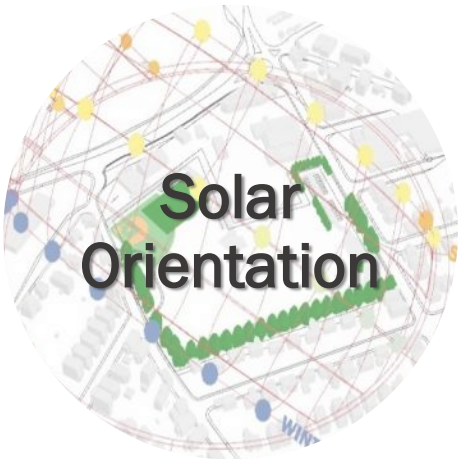
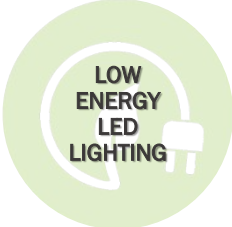
DAN ARONS, PERKINS EASTMAN



JACKIE REISING, TRAVERSE LANDSCAPE ARCHITECTS

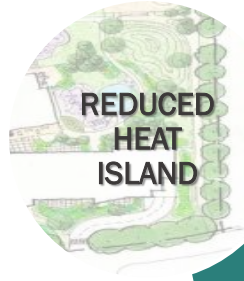
Sustainability

STRATEGIES USED



Sustainability

STRATEGIES USED



REDUCED
HEAT
ISLAND

6
GREEN
ACRES



ENERGY
RECOVERY
SYSTEMS



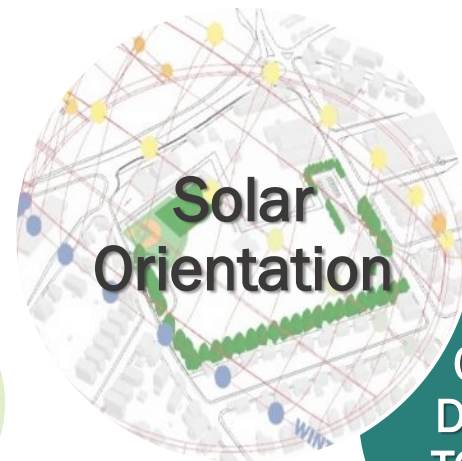
SOLAR
SHADING



HIGH-
PERFORMANCE
BUILDING
ENVELOPE



TRIPLE
GLAZED



Solar
Orientation



EDUCATION



0 TO 20
DEGREES
TO SOUTH



LOW
ENERGY
LED
LIGHTING



MAXIMIZE
ON-SITE
RENEWABLE
ENERGY

500 KW
ARRAY



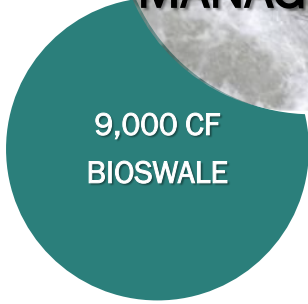
Zero On-Site
Greenhouse
Gas
Emissions



MINIMIZE
EMBODIED
CARBON



RESILIENCE
FOR FLOOD
MANAGEMENT



9,000 CF
BIOSWALE



LOW-FLOW
PLUMBING
FIXTURES
AND
RAINWATER
RE-USE



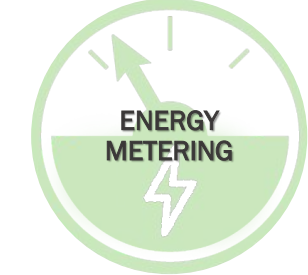
1.25
MILLION
GALLONS



ON-SITE
STORMWATER
MANAGEMENT



ZERO
COMBUSTION



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

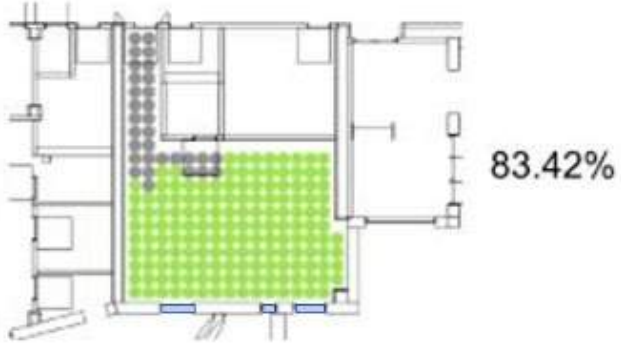
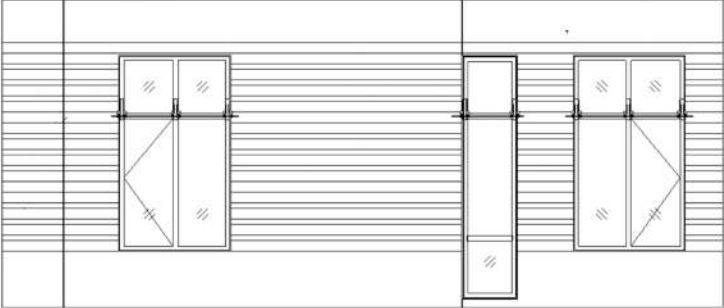
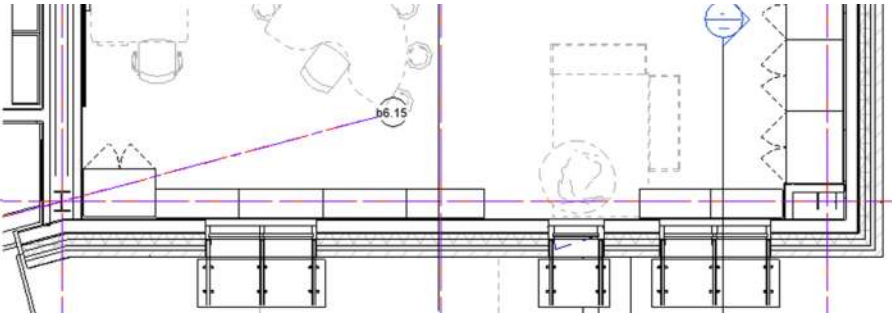
ASE (Annual Solar Exposure)

Percentage of space receiving at least 1000 lux (93 FC) direct lux for at least 250 occupied hours

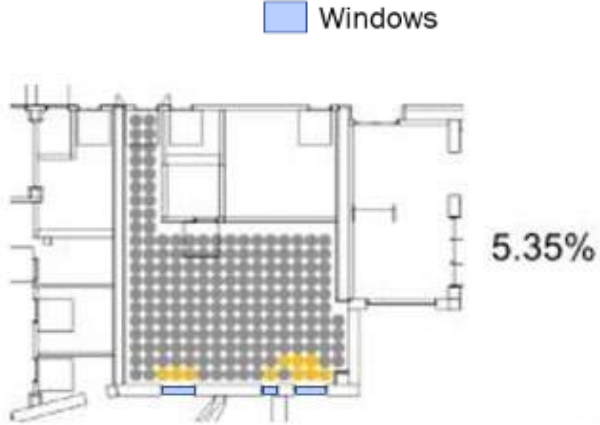
ASE: <10%


South Façade Current Design Performance (28% glazing)

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



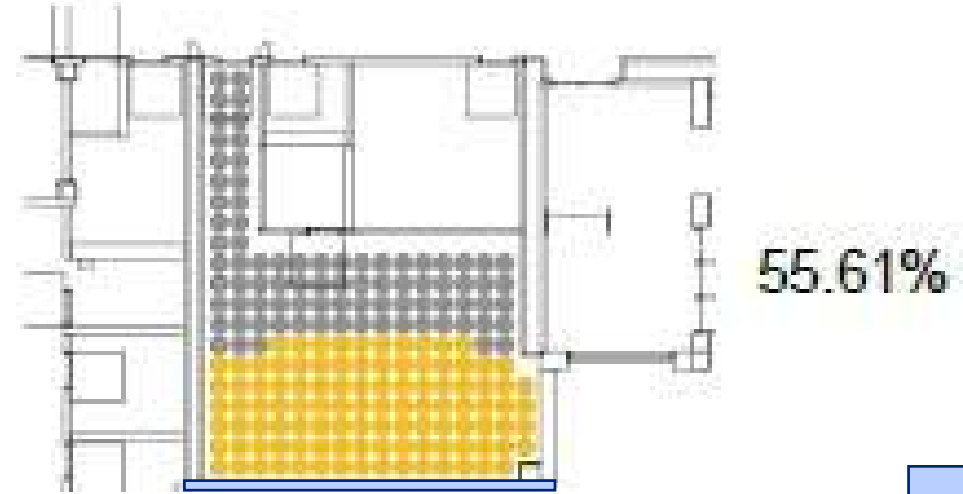
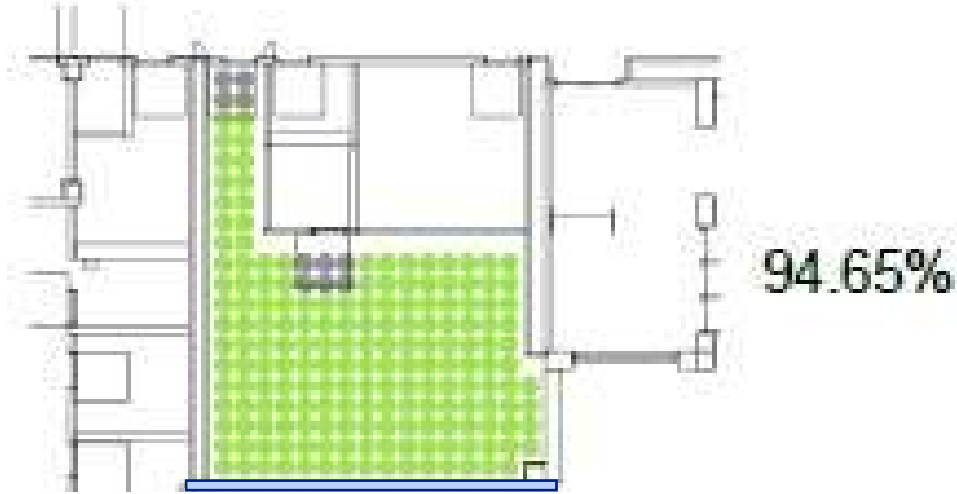
 **DAYLIGHT**
ACTUAL SDA: 83.42%
TARGET SDA: >75% +8.42%



 **GLARE**
ACTUAL SDA: 5.35%
TARGET ASE: <10% -4.65%

Potential Design – South Façade 100% Glazing (*rejected*)

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



Windows



DAYLIGHT

ACTUAL SDA: 94.65% +11.23%

TARGET SDA: >75% +19.65%



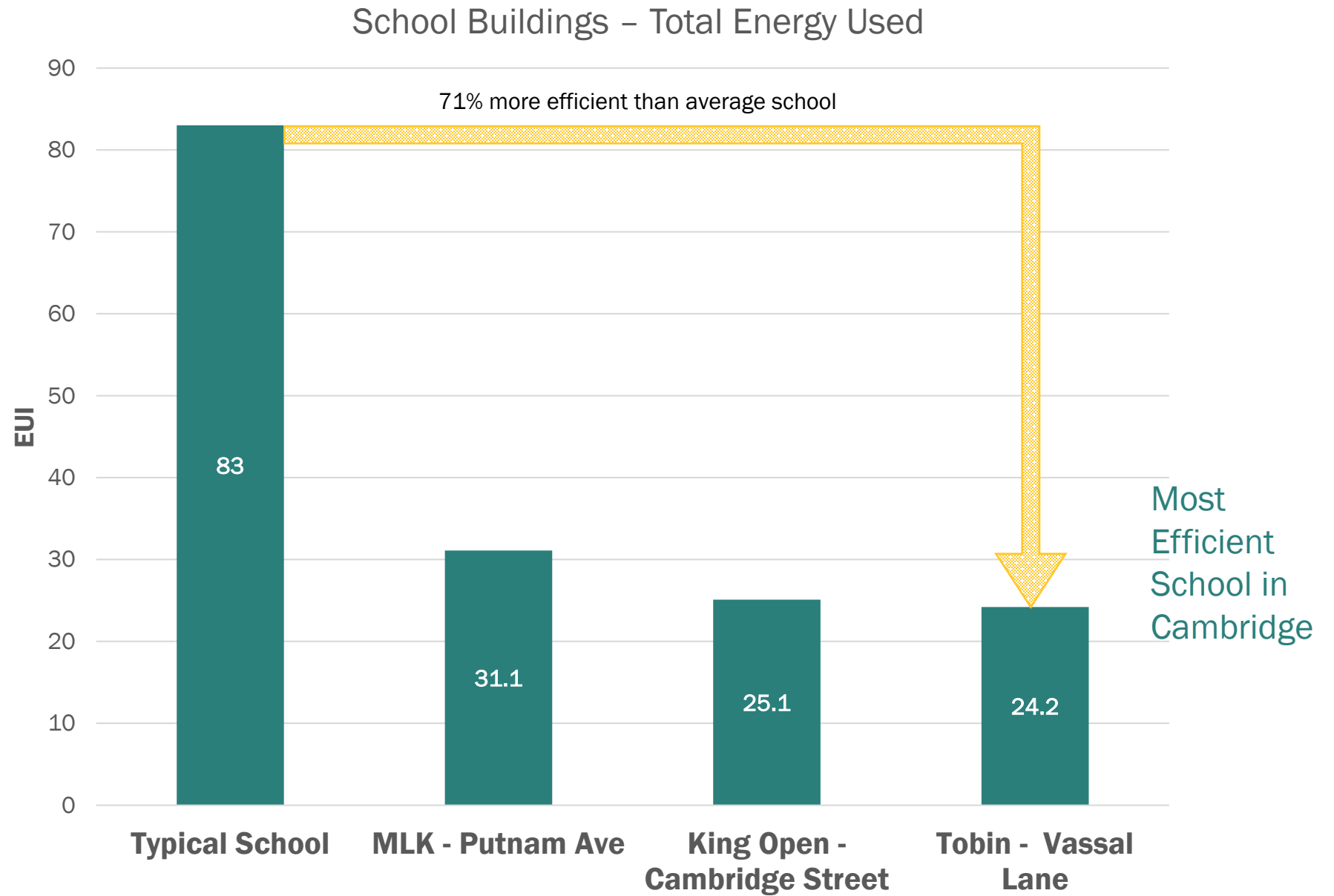
GLARE

ACTUAL SDA: 55.61% +50.26%

TARGET ASE: <10% +45.61%

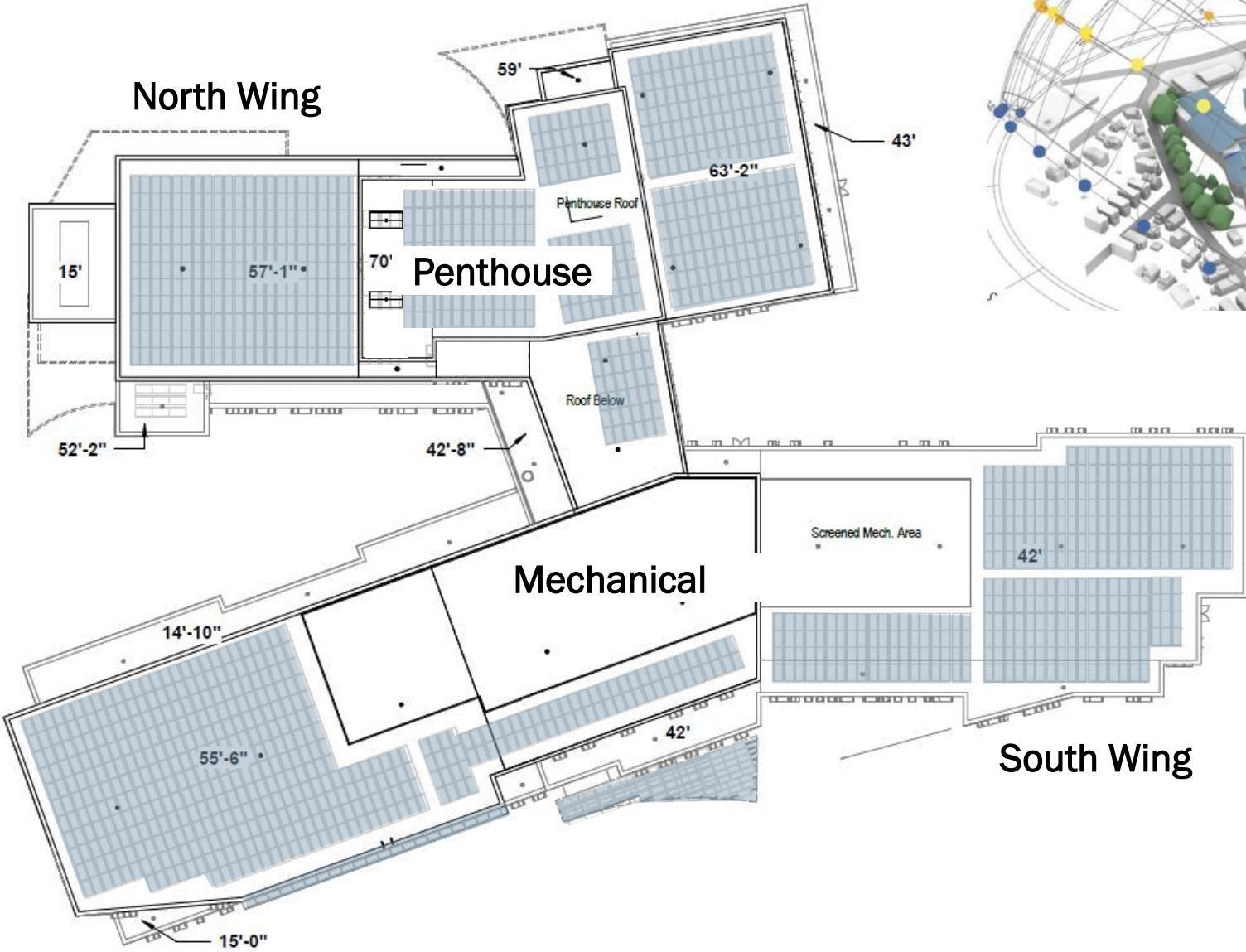
High Performance Building

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



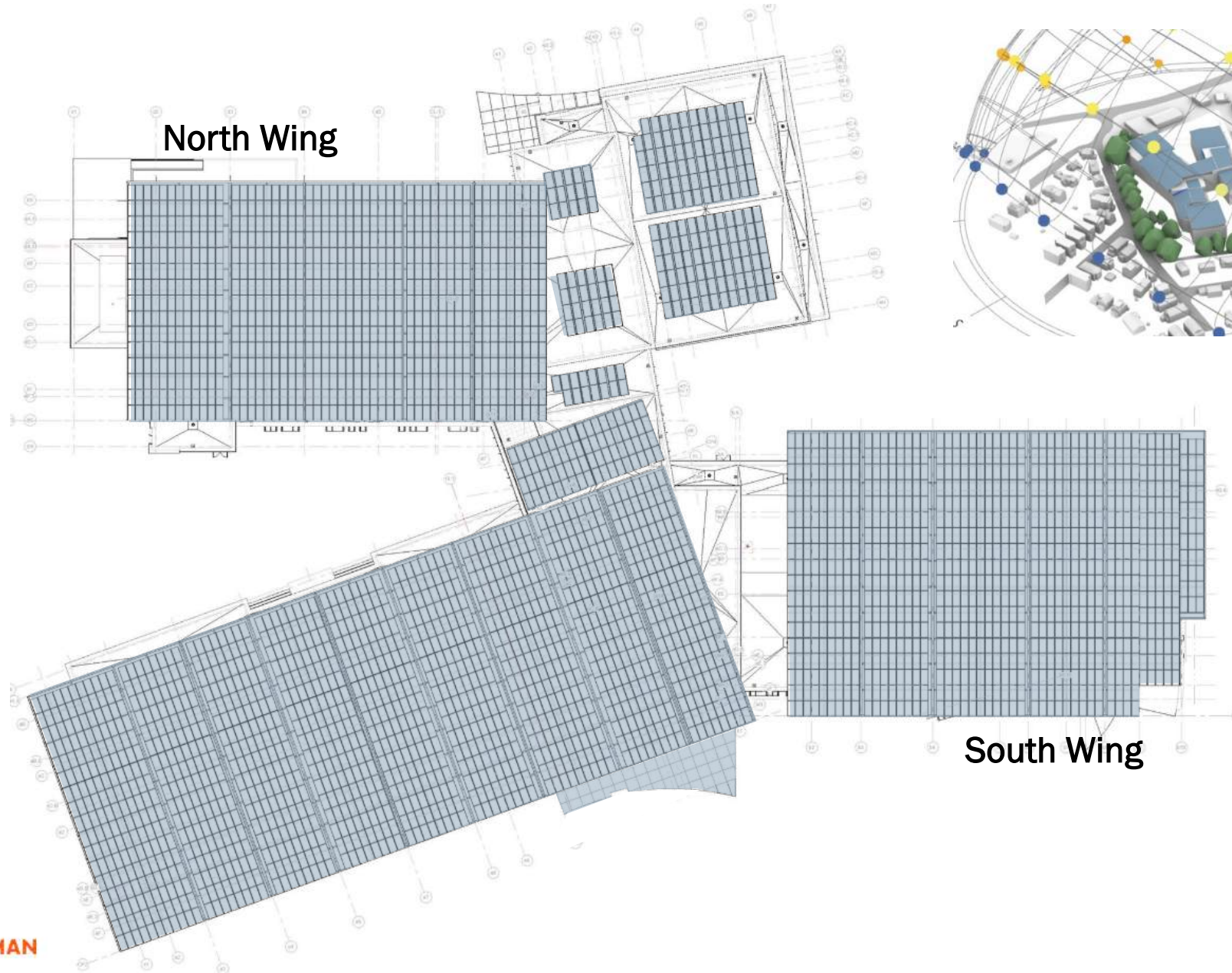
Solar Panel Coverage

CURRENT = 80% OF ROOF



PV Canopy

CURRENT STUDY





Potential PV Canopy at Front of School on Vassal Lane

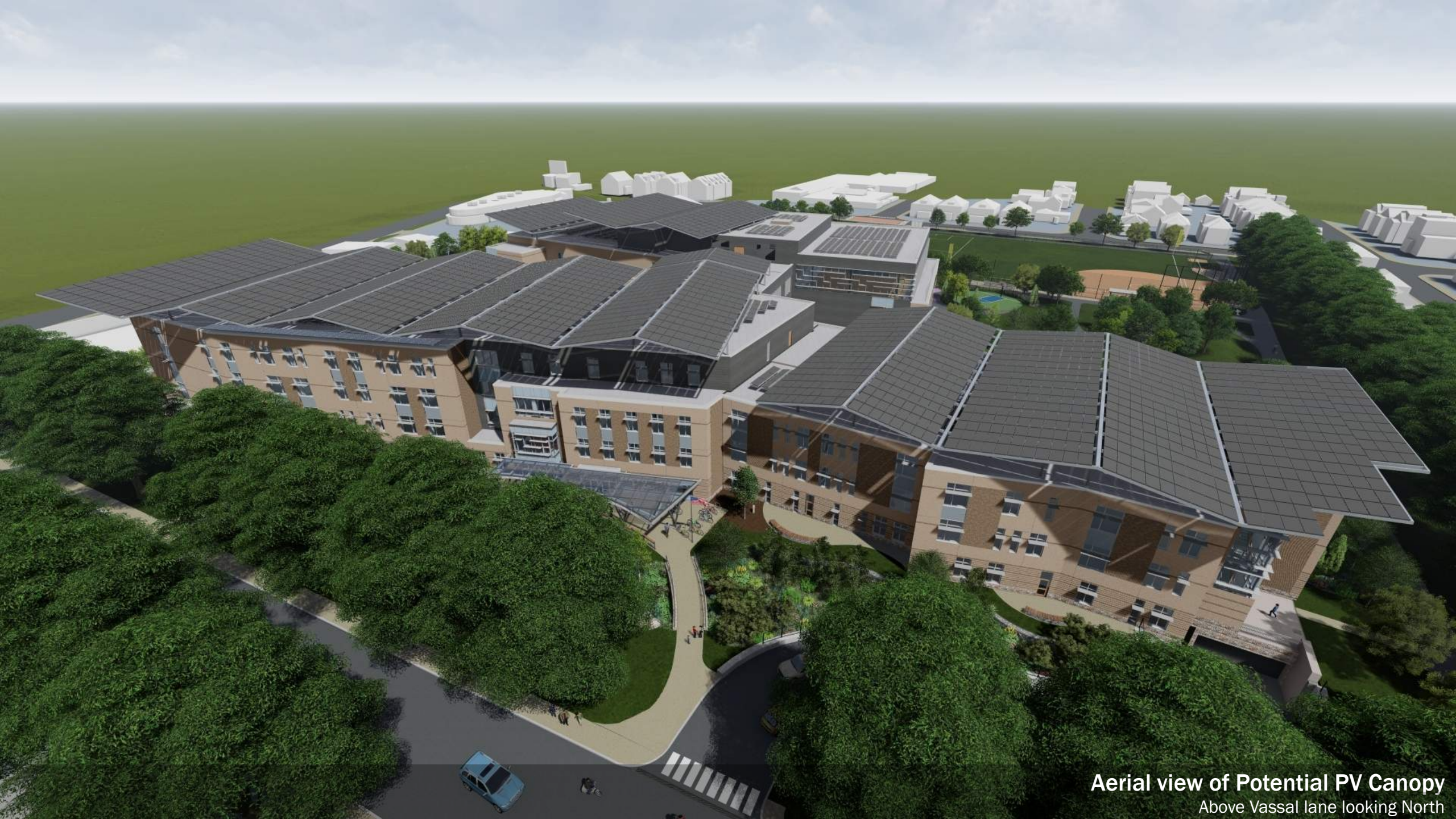
View from the end of Standish Street



TOBIN MONTESSORI
VASSALL LANE UPPER SCHOOL

Potential PV Canopy at West end of Auditorium wing

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

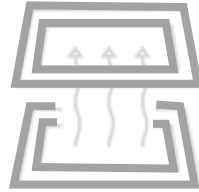


Aerial view of Potential PV Canopy

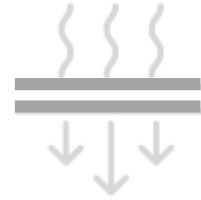
Above Vassal lane looking North

Wellness

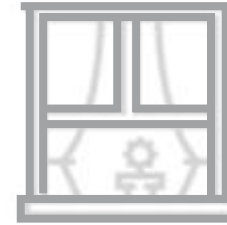
- Balance Indoor Air Quality, Thermal Comfort and Energy
- COVID-19 readiness
- Prioritize safety



Increased Building Ventilation



Enhanced Air Filtration



Operable Windows



Material Selections



Touchless Technologies



Hand Washing Stations



Improved Restroom Layouts



Student Traffic Flows

KEY

-  Removed By City
-  Proposed Removal
-  Proposed Protection
-  Proposed Trees



PRE CONSTRUCTION

141 total (83 ≥6" cal)
 34 protected
 107 removed (49 ≥6" cal)

*omits 13 removed by city



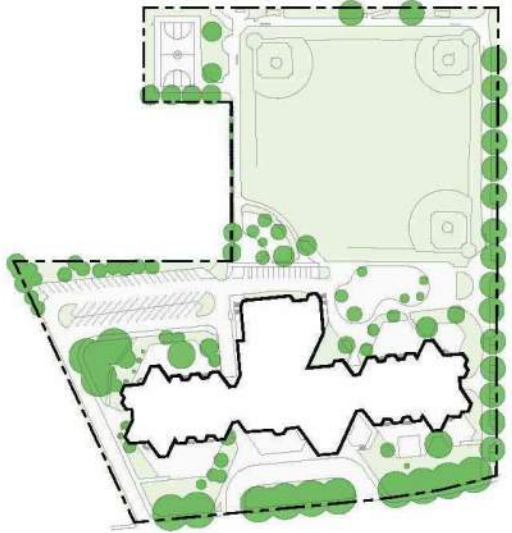
POST CONSTRUCTION

408 total
 34 protected
 374 new

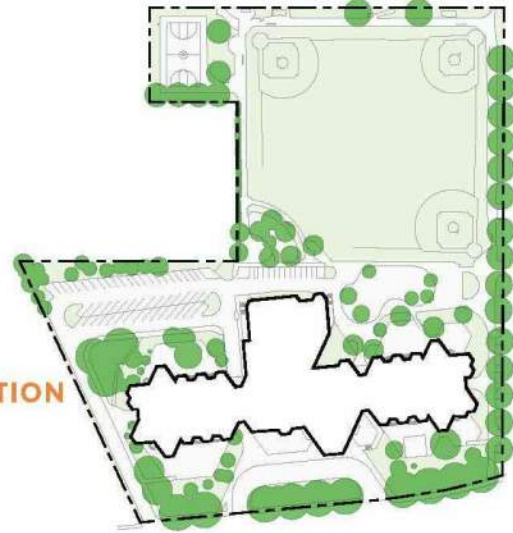
PRE + POST CONSTRUCTION COMPARISON

Tobin Montessori + Vassal Lane Upper Schools

EXISTING



PRE-CONSTRUCTION
72,300± sf
18%



2041
83,100± sf
21%



KEY
sf of canopy coverage
% of overall site

MATURITY
105,100± sf
26%

PROPOSED



58% of existing canopy
is preserved + protected

5 YRS
after installation
63,700± sf
16%



20 YRS
after installation
86,600± sf
22%

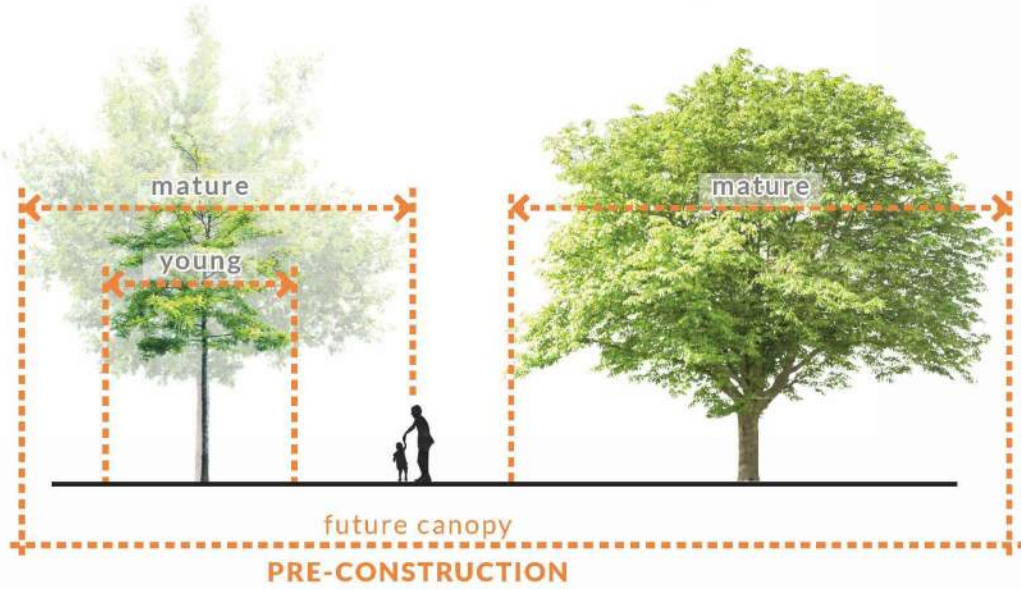
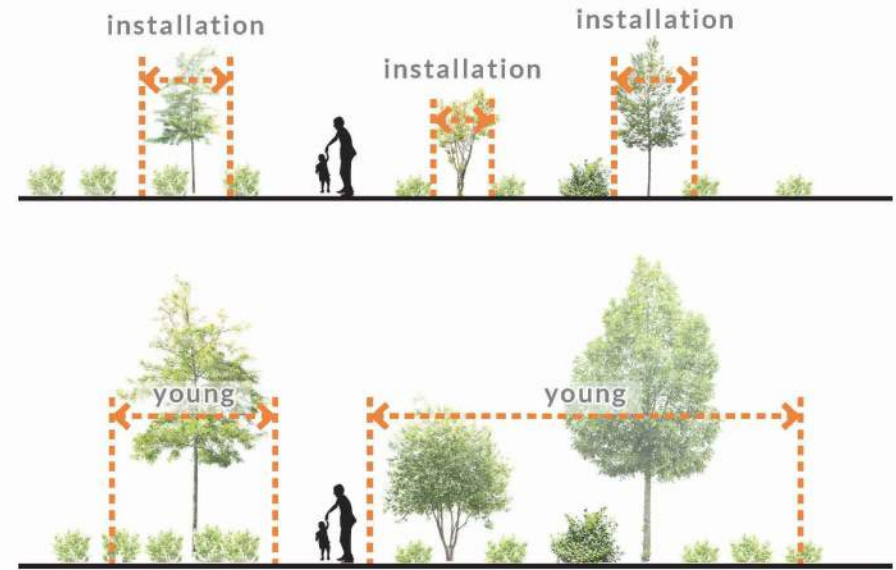
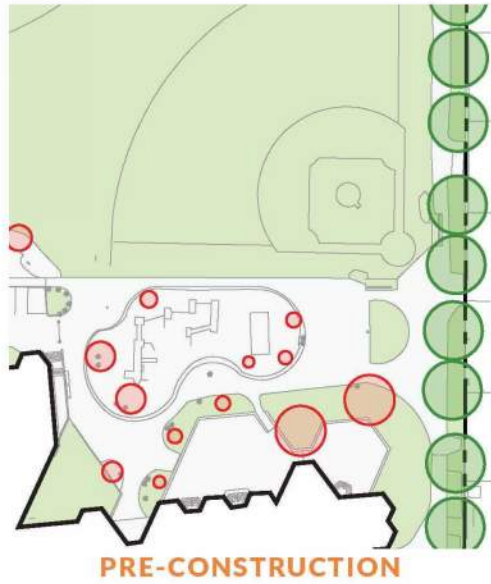


MATURITY
185,700± sf
47%

CANOPY COVERAGE COMPARISON

Tobin Montessori + Vassal Lane Upper Schools

TRAVERSE

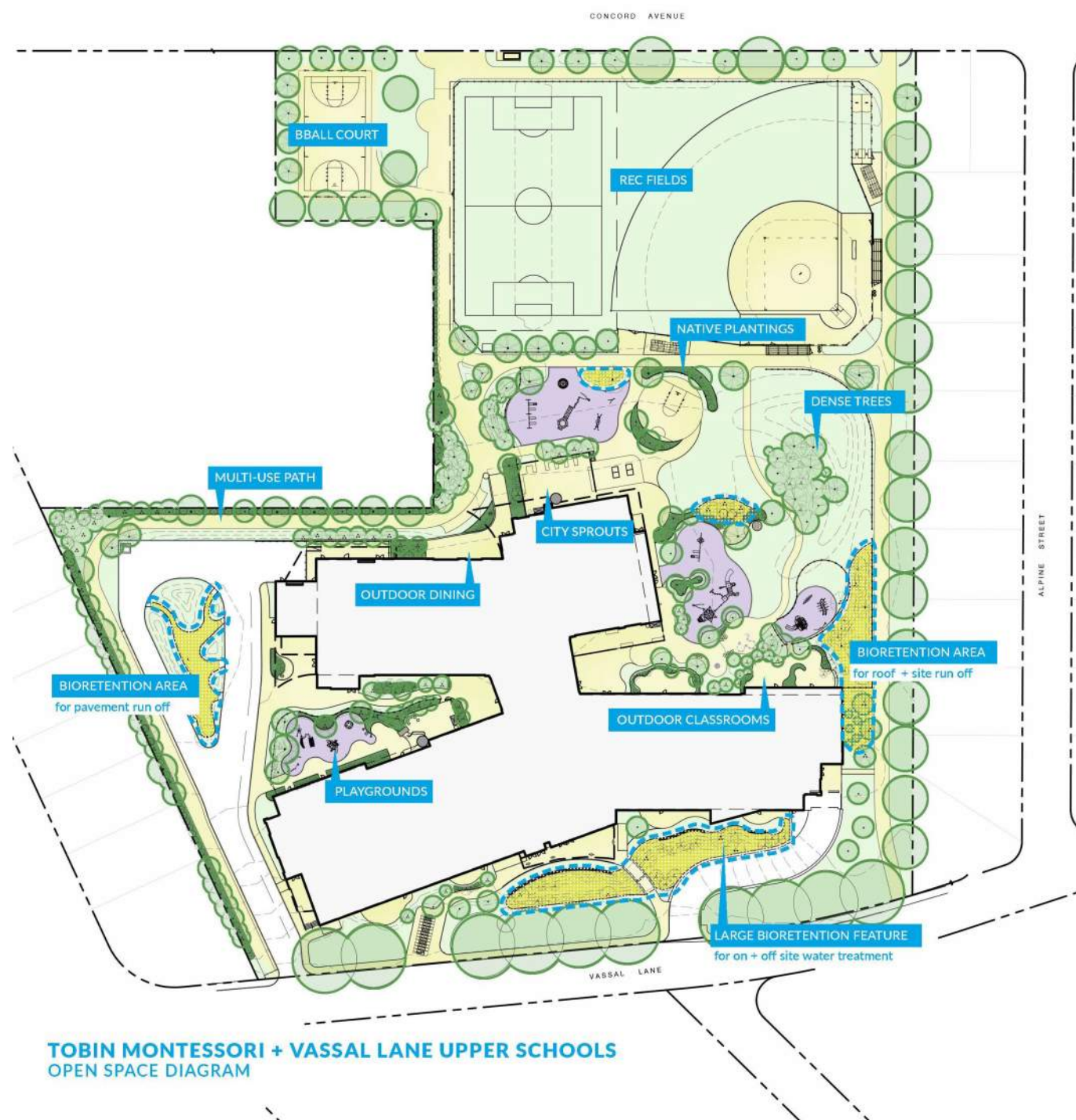


CANOPY GROWTH OVER TIME

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

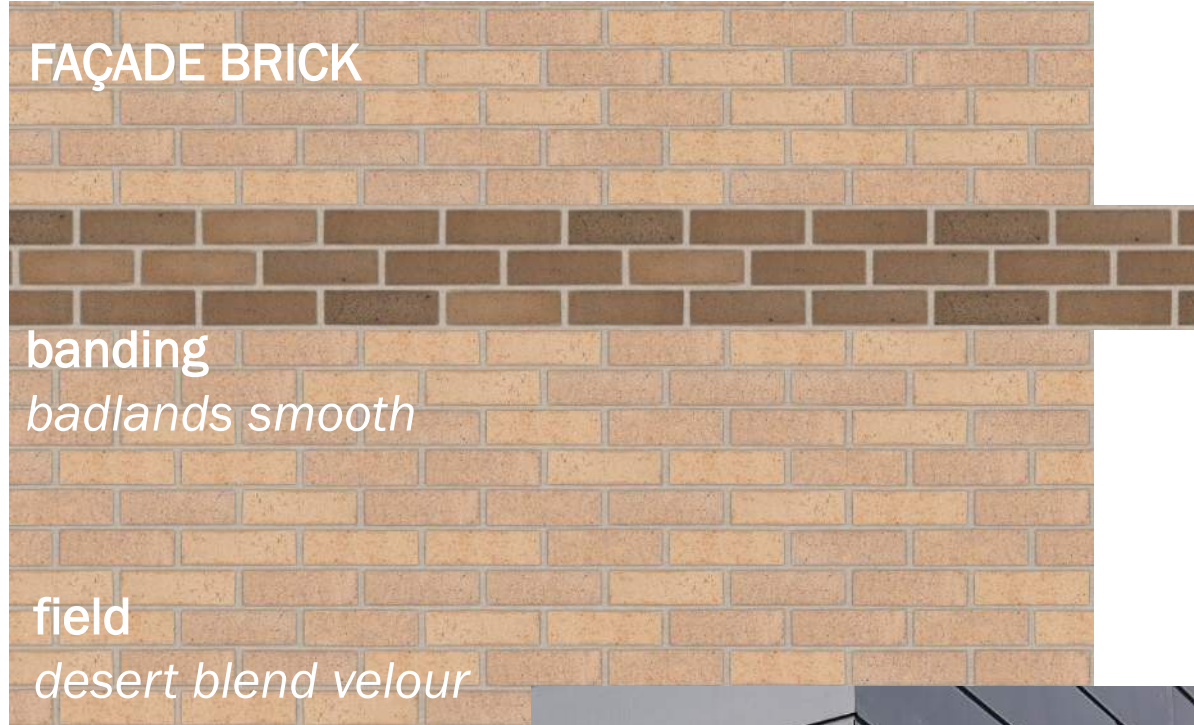


exterior sun shades

FAÇADE BRICK

banding
badlands smooth

field
desert blend velour



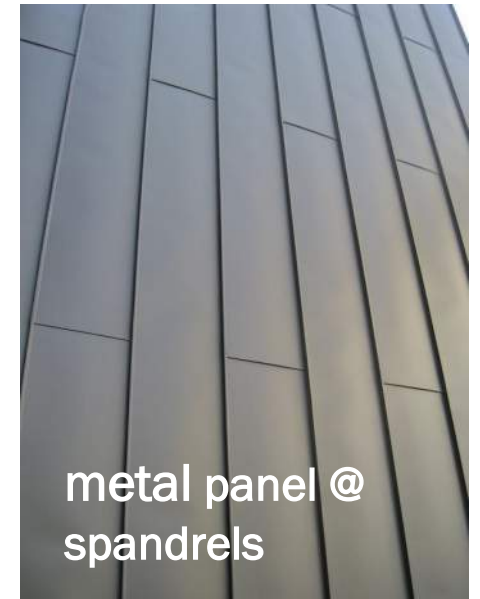
metal panel @
mech. screen



STONE BASE
weymouth granite



metal panel @
heart of school



metal panel @
spandrels



Front of School on Vassal Lane

View from the end of Standish Street



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)



DHSP PRESCHOOL

Typical Façade – Preschool Entrance

Window and Brick banding (some landscape omitted for clarity)



TURIN MONTESSORI
VASSAL LANE UPPER SCHOOL

West end of Auditorium wing

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



North Side of building
Approach from Community Path



Community Entrance

Access to cafeteria, gyms, and auditorium



Northeast side of Gym
View from path along Alpine Street




East end of Tobin Wing
View from path along Alpine Street

4 - Site Design



**KRIS BRADNER,
TRAVERSE LANDSCAPE ARCHITECTS**



5 – Interior Design Update & Walk Thru



CAITLIN GILMAN,
PERKINS EASTMAN

ELEMENTS

AIR



FIRE



WATER



EARTH



6-Construction Update



BRIAN SANTOS, W. T. RICH

EARLY CONSTRUCTION



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

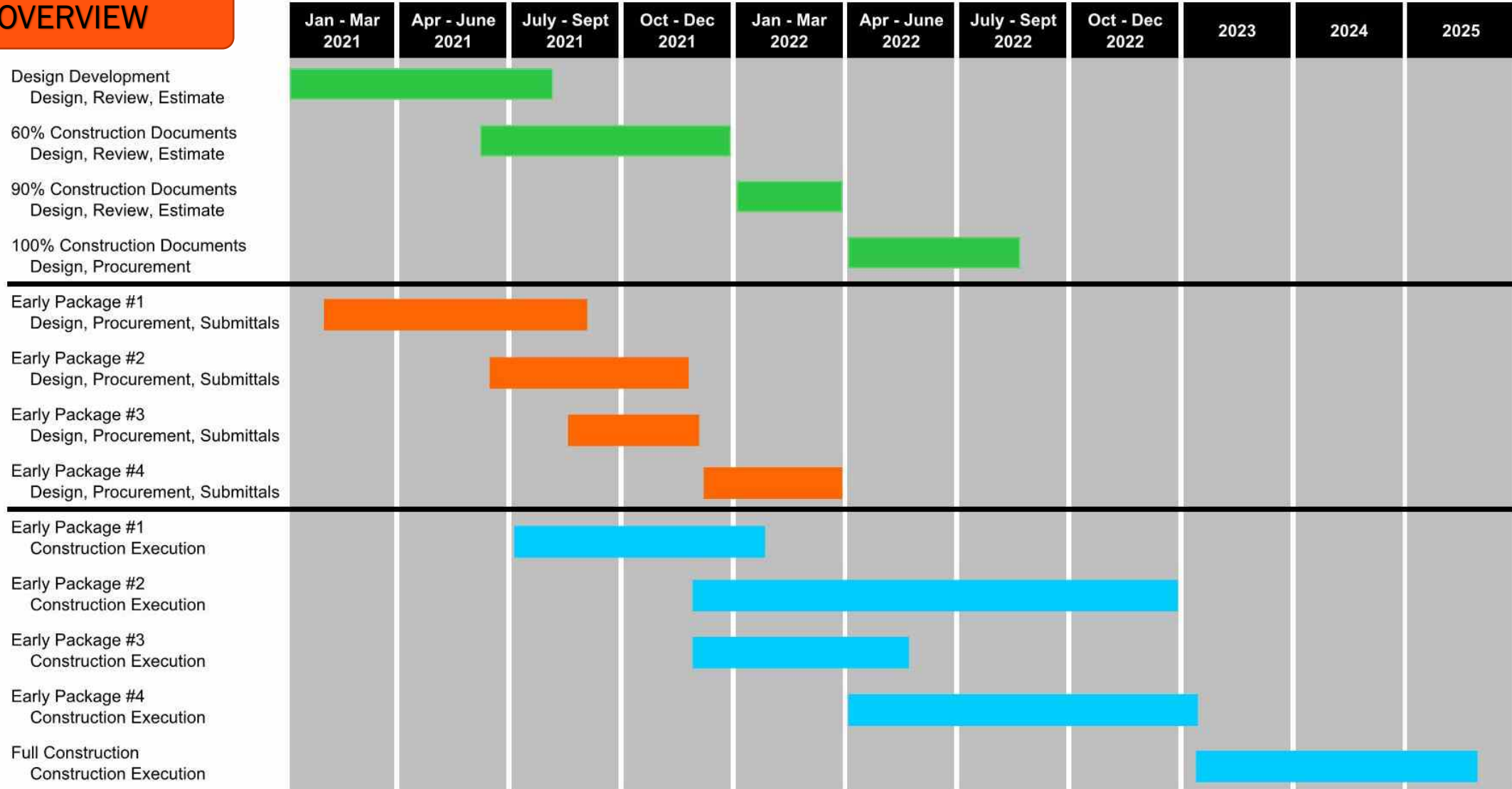
- Scope:
 - Installation of the Water Tank *1.2 Million Gallon
 - Sheet Piling
 - Excavation and Onsite Stockpiling

APPROX. START 4/2022

Commence Full Construction

- Installation of New Foundations, Structural Steel
- Exterior Enclosure
- MEP Systems
- Finishes
- Site Work / Landscaping

SCHEDULE OVERVIEW



Early Package #1
Site Enabling & Storm Tank

Early Package #2
Geothermal Wells

Early Package #3
Abatement & Demolition

Early Package #4
Sitework, Foundations, Steel

LOGISTICS



Current View from Alpine
Towards Concord

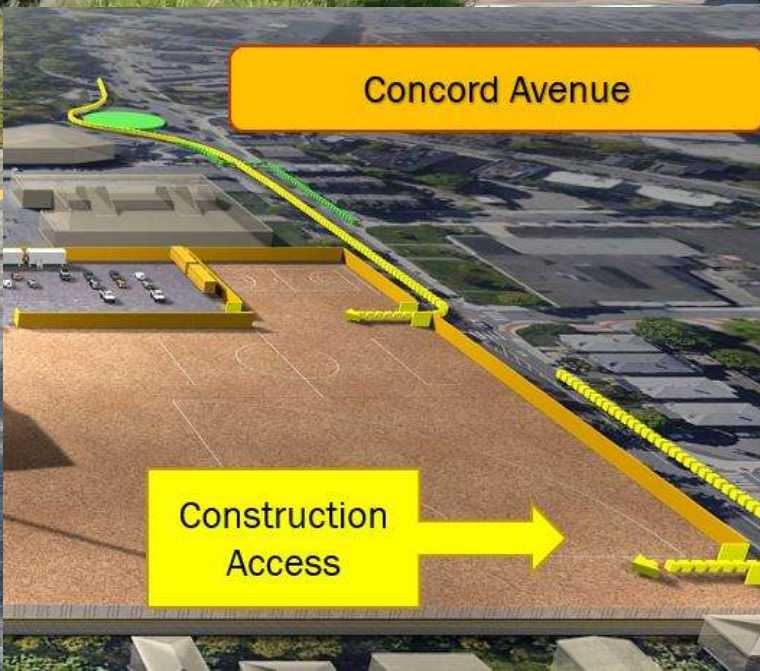


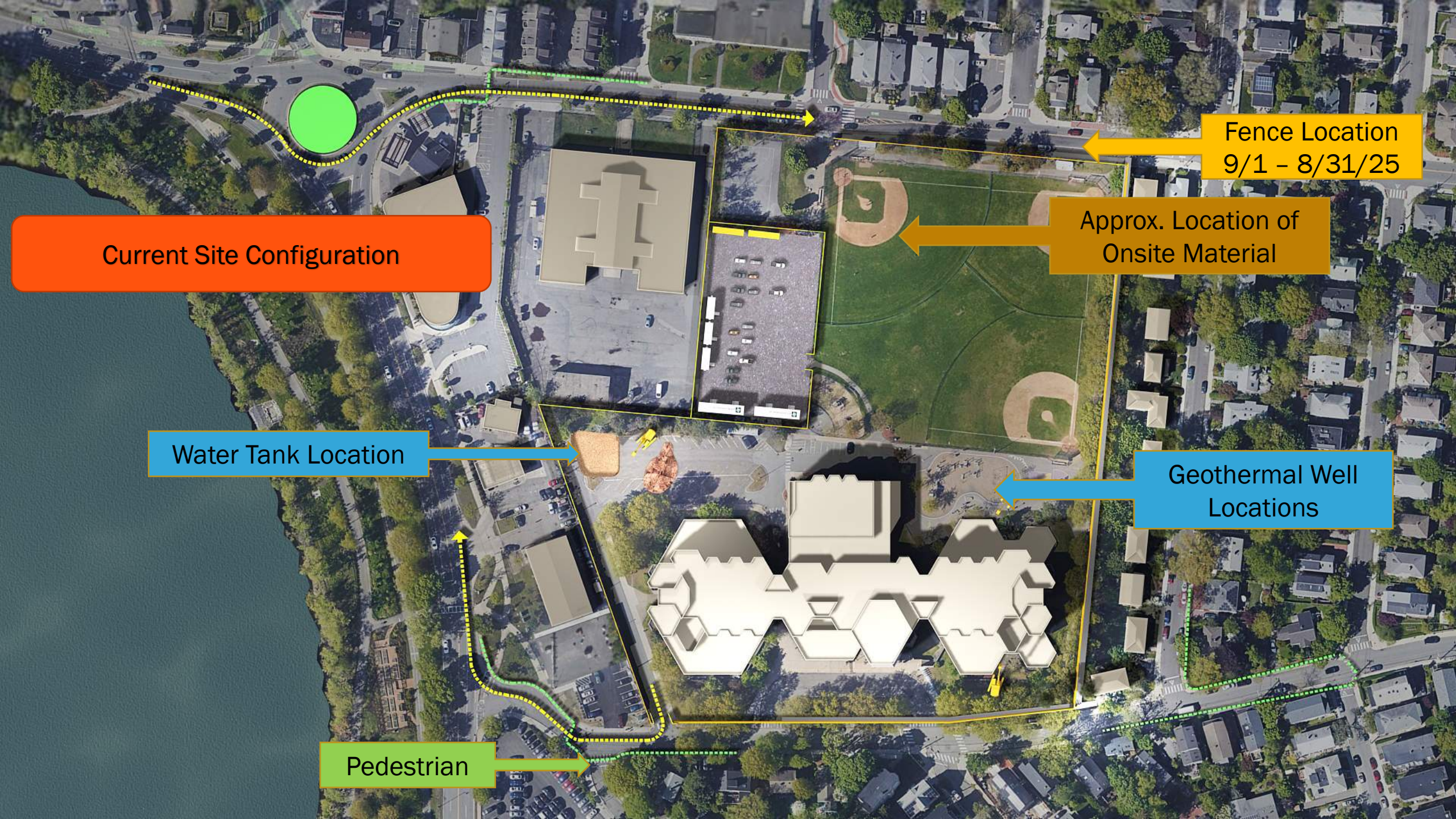
Waddles and Silt Fencing

Bikes Relocated

Fence Location
9/1 - 8/31/25

Concord Lane
Pedestrian Walk and Bus Stop
Remain Open. Construction
Entry and Exit Gates are Open





Fence Location
9/1 – 8/31/25

Approx. Location of
Onsite Material

Geothermal Well
Locations

Current Site Configuration

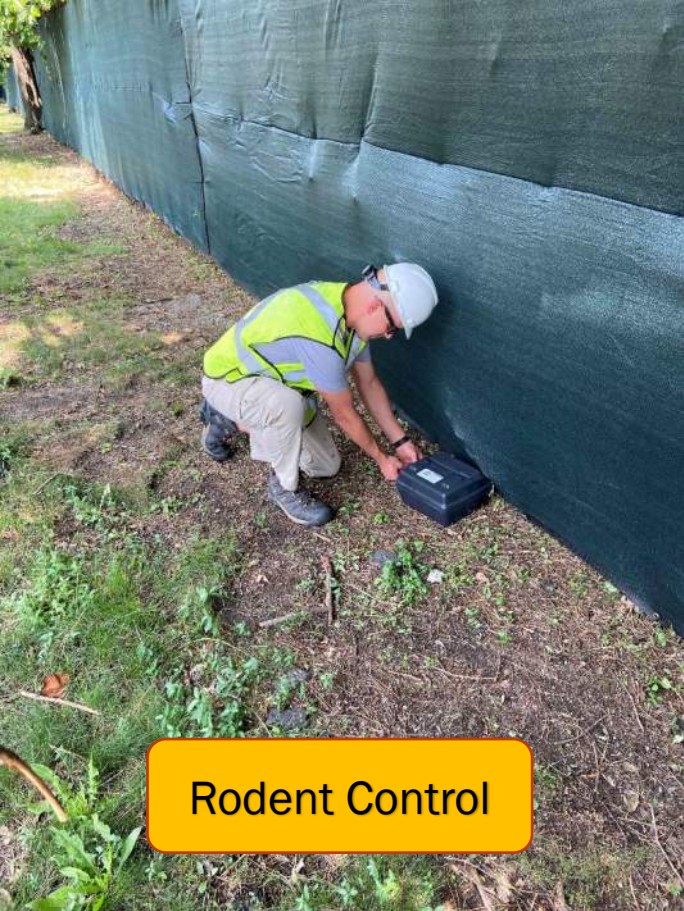
Water Tank Location

Pedestrian

Dust Control



Ongoing Site Demolition and Rodent Control



Rodent Control



Immediate Loading

Ongoing Construction
Safety and Protection



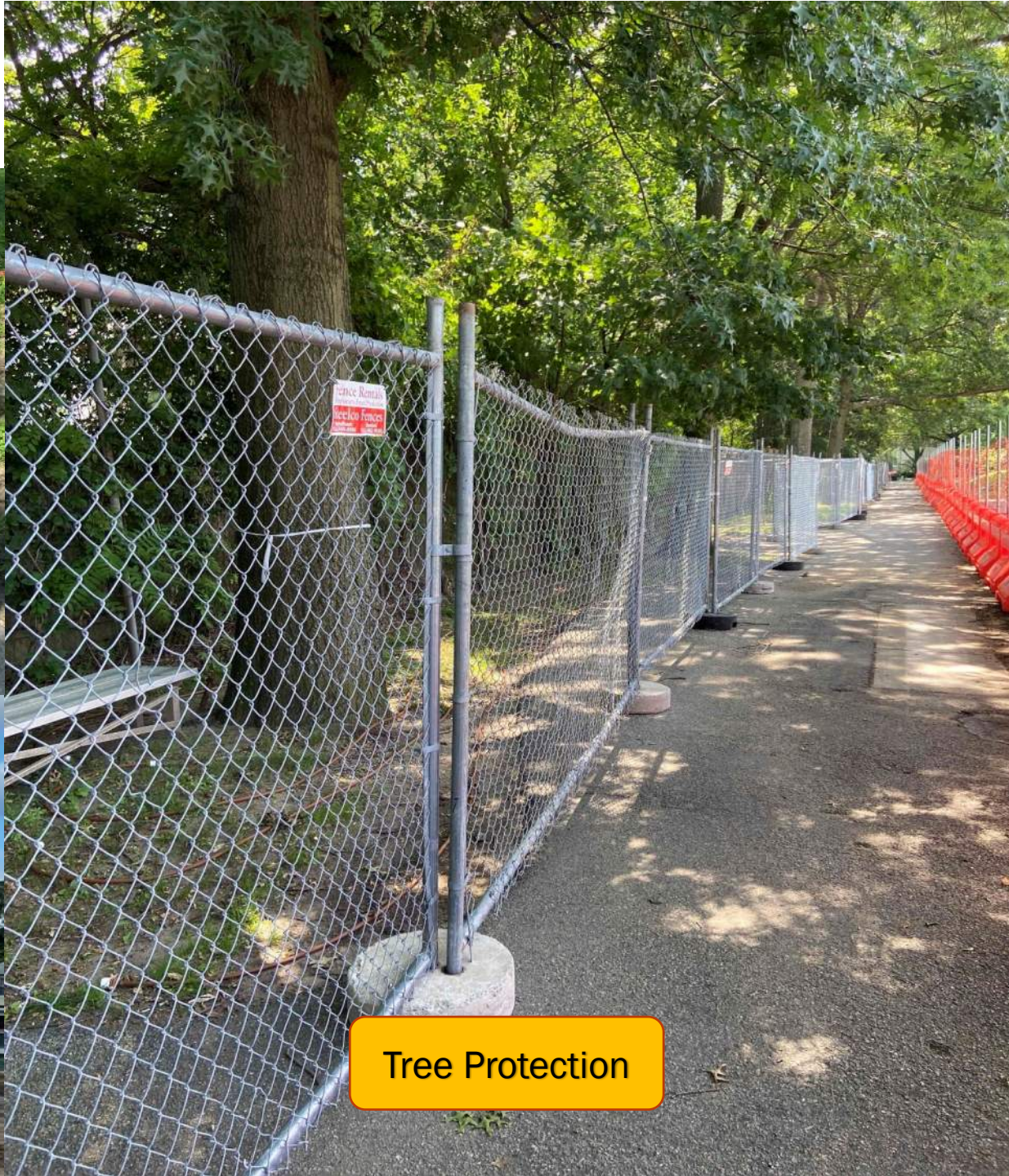
Storm Water
Management



Vibration
Monitoring



Dust Control



Tree Protection

Ongoing Construction
Soilcrete Wall, Insitu Soil
Stabilization - Pilot Test



Mixing



ISS Pilot Test



Fall-Winter 2021
Abatement and Demo - Site Configuration

Jobsite
Offices

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

Vassal Lane



Spring 2022 Site Configuration
Foundations

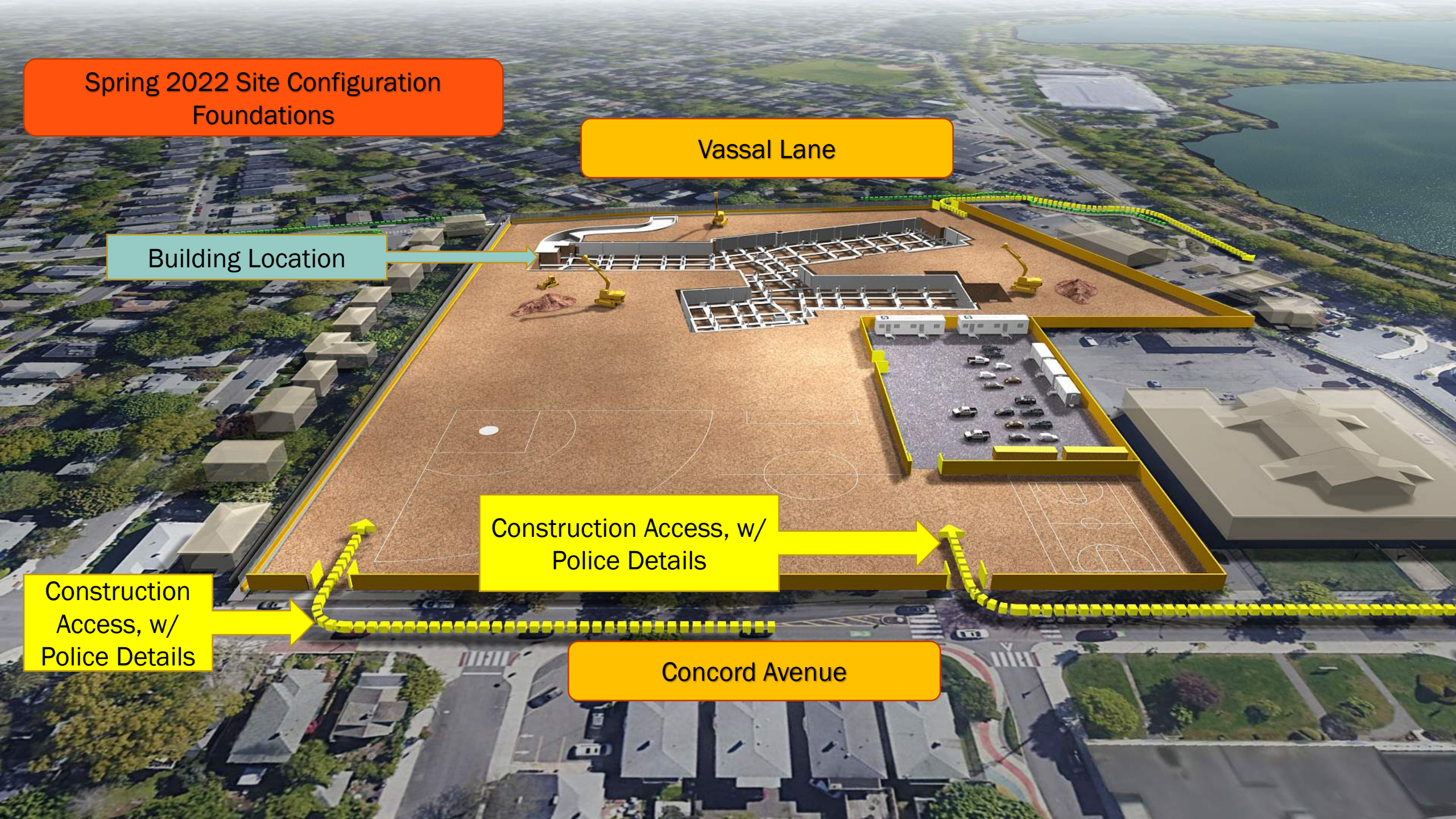
Vassal Lane

Building Location

Construction Access, w/
Police Details

Construction
Access, w/
Police Details

Concord Avenue



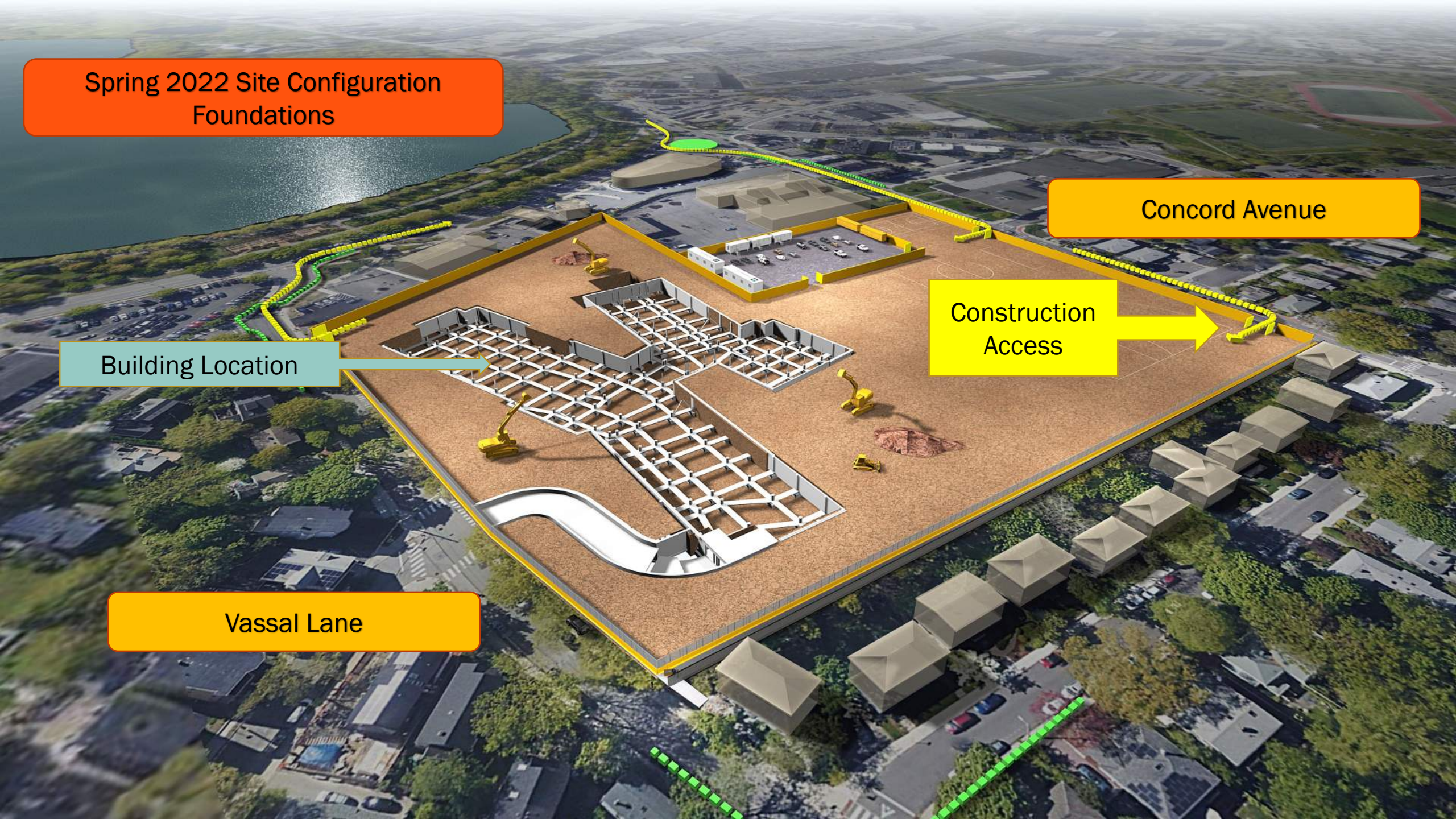
Spring 2022 Site Configuration
Foundations

Concord Avenue

Construction
Access

Building Location

Vassal Lane



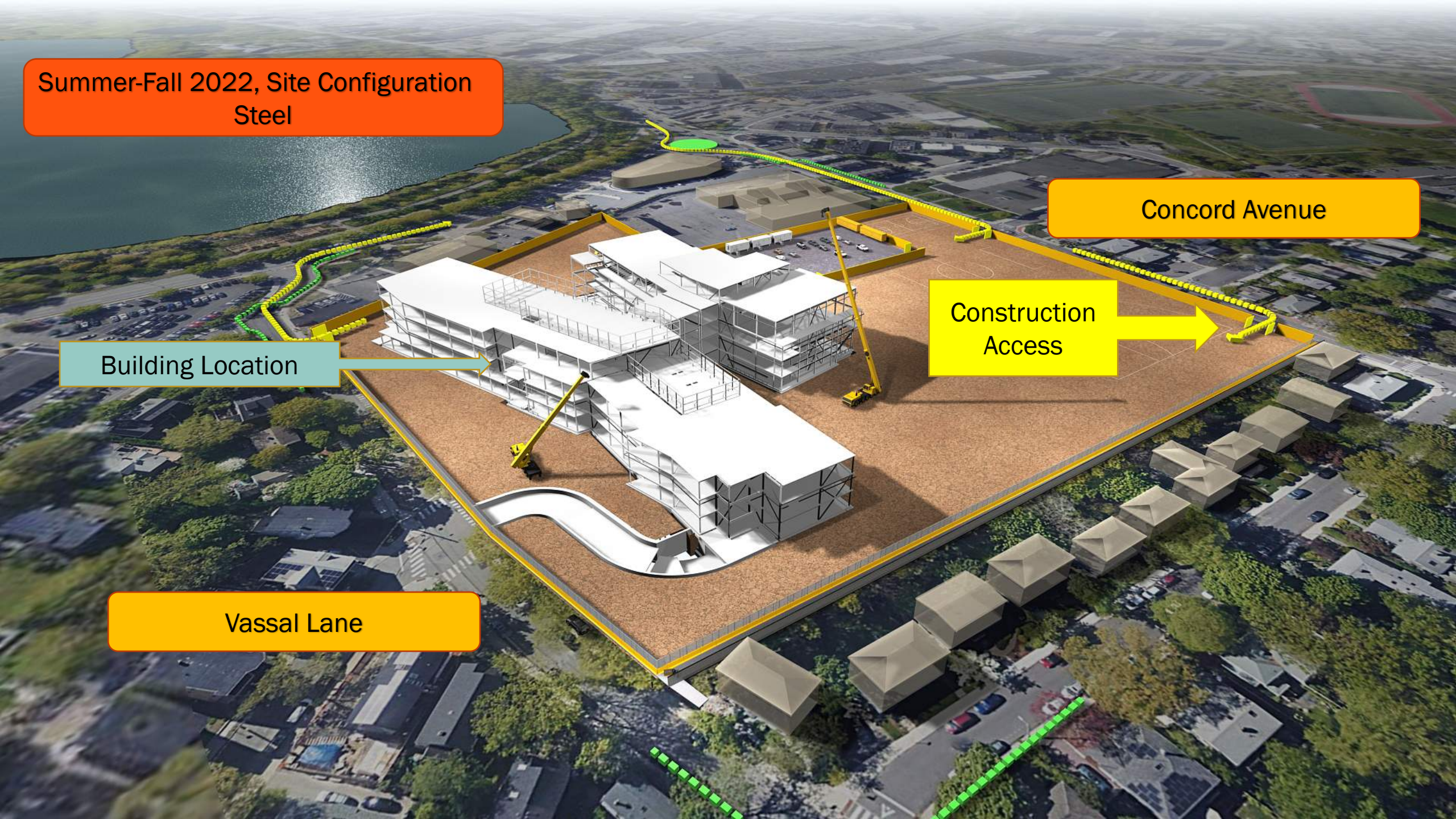
Summer-Fall 2022, Site Configuration
Steel

Concord Avenue

Construction
Access

Building Location

Vassal Lane



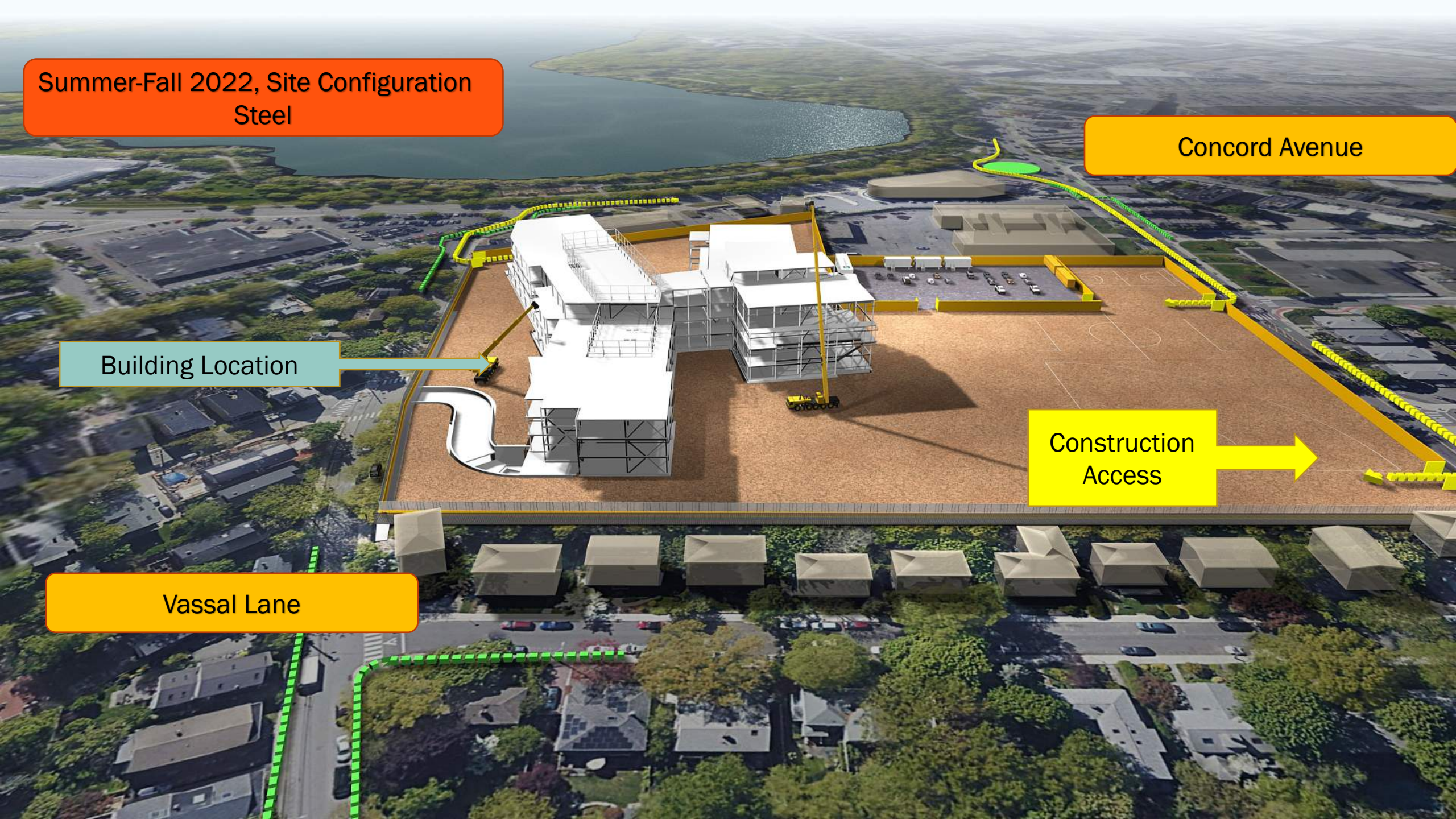
Summer-Fall 2022, Site Configuration
Steel

Concord Avenue

Building Location

Construction Access

Vassal Lane



August 2025, Final

Concord Avenue

Vassal Lane

