

CITY OF CAMBRIDGE

TOBIN MONTESSORI AND VASSAL LANE UPPER SCHOOLS PROJECT

12/02/2019

PERKINS —
EASTMAN

Human by Design

CITY COUNCIL / SCHOOL COMMITTEE ROUND TABLE



AGENDA

02 DECEMBER 2019

7:30 - 7:50 p.m.

Introductions

Presentation

- Program
- Goals and Principles
- Option Drivers
- Design Options
- Option Comparison
- Look Ahead

7:50 - 8:30 p.m.

Discussion



PROJECT ELEMENTS

Program

- Tobin Montessori School
- Vassal Lane Upper School
- Self-Contained Special Education
- Special Start
- Preschool & Community School

Performance

- Net Zero Emissions

Site

- Soil Management
- Municipal Storm Water
- Sports Fields & Playgrounds



PROGRAM



PROGRAM CAPACITY

MAXIMUM NUMBER OF STUDENTS (UPDATED 12/02/2019)

PROGRAM	GRADES	EXISTING	PROPOSED
Human Services Preschool	PreK		160
Tobin School			
Montessori	PreK – 5 th	312	336
Special Start	PreK	14	75
*Substantially Sub Separate Special Ed	K – 5 th		40
Vassal Lane Upper School			
General Program	6 th – 8 th	300	450
*Sheltered English Immersion	6 th – 8 th	75	75
*Substantially Sub Separate Special Ed	6 th – 8 th	24	48
All Programs		725	1,184

*Note: In reality the Substantially Sub Separate Special Ed Students and the Sheltered English Immersion Students are not additive. They will almost always be in the 450 due to the need to schedule and mainstream with the general population. These students do, however, need program homerooms which appears to inflate the total capacity.



PROGRAM ELEMENTS

COMMUNITY AND DISTRICT-WIDE

- Auditorium
- Gyms
- Assembly Spaces

- Science Department
- Office of Student Services --
offices and testing center
- Storage and Shop

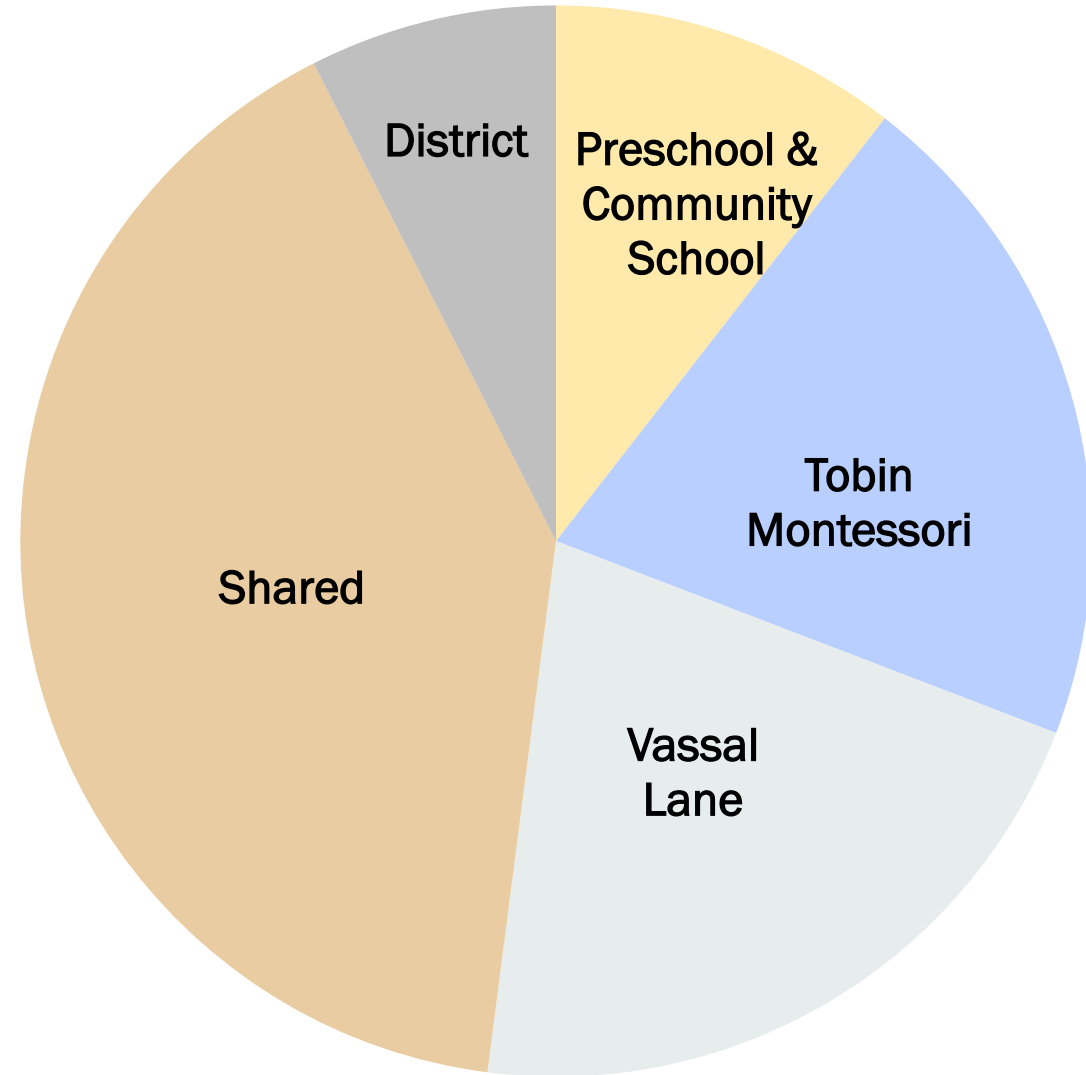




FACILITY SPACE PROGRAM

AREA COMPARISON

PROGRAM	EXISTING GSF	PROPOSED GSF
Human Services Preschool Community School	5,291	31,380
Tobin Lower School	36,878	60,600
Vassal Lane Upper School	33,059	63,300
Shared Spaces Learning Commons Gyms Dining Auditorium, Performing Arts & Visual Arts Professional Development	44,625	120,800
CPS District Wide	8,317	22,300
Building Total	+/-128,170	298,380
Underground Parking	0	+/- 55,000
Grand Total	+/- 128,1701	353,380



OUTDOOR PROGRAM

PROGRAM ON-GRADE

- Playgrounds
- Sports Field
- Off-street Parking
- Bus and Car Drop-off/Pick-up
- Bicycle Connection
- Emergency Vehicle Access
- Tree Protection



SITE INFRASTRUCTURE

- 1.25 Million Gallon Storm Water Tank
- Bioswales and Rain Gardens
- Solar Panels
- Geothermal Wells (if used)
- Parking and Circulation



2070 Storm Surge and Precipitation Flooding

GOALS & PRINCIPLES



DESIGN GOALS



Provide a campus respectful of neighborhood and traffic impacts, providing public open space amenities



Include regional, local, and on-site storm water management with a building above the future flood plain



Design for net zero emissions and target net zero energy and a healthy environment

EDUCATION DESIGN PRINCIPLES



Create an identity and front door for each program



Offer a hierarchy of spaces supporting developmental needs of each school



Draw a healthy balance between school program and shared spaces

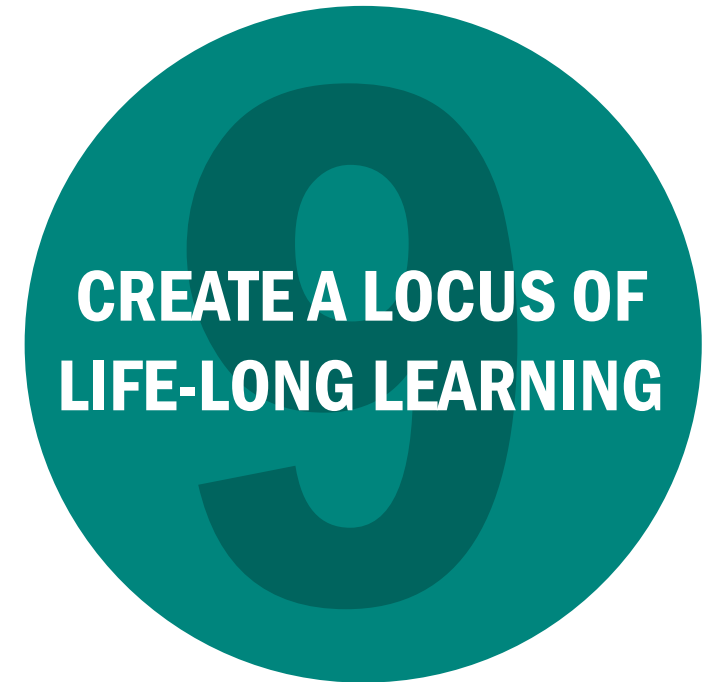
EDUCATION DESIGN PRINCIPLES



Provide developmentally appropriate opportunities for active, experiential, reflective learning and socialization



Connect learning spaces with readily accessible outdoor spaces designed for learning, recreation, and socialization

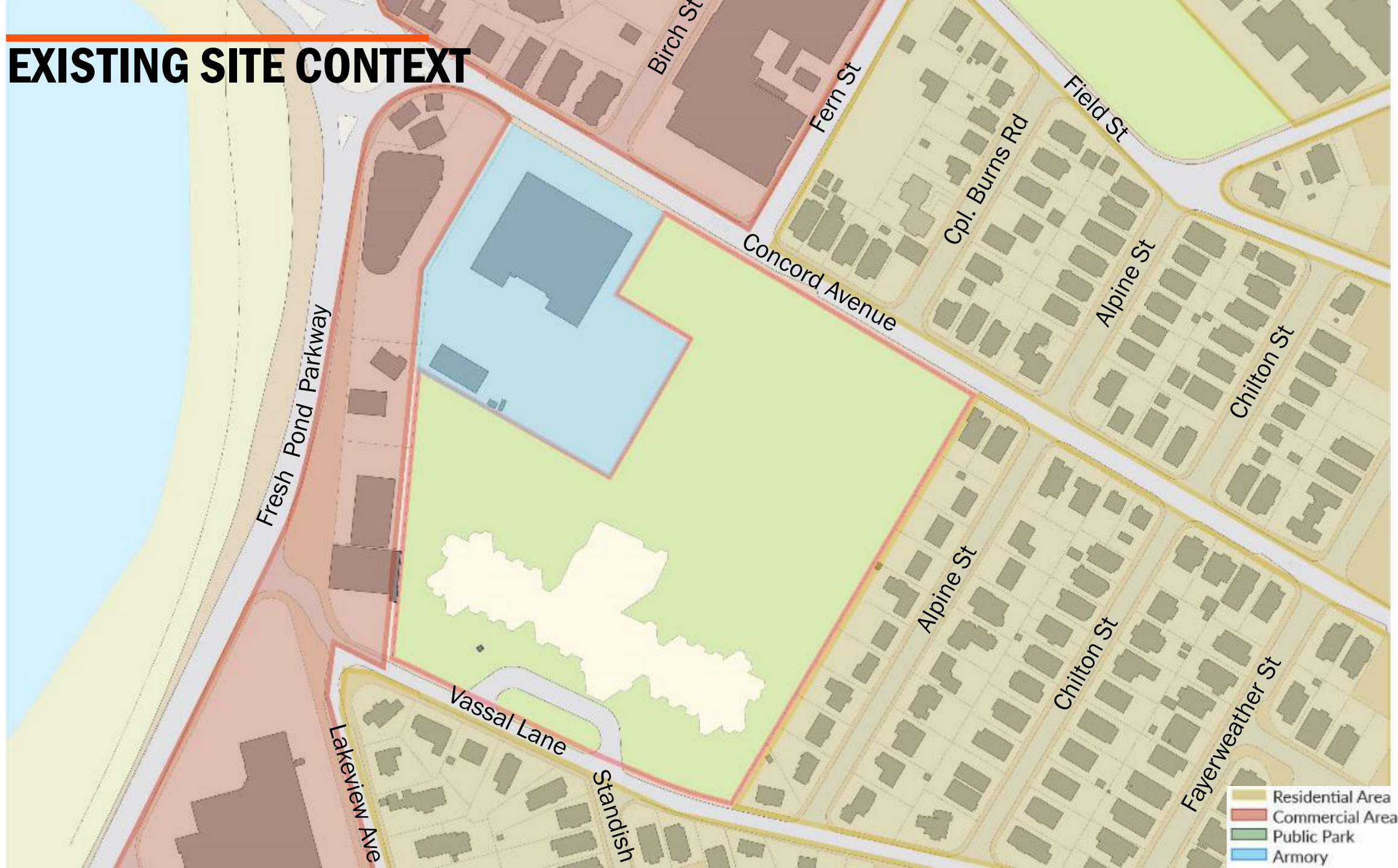


Create a locus for students and teachers, and support professional development for teachers on- and off-site

OPTION DRIVERS



EXISTING SITE CONTEXT



- Residential Area
- Commercial Area
- Public Park
- Armory



SITE UNDERSTANDING



VALUABLE TREES

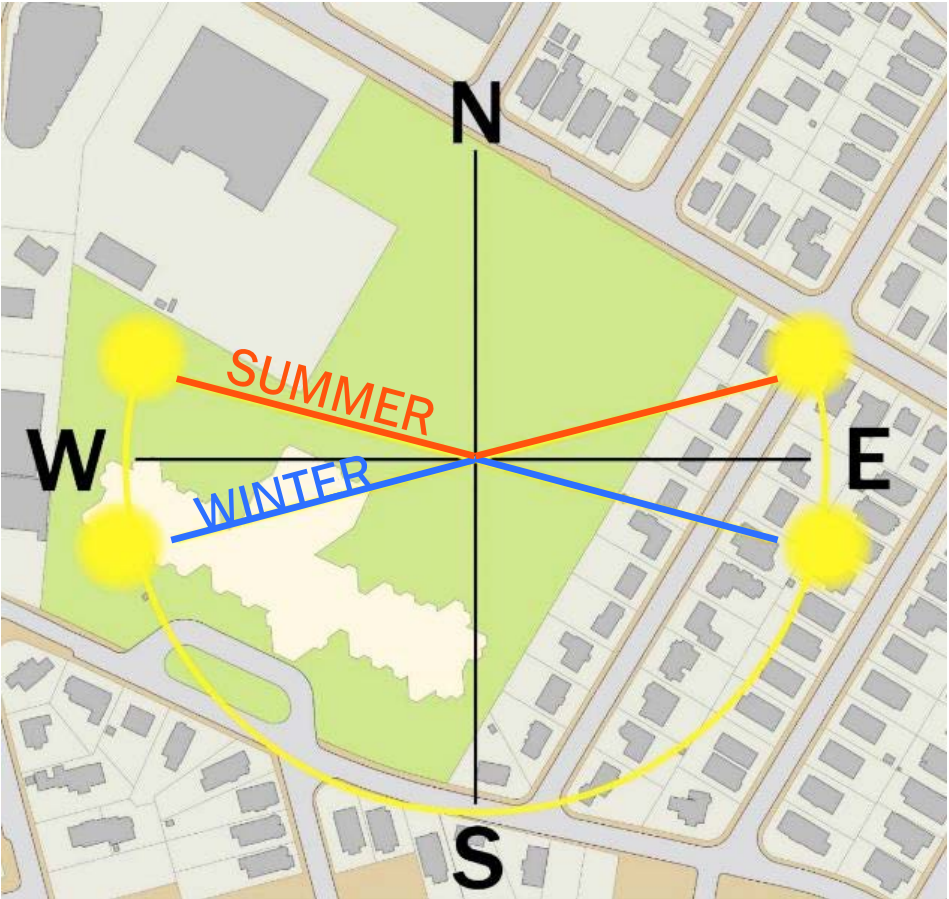


ACCESS AND PARKING

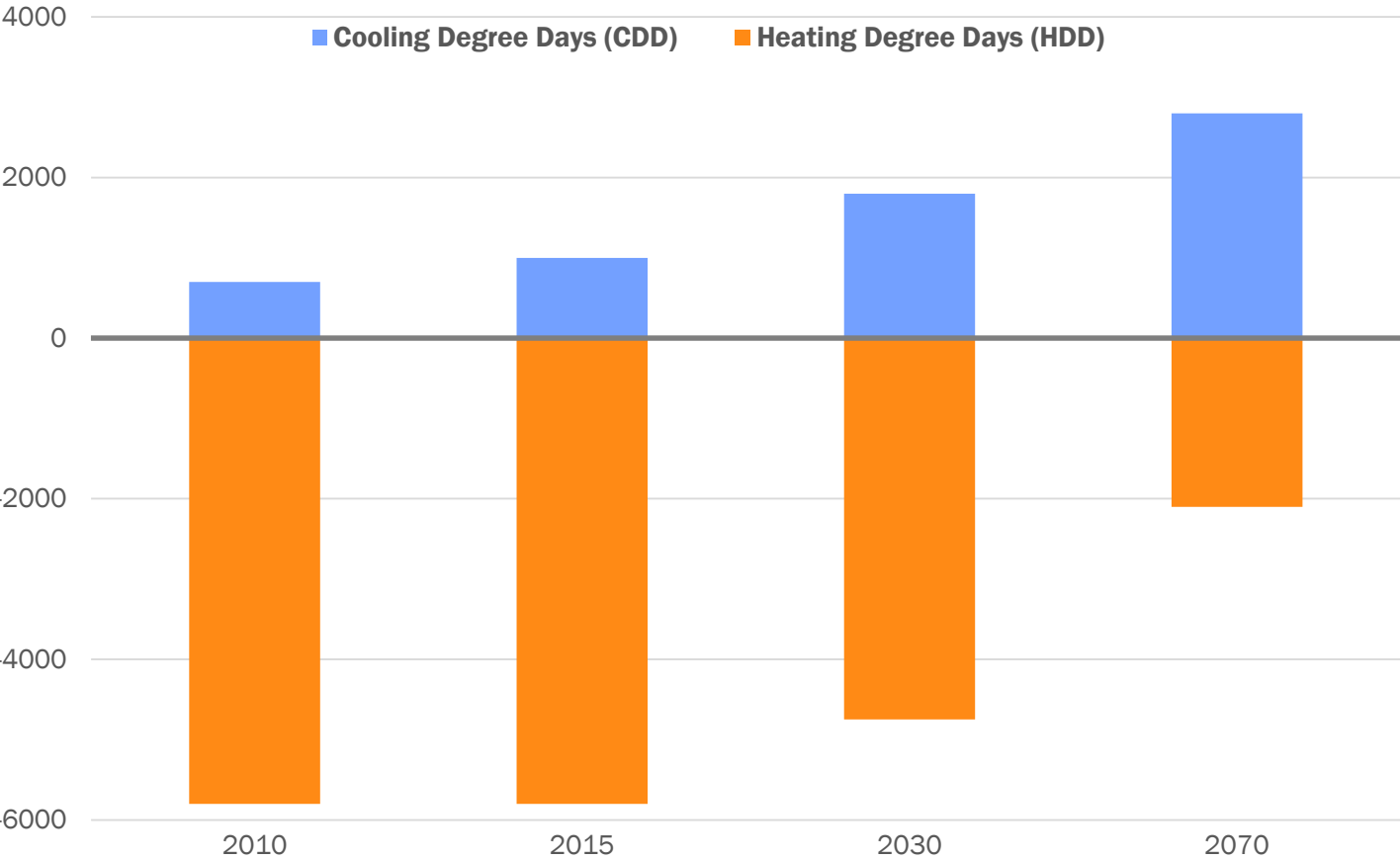


OPTIMAL MASSING FOR NEIGHBORHOOD

CLIMATE RESPONSIVENESS

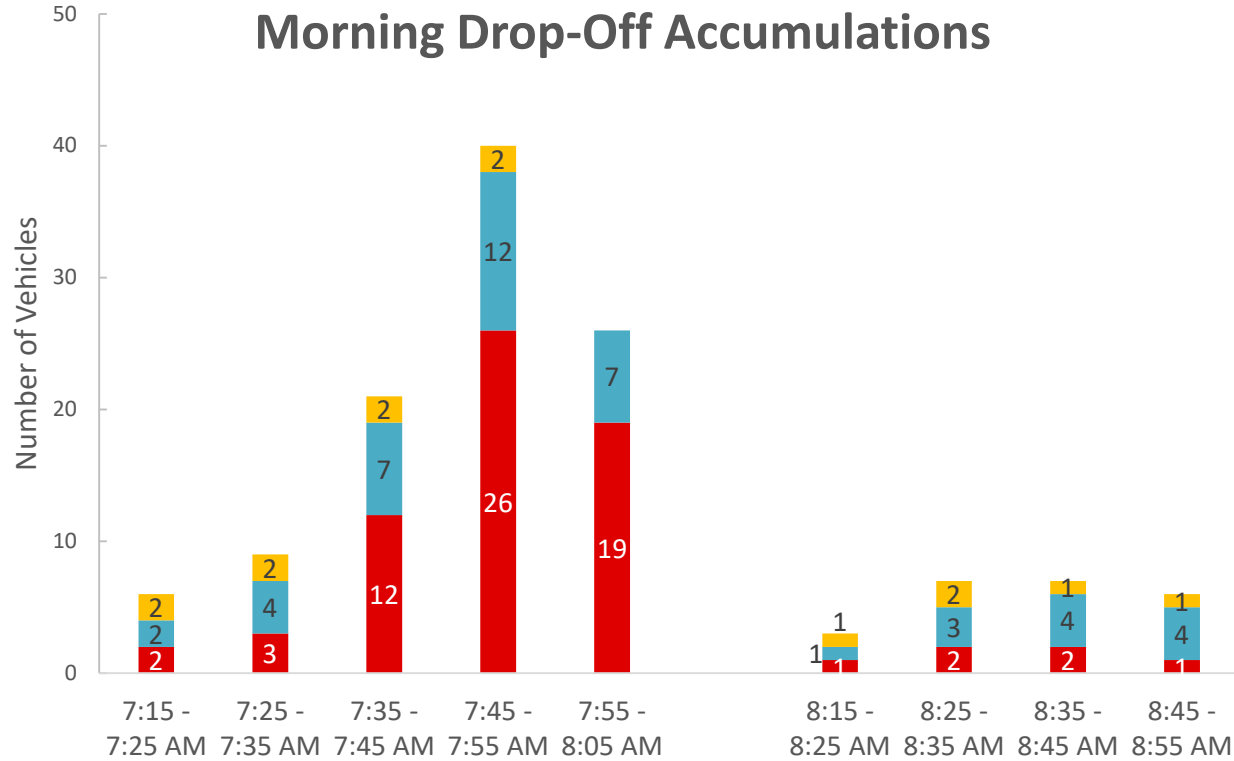


Energy Use in Buildings Shifting - More Cooling, Less Heating



EXISTING TRAFFIC VOLUMES

Morning Drop-Off Accumulations

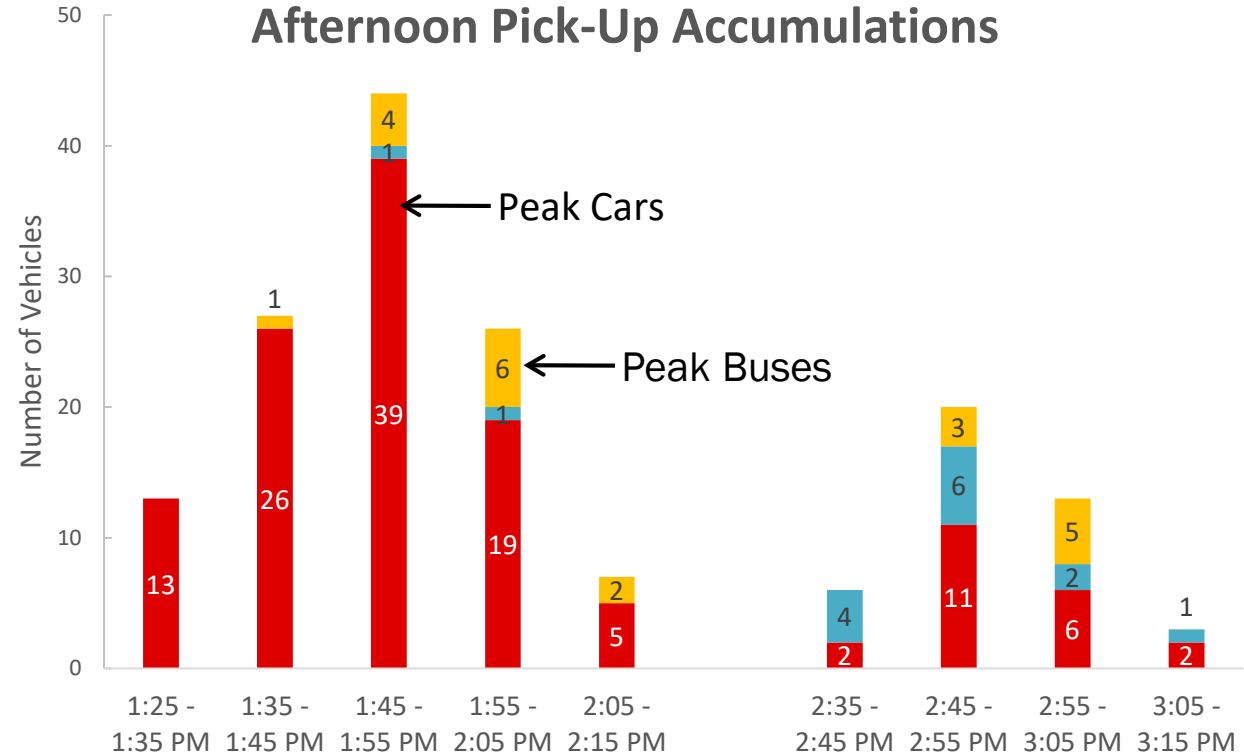


Tobin Montessori

Vassal Lane

■ Drop-Offs On Street ■ Drop-Offs In Circle ■ Buses in Circle

Afternoon Pick-Up Accumulations



Tobin Montessori

Vassal Lane

■ Pick-Ups on Street ■ Pick-Ups in Circle ■ Buses in Circle

EXISTING SOUND LEVELS

Ambient Sound Survey (Current)

- Sources are traffic and human activity
- Levels are within city ordinance limits

Nighttime: <50 dBA

Daytime: <60 dBA

- Measured Levels

① 37-46 dBA

② 42-57 dBA

③ 46-59 dBA



EXISTING BUILDING

Concrete Structure

Concrete Block Infill

Limited Windows, Views

Angular Rooms

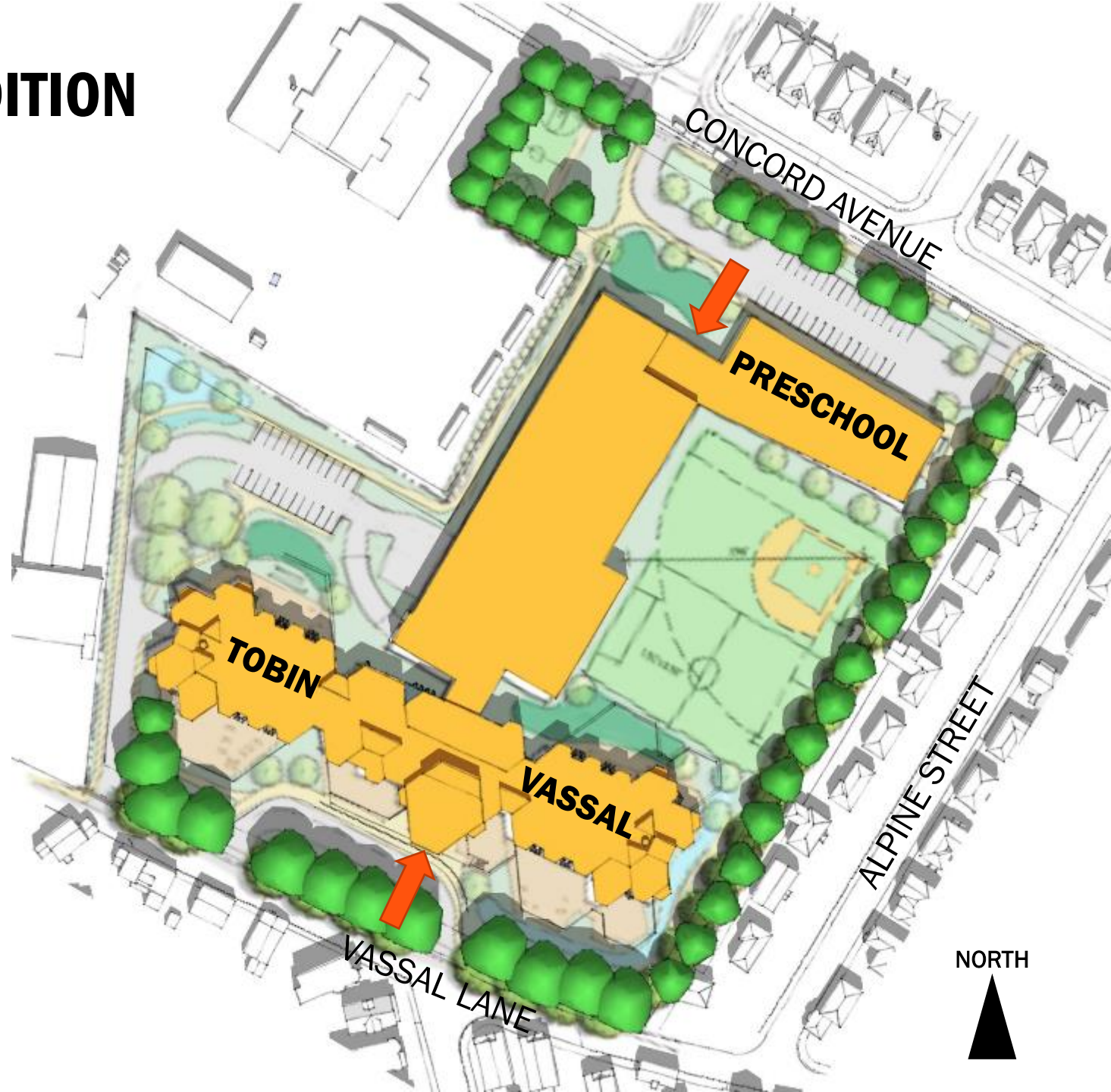
Aged Systems and Finishes

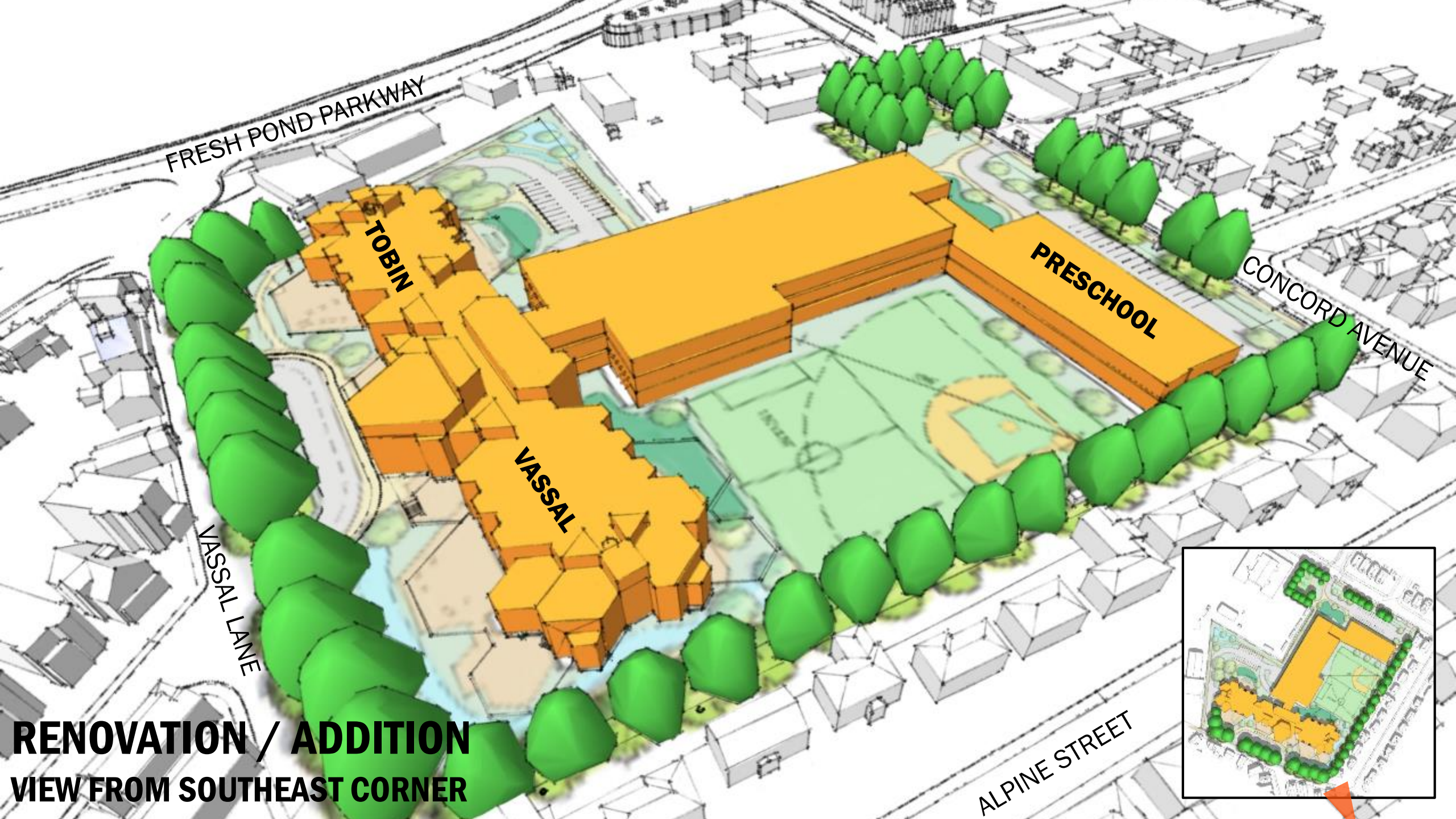


OPTION 1: RENOVATION / ADDITION

GYM REMOVED, ADDITION TO NORTH

- Re-uses Existing Building
- Buses on Vassal Lane
- Cars on Concord Ave
- Service and Parking at Site Interior
- Playing Fields on East Side





FRESH POND PARKWAY

TOBIN

VASSAL

PRESCHOOL

CONCORD AVENUE

VASSAL LANE

ALPINE STREET

RENOVATION / ADDITION
VIEW FROM SOUTHEAST CORNER



OPTION 2: WINGS

BUILDING ORIENTED AROUND A COURTYARD

- All New Building
- On-site Drive Aisle for Buses and Cars
- Service and Parking at Site Interior
- Playing Fields on South Side





FRESH POND PARKWAY

PRESCHOOL

TOBIN

VASSAL

CONCORD AVENUE

VASSAL LANE

ALPINE STREET

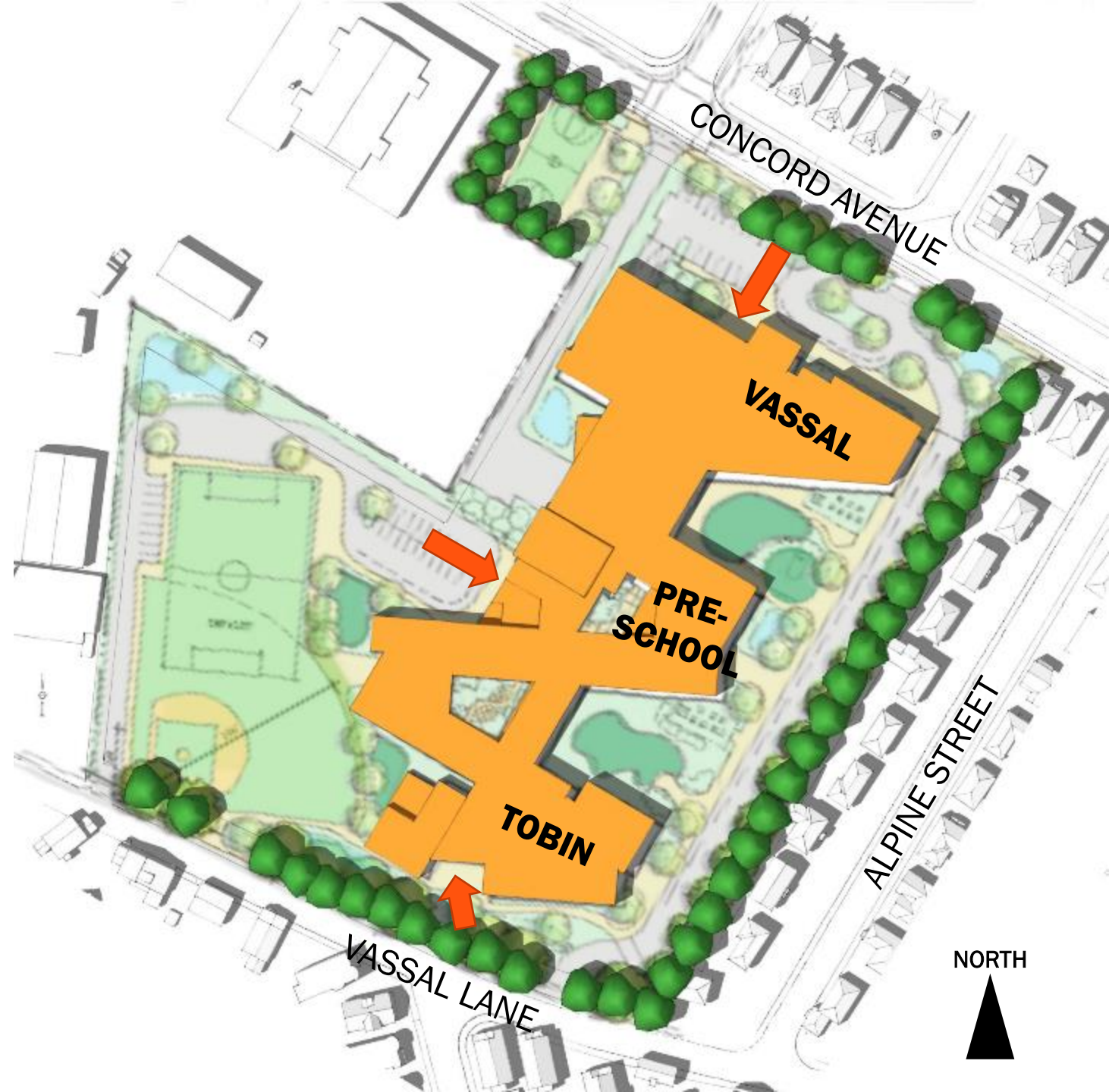
WINGS
VIEW FROM SOUTHEAST CORNER

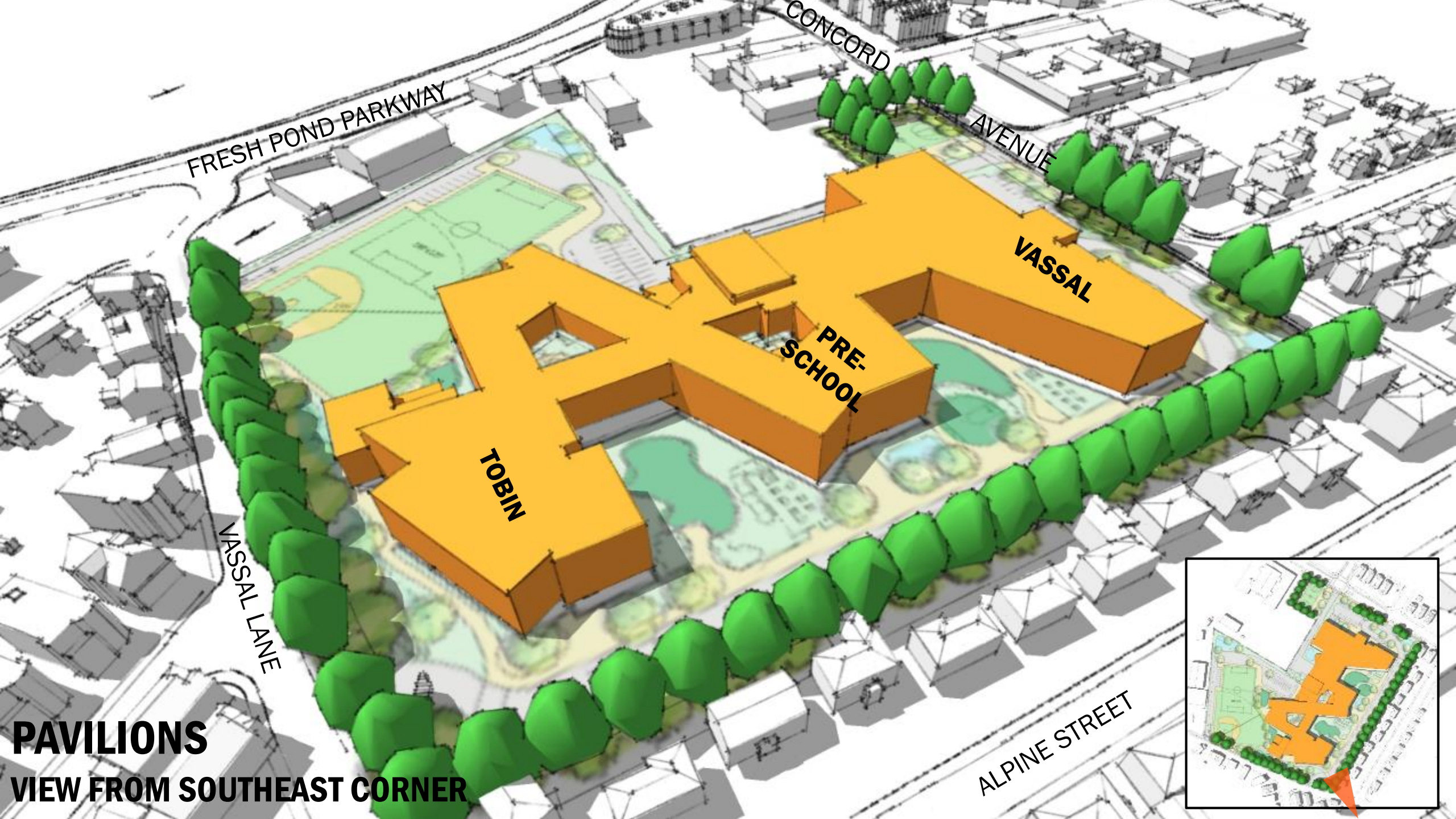


OPTION 3: PAVILIONS

SCHOOLS CONNECTED BY COMMON SPACE

- All New Building
- On-site Drive Aisle for Buses and Cars
- Service and Parking at Site Interior
- Playing Fields on West Side





FRESH POND PARKWAY

CONCORD AVENUE

CONCORD AVENUE

VASSAL

PRE-SCHOOL

TOBIN

VASSAL LANE

ALPINE STREET



PAVILIONS
VIEW FROM SOUTHEAST CORNER

OPTION COMPARISON



RENOVATION / ADDITION



WINGS



PAVILIONS

FRONTAGE

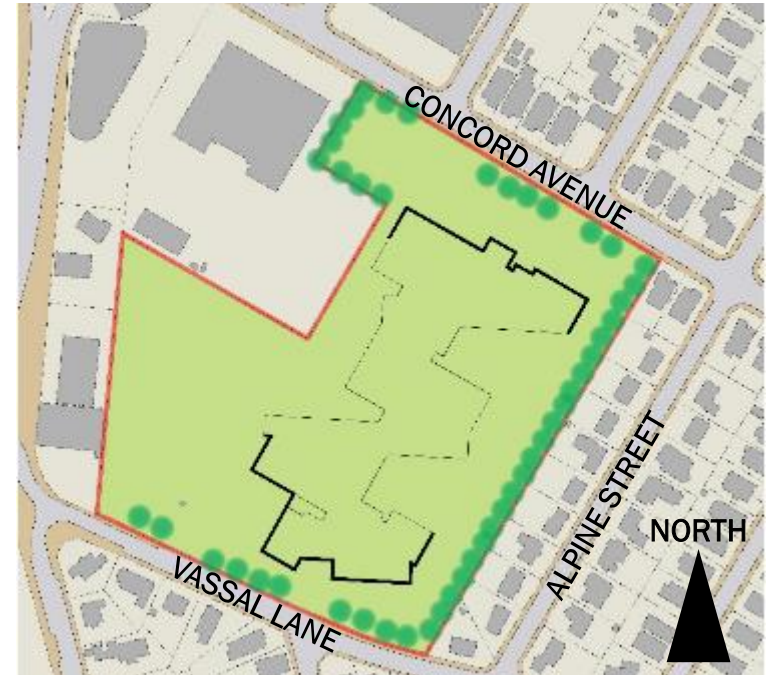
COMMUNITY PRESENCE



RENOVATION / ADDITION



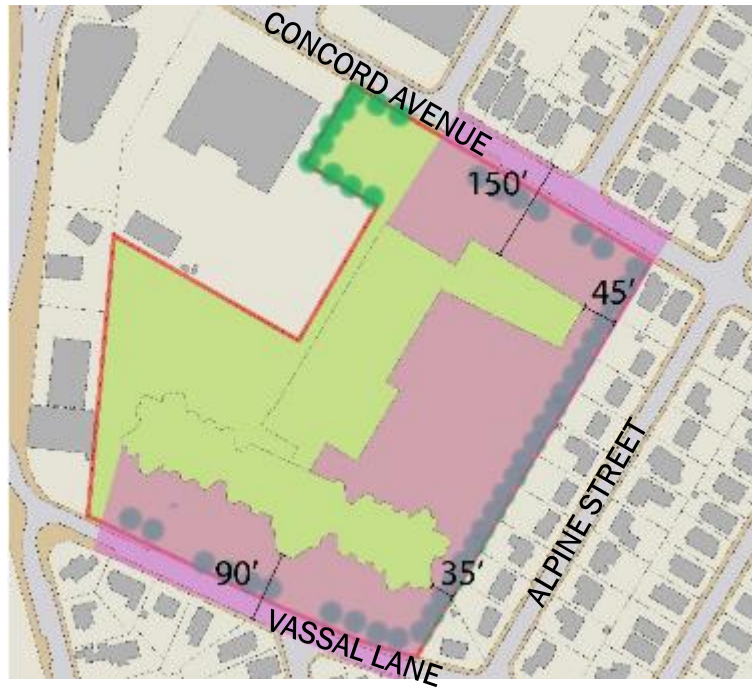
WINGS



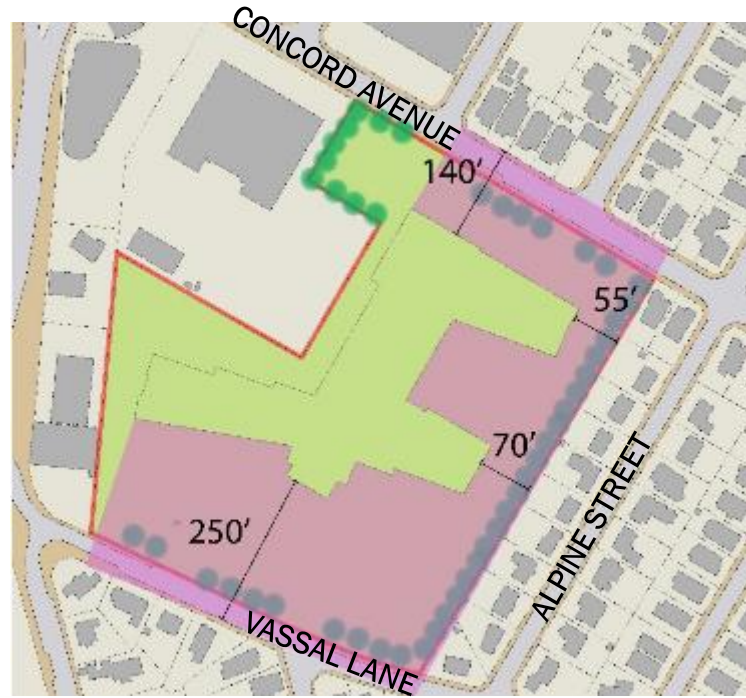
PAVILIONS

SETBACK

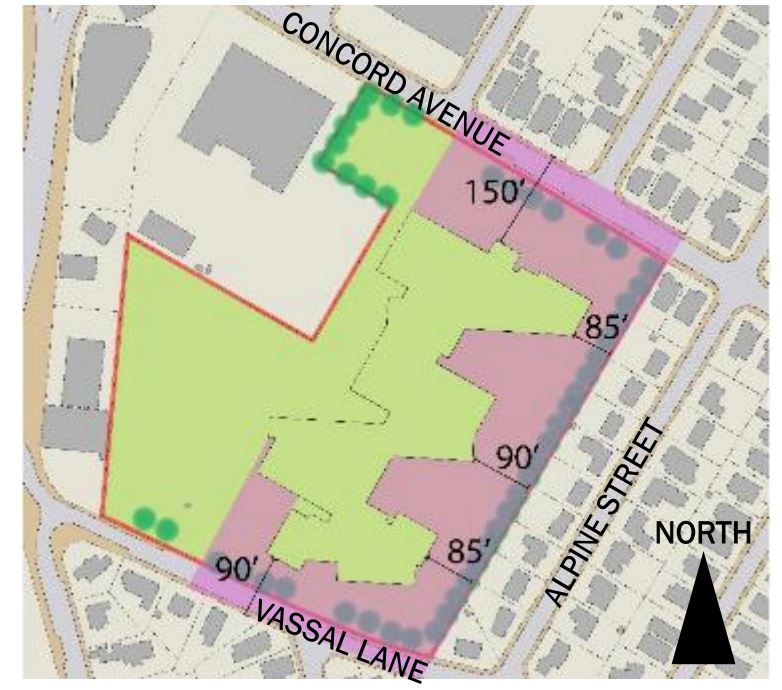
COMMUNITY PRESENCE



RENOVATION / ADDITION



WINGS



PAVILIONS

OPEN SPACE



RENOVATION ADDITION: 5.4 ACRES



WINGS: 5.4 ACRES



PAVILIONS: 5.2 ACRES

GOAL = 5 ACRES PROTECTED

MASSING



RENOVATION / ADDITION



WINGS



PAVILIONS

3 story 2 story 1 story

COMMUNITY SPACE

COMMUNITY PRESENCE



RENOVATION / ADDITION



WINGS

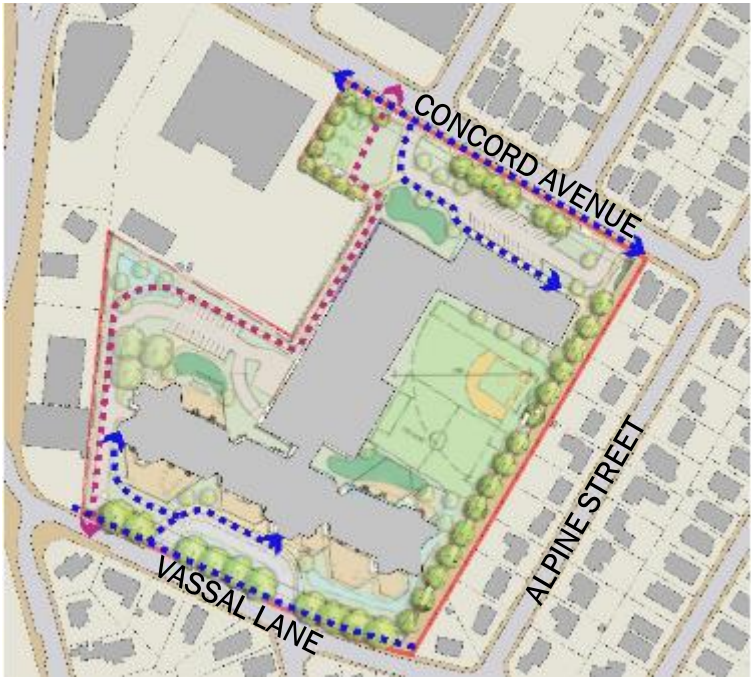


PAVILIONS

- GYMNASIUM
- CAFETERIA
- AUDITORIUM

SITE CIRCULATION

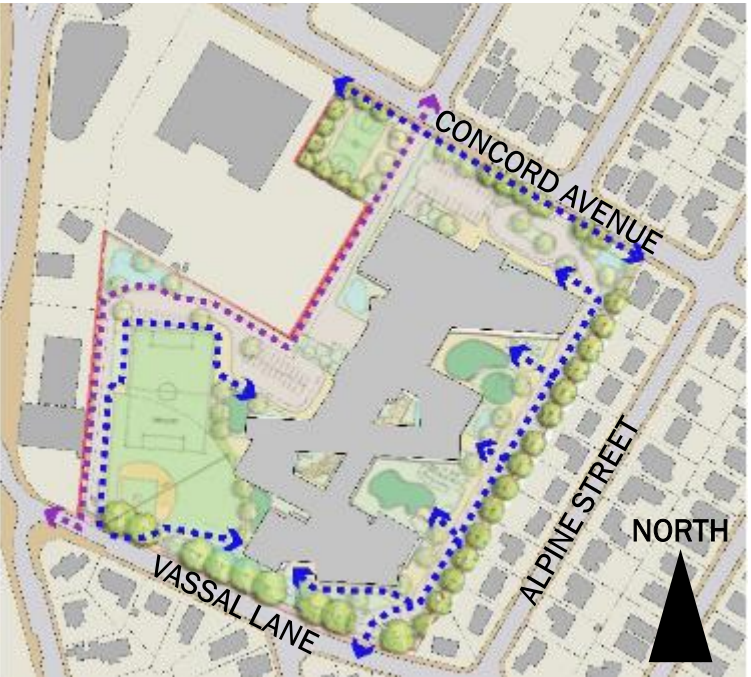
PEDESTRIAN / BICYCLE



RENOVATION / ADDITION



WINGS



PAVILIONS

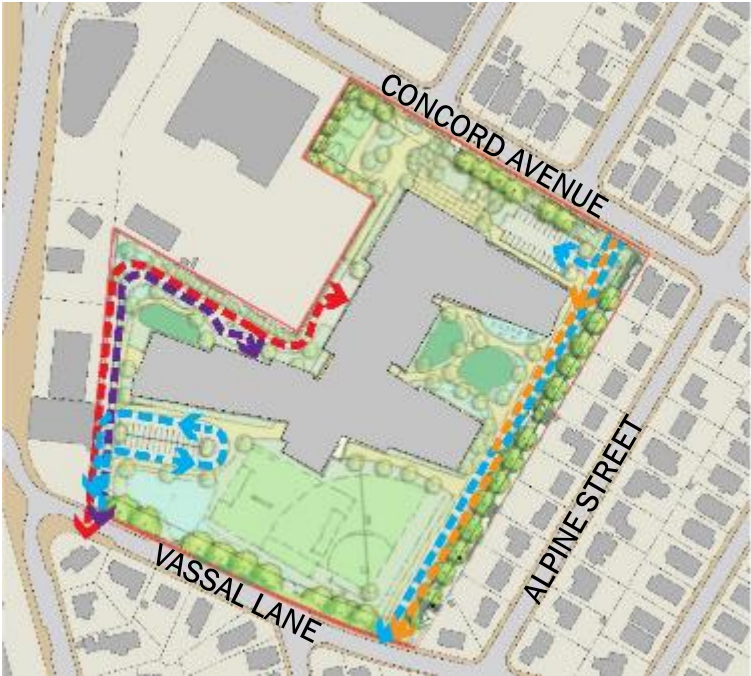
-  BICYCLE
-  PEDESTRIAN

SITE CIRCULATION

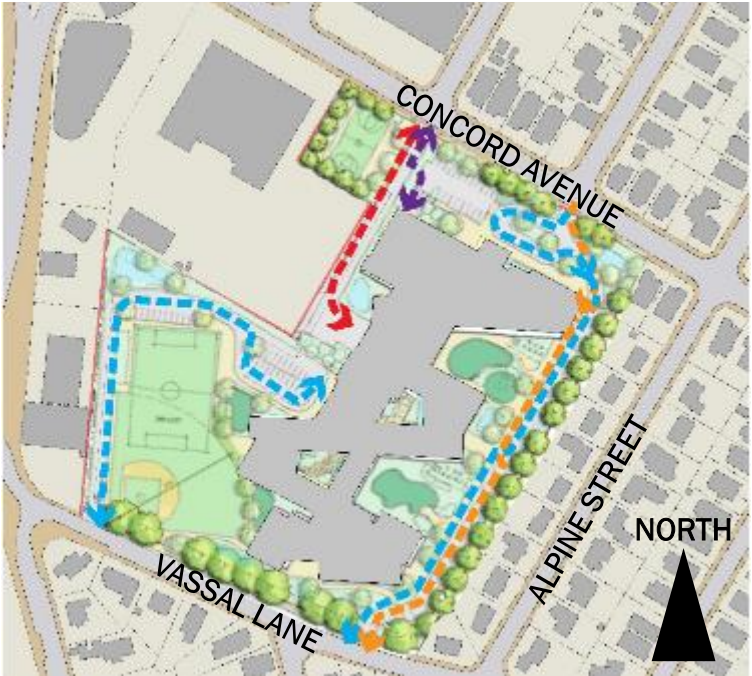
VEHICULAR



RENOVATION / ADDITION



WINGS



PAVILIONS

- PARENT DROP OFF
- SERVICE
- BUSES
- STAFF

PICK-UP PARKING

AFTERNOON PEAK



EXISTING CONDITION

PICK-UP PARKING

AFTERNOON PEAK

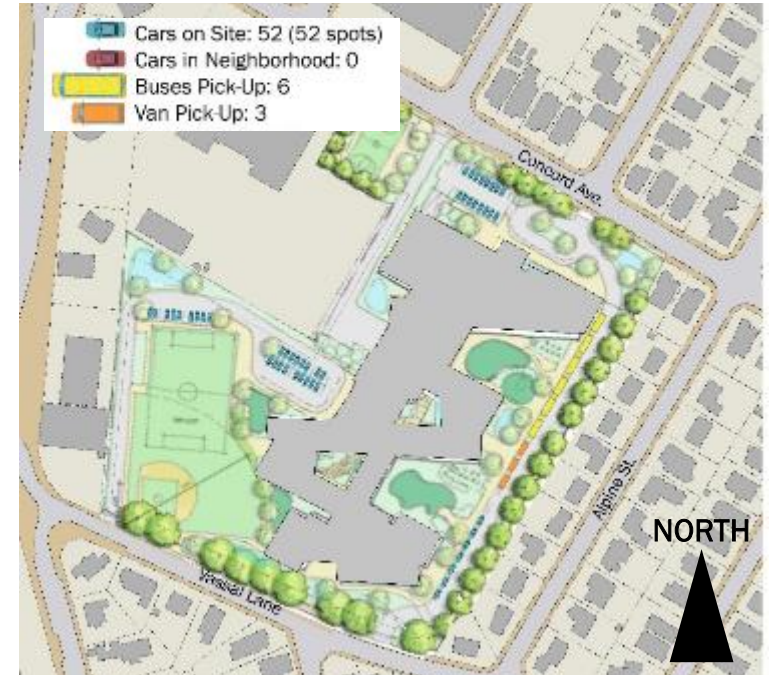
RENOVATION / ADDITION



WINGS



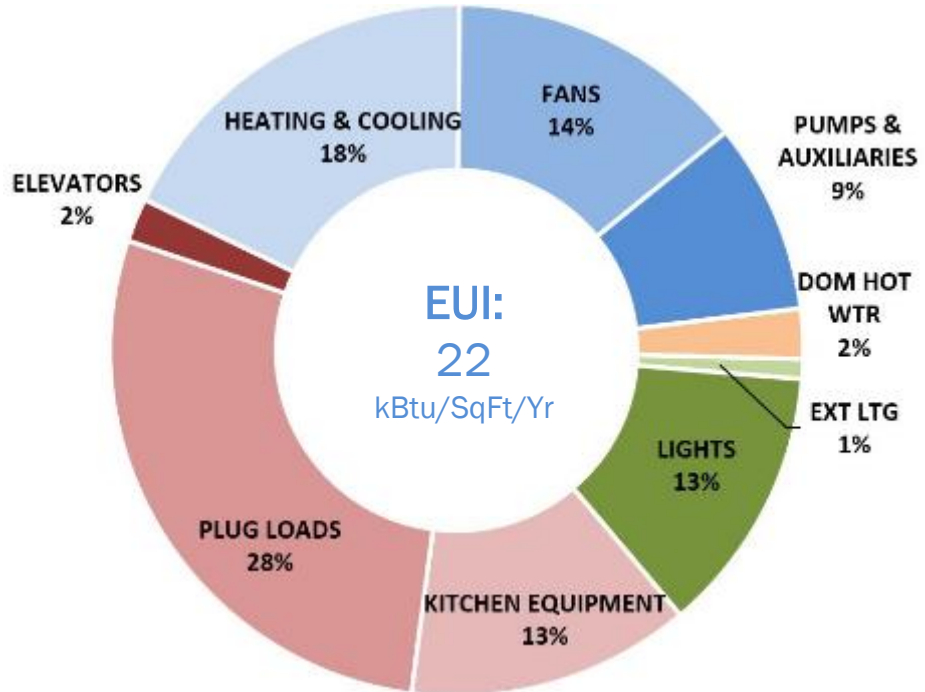
PAVILIONS



EXISTING CONDITION

SUSTAINABILITY STUDIES

ENERGY LOAD – CAMBRIDGE SCHOOL



Annual End-Use Breakdown by Energy Consumption (MMBtu)

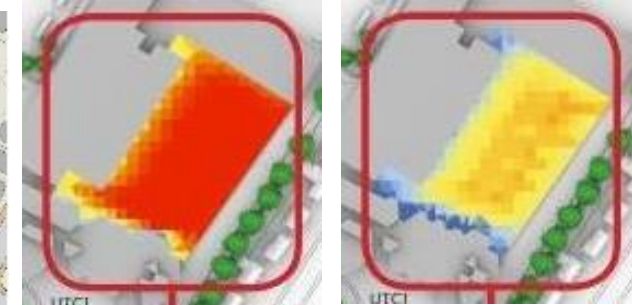
PHOTOVOLTAIC POTENTIAL



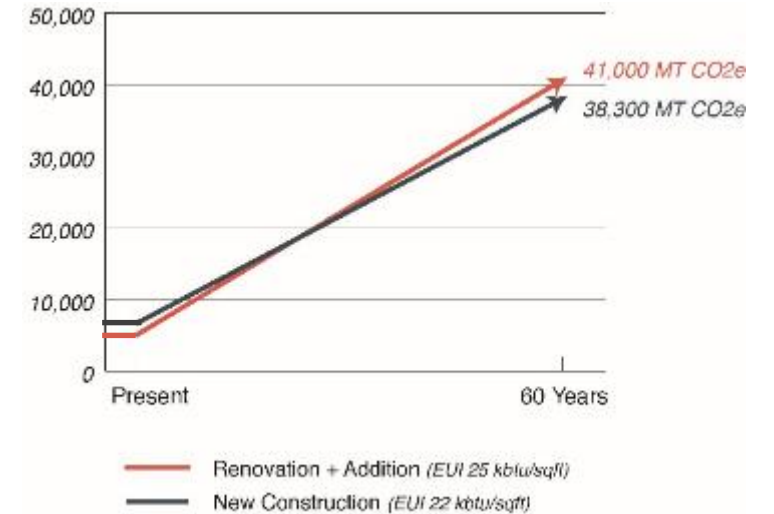
95,000 SF
PV Panel Area to Meet Energy Needs on Site

110,000 SF
Ave Building Footprint

OUTDOOR COMFORT



CARBON FOOTPRINT



NEXT STEPS



LOOK AHEAD

December 2019

Stakeholder and Community Meetings

January 2020

Preferred Option Selected

February 2020

Stakeholder Meetings

March 2020

Feasibility Study Complete



HUMAN BY DESIGN- PASSIONATE ABOUT WHAT WE DO...HERE'S WHY

Human by Design

