



New School Building

115 Sycamore Street

Meeting #9 June 8, 2026

PERKINS —
EASTMAN
Human by Design

AGENDA

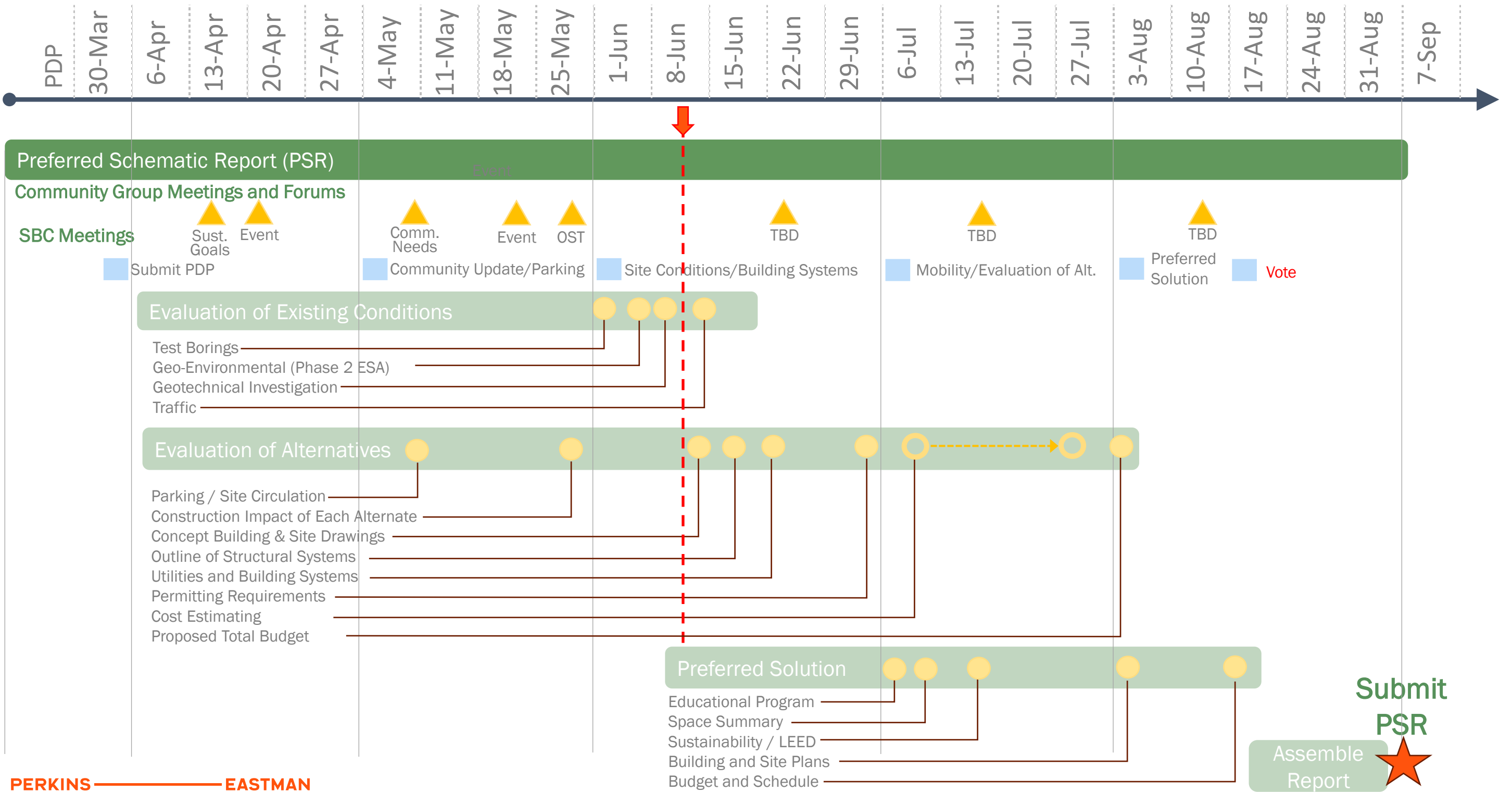
Project & Community Engagement Update

Preliminary Sustainability Goals

- Passive Solar
- Building Systems
- Certification
 - Passive House/TEDI
 - LEED/WELL
- Mass Timber for Low Embodied Carbon
 - Project Delivery, CM vs GC

Site Circulation

PSR WORKPLAN



Submit PSR
Assemble Report

COMMUNITY ENGAGEMENT OVERVIEW

COMMUNITY ENGAGEMENT

| | |
|--|----------------------|
| Community Workshop #1 Sustainability | 4/13/2026 |
| SPS Event - Parents of Young Children | 4/16/2026 |
| Community Workshop #2 Community Programs | 5/11/2026 at 5:30pm |
| OST Task Force | 5/19/2026 at 10:00am |
| Slice of Somerville Event | 5/20/2026 at 5:00pm |
| <hr/> | |
| Neurodiversity Workshop | 6/26/2026 at 10:00am |
| Community Workshop #3 Sustainability Part 2 | Sept. TBD |
| Community Forum 2 – Project update, sustainability & traffic | Oct. TBD |

WORKSHOP

Community Workshop on Program Feedback:

| Children Outdoor Spaces | Priority Votes |
|---|-----------------------|
| NEEDS | |
| Covered out door space for use in wet weather | 5 |
| Shaded space (so kids don't get baked) | 6 |
| Playground equipment for sensory seekers (climbing, spinning, hanging) | 5 |
| Solve long transition time from academic spaces to outside - especially upper floors | 1 |
| Have a plan for snow removal on roof | 2 |
| Have a plan for maintenance of roof top plants | 1 |
| No wood chips | 1 |
| Inclusive playground design | 3 |
| Picnic tables - heavy/secure so they are not stolen | 1 |
| Younger children area should be fenced and gated | 5 |
| Water bottle fill station / bubbler | |
| Clear sight lines so adults can watch kids | 3 |
| Lighting for after hours, especially in winter | 4 |
| ASKS | |
| Breakup play spaces so sports do not take over | |
| Quiet for neighborhood and brake up the façade | |
| Trees that can be climbed | 1 |
| Think about long term maintenance of the spaces | |
| Keep existing mature trees if possible | |
| Feel of nature - Hoyt - Sullivan Playground | 2 |
| Workout stations | 2 |
| Unscripted play elements vs traditional playground equipment | 1 |
| Access to grass and dirt - a reasonable amount of | 1 |
| Stadium seating elements that are built into the level change | 2 |
| Adult Outdoor Spaces | Priority Votes |
| NEEDS | |
| Place to sit in shade | 2 |
| Inclusive Design for playground | 2 |
| Access to toilet rooms from outside | 3 |
| Outdoor lights for basketball, pickleball and tennis | 4 |
| Welcome and accessible space for all community members of all ages and abilities | |
| Cover and overhands built into exterior to provide weather protection all year long | 4 |
| Walking track/Stepping logs and fitness trail that can be used by older adults and kids | 4 |
| Multi-use stadium seating /steps for spectating and fitness uses | 1 |
| Water bottle filter and water fountain | 7 |
| Beautiful landscape | 1 |
| Community Garden Plots | 1 |
| Monkey bars that adults and teens can use | 4 |
| Durable exterior - architecture and landscape elements | 2 |
| ASKS | |
| Tennis or badminton or pickleball courts | 1 |
| Benches and tables for community gatherings | 4 |
| Shaded and covered meeting areas - rain proof | 3 |
| Outdoor classroom for scale and English classes | |
| Fitness Equipment apart of playground | 1 |
| Zumba class space | |
| Fire pit - LED/Safe with seating circle to relax and gather at evening | |
| Skate. Scouter park / pump track | |

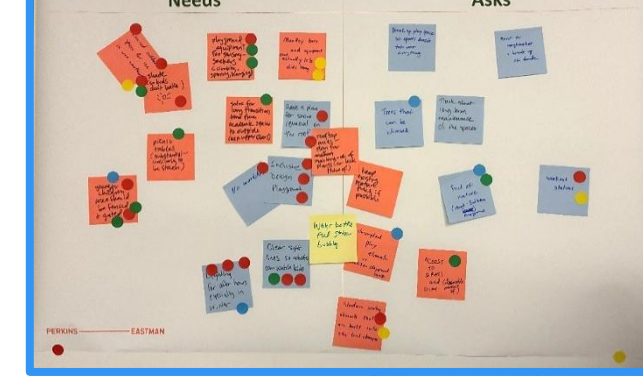
| Children Indoor Spaces | Priority Votes |
|---|-----------------------|
| NEEDS | |
| SFLC playgroup (flex size) - EBBs/Flows with family leave and seasons | 2 |
| Baby stroller storage (covered no necessary interior space) | 3 |
| Adult bathrooms / Family nearby | 5 |
| Age appropriate/inclusive interactive play space - manipulatives, alt to outdoor play and Storage | 5 |
| Inclusive design - inside/out - beyond U.D. | 3 |
| Acoustics - large and small spaces | 2 |
| Daylight - cafeteria | 1 |
| Quiet spaces with cafeteria and gym | 3 |
| Flexibility at all scales | |
| Small school experience & graduating to spaces | 3 |
| ASKS | |
| Sensory gardens/int. spaces | 2 |
| School as thematic, interactive environment - a destination | |
| Informal common space - not just programmed | 4 |
| Classrooms available to OST with storage | 2 |
| Interior playspace near cafeteria | |
| Attention to rodent resistance - no carpets | |
| Pockets/alcoves - no cells and belts | 3 |
| Fun light wells | 1 |
| Multipurpose - habitable cafeteria and stair | 2 |
| Adult Indoor Spaces | Priority Votes |
| NEEDS | |
| Section off community spaces for public access and school safety | 7 |
| Secure area w/ easy community access | 1 |
| Space for community meetings - large and small with A/V | 3 |
| Non-school PE with storage off gym for outside program | 5 |
| IEP meetings are for adults entering the school during the school day and school staff /admin | |
| Afterschool teachers/admin needs at least one dedicated office | |
| However much space can be available for "outside" use | 2 |
| Spaces for teachers to do group Professional development and meetings | 1 |
| PTA would love something larger than a closet but needs at least a substantial closet | 1 |
| Lending Library - Somerville mutual aid clothing - storage with gym for swaps | 1 |
| Community access to 3D printers | 1 |
| ASKS | |
| Library/media access support local community needs | 2 |
| Food pantry, clothing, toy/clothing swap space | 3 |
| Lending Libraries - tools, bikes, books media | 1 |
| Storage for clubs and informal activities | 1 |
| Conference space by day - activity space by night/weekend | 1 |
| Conference space that can be easily accessed from the exterior - not buried | |
| Classroom space for SCALE - adult ed | |
| Ability to use indoor space informally for community ed activity | 1 |
| SFLC - needs outdoor access and nearby parking even if temporary | 3 |
| Gym space that opens onto open space with large doors | 1 |
| Plan for swing space in case spaces need to be future classrooms | 1 |
| Bathrooms/changing rooms accessed directly through gym space, not hallway | |
| Indoor movie space | 2 |
| ability to load equipment into cafeteria/gym from outside | 2 |
| Community art space with storage | 1 |



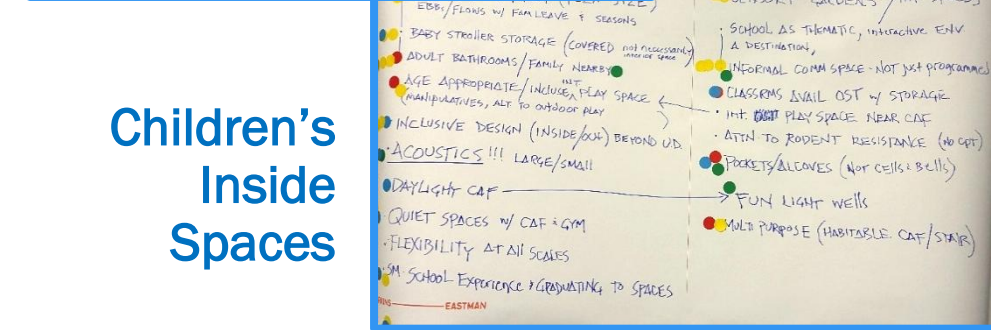
Adult Inside Spaces



Adult Outside Spaces



Children's Outside Spaces

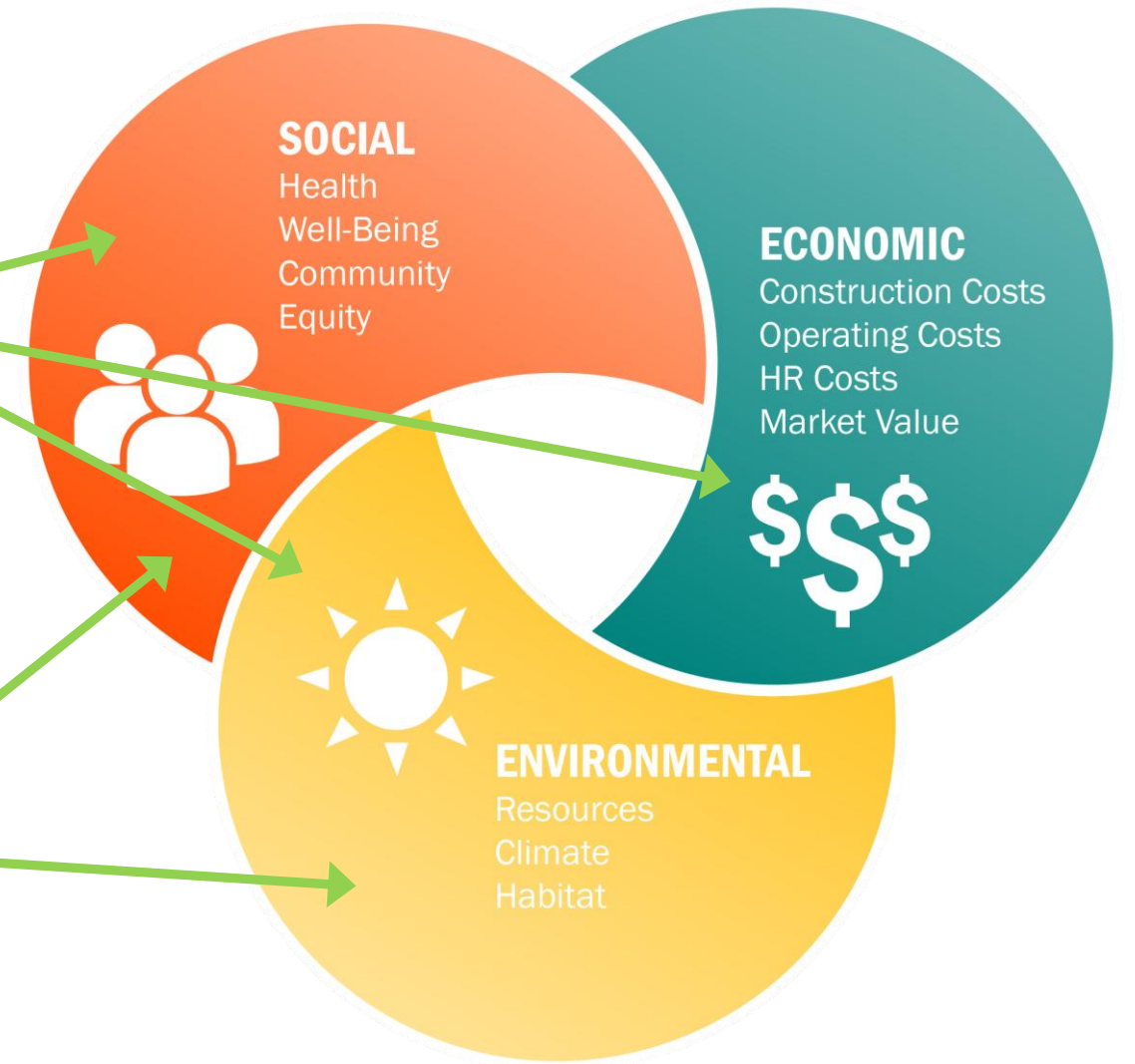


Children's Inside Spaces

PRELIMINARY SUSTAINABILITY GOALS

SUSTAINABILITY IS EVERYTHING

| | School | Neighbors | City | Consultant | |
|-----------------------|-----------|-----------|-----------|------------|--------|
| Summary | Community | | Employees | | Totals |
| Improve Heat Island | 5 | 9 | | 1 | 15 |
| Geothermal | 3 | 2 | | 1 | 6 |
| Stormwater Management | 5 | 1 | 3 | 2 | 11 |
| Mobility | 2 | 8 | | 2 | 12 |
| Carbon | 11 | 3 | 1 | 4 | 19 |
| Energy Efficiency | 17 | 5 | 1 | 6 | 29 |
| Windows | 3 | 1 | | | 4 |
| Air Quality | 2 | 2 | 2 | 1 | 7 |
| Lighting | 2 | 1 | 1 | 2 | 6 |
| Water | | | 1 | 1 | 2 |
| Gardens/Biophilic | 8 | 5 | 1 | 1 | 15 |
| Materials | 11 | 1 | 1 | 3 | 16 |
| Wood | 9 | | | 1 | 10 |
| Acoustics | 3 | | | | 3 |
| Art | | | | | 0 |
| Learning/Play Space | 15 | 10 | 5 | 7 | 37 |
| Community | 14 | 9 | 5 | 1 | 29 |
| Resiliency | 2 | 4 | | 2 | 8 |
| Commissioning | 1 | 1 | | | 2 |
| Equitable | 7 | 7 | | 3 | 17 |
| Maintenace | | 1 | 1 | | 2 |



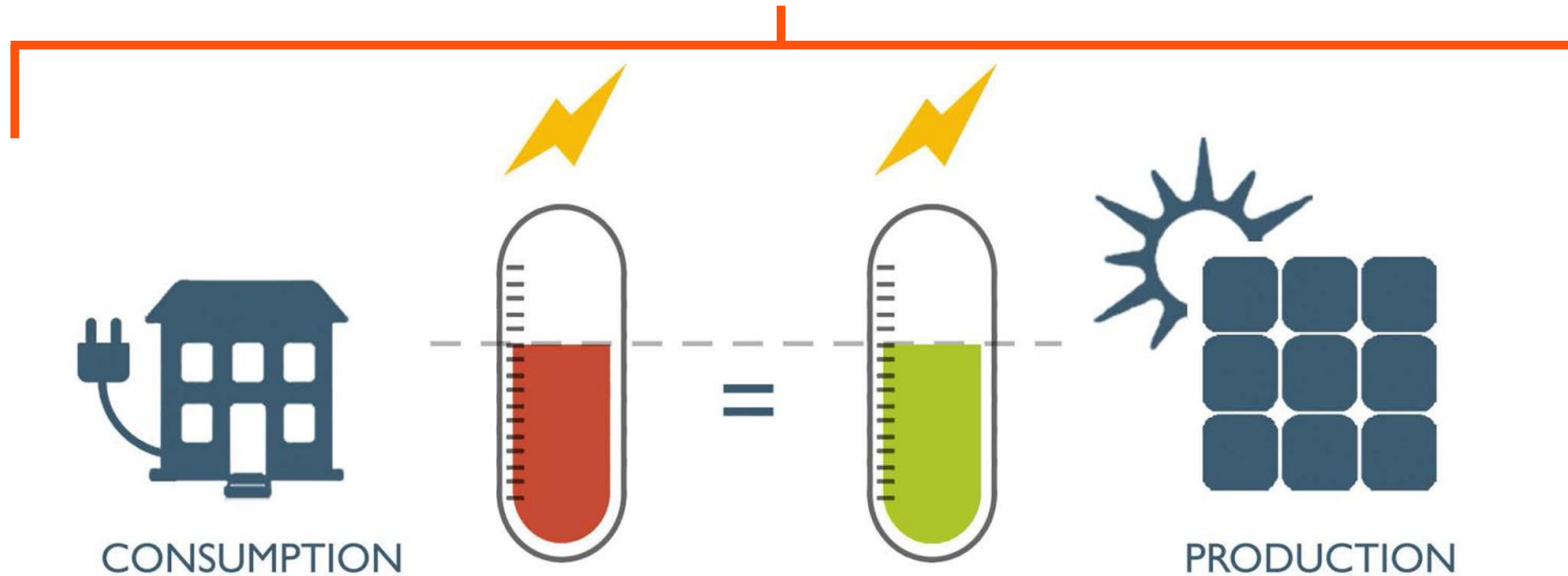
PASSIVE SOLAR DESIGN



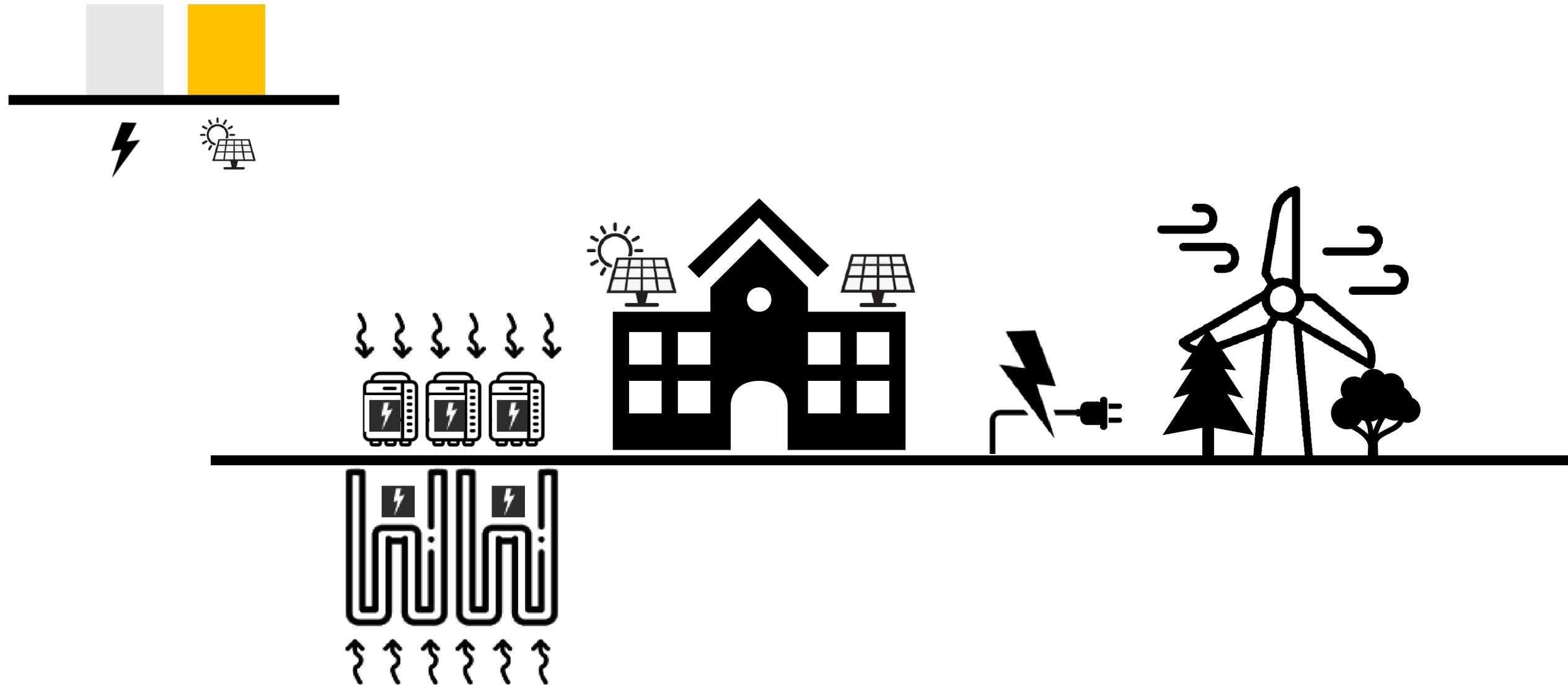
A NET ZERO ENERGY & CARBON BUILDING

NET ZERO ENERGY

A project that meets Net Zero Energy produces as much energy on-site as it consumes on an annual basis. On-site production comes from renewable sources such as solar photovoltaics.



HOW DO WE GET TO A CARBON-NEUTRAL FUTURE?



HVAC System Selection

City of Somerville
New School Building
115 Sycamore Street



HVAC System Options:

1

Ground Source Heat Pump (GSHP)

2

Air Source Heat Pump (ASHP)

3

**Hybrid Ground Source / Air
Source Heat Pump**



What is Geothermal or Geo-Exchange?

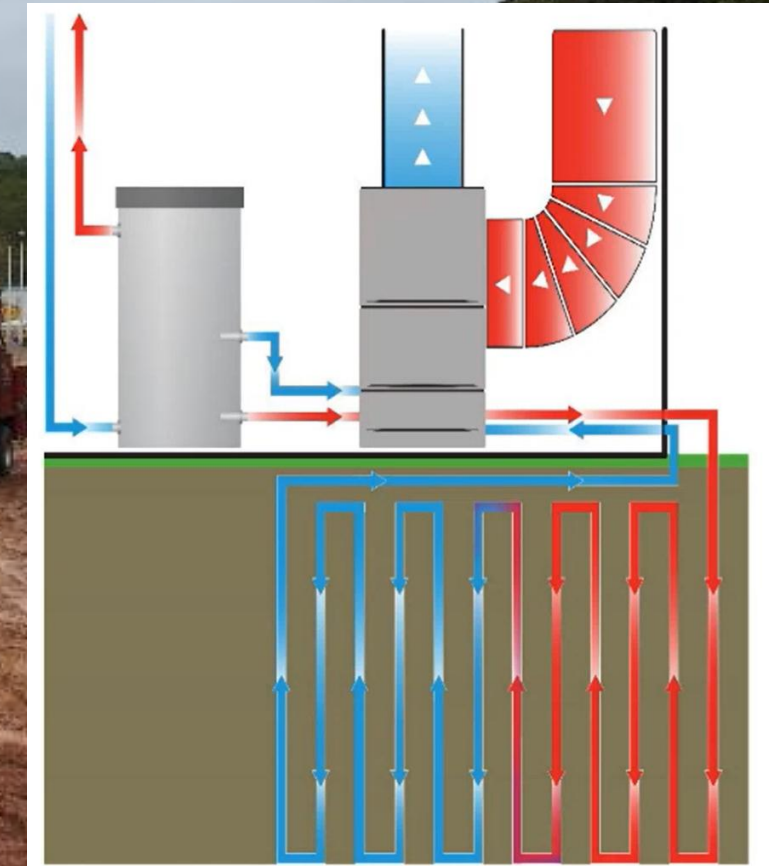
A geothermal system is a heat exchange system using pipes in the ground.

The ground's near constant temperature is a renewable resource that can be used to cool and heat water from the building.

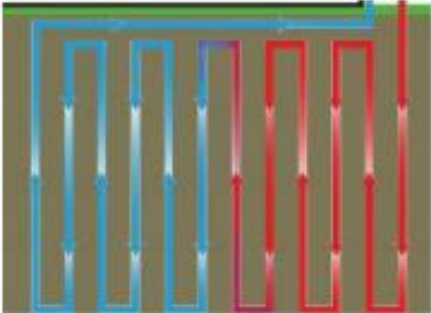








In the winter, the water is heated by the earth, then exchanged in the building.

In the summer, the water is cooled by the earth, then exchanges in the building.

They are generally 40% more energy efficient than traditional systems, which may require combustion or heat exchange with the air (rather than the ground).



HVAC System Options

| | Option 1 – Electric GSHP | Option 2 - Electric ASHP | Option 3 – Electric GSHP / ASHP |
|-------------------------------|---|--|--|
| Heating/ Cooling Source | <p>Ground Source</p>  | <p>Air Source</p>  | <p>Ground & Air Source</p>  |
| Compressor Location | <p>Central or Distributed</p>  | <p>Air Source</p>  | <p>Air Source</p>  |
| Terminal Distribution | <p>Fan Coil Unit or Heat Pump Unit</p>  | <p>Fan Coil Unit</p>  | <p>Fan Coil Unit or Heat Pump Unit</p>  |

HVAC SYSTEM COMPARISON

| | Option 1 Electric GSHP | Option 2 Electric ASHP | Option 3 Electric GSHP / ASHP |
|----------------------------|---------------------------|---------------------------|----------------------------------|
| Energy Use Intensity | Best | Good | Better |
| System First Cost | Good | Best | Better |
| Annual Operating Costs | Best | Good | Better |
| Life Cycle Costs | Best | Good | Better |
| Rooftop Space Requirements | Best | Good | Better |
| Site Disruption | Good | Best | Better |
| Solar Requirements | Best | Good | Better |

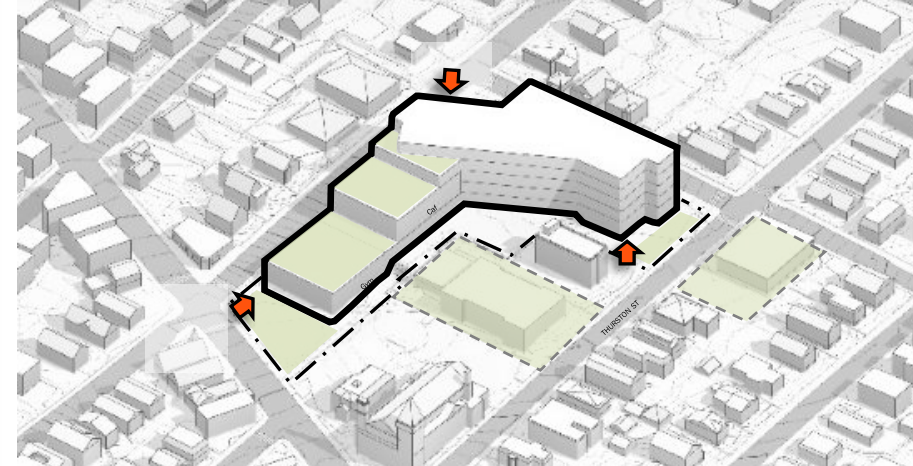
*Based on CMTA's previous experience and may shift based on site specific considerations.

SOLAR PHOTOVOLTAIC (PV) SYSTEM

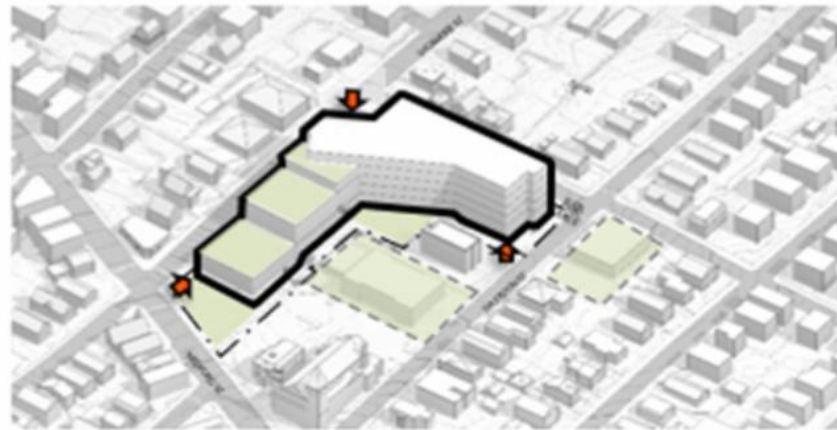
1B ADDITION/RENOVATION
115 SYCAMORE ST. 925 STUDENTS



2A NEW CONSTRUCTION
115 SYCAMORE ST. 690 STUDENTS



2B NEW CONSTRUCTION
115 SYCAMORE ST. 925 STUDENTS



4 NEW CONSTRUCTION
115 SYCAMORE ST. 925 STUDENTS



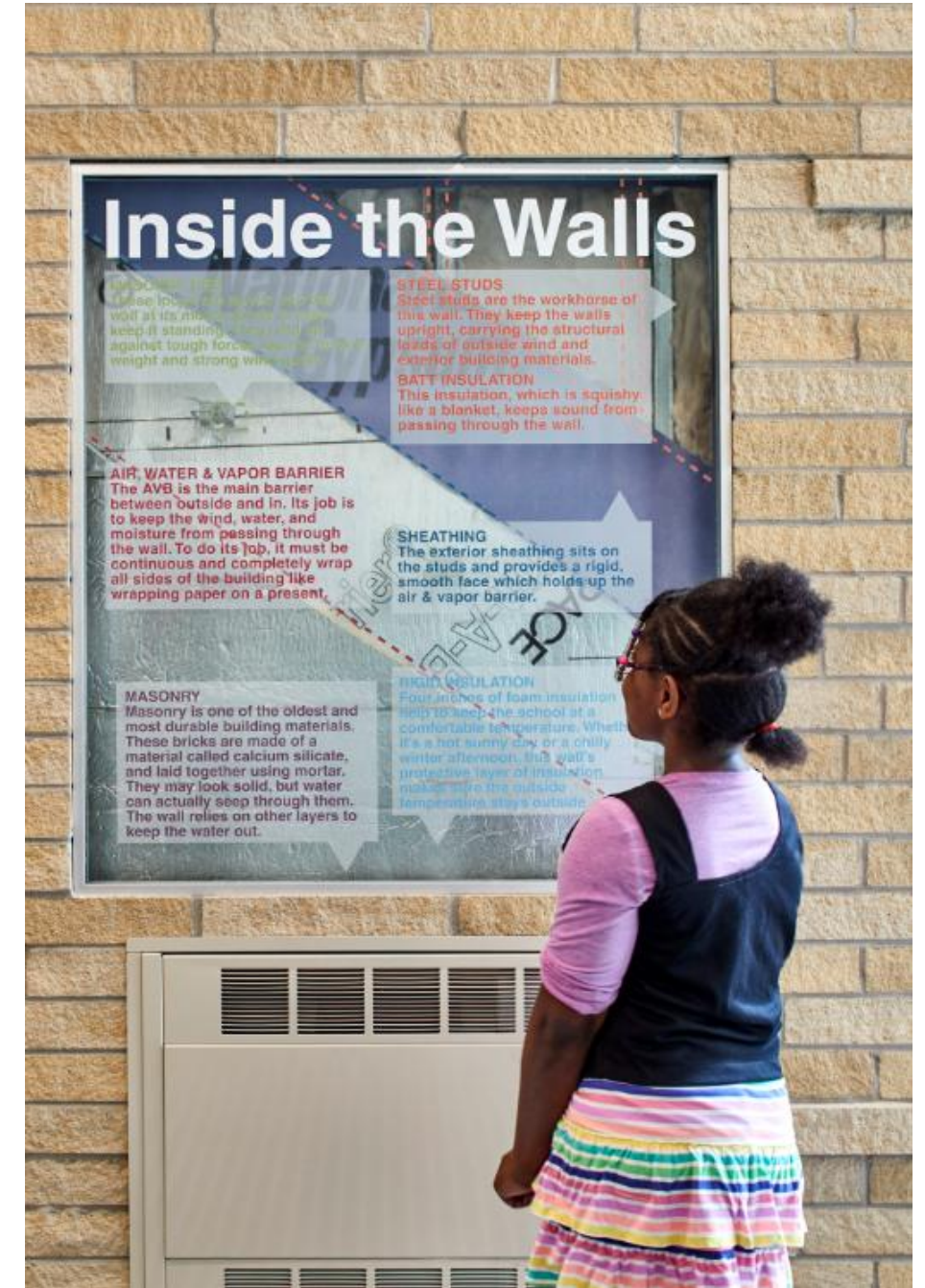
- **Lower EUI designs require less solar PV**
- **Rooftop capacity can offset ~20% of building energy (excluding green play/learning space)**

GENERATOR

- **Single diesel generator to be located on site with 24-hour fuel storage**
- **Optional loads that can be on the generator:**
 - **Cooler/freezers**
 - **IT loads (including cooling for IT spaces)**
 - **Select kitchen equipment**
 - **HVAC, power, and lighting in select relief center areas**
 - **Select HVAC equipment – can lead to a larger generator size needed**
- **Docking Station – large docking station can be included for full building backup with a portable generator**
 - **In addition to code required docking station**
 - **Requires coordination with generator rental company**



DESIGN FOR LEARNING AND PLAY



Inside the Walls

STEEL STUDS
Steel studs are the workhorses of this wall. They keep the walls upright, carrying the structural loads of outside wind and exterior building materials.

BATT INSULATION
This insulation, which is squishy like a blanket, keeps sound from passing through the wall.

AIR, WATER & VAPOR BARRIER
The AVB is the main barrier between outside and in. Its job is to keep the wind, water, and moisture from passing through the wall. To do its job, it must be continuous and completely wrap all sides of the building like wrapping paper on a present.

SHEATHING
The exterior sheathing sits on the studs and provides a rigid, smooth face which holds up the air & vapor barrier.

MASONRY
Masonry is one of the oldest and most durable building materials. These bricks are made of a material called calcium silicate, and laid together using mortar. They may look solid, but water can actually seep through them. The wall relies on other layers to keep the water out.

RIGID INSULATION
Four inches of foam insulation help to keep the school at a comfortable temperature. Whether it's a hot sunny day or a chilly winter afternoon, this wall's protective layer of insulation makes sure the outside temperature stays outside.

DESIGN FOR COMMUNITY



CERTIFICATIONS

CERTIFICATIONS



Passive
Building



LEED



WELL

TEDI/PASSIVE HOUSE

TEDI: Requirements based on energy model

Uses energy model to determine compliance, based on thermal performance of building envelope.

- Sets prescriptive limit on energy demand
- Requires high-performance building enclosure
- Additional prescriptive requirements – some already assumed in project
- Modest infiltration requirement (0.35 CFM75 instead of 0.08 CFM75 for Passive House)

Pros:

- Significantly lower soft cost premium

Cons:

- Light quality control for design or construction
- Less flexibility in thermal envelope requirements

Passive House: Holistic 3rd party certification process

Ensures a building is energy-efficient, draft-free, and healthy: Covers ventilation, indoor air quality, thermal envelope, airtightness, and heating/cooling systems

- Certification primarily based on energy model
- Very stringent air leakage requirements
- More flexibility in building envelope, but comes with additional requirements for air tightness, building testing, HVAC equipment, materials, and more

Pros:

- Rigorous QC process during design and construction ensures high quality building
- Best track record in industry for energy savings

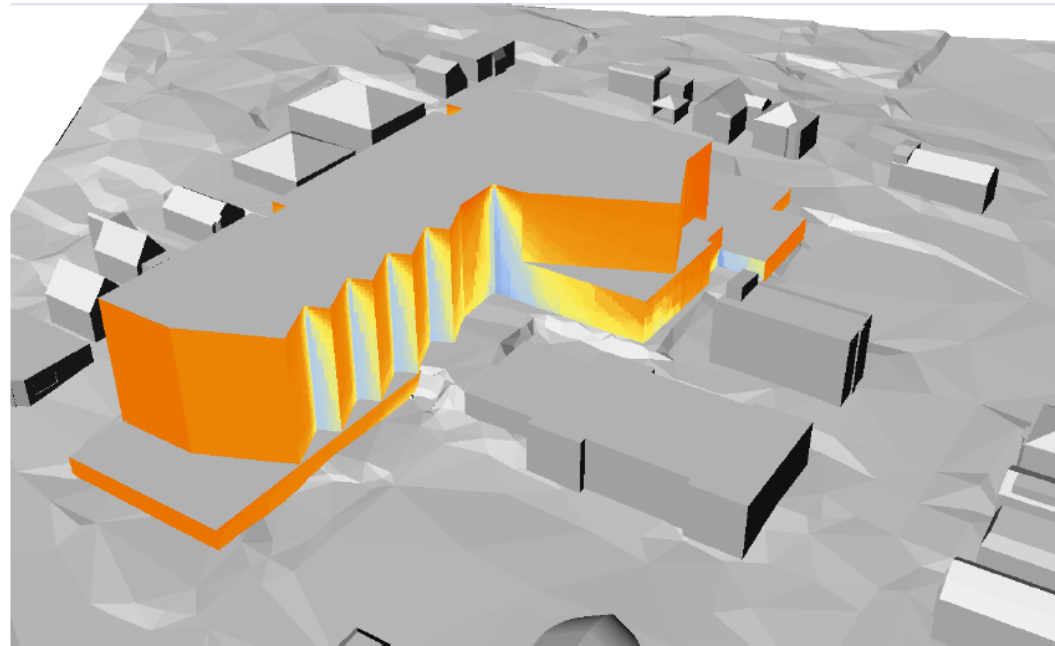
Cons:

- Additional soft costs (likely ~\$200-300k)
- Possible small increase in hard costs (likely 1% or less)

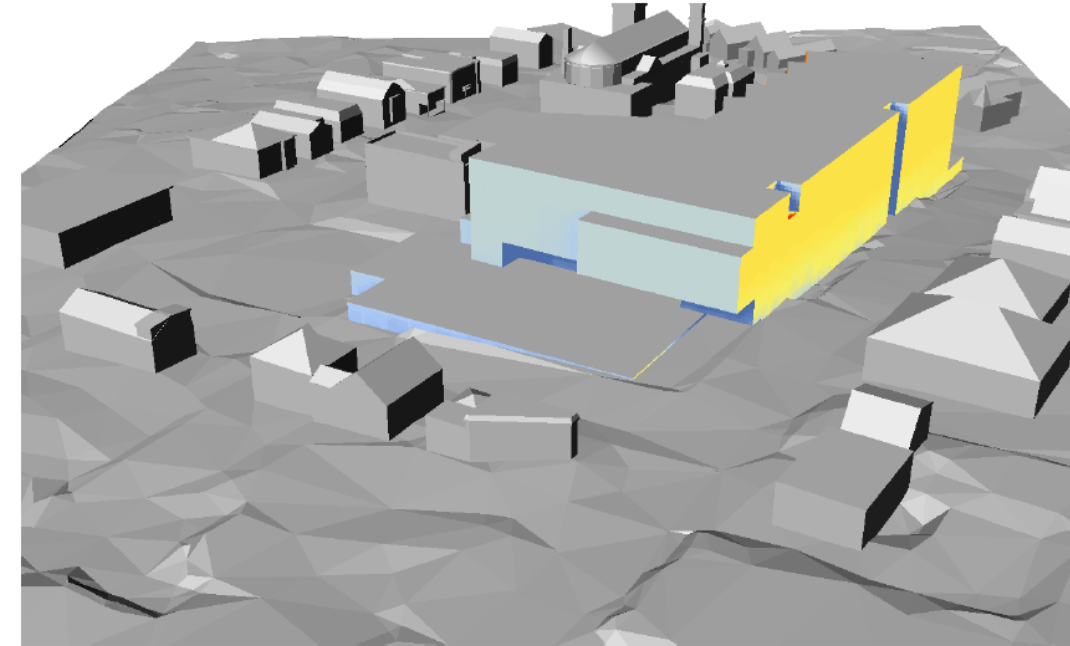
PASSIVE HOUSE/TEDI

| Component | TEDI Model | Passive House | |
|---------------------|--|--------------------|---|
| Above Grade Walls | R-22 to R-27 , cladding-dependent 6" Cavity mineral wool, 5" Exterior mineral wool | Same as TEDI Model | ✓ |
| Below Grade Walls | R-25 5" XPS | Same as TEDI Model | ✓ |
| Roof | R-50 10" Polyiso | Same as TEDI Model | ✓ |
| Parking Garage Slab | R-30 6" Concrete with 6" XPS above | Same as TEDI Model | ✓ |
| Windows | U-0.22 whole window (Kawneer 1600UT, triple pane) | Same as TEDI Model | ✓ |
| Airtightness | 0.35 cfm75 | 0.08 cfm75 | ✓ |

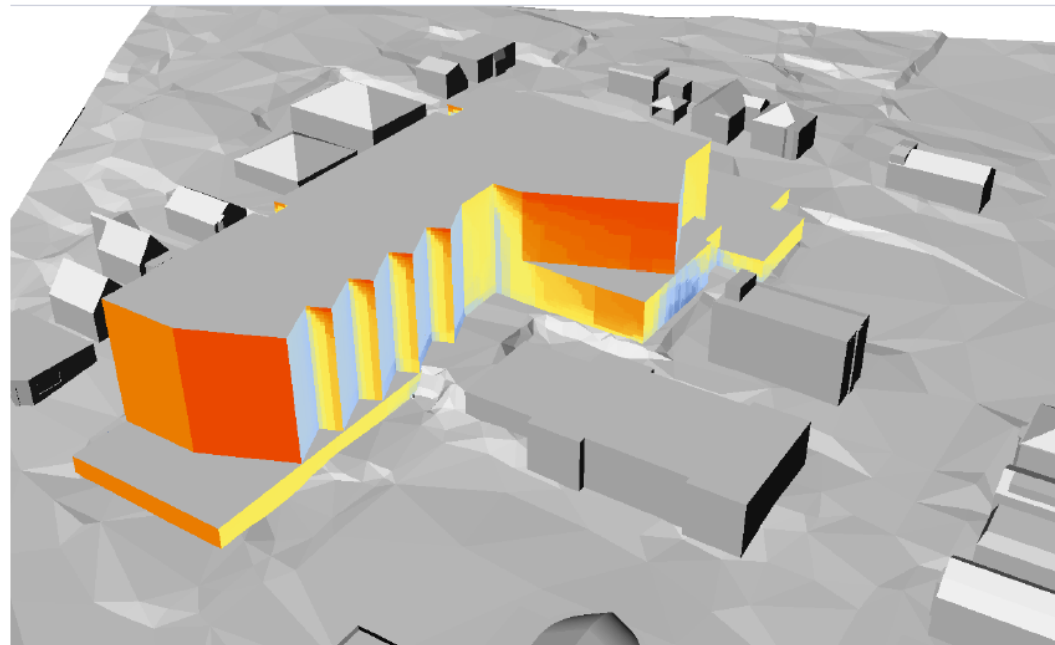
SEASONAL SOLAR RADIATION STUDIES



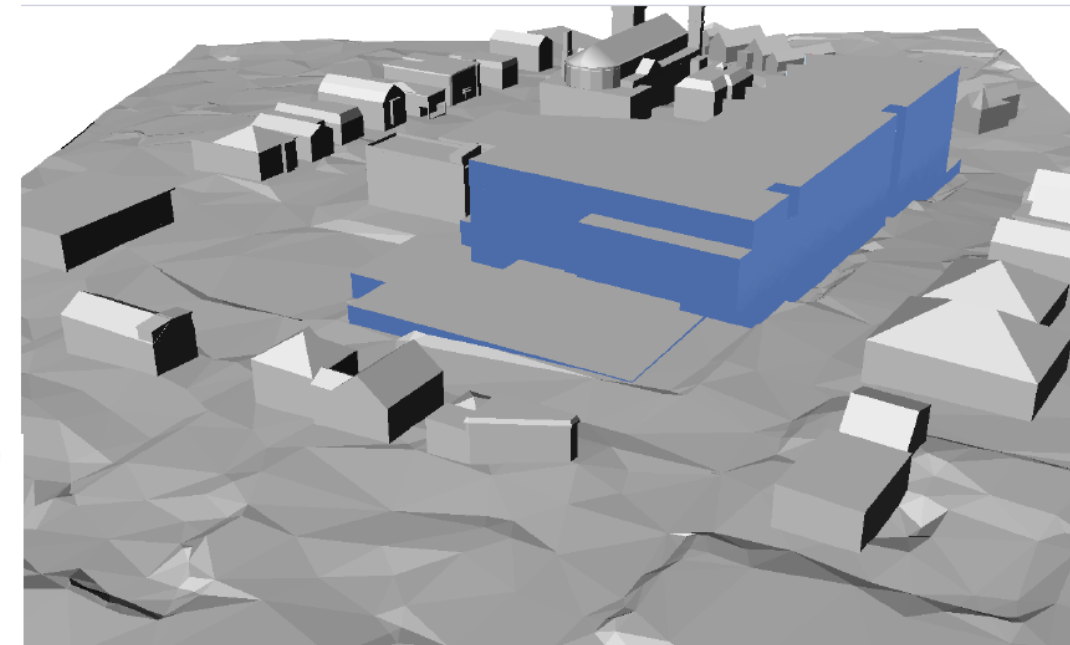
South: Summer Months (June 15-Sept 15)



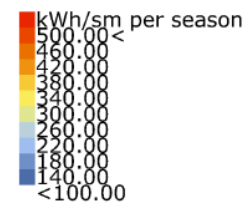
North: Summer Months (June 15-Sept 15)



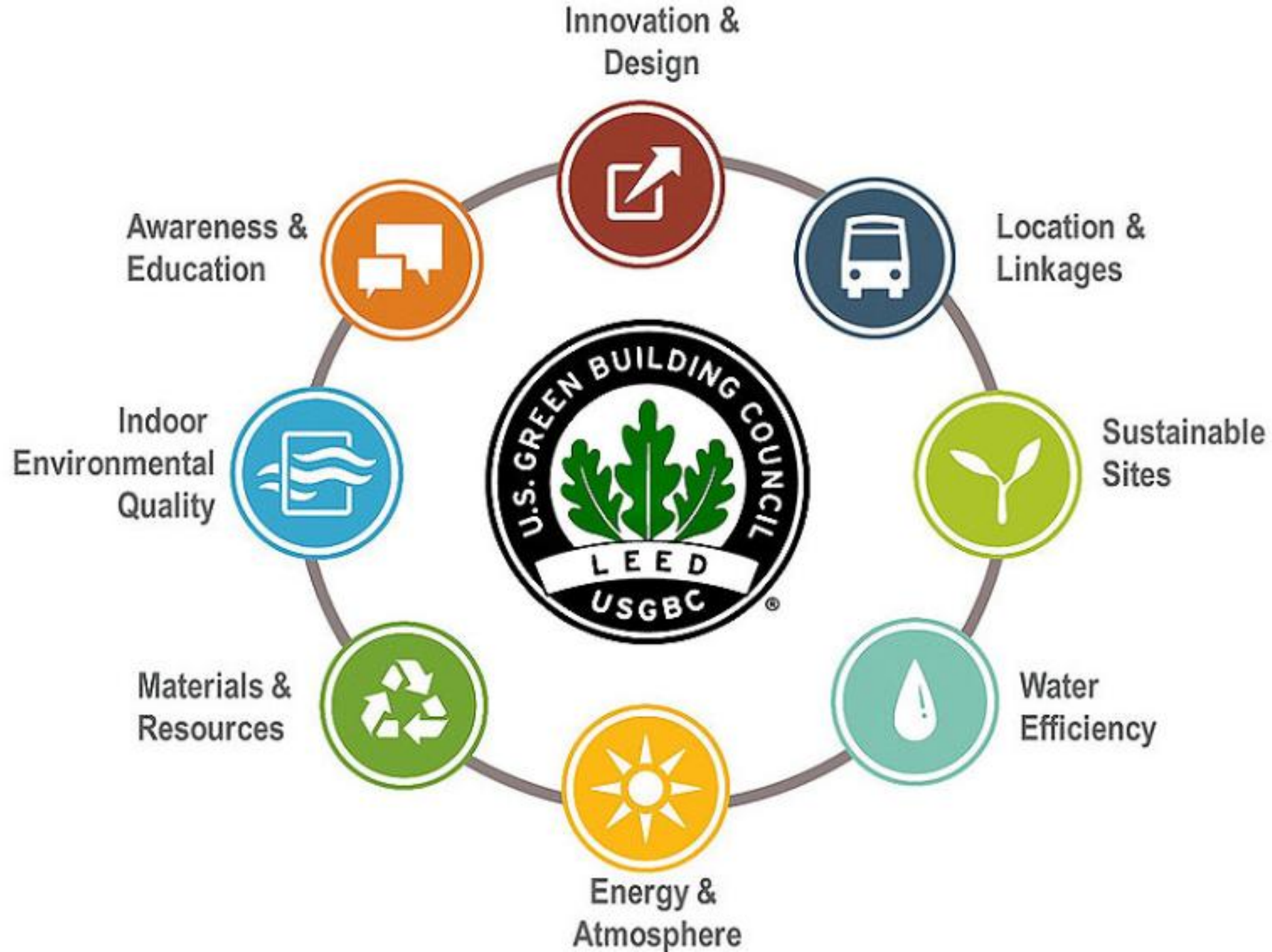
South: Winter Months (Dec 1-March 1)



North: Winter Months (Dec 1-March 1)



CERTIFICATIONS



SUSTAINABLE GOAL SETTING

Health, Wellness & Student Experience

- Acoustic performance
- Individual thermal controls
- All-gender restrooms to support equity

Sustainability Education & Curriculum

- Building as a teaching tool
- Green Classroom Professional Certificate program
- Integrating building performance in curriculum

Transportation & Community Access

- Covered bicycle parking and storage
- Electric vehicle charging infrastructure

-

Building Operations & Long-Term Stewardship

- Enhanced water and energy submetering
- Long-term building performance verification
- Real time performance dashboards to track energy, water, and carbon metrics



SUSTAINABLE GOAL SETTING

Indoor Air Quality

- Full-building flush-out prior to occupancy

Carbon & Climate Leadership

- Reduce embodied carbon in building structure and materials
 - Mass timber as a strategy to reduce embodied carbon
- Set project-specific embodied carbon reduction target
- Exceed code-minimum energy performance
- Install renewable energy systems (solar PV)
- Enhance resilience for power outages or weather events

Materials & Healthy Buildings

- Select materials with environmental and human health transparency documentation
- Prioritize durable, low-maintenance materials
- Incorporate local, regional, or responsibly sourced materials





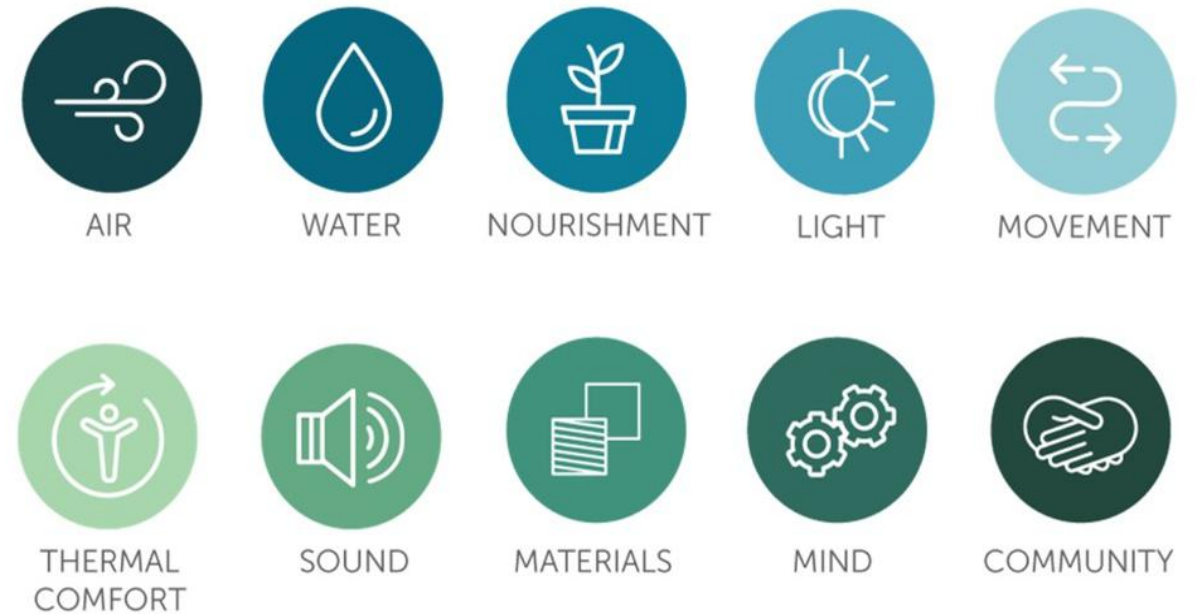
WELL CERTIFICATION OVERVIEW

What:

- 3rd party certification focusing on **wellness** of occupants
- Requires prerequisites and points to be achieved in each of 10 categories

How:

- Intentional and focused strategic planning meetings early in design
- Extensive policy & operations manual development
- On-site testing of air and water quality



MASS TIMBER FRAMING

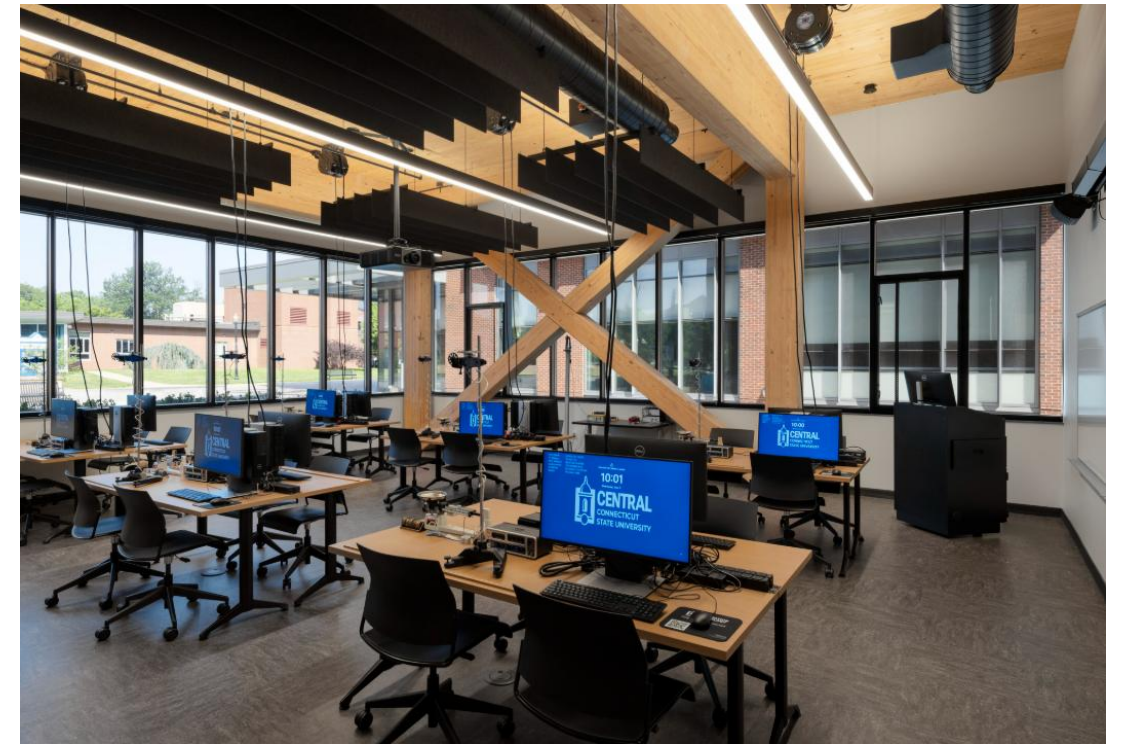
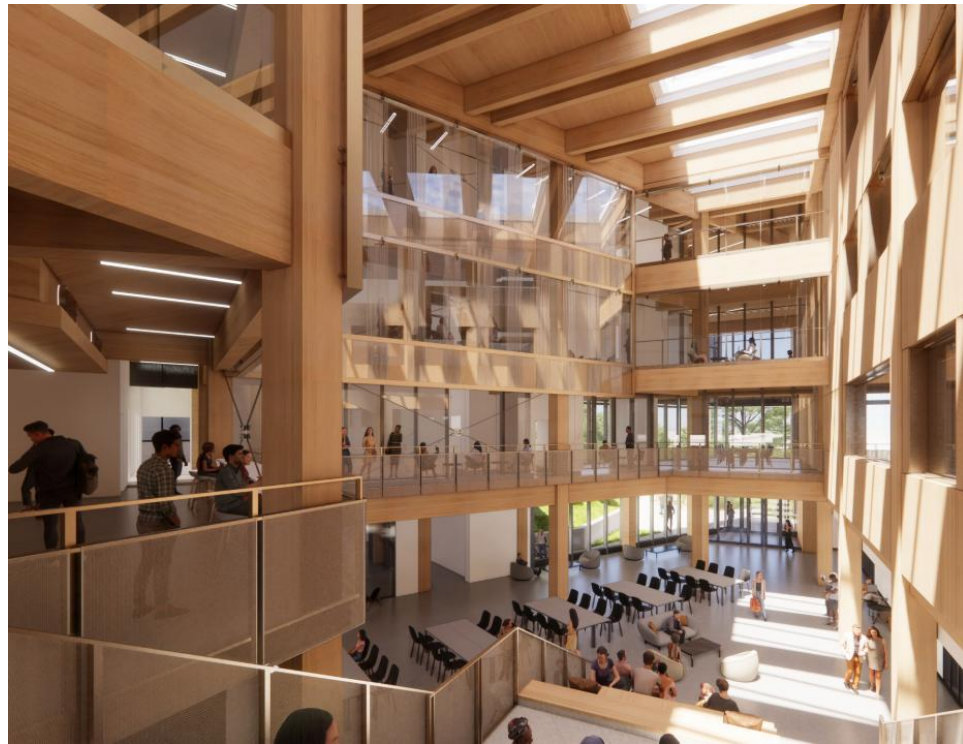
MASS TIMBER BENEFITS

Carbon Sequestration: Mass-timber stores carbon, **reducing the embodied carbon footprint by 50-60%.**

Renewable Material: Sourced from responsibly managed forests, timber is a renewable resource.

Reduced Waste: Precision manufacturing minimizes scrap and construction debris.

Biophilic Design Benefits: Timber interiors enhance occupant well-being and indoor air quality.



MASS TIMBER

Construction Speed: Mass-timber components are prefabricated off-site, reducing on-site assembly time and labor compared to steel, which requires complex erection and welding.

Design Flexibility: Mass-timber allows exposed wood finishes, reducing the need to add supplemental fireproofing and wallboard enclosure.

Cost & Efficiency: Mass-timber can offset cost premiums with faster construction and reduced foundation requirements.

Sustainability: Mass-timber sequesters carbon and uses renewable resources, while steel has significantly higher embodied energy and carbon emissions

Fire Safety: Laminated timber has excellent fire resistance characteristic but similar to steel protective coatings and compartmentalizing needs to comply to building code requirements

Structural Sizes: Column bays are smaller than structural steel and have larger elements

MASS TIMBER PROJECTS

MSBA Projects with Hybrid Mass Timber:

Pentucket Regional High School - CM (W.T. Rich)

Stoughton New Elementary School - CM (W.T. Rich)

North Attleborough High School – CM (Consigli)

Other Projects with Mass Timber :

Noble & Greenough Castle Dining – CM (Shawmut)

Cambridge School of Weston Garthwaite Center – CM (Consigli)

David Rubenstein Treehouse at Harvard University – CM (Consigli/Smoot)



Pentucket R.H.S: W.T. Rich / Dore + Whittier



David Rubenstein Treehouse at Harvard University:
Gang/Consigli and Smoot Construction

GC 149 / CM 149A

PROJECT DELIVERY

Design Bid Build

Lowest Qualified Bidder/Firm Fixed Price

Lowest bid cost

Highest change orders

Signs on after design is complete

No preconstruction fees

Difficult to coordinate Mass Timber

Different Early bid package contracts

Construction Manager at Risk

Negotiated Guaranteed Maximum Price

Higher bid cost

Lowest change orders

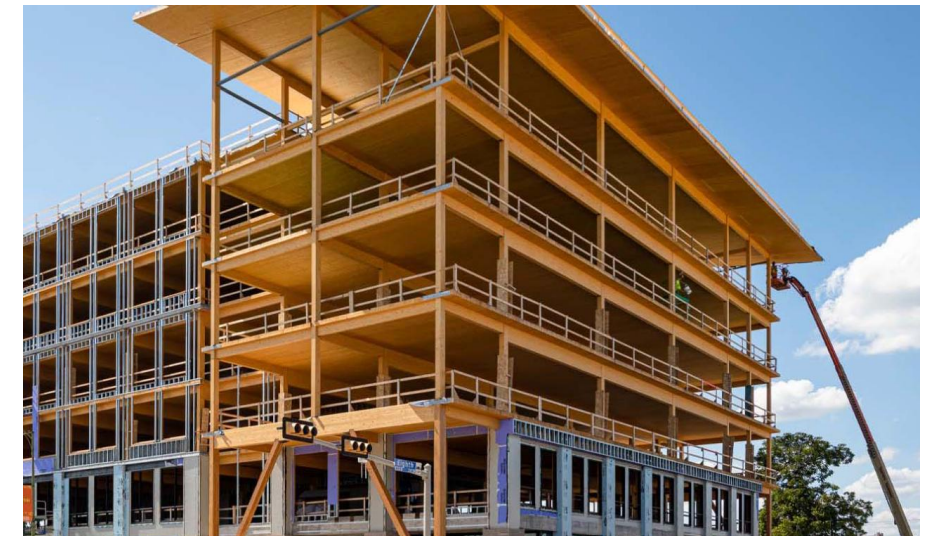
Pre-construction collaboration and coordination

Preconstruction fees (5% to 7%)

Early bid package coordination

Recommended for mass timber

Early involvement with neighbors and community



SITE CIRCULATION

SITE CIRCULATION WITH POTENTIAL PARKING





SITE ANALYSIS



- ① MEDFORD STREET IS NOT RECOMMENDED FOR PICK-UP/DROP-OFF ZONES DUE TO RUSH HOUR TRAFFIC
- ② POTENTIAL BIKE STORAGE
- ③ ALTERNATIVELY, SYCAMORE CAN BE CLOSED TO PARENTS / OPEN TO RESIDENTS DURING SCHOOL PICK-UP / DROP-OFF
- ④ SIGNAL PHASING TO BE REVIEWED IF A BIKE SIGNAL OR SEPARATE PHASE TO ACCOMMODATE CONTRA FLOW BIKE LANE IS REQ'D
- ⑤ UPHILL GRADE IS CHALLENGE FOR BIKING - CONSIDER BIKE PARKING AT THE BOTTOM OF THE HILL
- ⑥ EXISTING 29' ROADWAY WIDTH ALLOWS FOR 6' WIDE CONTRA FLOW BIKE LANE, 9' TRAVEL LANE, AND (2) 7' PARKING/DROP-OFF LANES
- ⑦ EXISTING SPEED HUMPS TO REMAIN
- ⑧ EXISTING 26' ROADWAY WIDTH DOES NOT ALLOW FOR CONTRA FLOW BIKE LANE IF PARKING IS PRESUMED TO REMAIN ON BOTH SIDES
- ⑨ MAY NEED TO DEVELOP DISPLAYED NUMBER SYSTEM WHERE PARENTS HAVE NUMBERS DISPLAYED ON THEIR VEHICLES AND ADVANCED SPOTTERS CALL AHEAD FOR STUDENT PICK-UP
- ⑩ ZONES OF POTENTIAL WB TRAFFIC RESTRICTIONS DURING SCHOOL PICK-UP AND DROP-OFF HOURS
- ⑪ INVESTIGATE POTENTIAL DESIGNATED PICK-UP/DROP-OFF ON THURSTON TO AVOID TRAFFIC CONGESTION AROUND SYCAMORE

SITE CIRCULATION WITH POTENTIAL PARKING

OPTION 2B CONCEPT A - TWO-WAY RAMP

- VEHICULAR CIRCULATION 
- DROP-OFF / PICK-UP ZONE 
- CONTRAFLOW BIKE LANE 
- ZONES OF POTENTIAL WB TRAFFIC RESTRICTIONS DURING SCHOOL PICK-UP AND DROP-OFF HOURS 



SITE CIRCULATION WITH POTENTIAL PARKING

OPTION 2B CONCEPT B - ENTRY AND EXIT RAMP

- VEHICULAR CIRCULATION
- DROP-OFF / PICK-UP ZONE
- CONTRAFLOW BIKE LANE
- ZONES OF POTENTIAL WB TRAFFIC RESTRICTIONS DURING SCHOOL PICK-UP AND DROP-OFF HOURS



SITE CIRCULATION WITH POTENTIAL PARKING

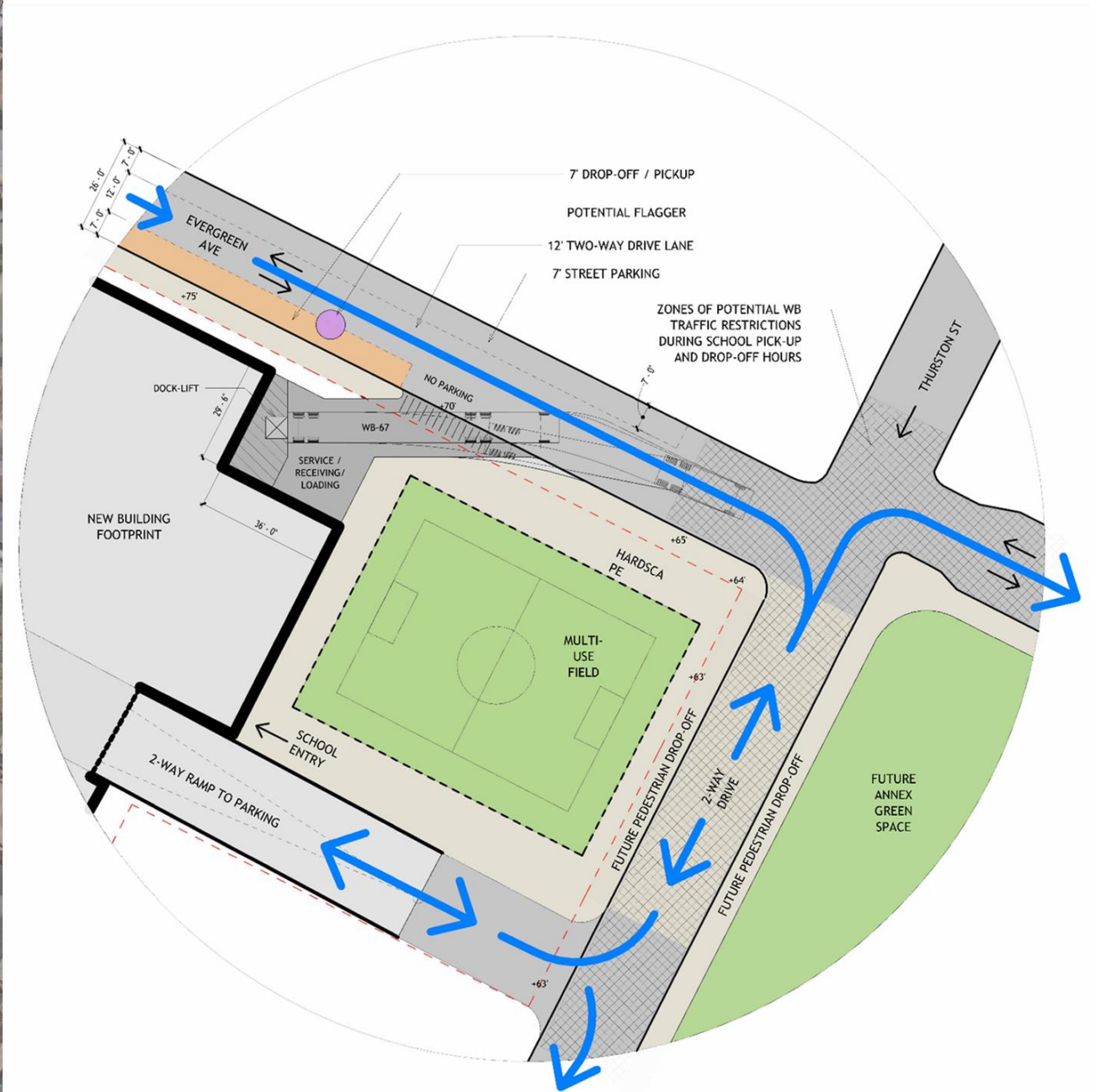
OPTION 2B CONCEPT C- ENTRY AND EXIT RAMP

- VEHICULAR CIRCULATION
- DROP-OFF / PICK-UP ZONE
- CONTRAFLOW BIKE LANE
- ZONES OF POTENTIAL WB TRAFFIC RESTRICTIONS DURING SCHOOL PICK-UP AND DROP-OFF HOURS



SITE CIRCULATION WITH POTENTIAL PARKING

OPTION 4 CONCEPT D - TWO-WAY RAMP





Thank you!