Lexington High School

School Building Committee Meeting

03/24/2025

smma dw DORE + WHITTIER Turner

1 Call to Order

2 Vote on Previous Meeting Minutes 12:00 – 12:05

3 Public Comment 12:05 – 12:15

4 Confirm Spaces to be Air Conditioned 12:15 – 12:25

5 Introduce Exterior Design & Building Entrances 12:25 – 1:20

6 Introduce Lighted Fields & Field Material 1:20 – 1:50

7 Reflections & Action Items 1:50 – 2:00

8 Adjourn

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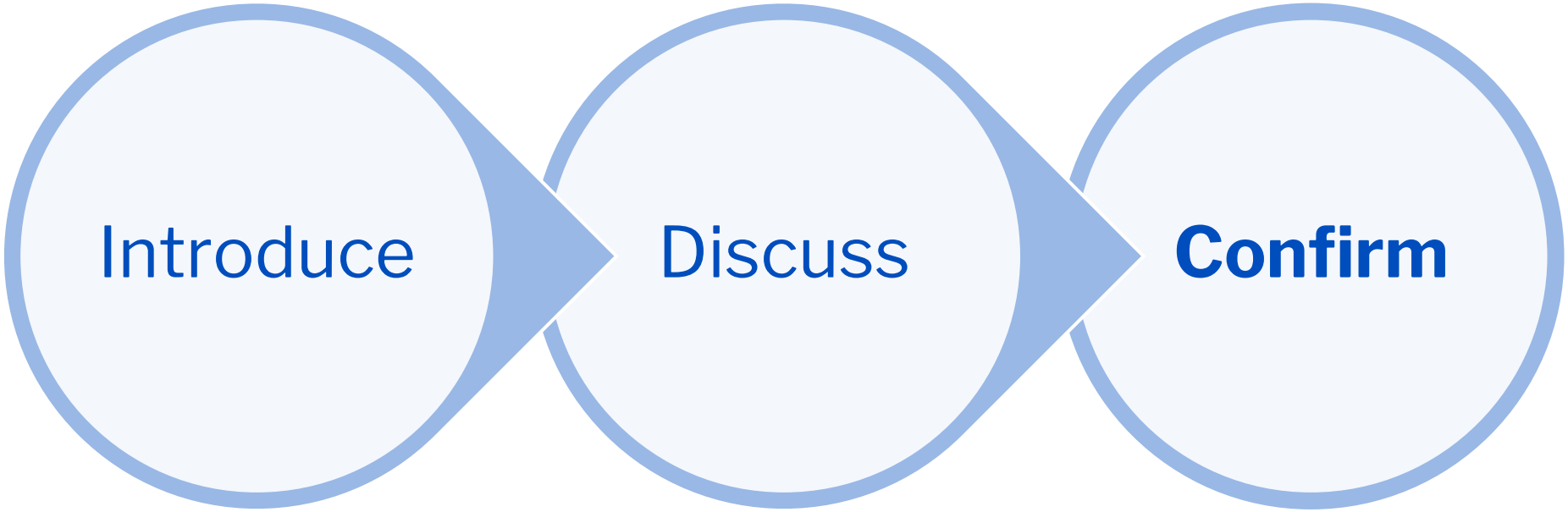
CONFIRM



February 24, 2025 | February 24, 2025 | March 24, 2025

Spaces to be Air Conditioned

CONFIRM

- Not Air Conditioned
- May Be Air Conditioned

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Building Entrances

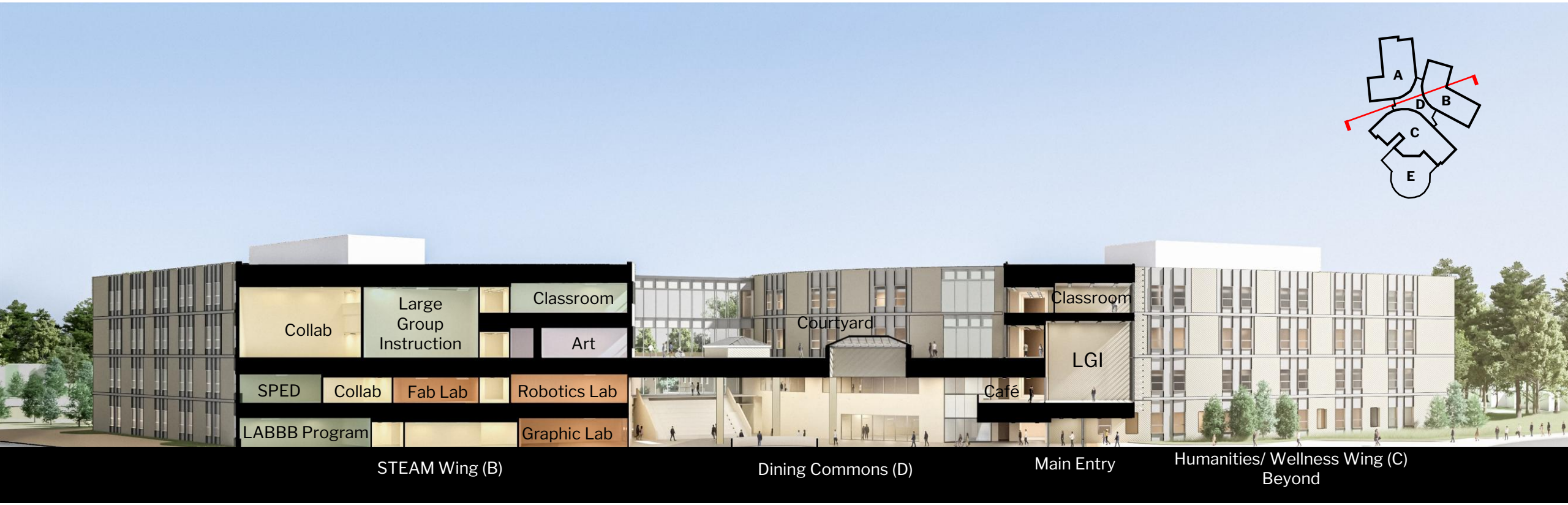
Building Entrances

West Entrance

- Highly visible from Worthen Road – good civic presence
- Connected to bus drop-off/pickup
- Visitor and accessible parking nearby
- Main Office / main security check-in for visitors
- Close to Guidance and Student Support hub
- Access to Central Office elevator/stair lobby in Wing A
- Entrance Plaza Pedestrian Zones should be large enough for mass groupings of students
- Plaza Design to frame entrance and develop scale transition
- Limited Program

Building Entrances – West

Building Section



Building Entrances

East Entrance

- Connected to car drop-off/pickup
- Visitor and accessible parking nearby
- May be used for after-hours events
- Should it be used for primary Gym access?
- Largest Entrance Plaza – design to frame entrance and develop scale transition
- Program Flexibility

Field House Entrance

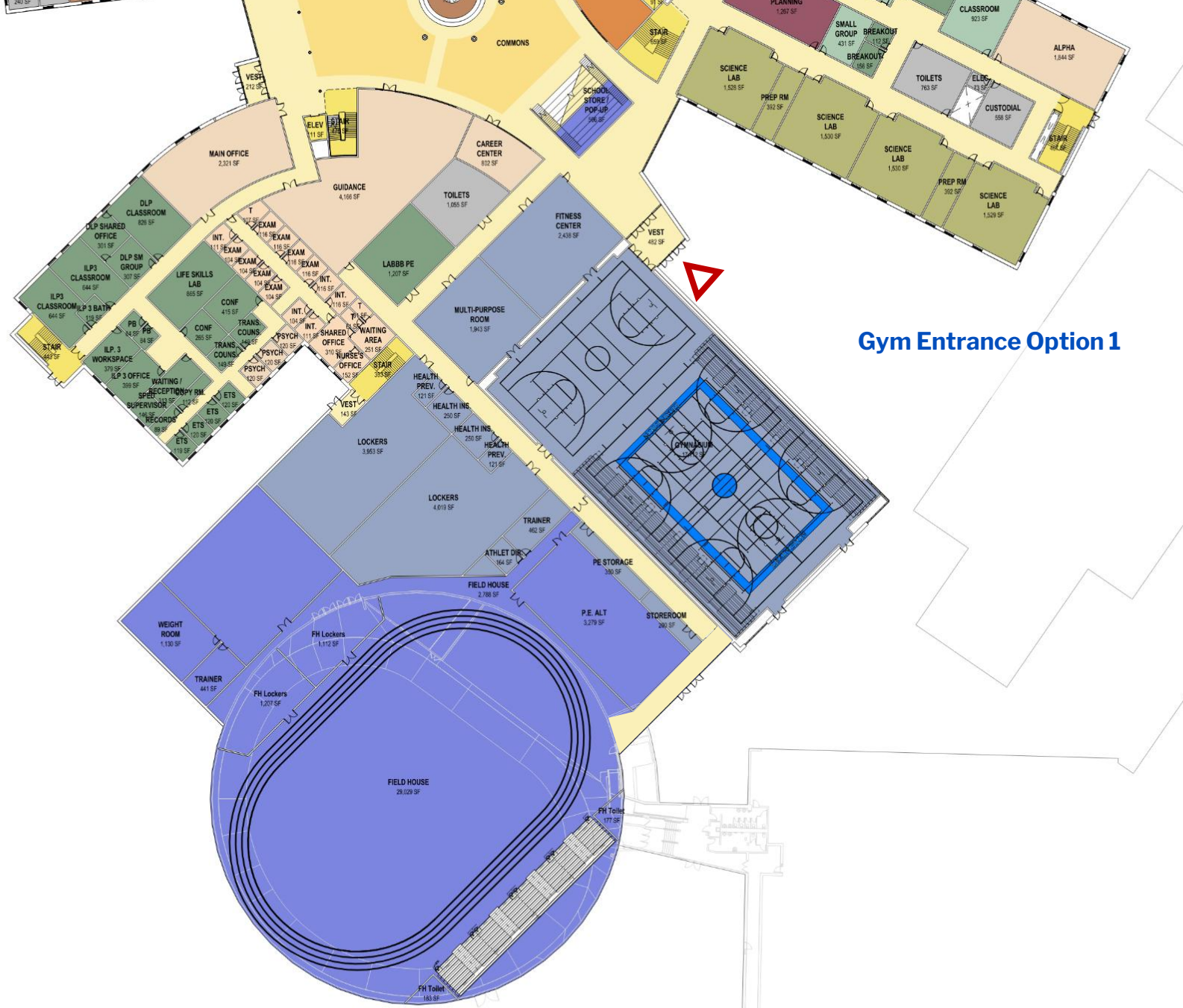
- Lobby connected to both Field House and Gym
- Visitor and accessible parking nearby
- May be used for after-hours events
- Should it be used for primary Gym access?

Building Entrances – East

Building Floor Plans

Level 1

- Core Academic
- Science
- Teacher Planning & Small Group
- Admin, Guidance, ALPHA, METCO, Central Offices
- Auditorium / Drama
- Art & Music
- Media Center
- Vocation & Technology
- Physical Education
- Special Education
- Medical
- Restrooms, Custodial
- Kitchen
- Commons
- Circulation
- Vertical Circulation
- Rooftop Open Space
- Other
- Expansion



Gym Entrance Option 1

Building Floor Plans

Level 1

- Core Academic
- Science
- Teacher Planning & Small Group
- Admin, Guidance, ALPHA, METCO, Central Offices
- Auditorium / Drama
- Art & Music
- Media Center
- Vocation & Technology
- Physical Education
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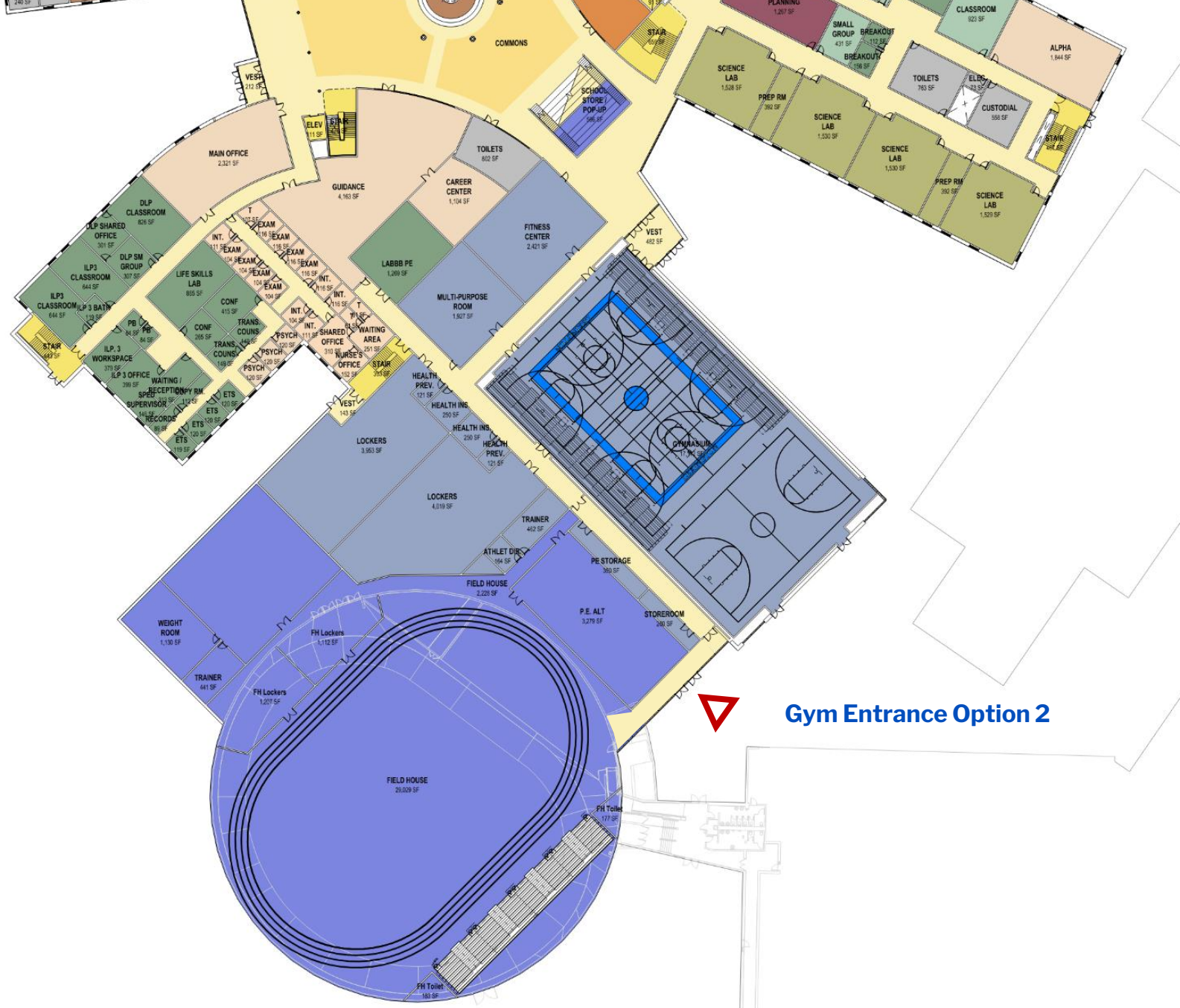


Building Entrances

North Entrance

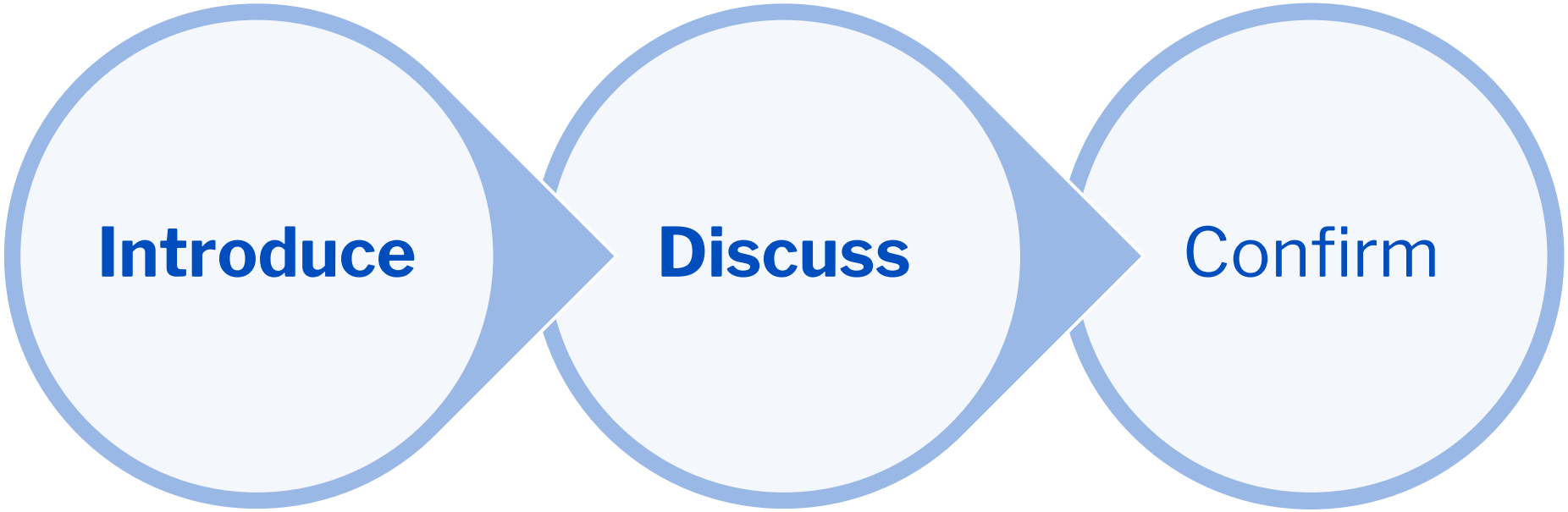
- LABBB entrance close to drop-off/pickup loop
- Limited parking nearby
- Smallest Entrance Plaza- potential for intimate gathering space
- North facing – more limited planting opportunities

Building Entrances – North

Building Entrances – Precedent – Wakefield High School

Building Entrances – Precedent – Waltham High School

Exterior Design

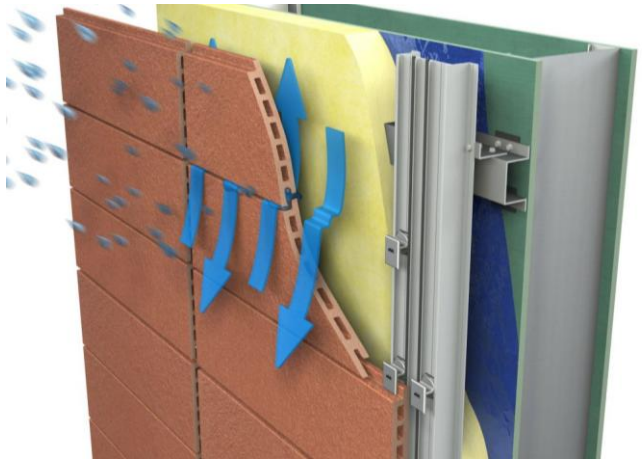


March 24, 2025 | April 14, 2025 | May 12, 2025

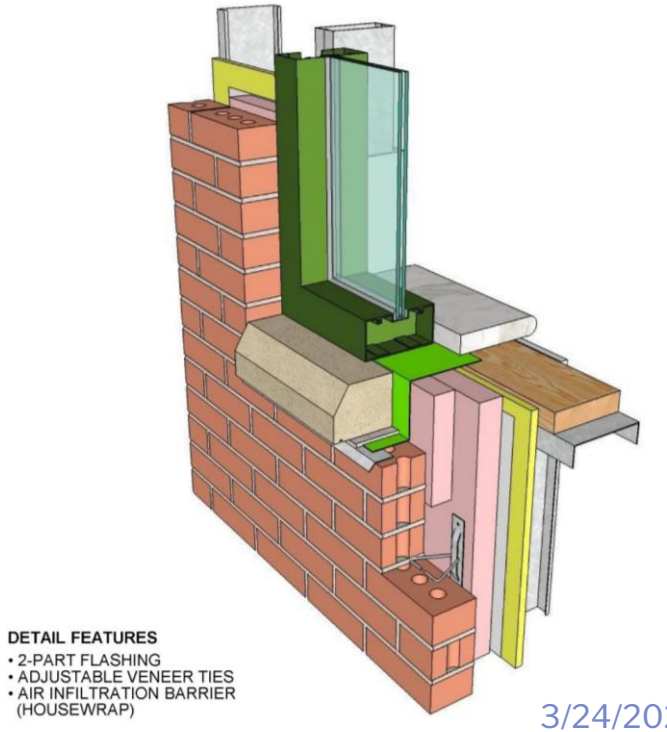
Potential Materials & Systems / Scope Assumptions

Opaque Masonry Walls (~60% of solid wall area)	Brick Masonry, Precast Accents, Stone Base	• 75% of Wall Enclosure • High Insulation Value
Rainscreen Accent Walls (~40% of solid wall area)	Pre-finished Metal Panel Spandrels and Fascias; Accents in Porcelain, Terra Cotta, Pre-formed Metal or Fiber Cement	
Windows (~50% of glazed area)	Triple Insulated-Glazed, Aluminum Frame	• 25% of Wall Enclosure • Utilizes Low-emissivity glass
Curtain Walls and Storefront (~50% of glazed area)	Triple Insulated-Glazed, Aluminum Frame	
Roof Edges & Canopies	Pre-finished Metal	
Soffits	Pre-finished Metal, Phenolic or DEFS (stucco)	
Roof Screens	Pre-finished Metal	
Roofing	PVC Membrane	

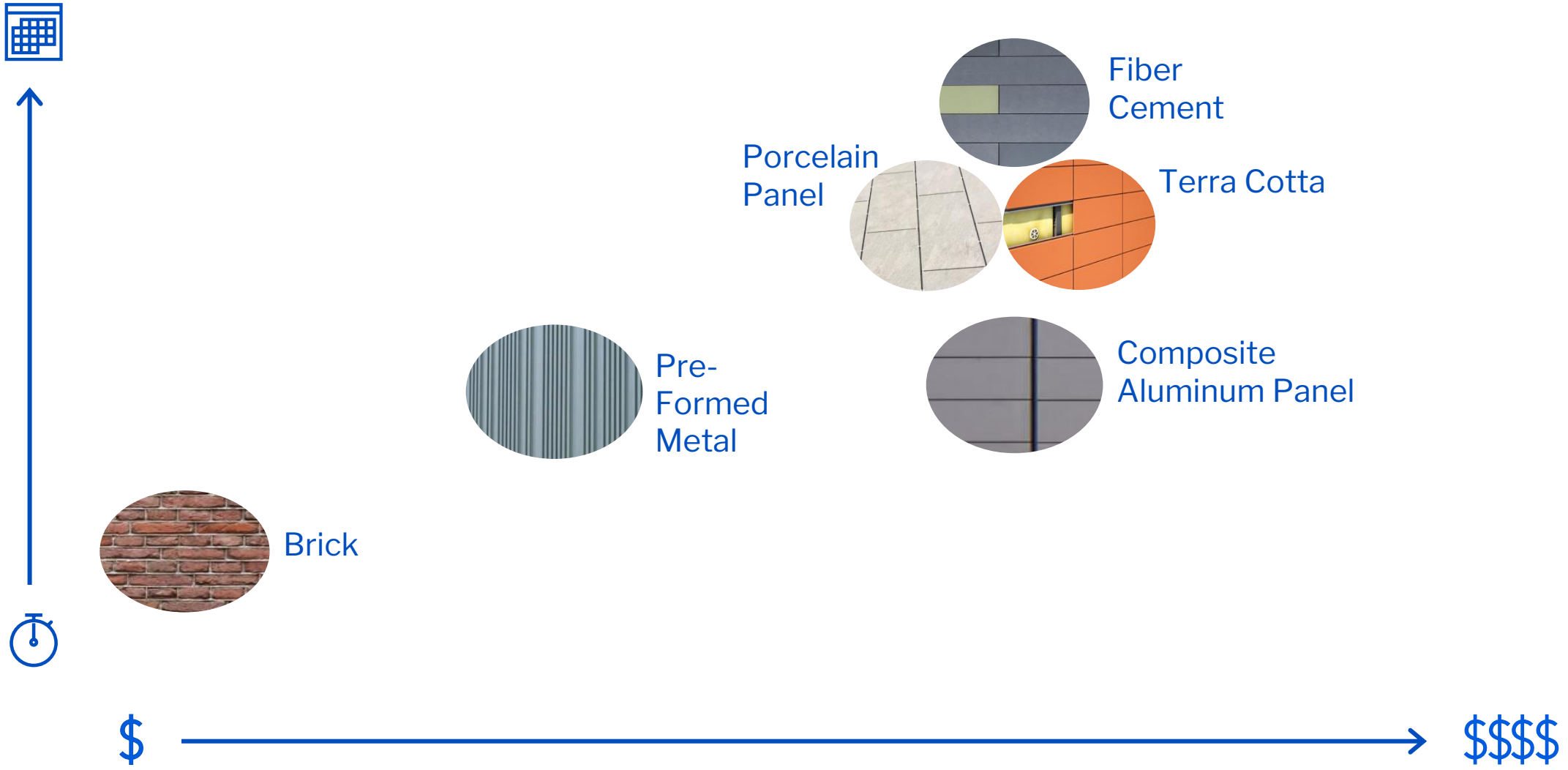
Building Enclosure Design Parameters



- Window to wall Ratio (WWR) = **25%**
- Wall Insulation = **R-40**
- Roof Insulation = **R-60**
- High-performance glazing system
  - **Low U-value: 0.23 or better**
  - **High Solar Heat Gain Coefficient: 0.30 or better**
  - **High Visual Light Transmittance**
- Thermal Bridging Mitigation
- Air Infiltration Testing - Reduction Goal = **0.15 cfm/sf@ 75 PA or better**



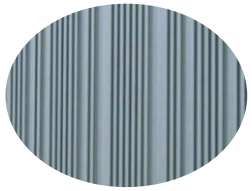
Relative Cost and Availability



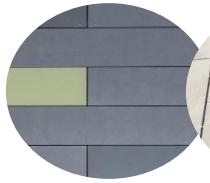
Exterior Cladding Materials

Embodied Carbon Factor (based on Industry-Wide Environmental Product Declarations, in kgCO2e/sf)

Formed Metal 1.73

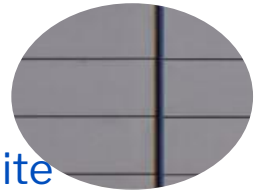


Fiber Cement 0.67

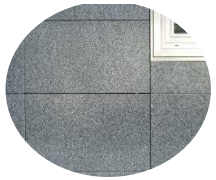


Porcelain Panel 1.28

Composite Aluminum Panel 2.6



Granite 1.99



Brick 4.3

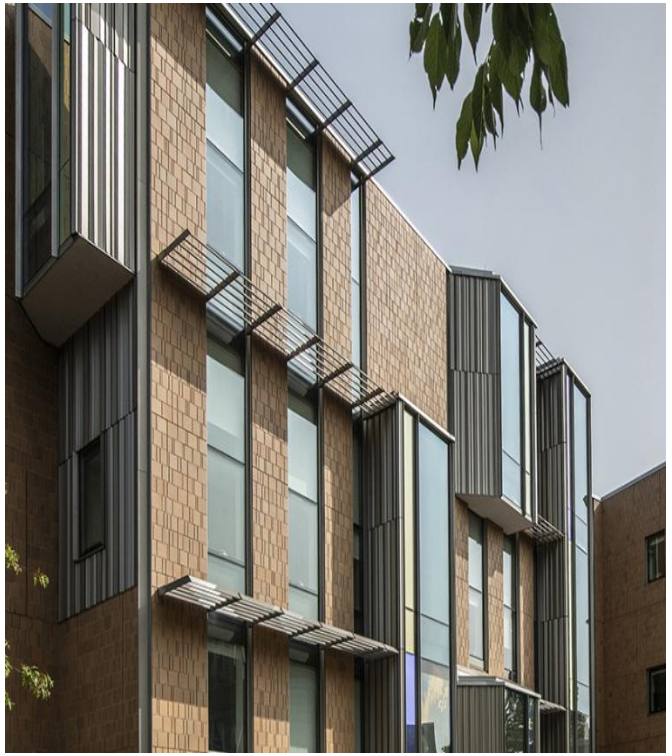
Terra Cotta 10.31

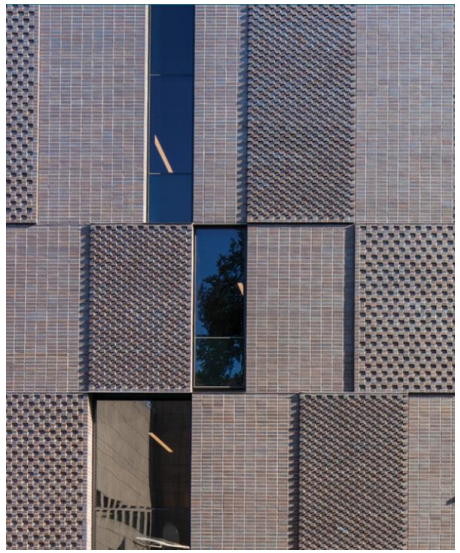
Low → High

Potential Materials & Systems

Brick Masonry

- 60% of Opaque Walls at PSR
- Timeless and reliable
- Wide range of colors and textures available
- Inexpensive
- **Carbon Factor: 4.3**

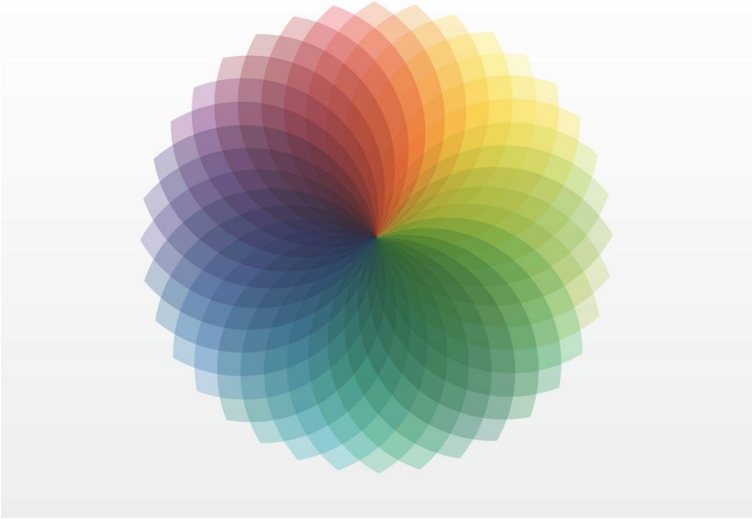




Potential Materials & Systems

Pre-Finished Metal Panel

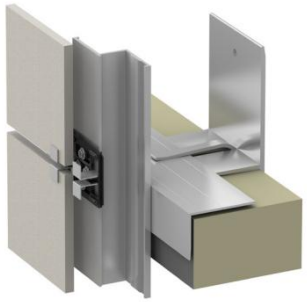
- 18% of Opaque Walls at PSR
- Accent Material
- Flat panels, perforations available
- Full spectrum of colors available including metallics
- Similar cost to other rainscreen systems (~2x brick masonry)
- **Carbon Factor: 2.6**



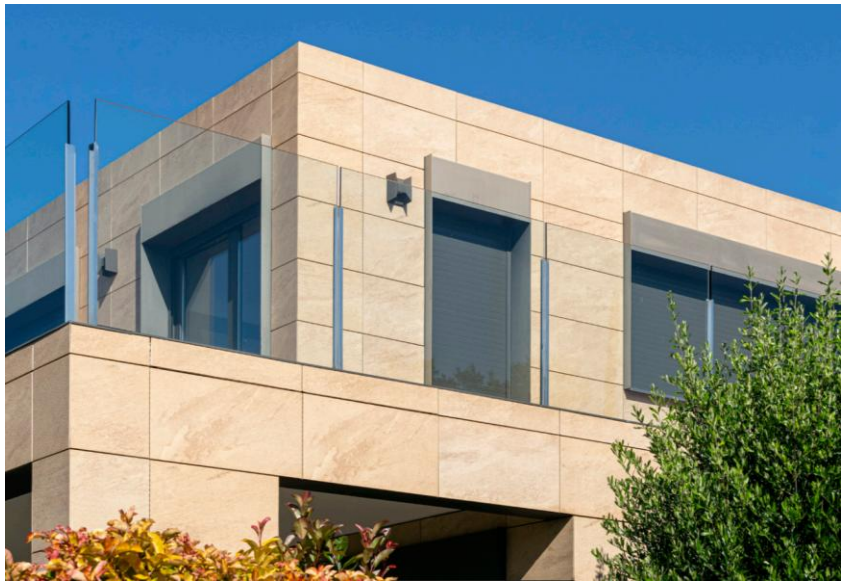
Potential Materials and Systems – Rainscreen Options

Porcelain Tile

- Beautiful, refined aesthetic
- Can mimic stone or wood
- Very durable
- Similar cost to other rainscreen systems (~2x brick masonry)
- **Carbon Factor: 1.28**



Alpha Vci.40 - Concealed Anchor



Stone Series

Our stone-effect ceramic collection is ideal for high-performance exterior applications. Our standard color palette boasts 20 nature-inspired colors.

Concrete Series

Our neutral, exceptionally versatile smooth concrete collection for exterior cladding. Includes 10 neutral, concrete-inspired colors.

Clay Series

Warmth and depth. Inspired by earthy mineral clay deposits from around the world... Our standard color palette has 11 earth-inspired colors.

Metallic Series

Our aged metals series for exteriors, scratched & colored by the passage of time. Includes 11 metallic looking finishes.

Timber Series

This series captures the essence of aged, material wood for high performance exteriors. Our standard color palette includes 10 nature-inspired woodgrains.

(Multiple tiles shown to illustrate range of color variation.)

Potential Materials and Systems – Rainscreen Options

Fiber Cement

- Open joint system
- Visible or concealed fasteners
- Moderate range of colors and some textures available
- Durability needs consideration
- Cost TBD
- **Carbon Factor: 0.67**

Figure 16: Window Head

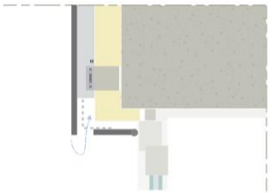
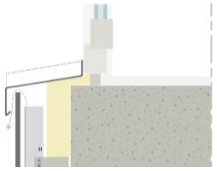


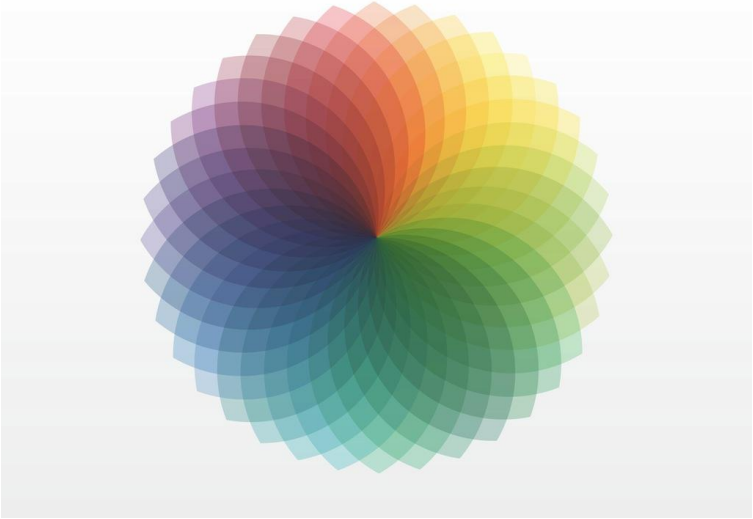
Figure 15: Window Sill



Potential Materials and Systems – Rainscreen Options

Pre-Finished Metal Siding

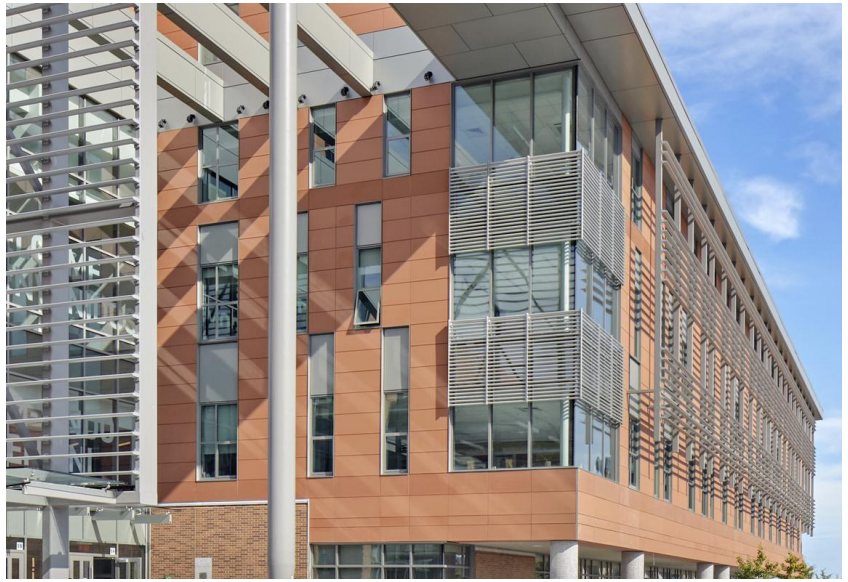
- Secondary Accent Material,
- Thin gauge, profiled for strength, perforations available
- Full spectrum of colors available including metallics
- Less expensive than other rainscreen systems
- May be less refined visually, depending on detailing
- **Carbon Factor: 1.7**

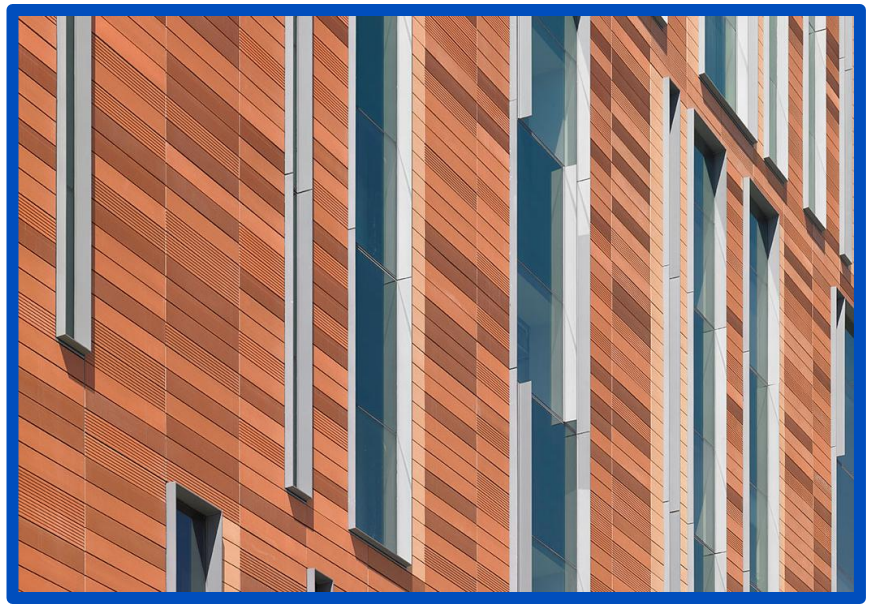


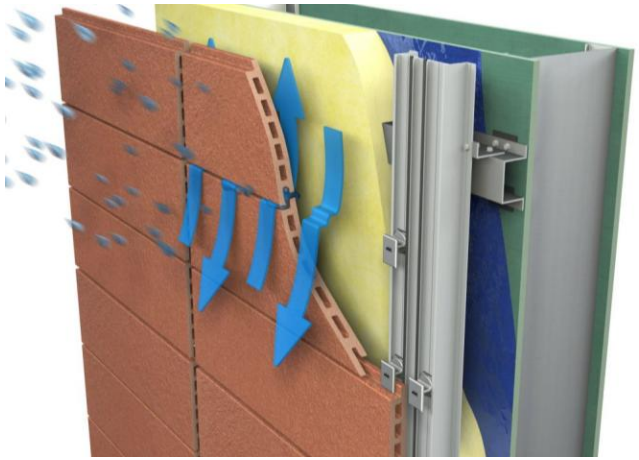
Potential Materials and Systems – Rainscreen Options

Terra Cotta

- 20% of Opaque Walls at PSR
- Beautiful, refined aesthetic
- Wide range of colors and textures available
- Similar cost to other rainscreen systems (~2x brick masonry)
- **Carbon Factor: 10.3**



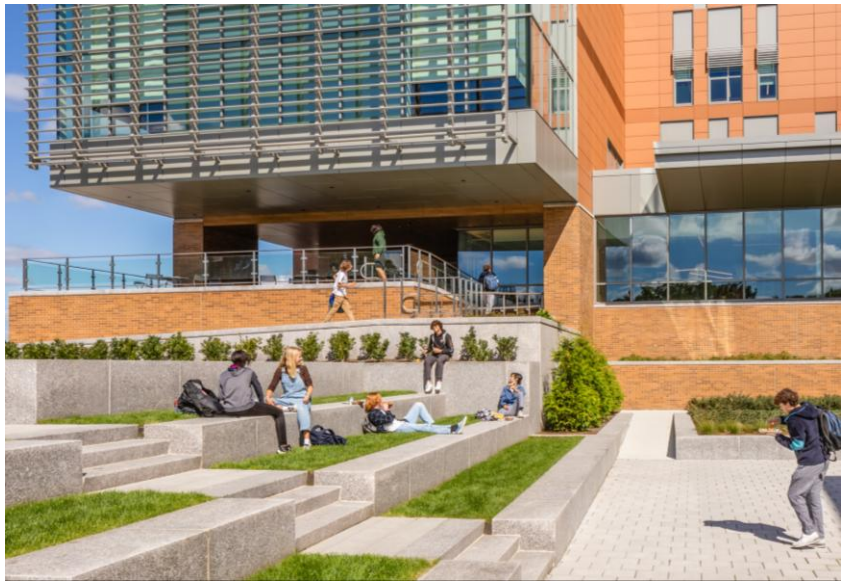


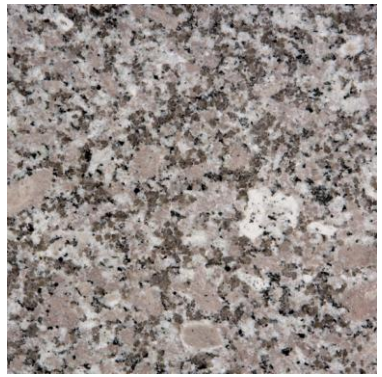


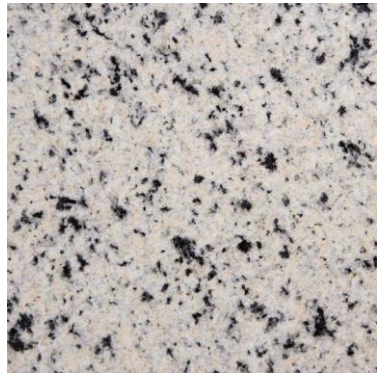
Potential Materials and Systems

Granite Base and Trim

- Extremely hard and durable, resists damage
- Prevents efflorescence of brick at grade
- Range of local colors readily available
- Similar cost to rainscreen materials
- Natural beauty
- **Carbon Factor: 1.99**







Lexington Context

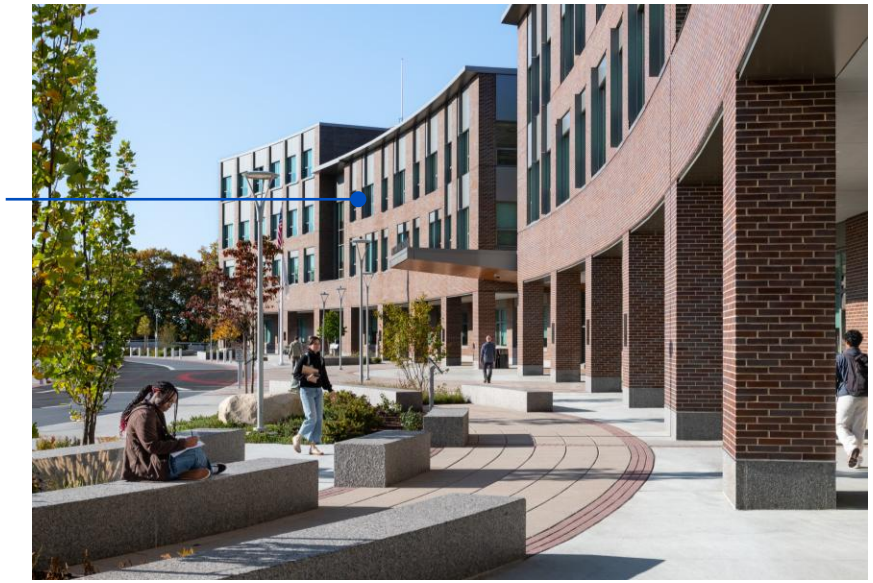
Building Materials Across the District's Schools – Color and Character

Designing for 21st Century Education

Large Group Instruction

Performing Arts

Gen Ed Classrooms



Media Center

Exterior Elevation “Types”

Long sides of wings

- Primarily Classrooms
- Lots of repetition

Short ends of wings

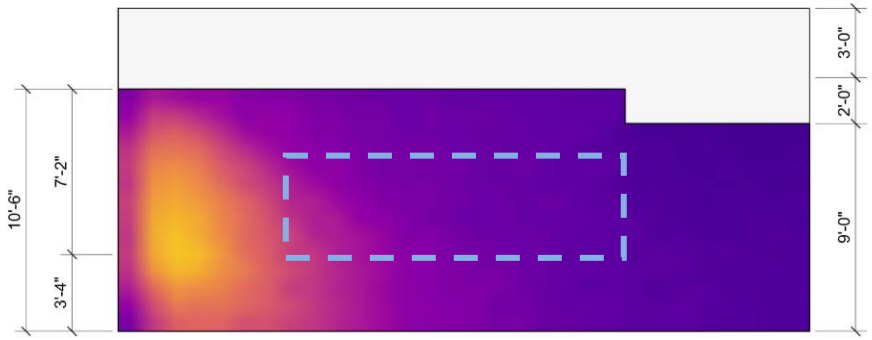
- Stairwells and ends of corridors
- Corner room conditions

Entrances and “bridges” between wings

Exterior Design – Study 1

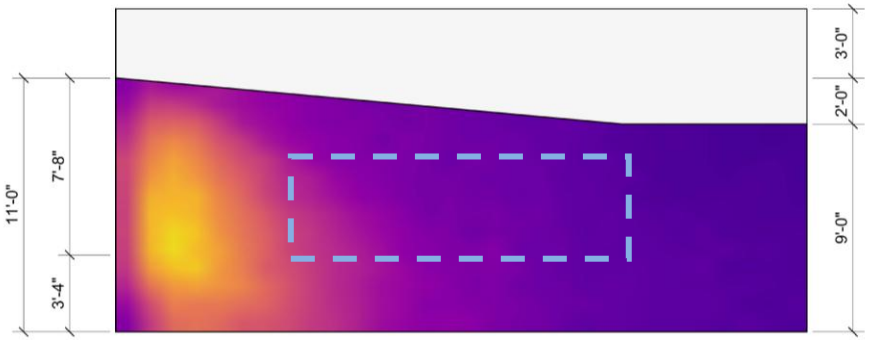
Fenestration Approach

Classroom Window Placement for Optimized Natural Daylighting



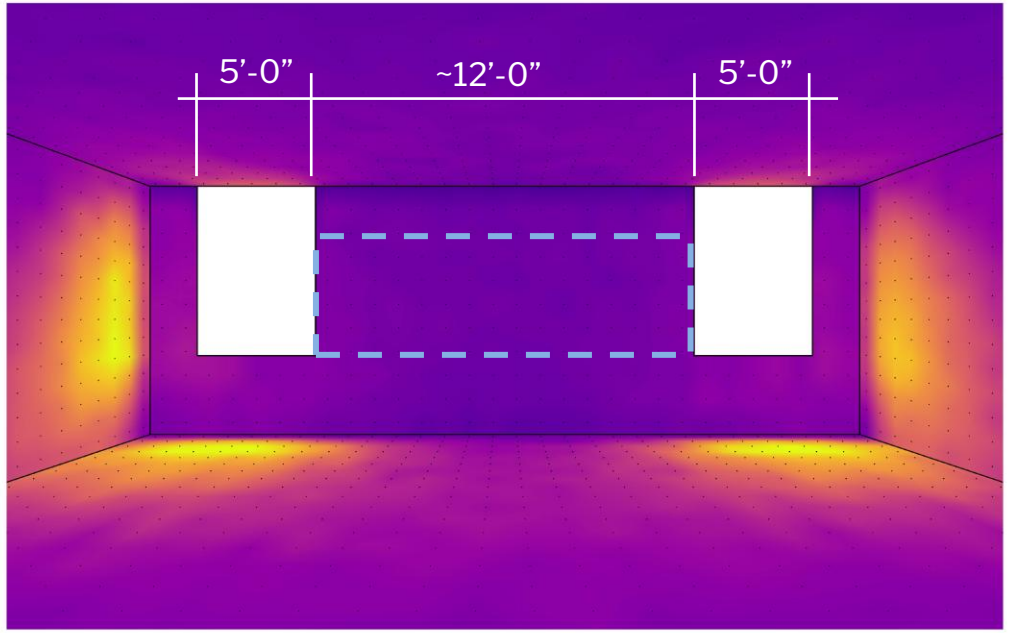
RECESSED CEILING

vs.

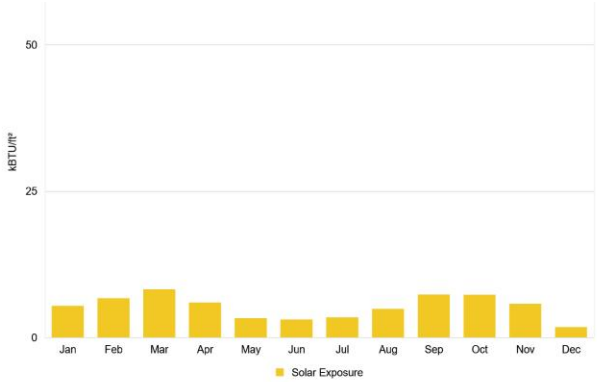


SLANTED CEILING

= Teaching Wall



Exterior Wall



Annual Solar Exposure

Exterior Design – Study 1

Exterior Design – Study 1

Exterior Design – Study 1

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Lighted Fields & Field Material

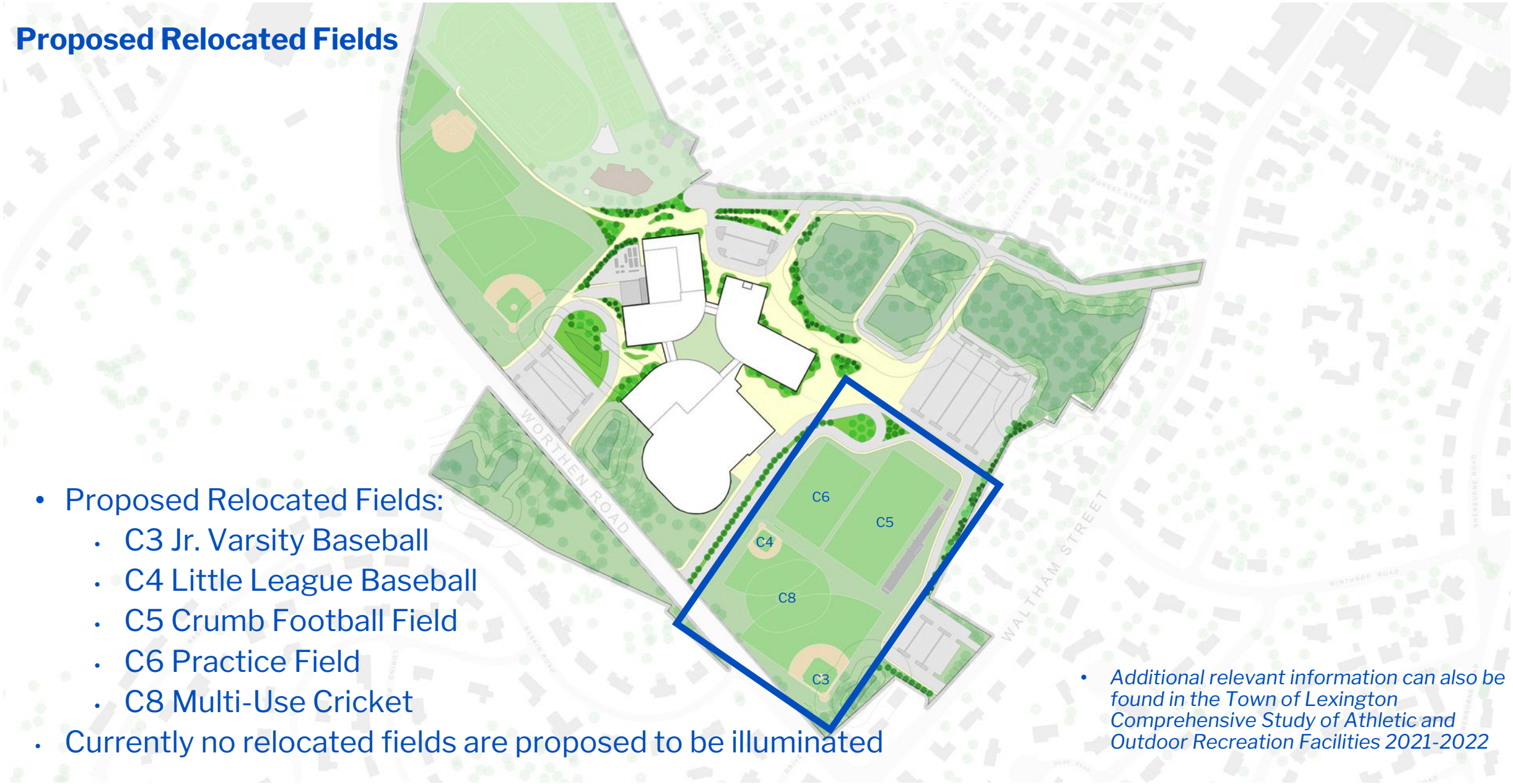
Lighted Fields

Existing Lighted Fields

- Existing Lighted Fields to Remain:
  - C1 Varsity Baseball
  - C2 Varsity Softball
  - C7 Multi-Use Rectangle Overlay

Lighted Fields

Proposed Relocated Fields



- Proposed Relocated Fields:
  - C3 Jr. Varsity Baseball
  - C4 Little League Baseball
  - C5 Crumb Football Field
  - C6 Practice Field
  - C8 Multi-Use Cricket
- Currently no relocated fields are proposed to be illuminated

- *Additional relevant information can also be found in the Town of Lexington Comprehensive Study of Athletic and Outdoor Recreation Facilities 2021-2022*

Lighted Fields

Approximate Cost

- Rockland Football | Soccer | Lacrosse (2023):

Sports Lighting

(4) pole lights, controller, installation, bases and circuitry (allow)

Football Field	1	loc	490,000.00	490,000
Circuitry to football field lighting controller	350	lf	40.00	14,000
Football Field DB inc 1-2" power and 2-2" controls	1,200	lf		Inc Above
Manhole (Sports lighting)	1	loc		Inc Above
Football field scoreboard (FBO) connection	1	ls	5,000.00	5,000
Football field scoreboard duct bank, allow	600	lf	20.00	12,000
Circuitry to football field lighting controller	4,000	lf	30.00	120,000

Athletic Field Surfacing

Natural Turf (Seed or Sod)

Pros

- Natural Aesthetics
- Cooler Surface
- Environmental Benefits
  - Carbon sequestration, reduce excess stormwater runoff
- Cost Effective to Install

Cons

- High Maintenance
  - mowing, watering, fertilizing, pest control
- Water Usage
- Durability Issues
  - Overuse and excessive traffic lead to compaction and bare spots; saturated soils/standing water limit playability
- Inconsistent Surface
- Pesticide and Fertilizer Use
- **Seed Requires 2 Full Growing Seasons Before Use**
- **Sod Requires a Minimum of 2-3 Weeks for Root Establishment Prior To Use**

Synthetic Turf

Pros

- Low Maintenance
- Durability
- Consistent Appearance
- Long-Term Cost Effectiveness
- **Able to Use Field Immediately**

Cons

- High Initial Cost
- Heat Retention
- Environmental Impact

- *Additional relevant information can also be found in the Town of Lexington Comprehensive Study of Athletic and Outdoor Recreation Facilities 2021-2022*

Athletic Field Surfacing

Comparative Cost Analysis - Installation

Seed

- Seed: $0.50 – $0.75/sf
- Topsoil: $85.00/cy
- Amendment & Place: $25.00/cy
- Crushed Stone Base: $55.00/cy
- Geotextile Fabric: $0.75/sf
- Irrigation: $1.50/sf

Sod

- Sod: $2.50 - $3.00/sf
- Topsoil: $85.00/cy
- Amend & Place: $25.00/cy
- Crushed Stone Base: $55.00/cy
- Geotextile Fabric: $0.75/sf
- Irrigation: $1.50/sf

Synthetic

- Synthetic: $6.00 - $6.50/sf
- Field Top Stone: $48.00/tn
- Field Base Stone: $40.00/tn
- Geotextile Fabric: $0.75/sf
- Turf Anchor: $80.00/lf
- Water Cannon

Comparative Cost Analysis - Maintenance

Seed

- Weekly Mowing
- Aeration (3X/yr)
- Fertilizer
- Soil Amendments/Topdressing
- Overseeding
- Irrigation shut down/start up
- Game Field Prep
- Water

Sod

- Weekly Mowing
- Aeration (3X/yr)
- Fertilizer
- Soil Amendments/Topdressing
- Overseeding
- Irrigation shut down/start up
- Game Field Prep
- Water

Synthetic

- Top Dressing/Infill
- Brushing/Sweeping
- Water Cooling
- Typical Lifespan of 8-10 yrs.

1 Call to Order

2 Vote on Previous Meeting Minutes 12:00 – 12:05

3 Public Comment 12:05 – 12:15

4 Confirm Spaces to be Air Conditioned 12:15 – 12:25

5 Introduce Exterior Design & Building Entrances 12:25 – 1:20

6 Introduce Lighted Fields & Field Material 1:20 – 1:50

7 Reflections & Action Items 1:50 – 2:00

8 Adjourn

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