

Lexington High School

Exterior & Interior Design Focus Group

04/28/2025



smma **dw** **Turner**

Exterior Design

- Exterior Design Options A, B, C and D
- Building Entrances
- Potential Materials & Systems
- Material Palette Options

Interior Design

- Option A: Layers
- Option B: Pathway

Experiential Graphic Design (XGD)

- Goals
- Process

Exterior Design

Exterior Design – Option A – Vertical Carving



Exterior Design – Option A - Vertical Carving



Exterior Design – Option B – Shifting Blocks



Exterior Design – Option B - Shifting Blocks



Exterior Design – Material Palette Option 1 – Red Brick with Stone Accents

Stone-look
Porcelain Tile or
UHPC Rainscreen



Brick Masonry
Veneer 1 (Norman
Unit Size)



Brick Masonry
Veneer 2 (Norman
Unit Size)



Full Bed Granite
Wall Base - Concord
Grey (NH) or Similar



Pre-formed
Metal Siding with
Metallic Finish



Bright "Bronze"
Painted
Aluminum
Window and
Curtainwall
Frames



Precast Concrete
Window Sills and
Trim

Exterior Design – Option C – Horizontal Striations



Exterior Design – Option C - Horizontal Striations



Exterior Design – Material Palette Option 2 – Stone-like with Wood Accents

Wood-look
Porcelain Tile or
UHPC Rainscreen



Wood-look Metal
Plank Soffits



Brick Masonry
Veneer w/
Accents



Full Bed Granite
Wall Base - Bethel
White (VT) or
Similar



Pre-formed
Metal Siding with
Metallic Finish



Dark "Bronze"
Painted
Aluminum
Window and
Curtainwall
Frames



Precast Concrete
Window Sills and
Trim

Exterior Design – Option D – Stone Petals

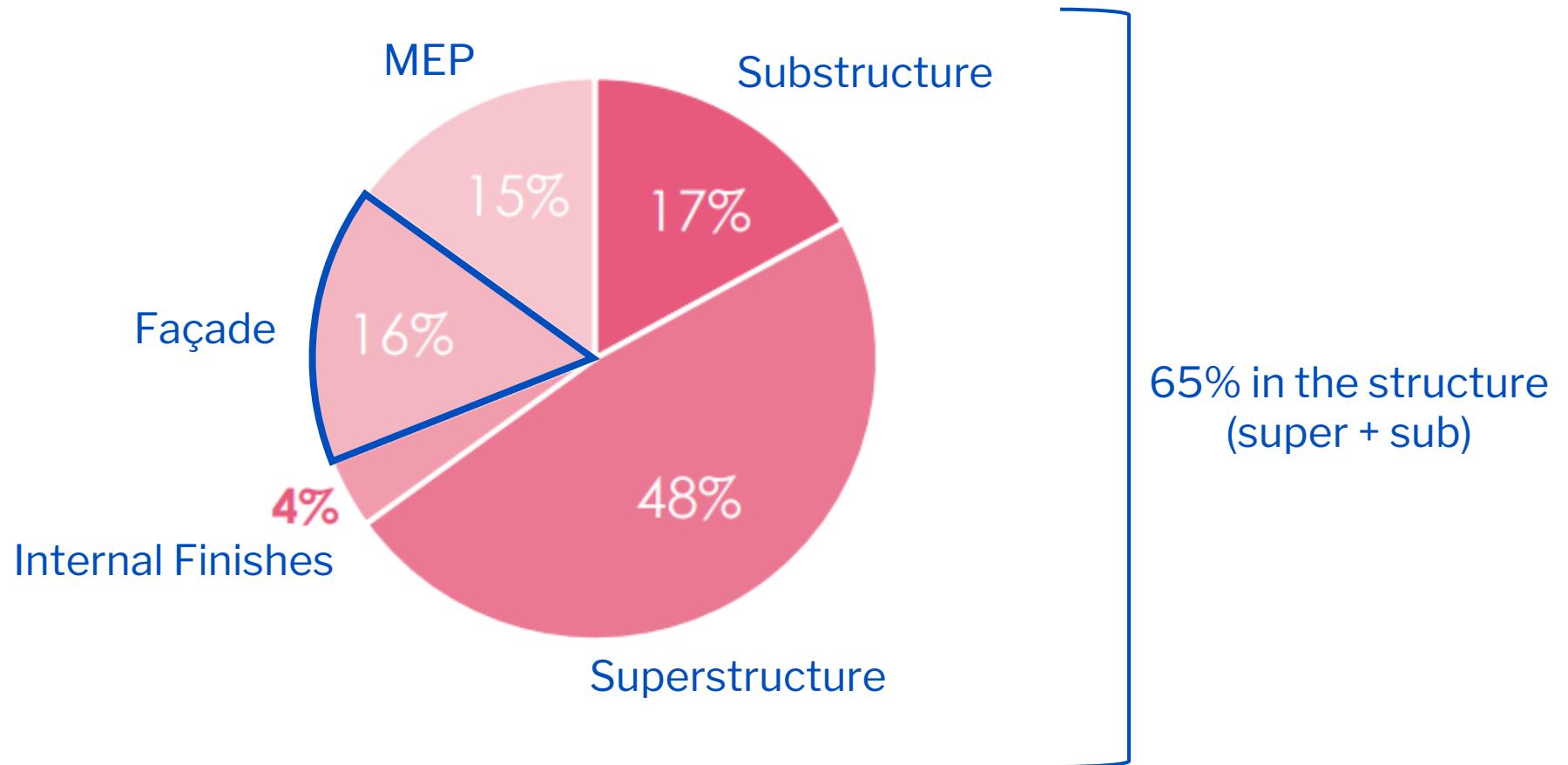


Exterior Design – Option D – Stone Petals





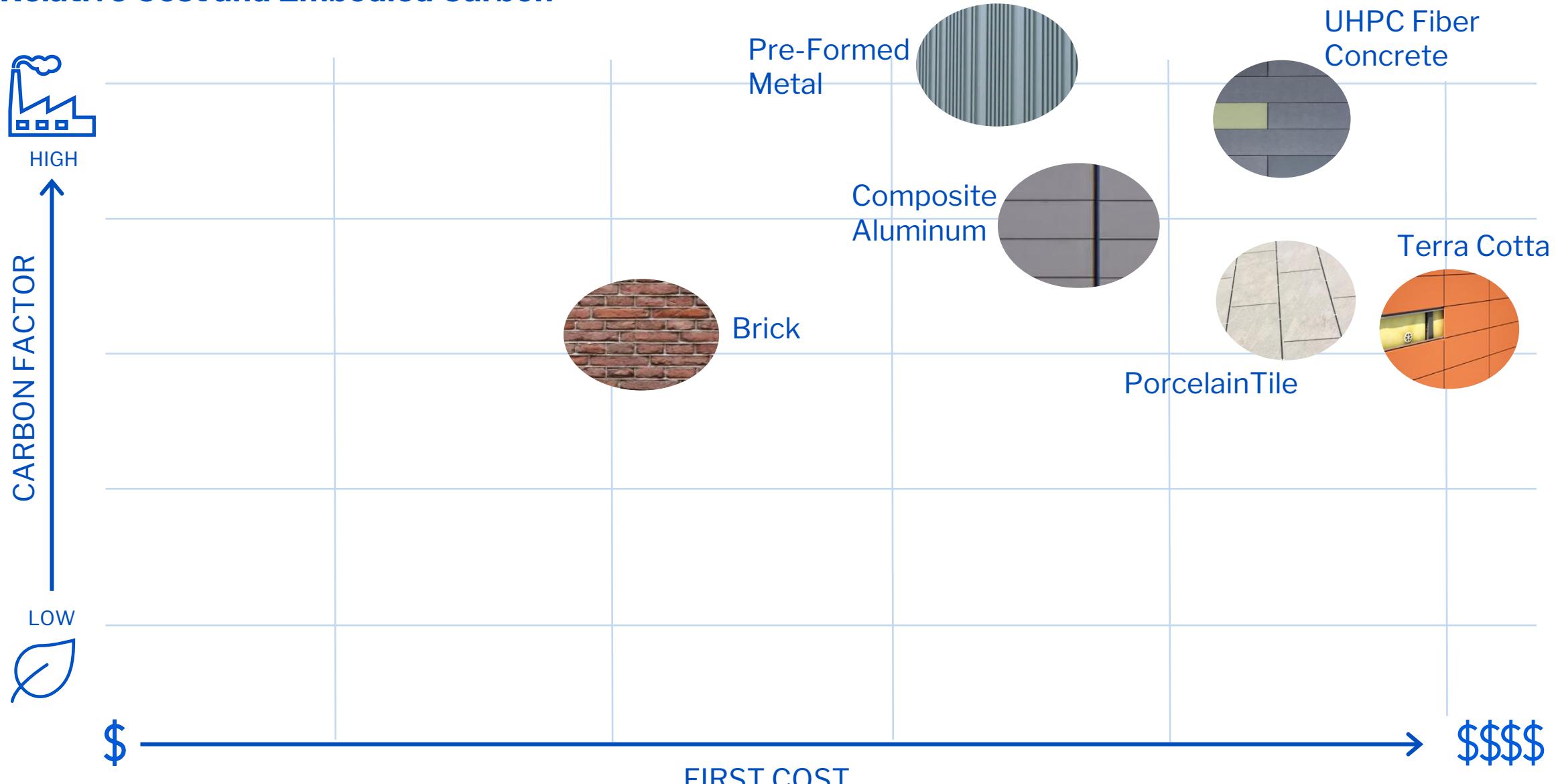
Where is Embodied Carbon?



Potential Materials & Systems / Scope Assumptions – No Change from PSR Estimates

Opaque Masonry Walls (~60% of solid wall area)	Brick Masonry, Precast Accents, Stone Base	<ul style="list-style-type: none"> • 75% of Wall Enclosure • High Insulation Value • Proportion of Masonry to Rainscreen may be increased to reduce cost
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	<ul style="list-style-type: none"> • 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	
Roof Screens	Pre-finished Metal, 50% acoustically rated	
Roofing	PVC Membrane	

Relative Cost and Embodied Carbon



Potential Materials & Systems

Brick Masonry

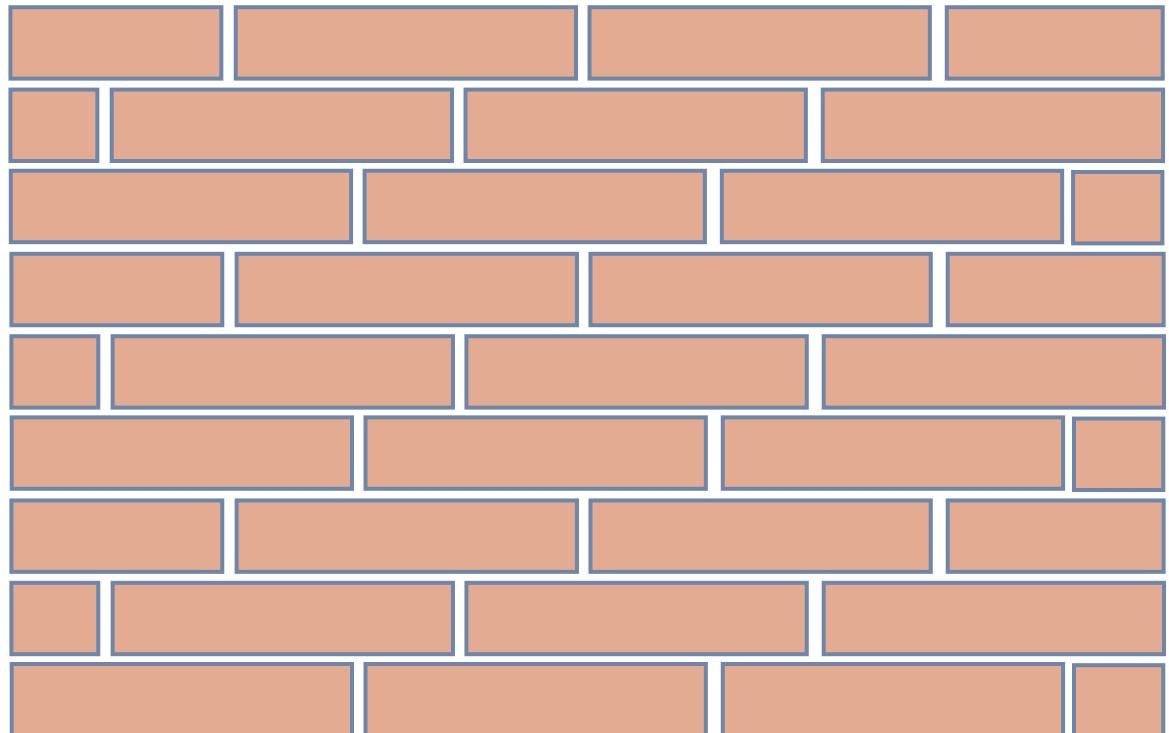
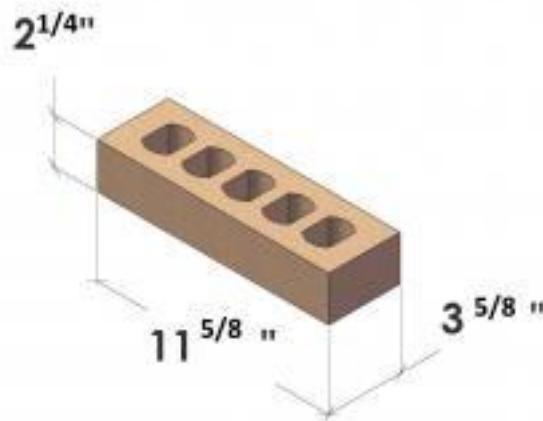
- 60% of Opaque Walls at PSR
- Timeless and reliable
- Wide range of colors and textures available
- **ROM Cost: \$55-60/sf**
- **Carbon Factor: 6.52
(not including steel support)**



Potential Materials & Systems

Brick Masonry – Norman Unit Size

- 50% longer than standard brick
- Faster installation
- Fewer joints to maintain
- May be more limited in availability than standard brick for certain colors and/or special corner shapes

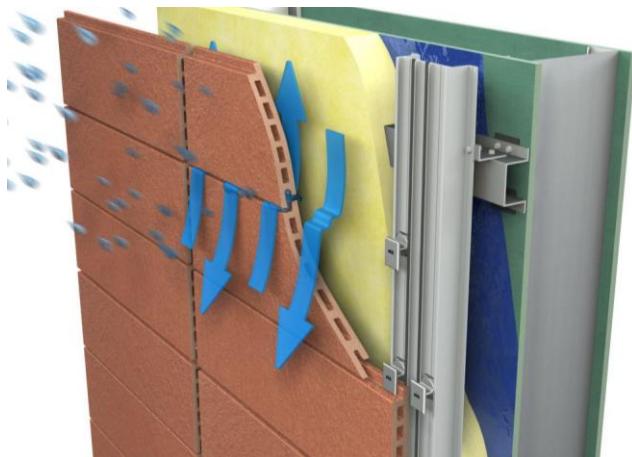


1/3 Running Bond

Potential Materials & Systems – Rainscreen Options

Terra Cotta (Not Recommended)

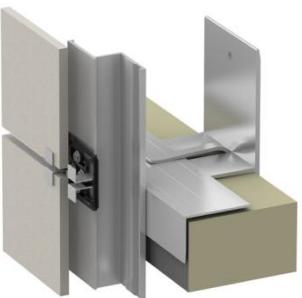
- 20% of Opaque Walls at PSR
- Beautiful, refined aesthetic
- Wide range of colors and textures available
- 5-10yr Warranty
- **ROM Cost: \$145-170/sf**
- **Carbon Factor: 7.08**



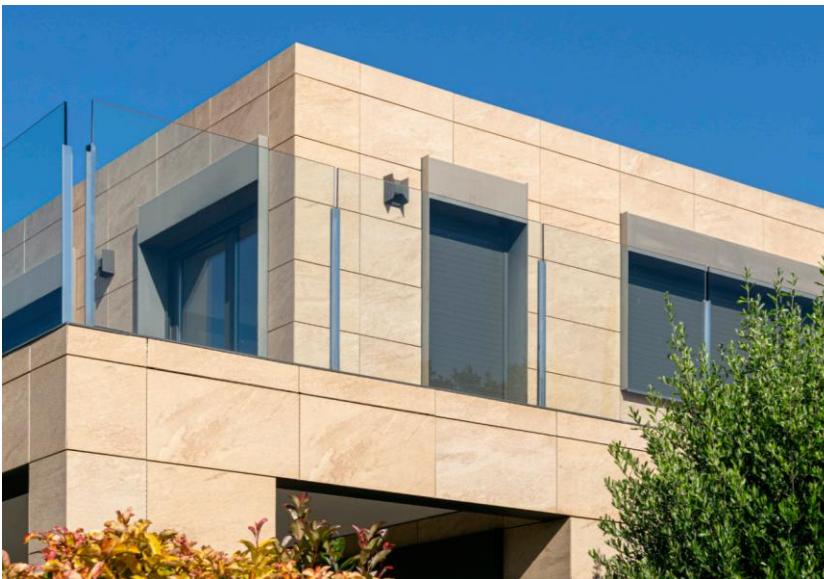
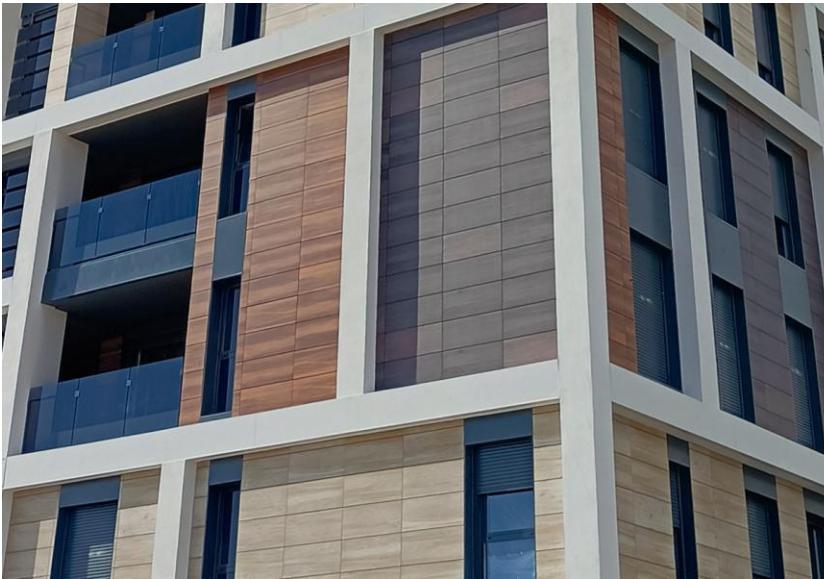
Potential Materials & Systems – Rainscreen Options

Porcelain Tile

- Beautiful, refined aesthetic
- Can mimic stone or wood
- 10yr Warranty
- **ROM Cost: \$140-150/sf**
- **Carbon Factor: 7.35**



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.

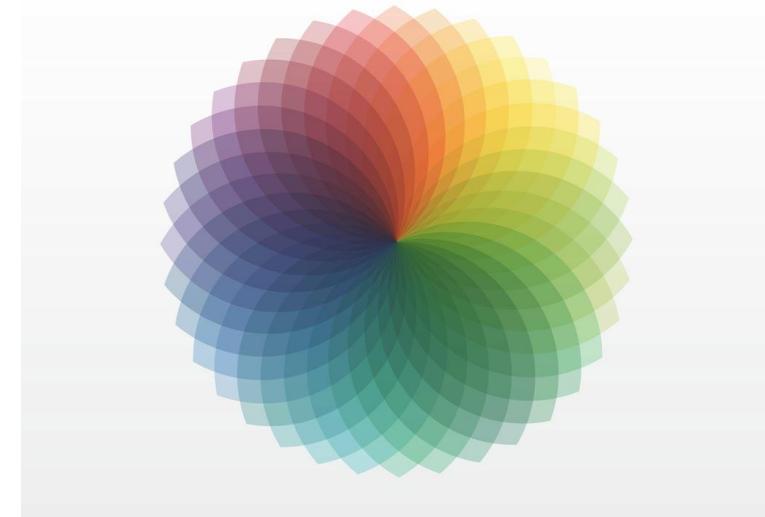


(Multiple tiles shown to illustrate range of color variation.)

Potential Materials & Systems

Pre-Finished Metal Panel

- 18% of Opaque Walls at PSR
- Accent Material
- Flat panels, perforations available
- Full spectrum of colors available including metallics
- 20yr Warranty
- **ROM Cost: \$115-125/sf**
- **Carbon Factor: 8.15**



Potential Materials & Systems – Rainscreen Options

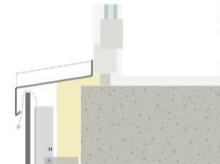
Ultra-High Performance Fiber Concrete

- Open joint system
- Visible or concealed fasteners
- Moderate range of colors and some textures available
- 20yr Warranty
- **ROM Cost: \$140-150/sf**
- **Carbon Factor: 9.04**

Figure 16: Window Head



Figure 15: Window Sill



TE90



TE00



TE10



TE60



TE30



TE40



TE15



TE20

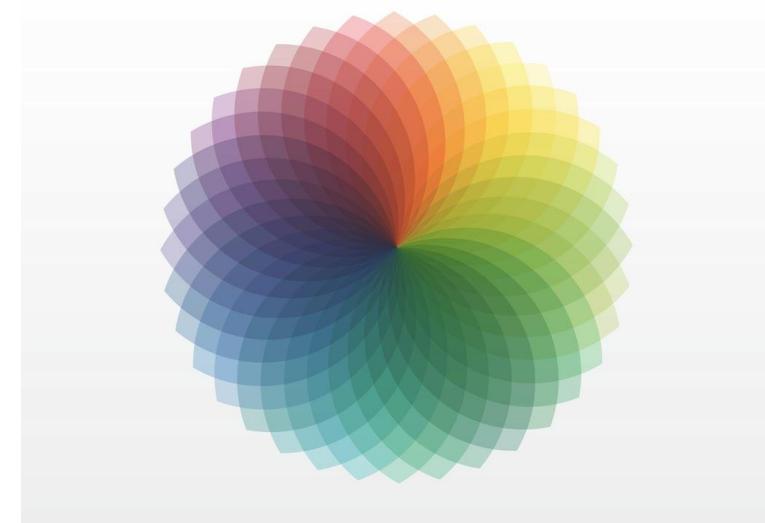


TE85

Potential Materials & Systems – Rainscreen Options

Pre-Finished Metal Siding

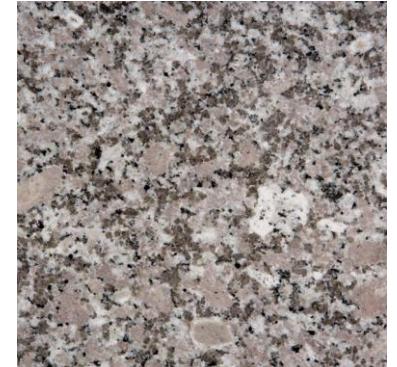
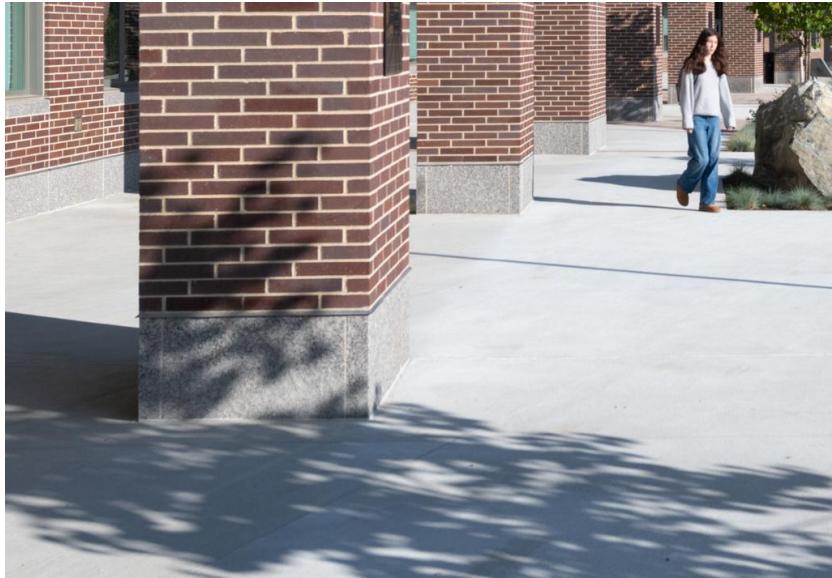
- Secondary Accent Material,
- Thin gauge, profiled for strength, perforations available
- Full spectrum of colors available including metallics
- May be less refined visually, depending on detailing
- 20yr Warranty
- **ROM Cost: \$100-120/sf**
- **Carbon Factor: 10.10**



Potential Materials & Systems

Granite Base and Trim

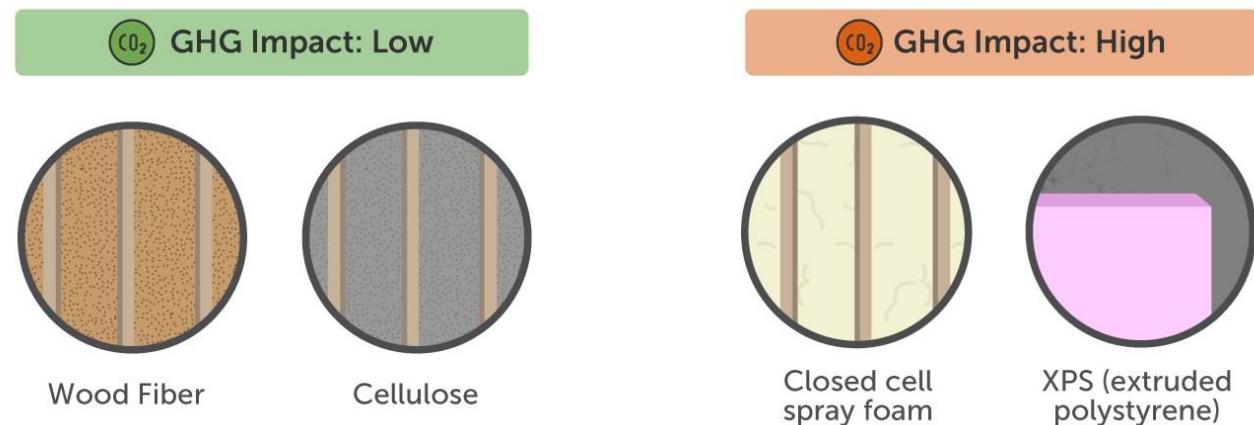
- Extremely hard and durable, resists damage
- Prevents efflorescence of brick at grade
- Range of local colors readily available
- Natural beauty
- **ROM Cost: \$120-140/sf**
- **Carbon Factor: 1.99**



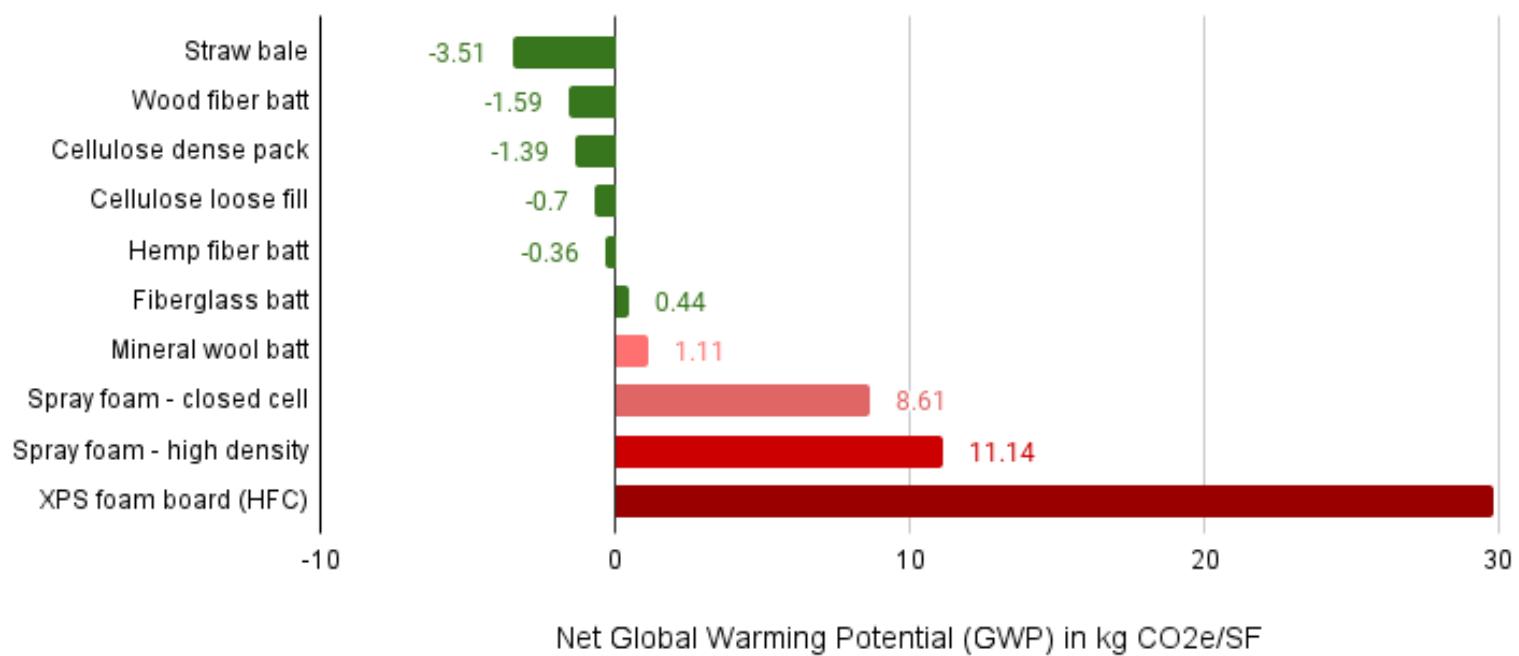
Embodied Carbon and Red List / Insulation

Potential Insulation Options

- Opportunity to reduce embodied carbon emissions, both interior and exterior.
- Optimize low-GWP insulation
- Prioritize Red List/Healthy Insulation Materials.



Embodied Carbon of Common Insulation Types



Embodied Carbon and Red List / Insulation

» Basis of Design

» Possible Alternative

INSULATION TYPE	CARBON FACTOR (kgCO2e/m ²) (material only, based on Industry-Wide EPD)	PROS	CONS
Mineral Wool (board)	2.82	moisture and fire resistant	
Mineral Wool (batt) @ Exterior Walls	1.25	high insulation value recyclable	Higher acidification than other insulation alternatives
Fiberglass (batt)	1.05	affordable, fire-resistant, widely available	Binding agents typically contain VOCs and formaldehyde (while you get low-VOC products - low isn't none) Moisture issues over time Fiberglass insulation manufacturing and production is energy-intensive
Extruded Polystyrene (XPS) @ Roof, Foundations	9.38	high insulation value	Due to its blowing agents, XPS has an exponentially higher carbon factor and overall environmental impact than other insulation alternatives.
Cellulose (blown-in)	0.204	bio based material - made from wood waste products low VOC and low embodied carbon high recycled content	Lower insulating value than alternatives Historically there has been concerns with cellulose settling over time - leading to poor insulation performance. While spray-on options are now available
Wood Fiber (board)	2.46	bio based material - made from wood waste products - carbon storing	Lower insulating value than alternatives Currently only (1) US manufacturer
Straw	Not a good source for GWP values	Bio-based material - lowest embodied carbon	has the lowest insulation value of all other insulations and requires much thicker walls (thicker walls = more material = higher embodied carbon)
Denim	1.99	made from recycled materials	cannot be used in UL tested assemblies, lower insulation value
Closed cell spray foam	4.75	high insulation value	Like XPS, its blowing agents have an exponentially higher embodied carbon and Ozone depletion potential than other insulation alternatives. Cannot act as an air barrier - does not hold up very well under temperature and moisture changes - leading to cracking & deterioration over time
Polyisocyanurate Foam	2.13	high thermal performance moisture-resistant long-term performance	High embodied carbon Not biodegradeable
Expanded Polystyrene (EPS)	2.53	Affordable, made without HFCs and more environmentally-friendly than XPS	Lower insulating value than XPS Limited recyclability

Interior Design

smma

Interior Design / Drivers



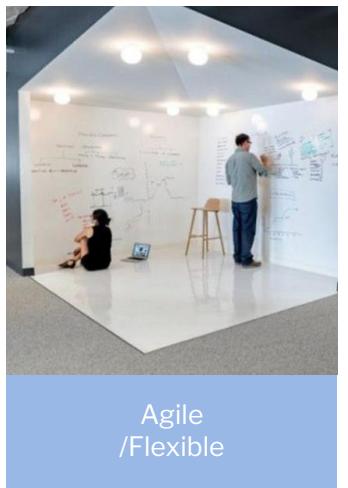
Joy in Learning



Curiosity in Life



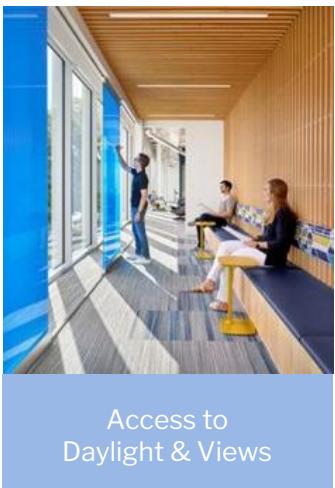
Compassion
in all we do



Agile
/Flexible



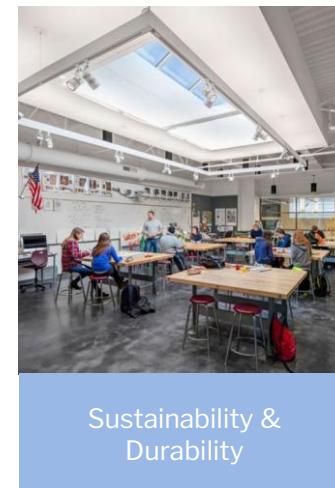
Connection to Nature



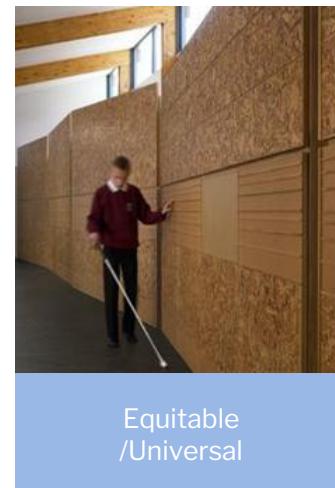
Access to
Daylight & Views



Intuitive Wayfinding

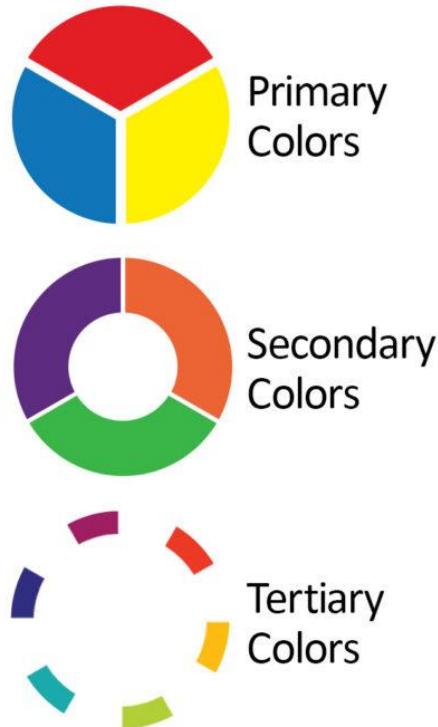


Sustainability &
Durability

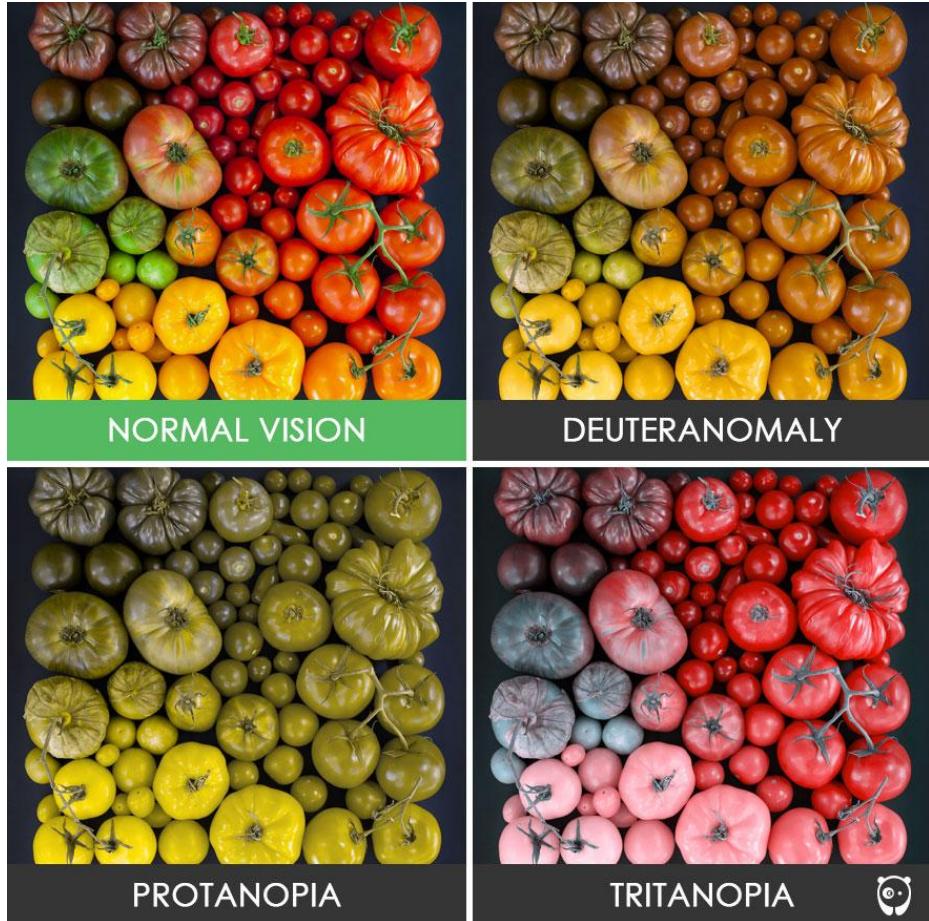


Equitable
/Universal

THE COLOR WHEEL



Color Blind Accessibility

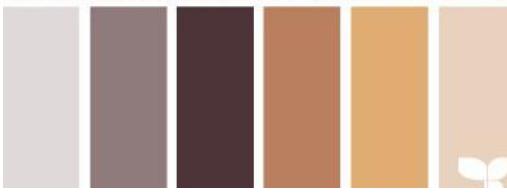


Blues



Soothing, peaceful, relaxing, inviting, trust, reliable

Warm Neutrals



Calming, relaxing, dependable, healing, strength

Greens



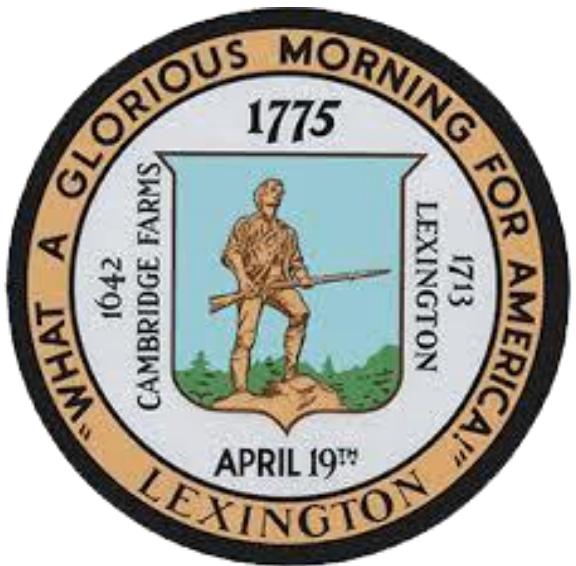
Tranquil, serenity, balanced emotions, calming, renewal, optimistic

Yellows

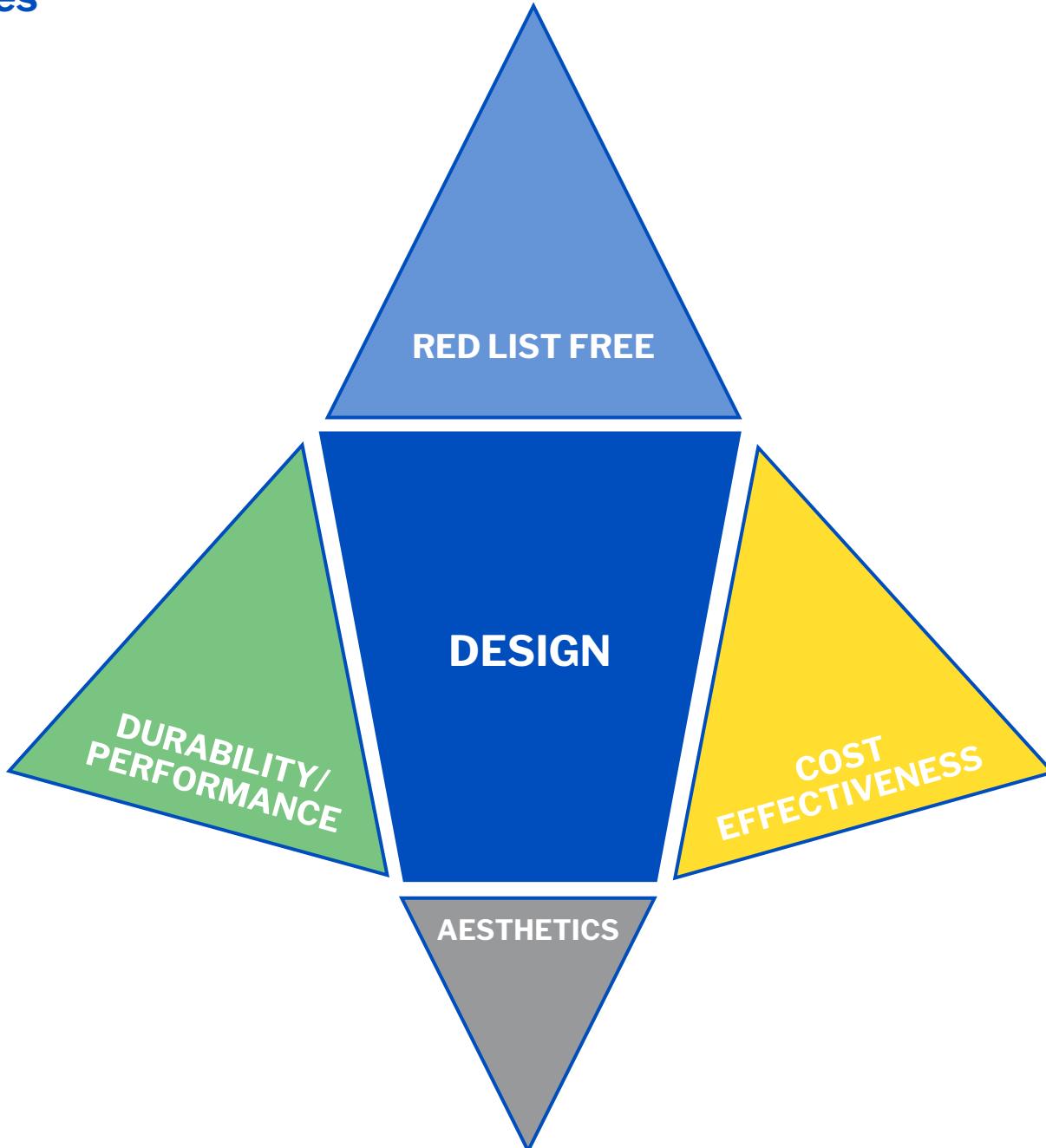


Optimistic, playful, happy, intellectual

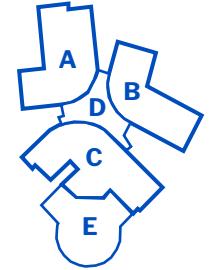
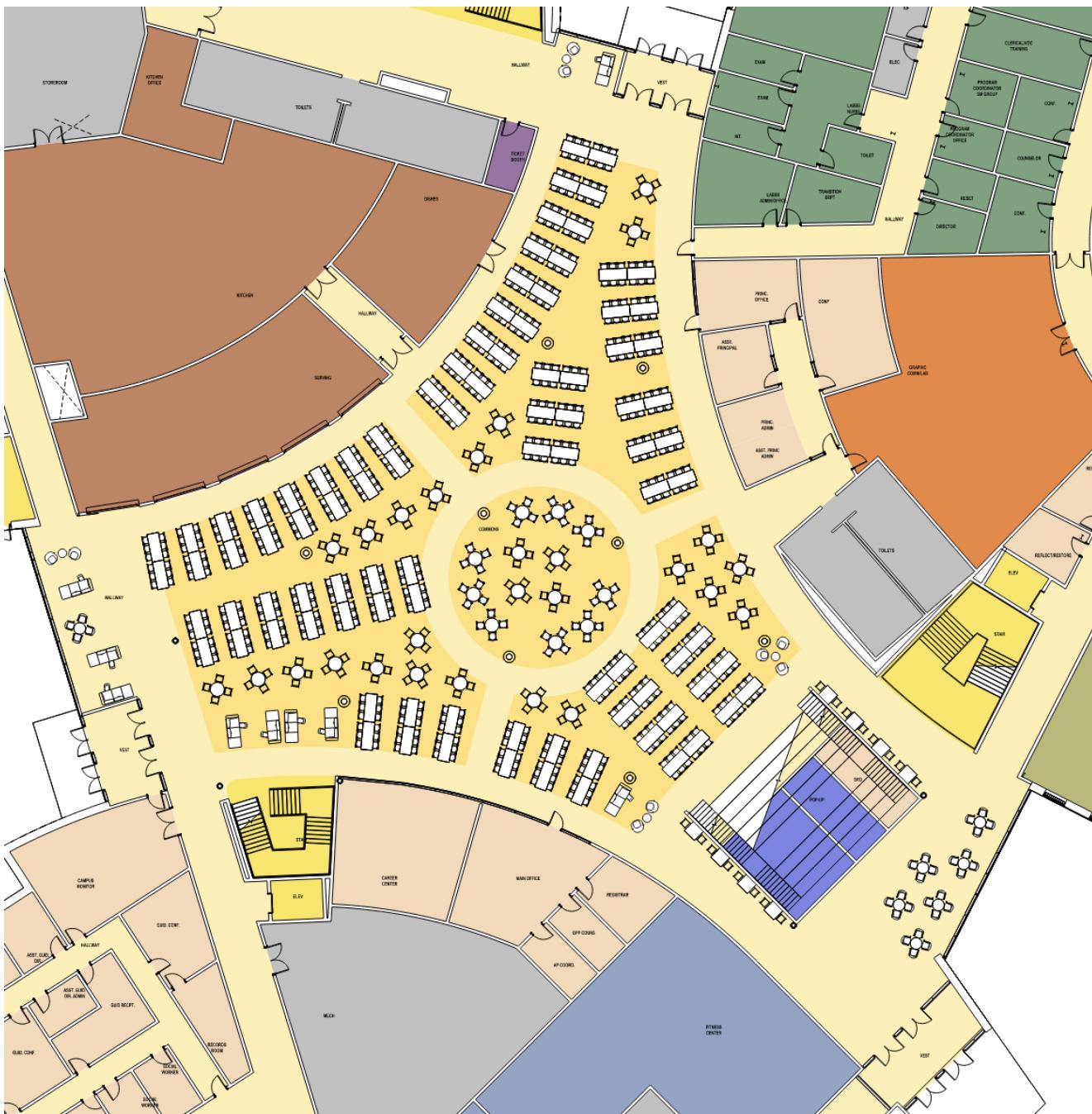
Interior Design / Town, Public School and Athletic Brands



Healthy Material Priorities

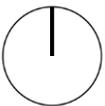


Dining Commons Floor Plan

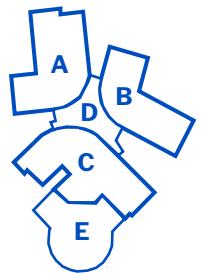


KEY PLAN

Level 1 - D Wing

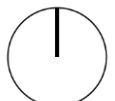


Library Media Center & Large Group Instruction (LGI) Floor Plan



KEY PLAN

Level 2- A Wing



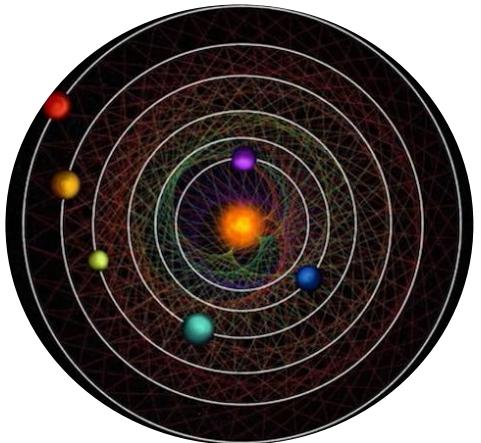
Interior Design Concept

Layers

Option A

smma

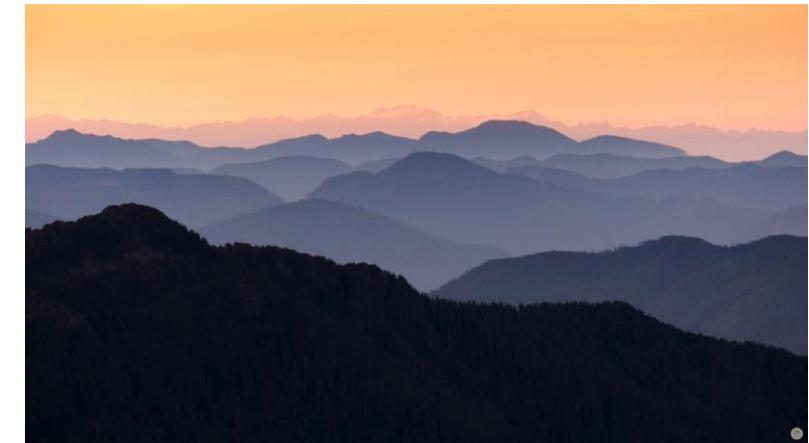
Interior Design Concept / Option A: Layers



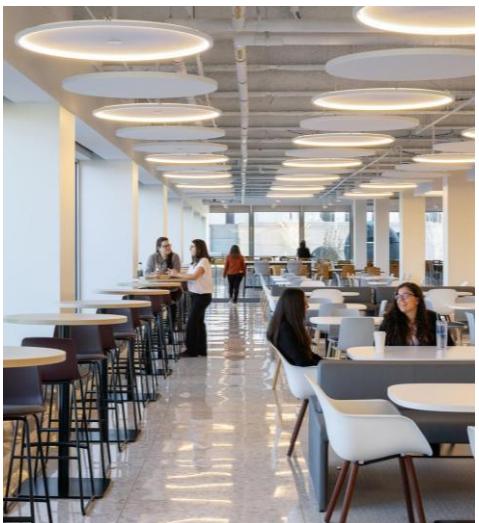
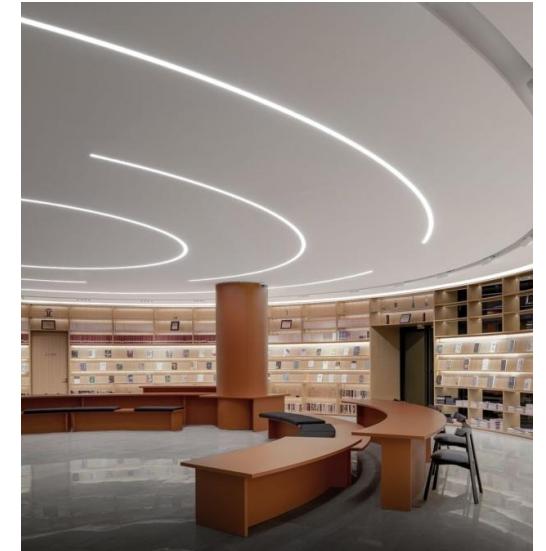
Radial



Ripple



Interior Design Concept / Option A: Layers



Building Section



Dining Commons / Option A: Layers

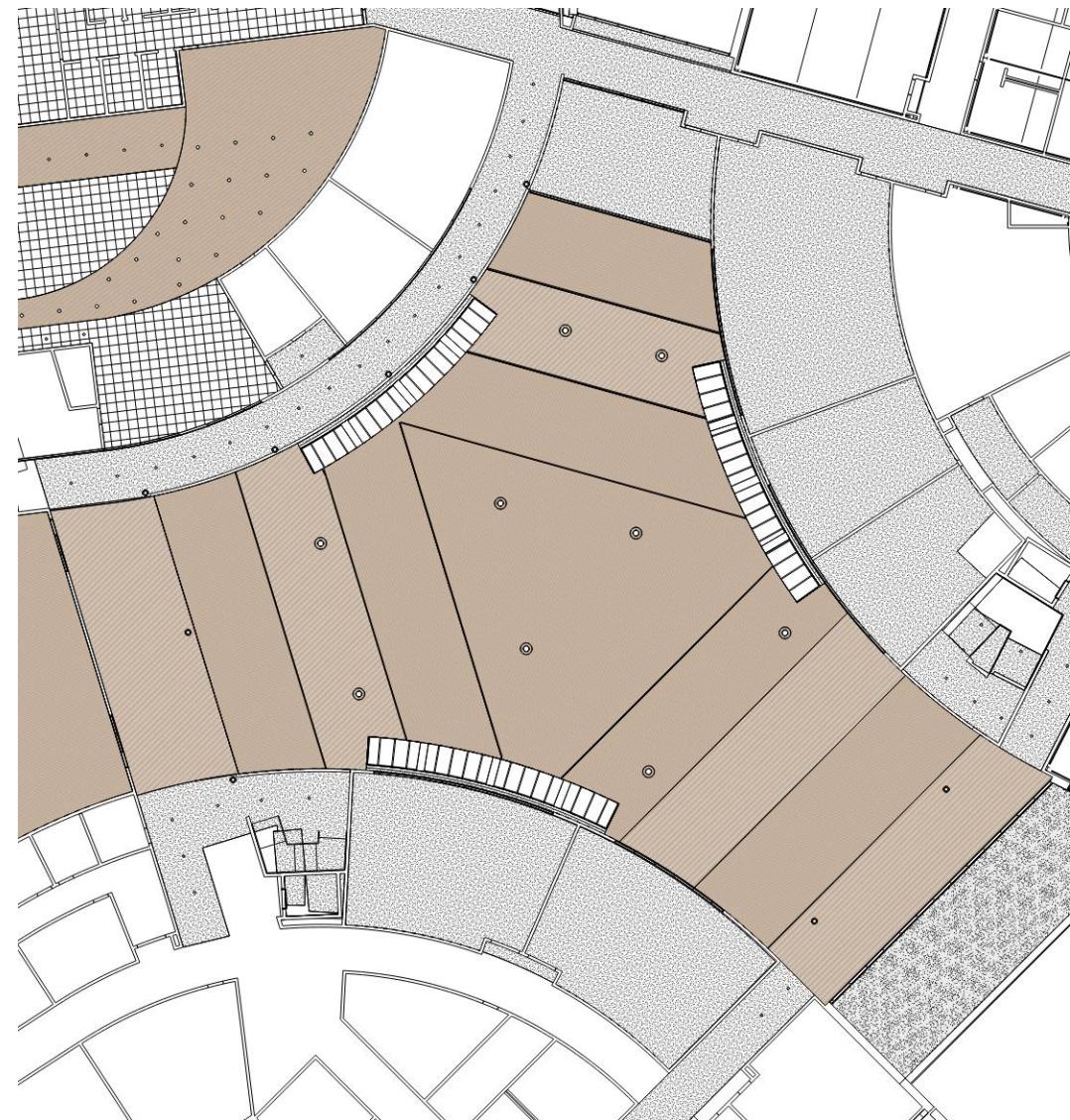


Dining Commons Plan Views / Option A: Layers



Furniture Floor Plan

*Hatches indicate different carpet patterns & colors



Reflected Ceiling Plan



Indicates location of wood-look metal ceiling



Dining Commons / Materials

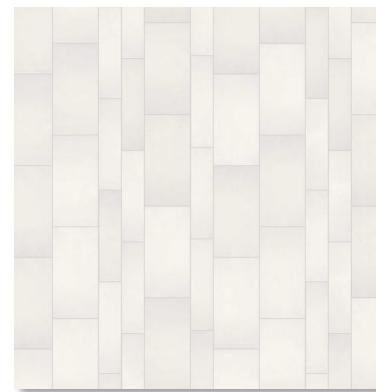


Option A: Layers



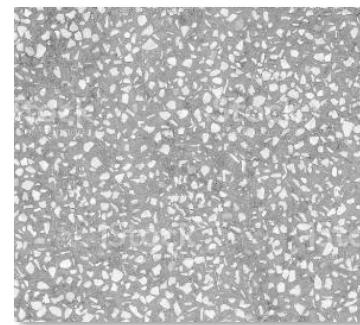
Ceiling:

Wood-look metal linear planks



Walls:

Porcelain wall tile in a vertical pattern with varying tile widths



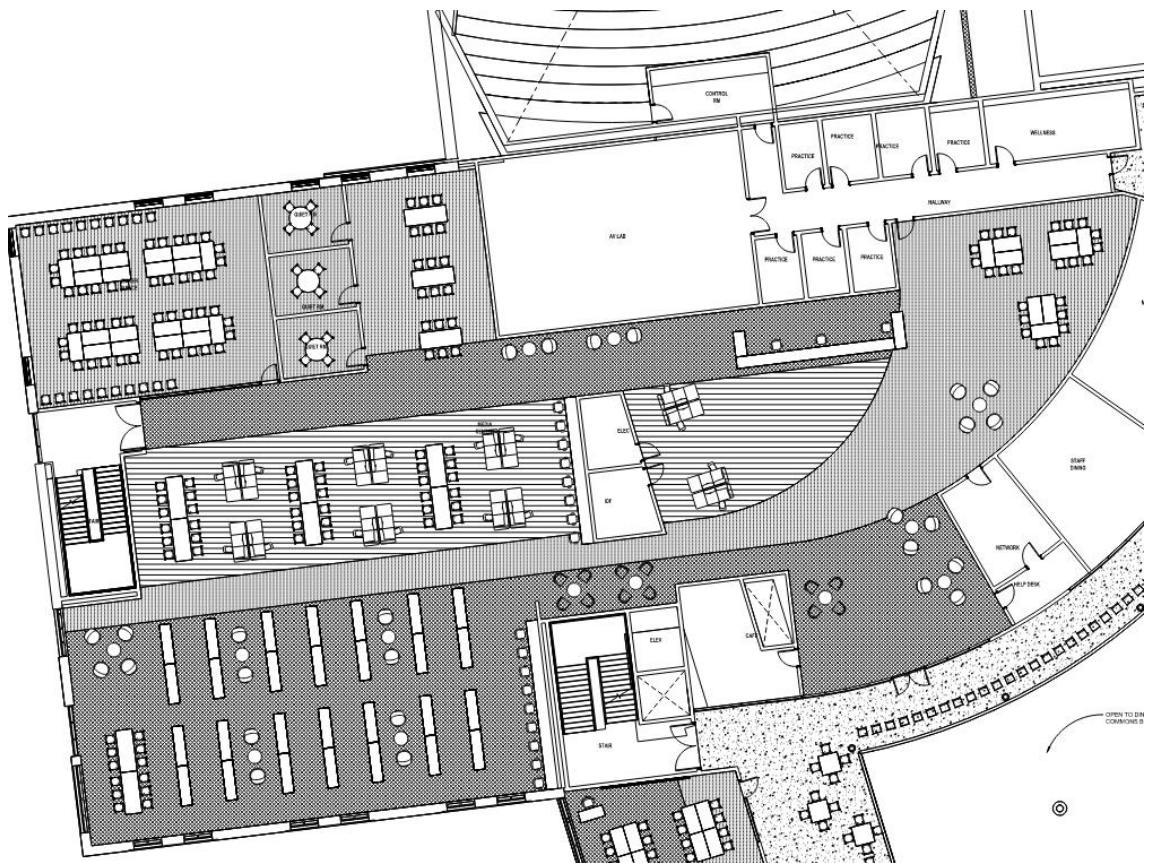
Floors:

Terrazzo

Library Media Center / Option A: Layers

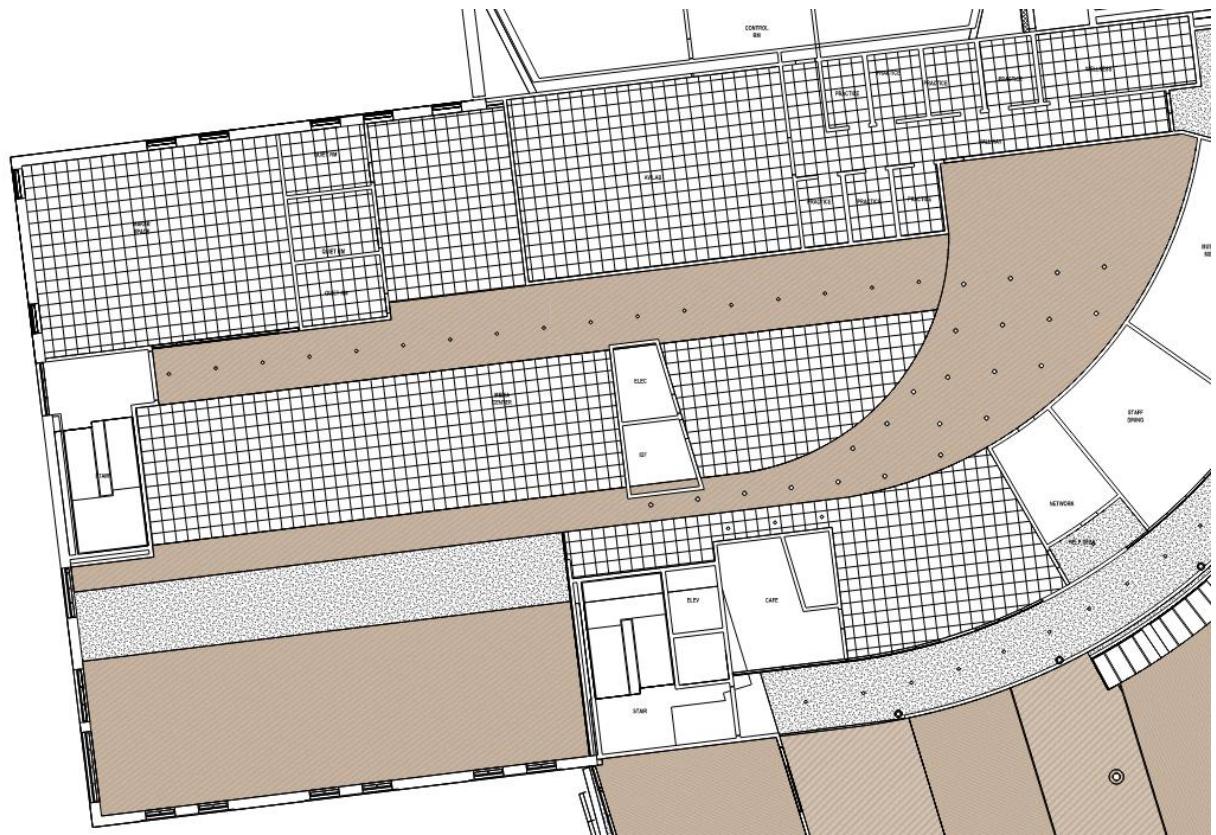


Library Media Center Plan Views / Option A: Layers



Furniture & Finish Floor Plan

*Hatches indicate different carpet patterns & colors



Reflected Ceiling Plan



Indicates location of wood-look metal ceiling



Library Media Center / Materials

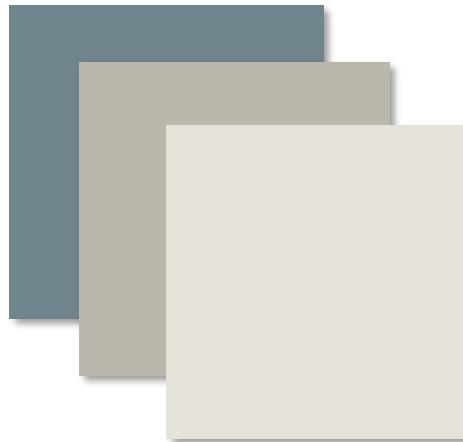


Option A: Layers



Ceiling:

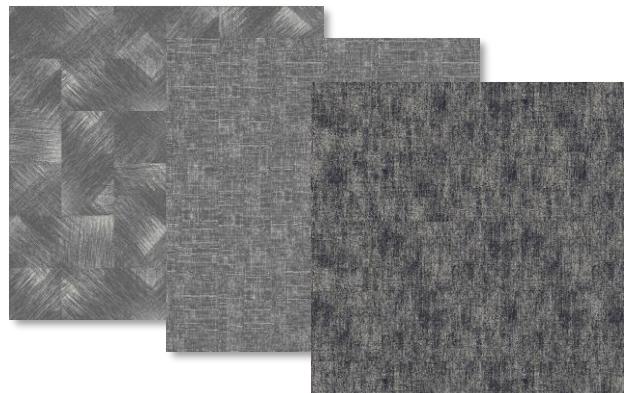
Wood-look metal linear planks



Walls:

Accent paint

General paint



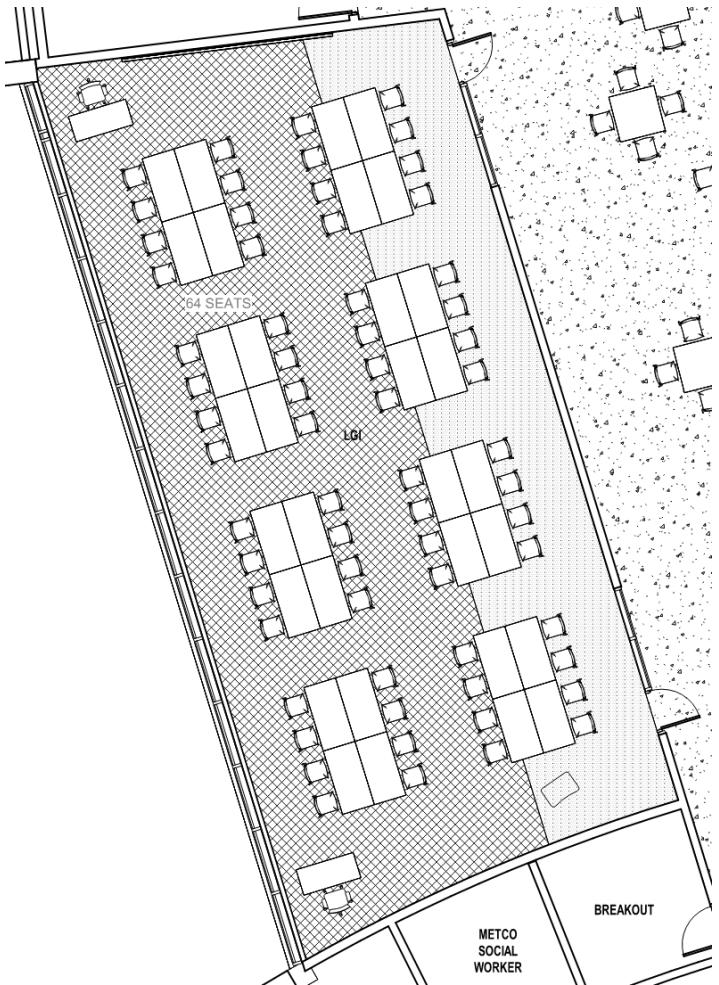
Floors:

Carpet tile

Large Group Instruction (LGI) / Option A: Layers

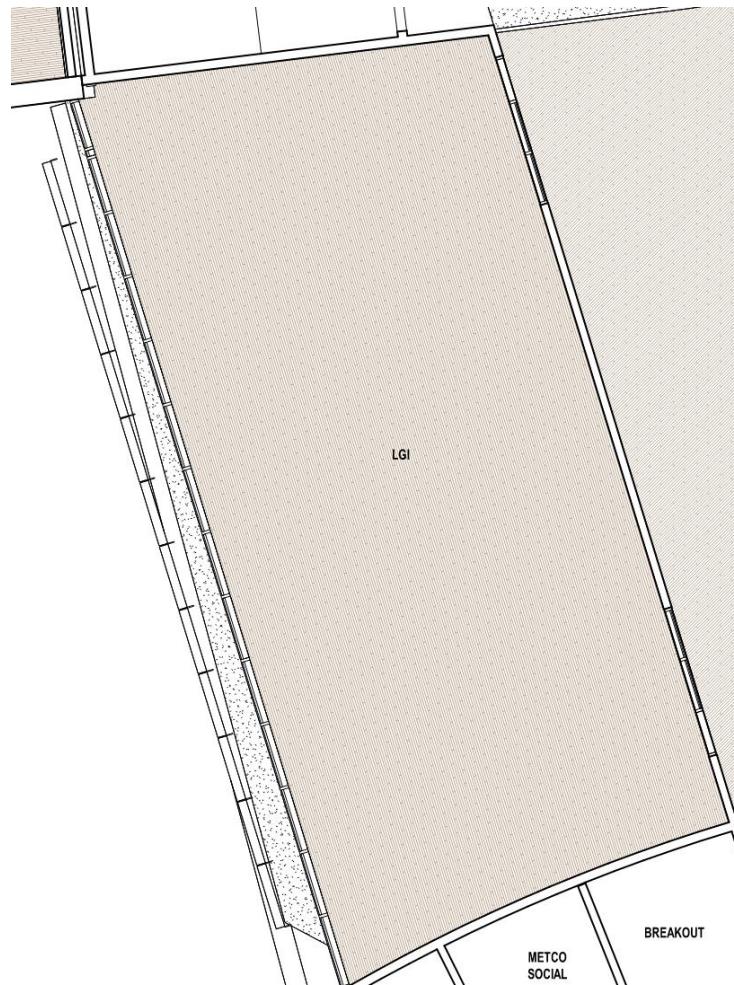


Large Group Instruction (LGI) Plan Views / Option A: Layers



Furniture & Finish Floor Plan

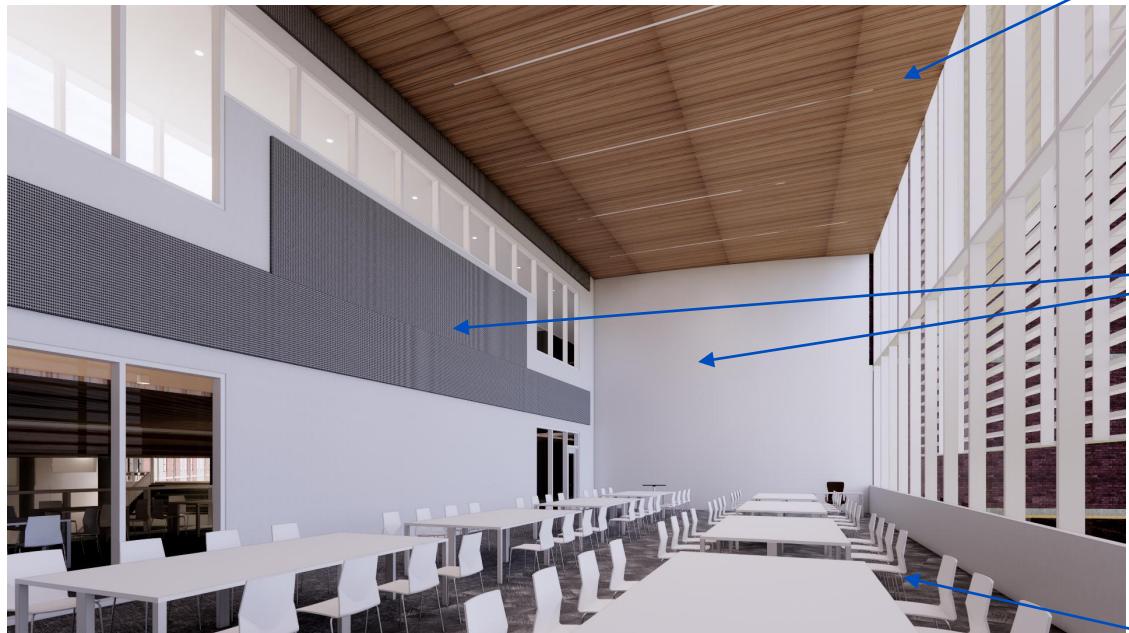
*Hatches indicate different carpet patterns & colors



Reflected Ceiling Plan

 Indicates location of wood-look metal ceiling

Library Media Center / Materials

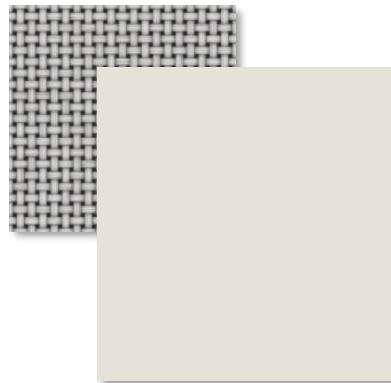


Option A: Layers



Ceiling:

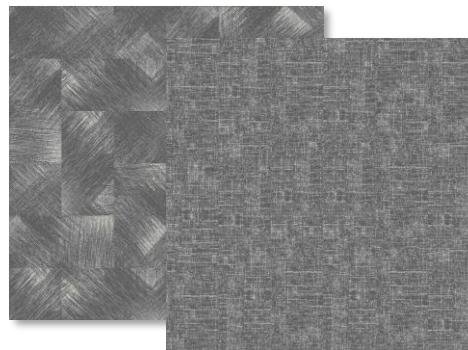
Wood-look metal linear planks



Walls:

Fabric wrapped acoustical panels

General paint



Floors:

Carpet tile

Interior Design Concept

Pathway

Option B

smma

Interior Design Concept / Option B: Pathway



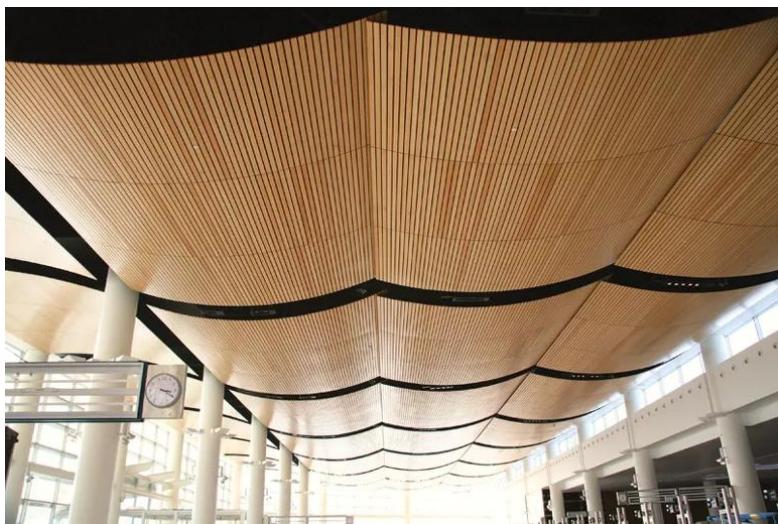
Linear



Organized Organic



Interior Design Concept / Option B: Pathway



Dining Commons / Option B: Pathway

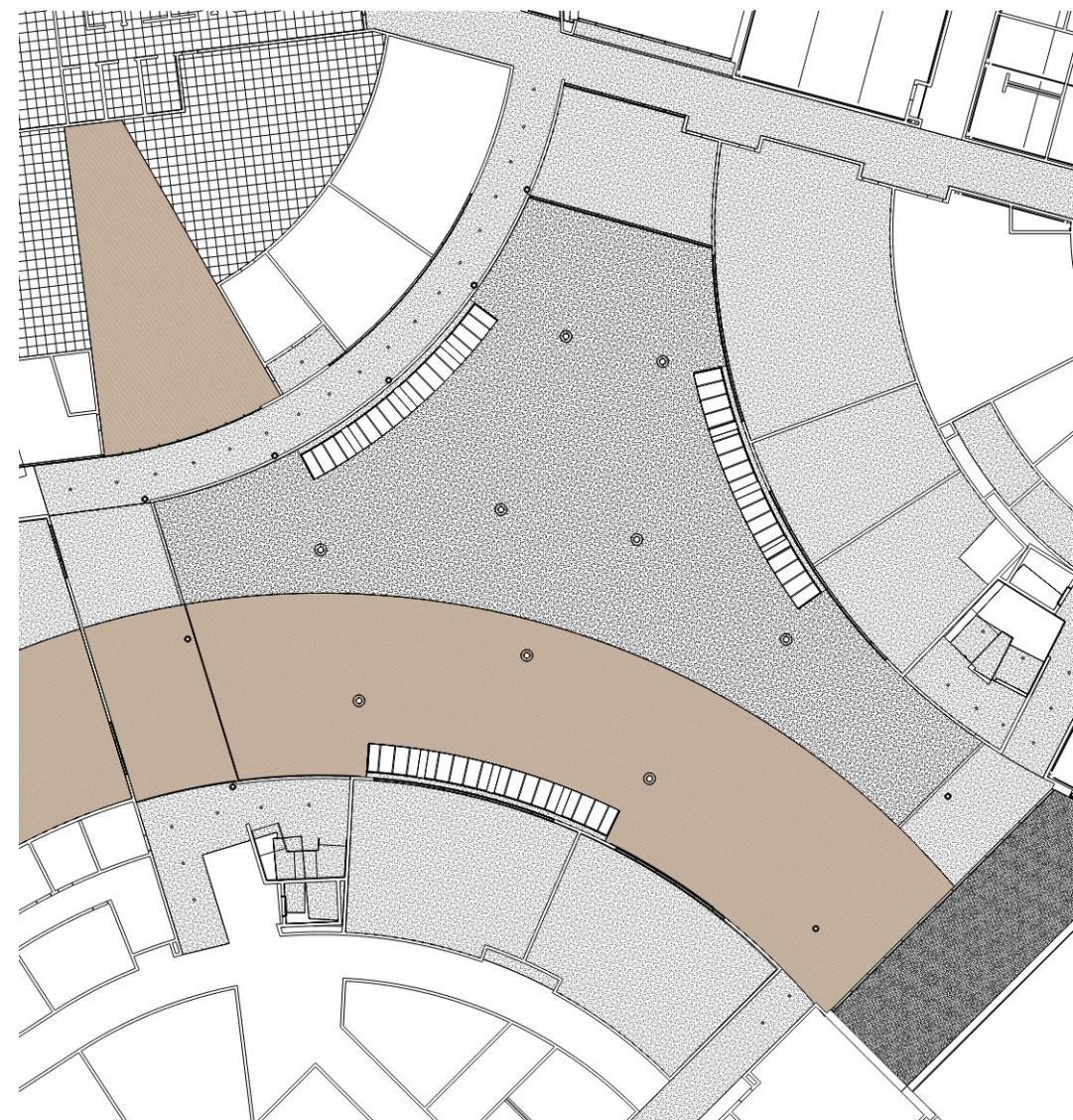


Dining Commons Plan Views / Option B: Pathway



Furniture Floor Plan

*Hatches indicate different carpet patterns & colors



Reflected Ceiling Plan



Indicates location of wood-look metal ceiling



Dining Commons / Materials

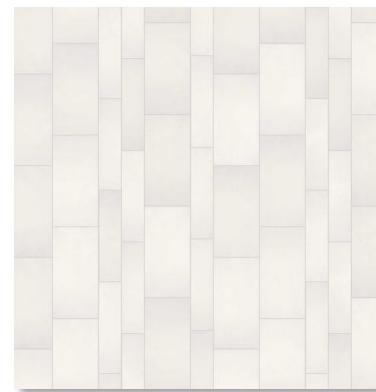


Option B: Pathway



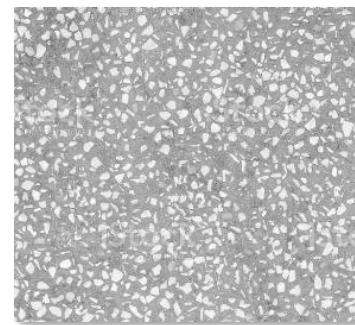
Ceiling:

Wood-look metal linear planks



Walls:

Porcelain wall tile in a vertical pattern with varying tile widths



Floors:

Terrazzo

Library Media Center/ Option B: Pathway

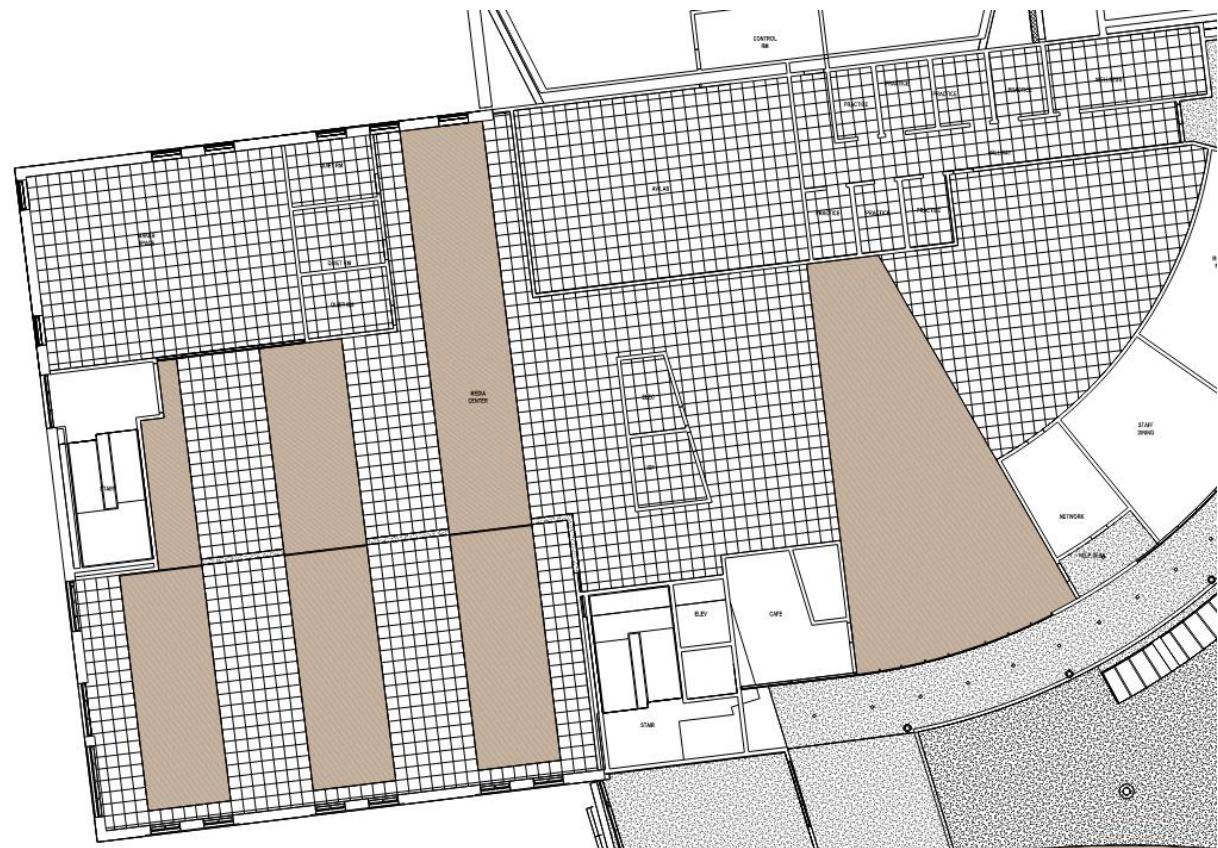


Library Media Center Plan Views / Option B: Pathway



Furniture & Finish Floor Plan

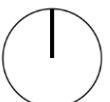
*Hatches indicate different carpet patterns & colors



Reflected Ceiling Plan



Indicates location of wood-look metal ceiling



Library Media Center / Materials

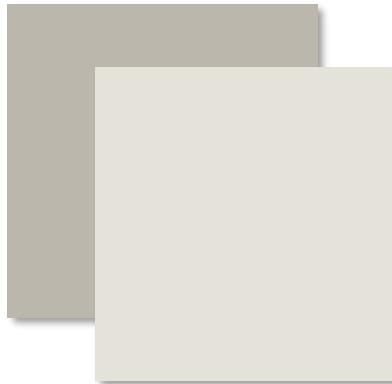


Option B: Pathway



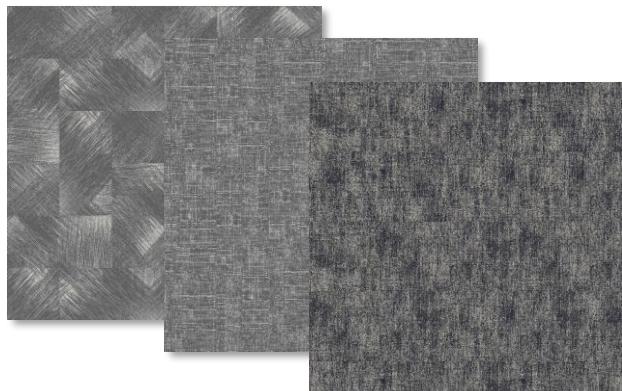
Ceiling:

Wood-look metal linear planks



Walls:

General & Accent paint



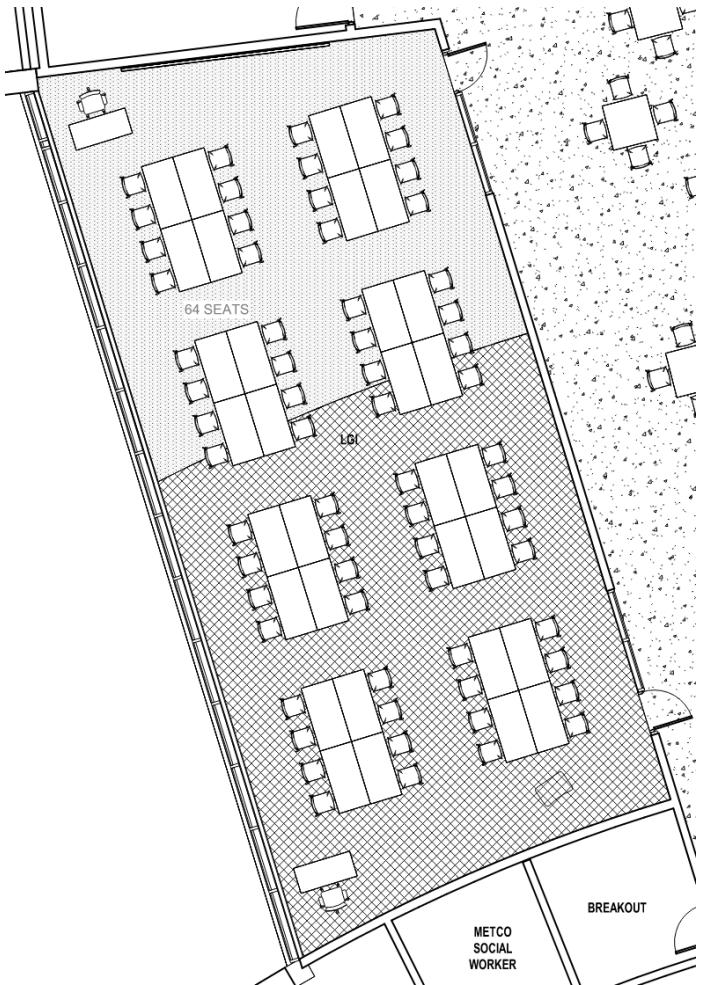
Floors:

Carpet tile

Large Group Instruction (LGI) / Option B: Pathway

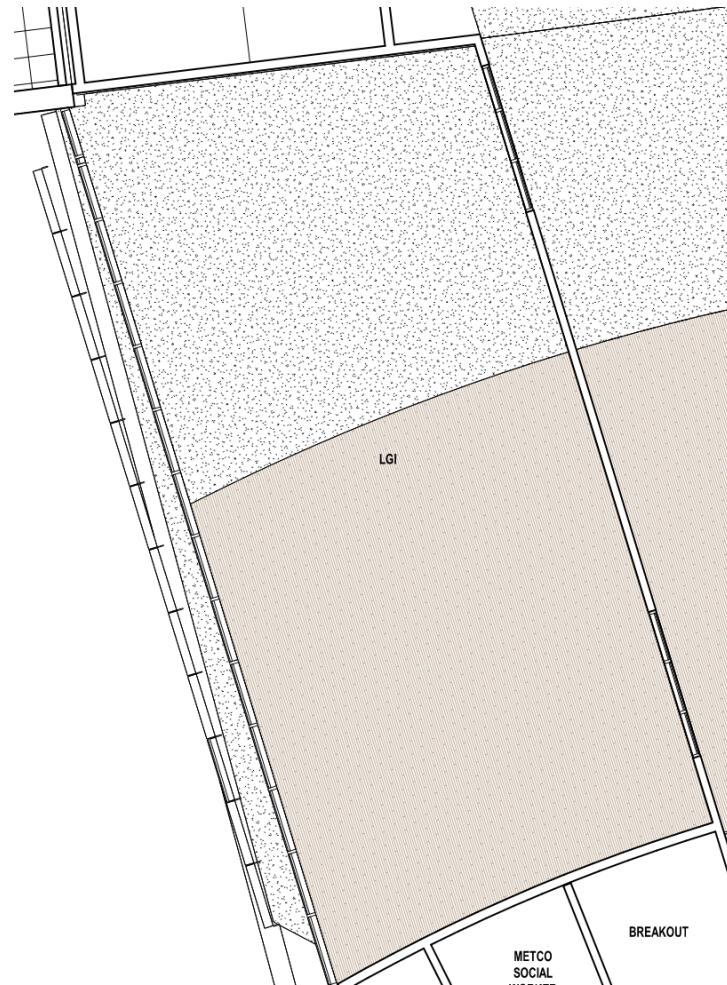


Large Group Instruction (LGI) Plan Views / Option B: Pathway



Furniture & Finish Floor Plan

*Hatches indicate different carpet patterns & colors

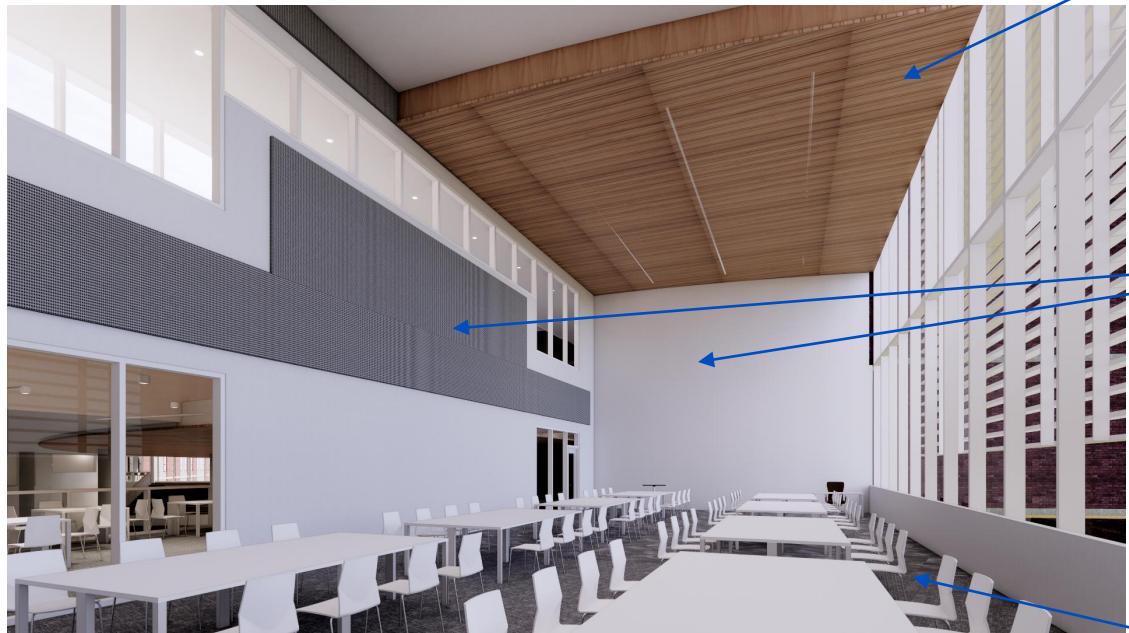


Reflected Ceiling Plan



Indicates location of wood-look metal ceiling

Library Media Center / Materials

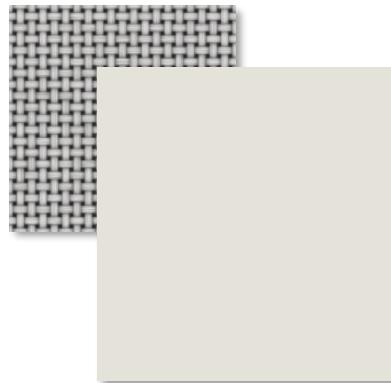


Option B: Pathway



Ceiling:

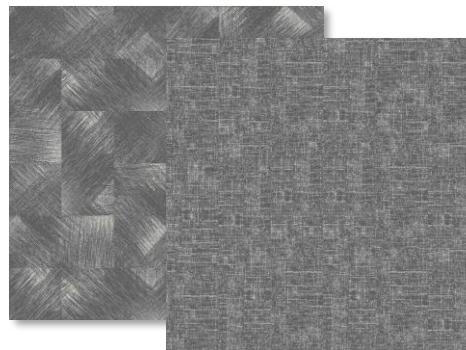
Wood-look metal linear planks



Walls:

Fabric wrapped acoustical panels

General paint



Floors:

Carpet tile

Experiential Graphic Design (XGD)



What is the content?

Story & Messaging

Where is it going?

Context & Environment

What does it look like?

Style & Material

- Connect the students, staff, and community to the space and connect individual spaces through a cohesive system of graphic installations
- Respond to interior and architectural concepts and elements
- Create visual and content strategies that allow for engaging educational opportunities inside and outside the classroom
- Provide clear and functional wayfinding and enhance placemaking throughout the school

Goals / Connect individuals to the space



Dining commons / Waltham HS ↑

Lobby / Hunnewell ES →



← Dining Commons /
Wakefield Memorial HS

↓ Dining Commons /
Excel Charter HS



Goals / Responsive Graphic Design

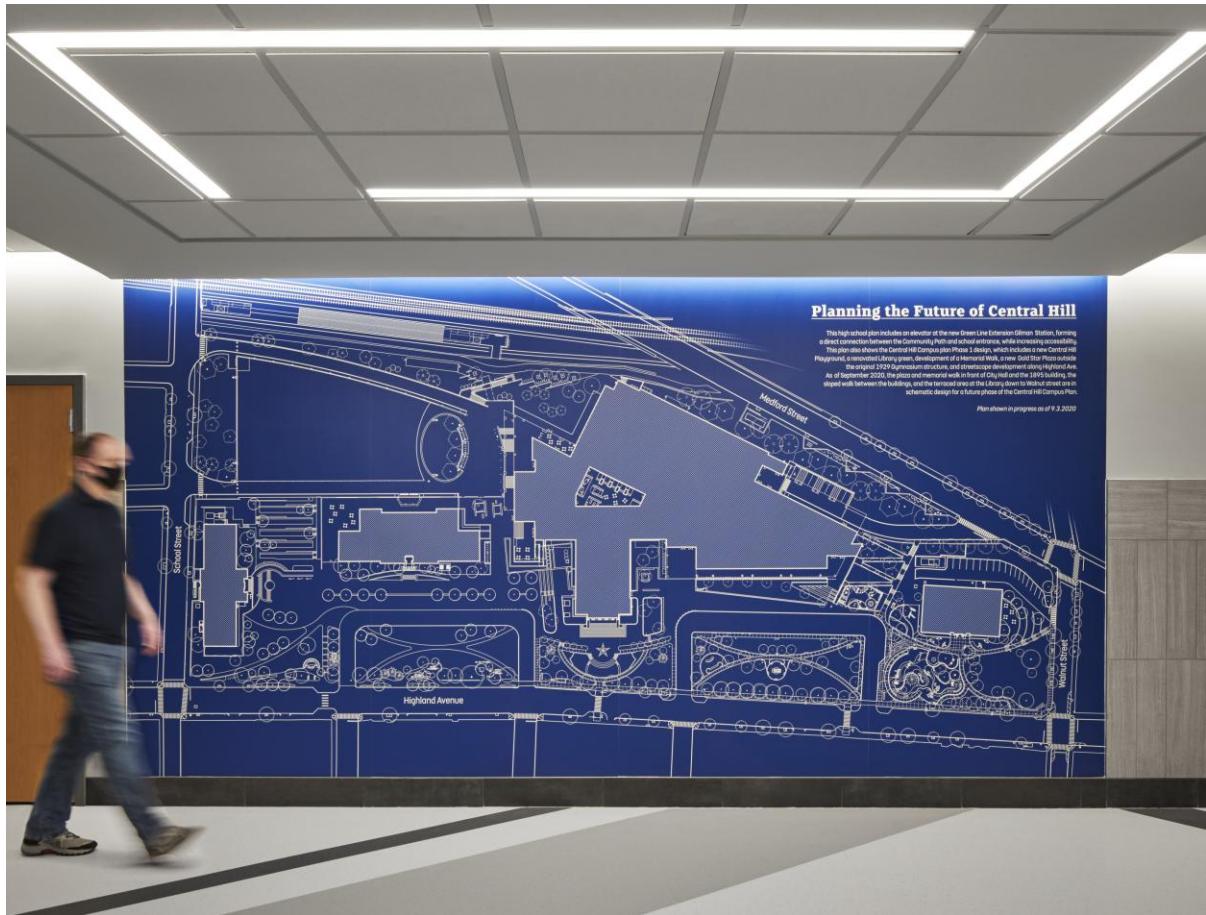


← [Community lobby / Somerville HS](#)

↑ [Media center / Wakefield Memorial HS](#)

← [Breakout spaces / Waltham HS](#)

Goals / Create educational opportunities



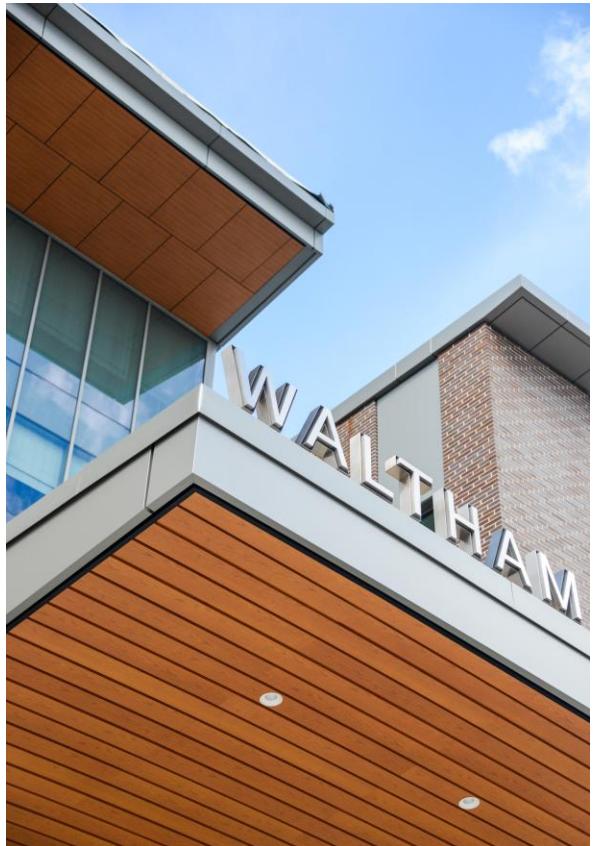
Architectural Drafting Corridor / Somerville HS ↑
Informational signage / Waltham HS →



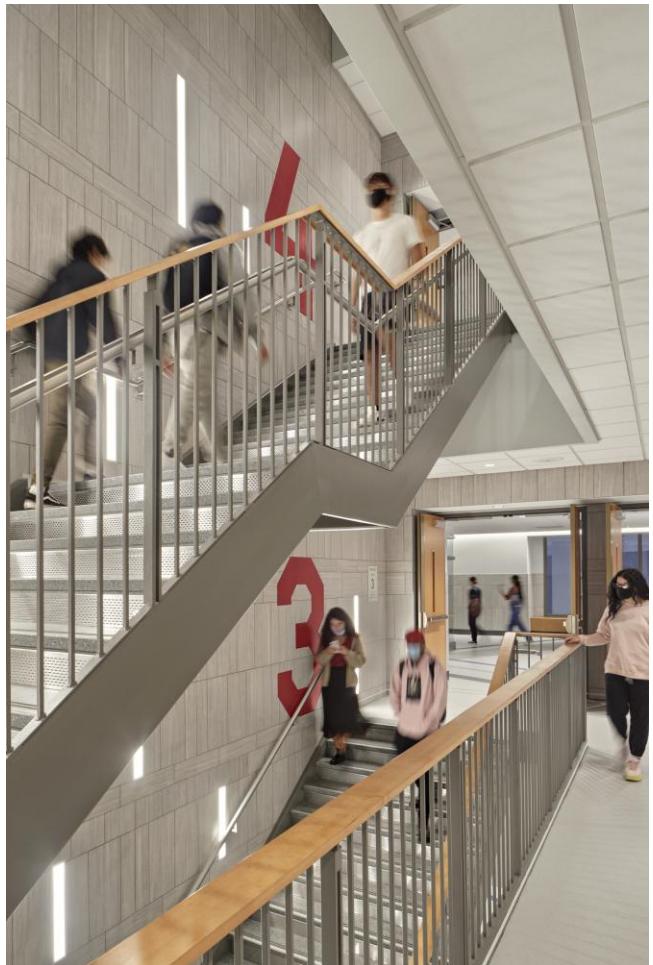
Educational posters / Waltham HS →



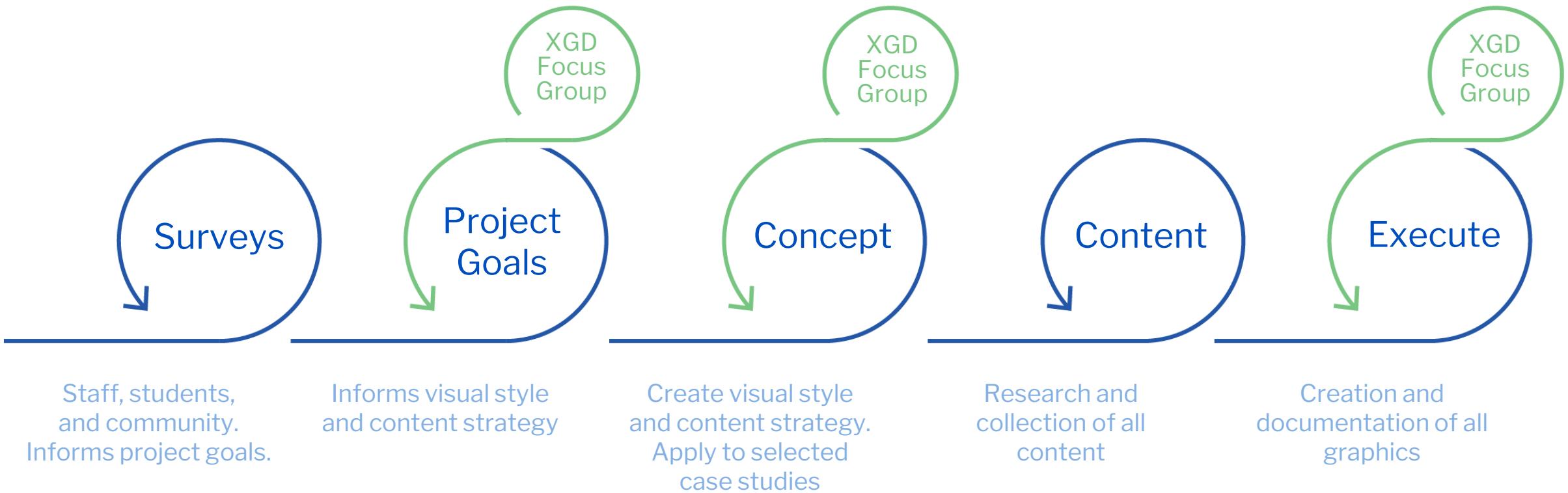
Goals / Wayfinding and Placemaking



Goals / Wayfinding and Placemaking



Experiential Graphic Design (XGD) / Process



XGD Process / Surveys

[Environmental Graphics at Wakefield Memorial High School: Student Survey](https://surveymonkey.com/r/WMHS-EGD)

What are Environmental Graphics in the new WMHS?

Environmental Graphics are visual and experiential artwork, images, and stories that will be displayed throughout your new school. These graphics and exhibits can represent special stories, celebrate the history and values of Wakefield, and help people find their way around the new building. Most importantly, the environmental graphics will contribute to building a sense of community and belonging for every student, no matter who they are.

Where do I come in? Environmental graphics are a visual way to celebrate what you are passionate about in the new Wakefield Memorial High School. We want to hear from students about what matters to you.

You are invited to participate in the following survey, which should take only 15 minutes of your time. Tell us what aspirations you have for the new school. We are interested in what inspires you—in school, or in life. We can't wait to hear from you!



1. What grade are you in?

- 9th
- 10th
- 11th
- 12th

[Environmental Graphic Design in Wakefield Memorial HS: Staff](https://surveymonkey.com/r/WMHS-Staff)

Inspiration & Aspirations In the New School

The environmental graphic design (EGD) being developed for the new Wakefield Memorial High School offers a unique opportunity to communicate the identity of the Waltham community while creating experiences throughout that will connect people to your new High School. This process begins with listening and learning about you—your community, history, and vision for the future.

You are invited to participate in the following survey that should only take about 15 minutes of your time. We are interested in what inspires you about Wakefield and what aspirations you have for the new school. We can't wait to hear from you.

1. How do you describe Wakefield Memorial High School more about where you work?

2. How long have you been at WMHS and how did you hear about the school?

3. What is your role at WMHS?

0 of 8 answered

[Environmental Graphic Design in Wakefield Memorial HS: Community](https://surveymonkey.com/r/WMHS-Community)

Inspiration & Aspirations In the New School

The environmental graphic design (EGD) being developed for the new Wakefield Memorial High School offers a unique opportunity to communicate the identity of the Waltham community while creating experiences throughout that will connect people to your new High School. This process begins with listening and learning about you—your community, history, and vision for the future.

You are invited to participate in the following survey that should only take about 15 minutes of your time. We are interested in what inspires you about Wakefield and what aspirations you have for the new school. We can't wait to hear from you.

1. How do you describe Wakefield to friends and family interested in learning more about where you live?

2. Is there a special place(s) in the Town that you are particularly fond of? Why?

3. Can you describe the culture of WMHS (i.e. customs, traditions, achievements, social characteristics, etc.)?

0 of 5 answered

Survey example from past projects. This will be curated for Lexington.

The XGD Focus Group will serve as a sounding board and source of feedback at critical milestones in the development of graphics for the new LHS. The group will help assess whether the graphic content and visual systems support the agreed upon XGD goals informed directly from research and survey responses.

- SMMA recommends that the focus group consist of students, teachers, PBC and/or community members, but not to exceed 8-10 people.
- SMMA will provide survey response summaries and outline goals for LHS XGD. These will be discussed with the focus group and edited as needed.
- The Focus Group will respond to SMMA's proposed content plan and visual styling for the graphics and assess whether it supports project goals.
- SMMA will present case studies to the focus group, showing both visual style and content. The Focus Group will provide feedback.



Raised Material

- Hard dimensional lettering or prints, studded to the wall
- Placed on upper portions of the wall

Printable Material

- For core spaces, use of direct print to acrylic, wood, laminate, metal, or vinyl
- In select spaces, we will integrate interior materials to frame and protect graphics

Glass Film

- Film on glass is installed on the inside surface to provide protection in high traffic areas
- Designs incorporate varying levels of transparency to allow lines of sight

Flexible Material

- Materials that allow the school to interchange in the future
- Magnetic panels, frames, display rails

XGD Process / Integrated in Interior Finishes



Tile

- Easy upkeep as typical tile in school
- Custom pattern or mosaic
- Permanent and durable



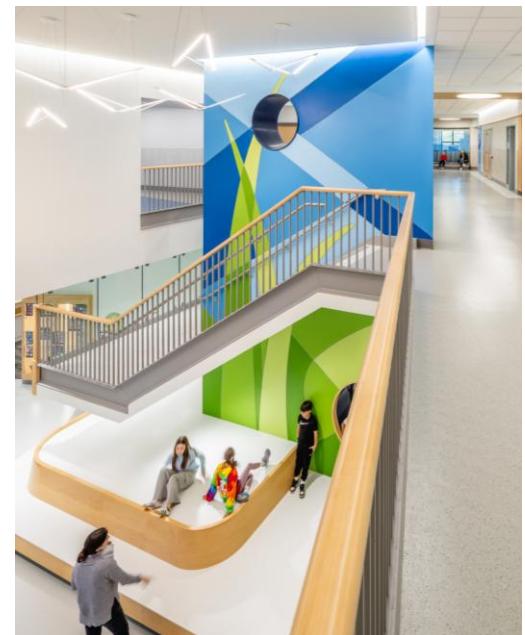
Acoustic Paneling

- Direct print to fabric
- Allows for graphic elements in areas required to have acoustical coverage



Terrazzo

- Town or school seal incorporated into flooring



Paint

- For simple designs; paint can be cost effective and easily touched up by maintenance

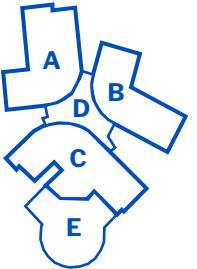
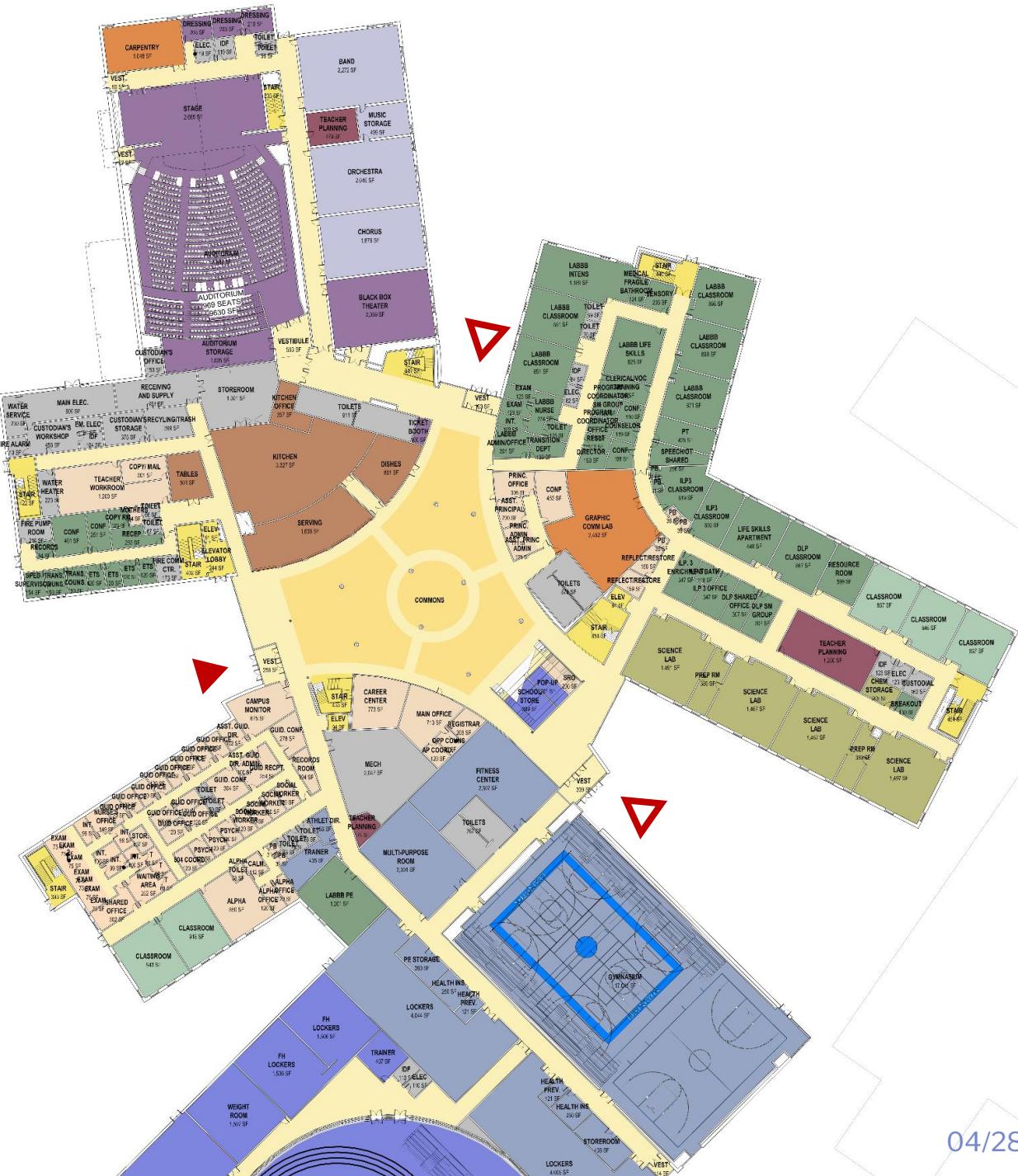
Thank you.

Floor Plans

Building Floor Plans

Level 1

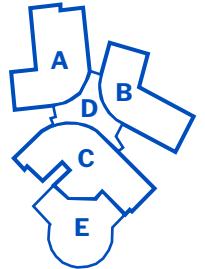
- Core Academic
- Science
- Teacher Planning & Small Group
- Admin, Guidance, ALPHA, METCO, Central Offices
- Auditorium / Drama
- Art & Music
- Media Center
- Vocation & Technology
- Physical Education
- Special Education
- Medical
- Restrooms, Custodial
- Kitchen
- Commons
- Circulation
- Vertical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



KEY PLAN

Building Floor Plans

Level 2



KEY PLAN



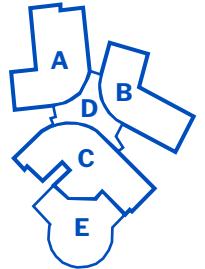
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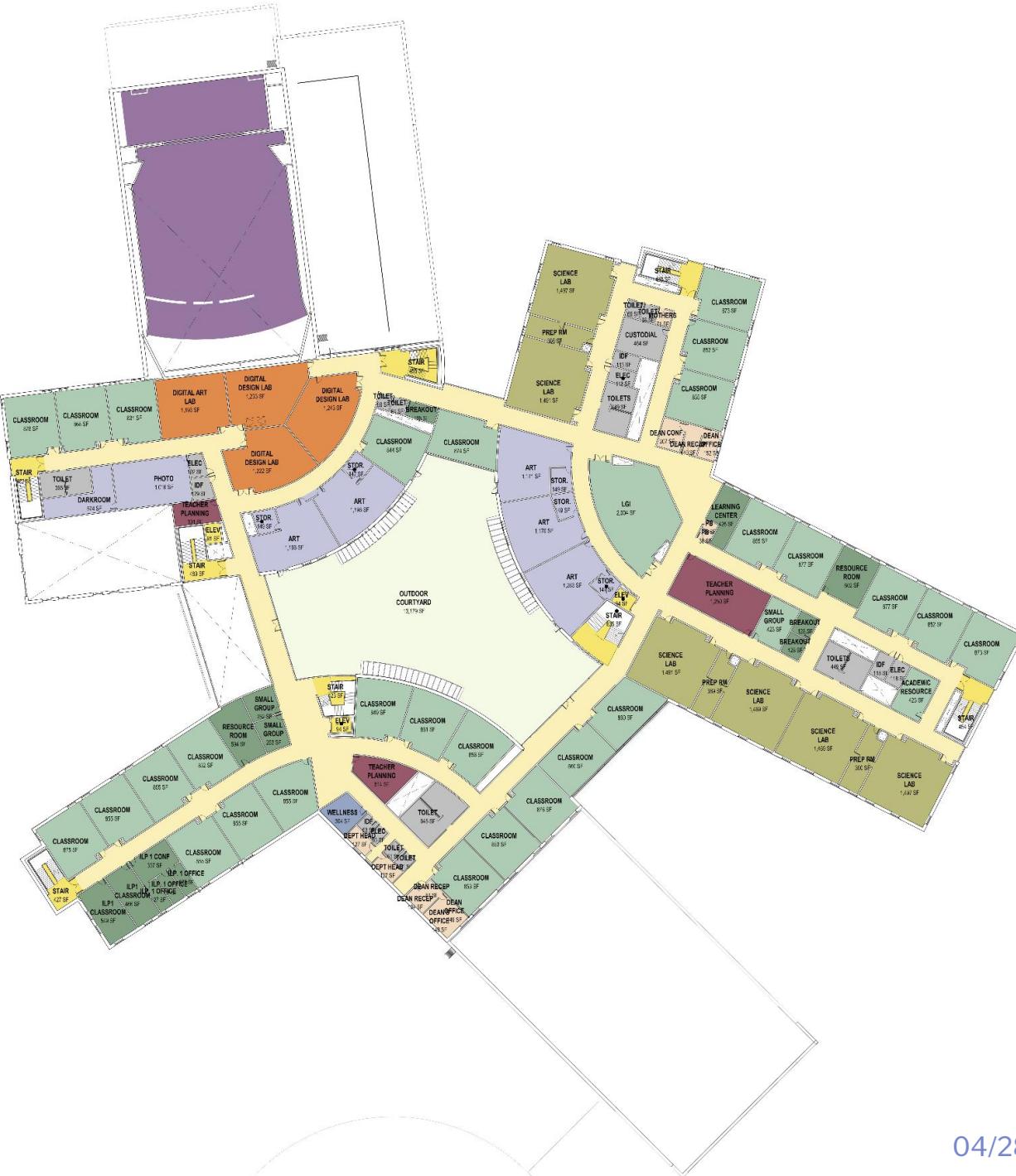
Building Floor Plans

Level 3



KEY PLAN

- 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

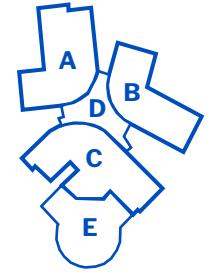


Building Floor Plans

Level 4

- 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

Central Office / Expansion



KEY PLAN

