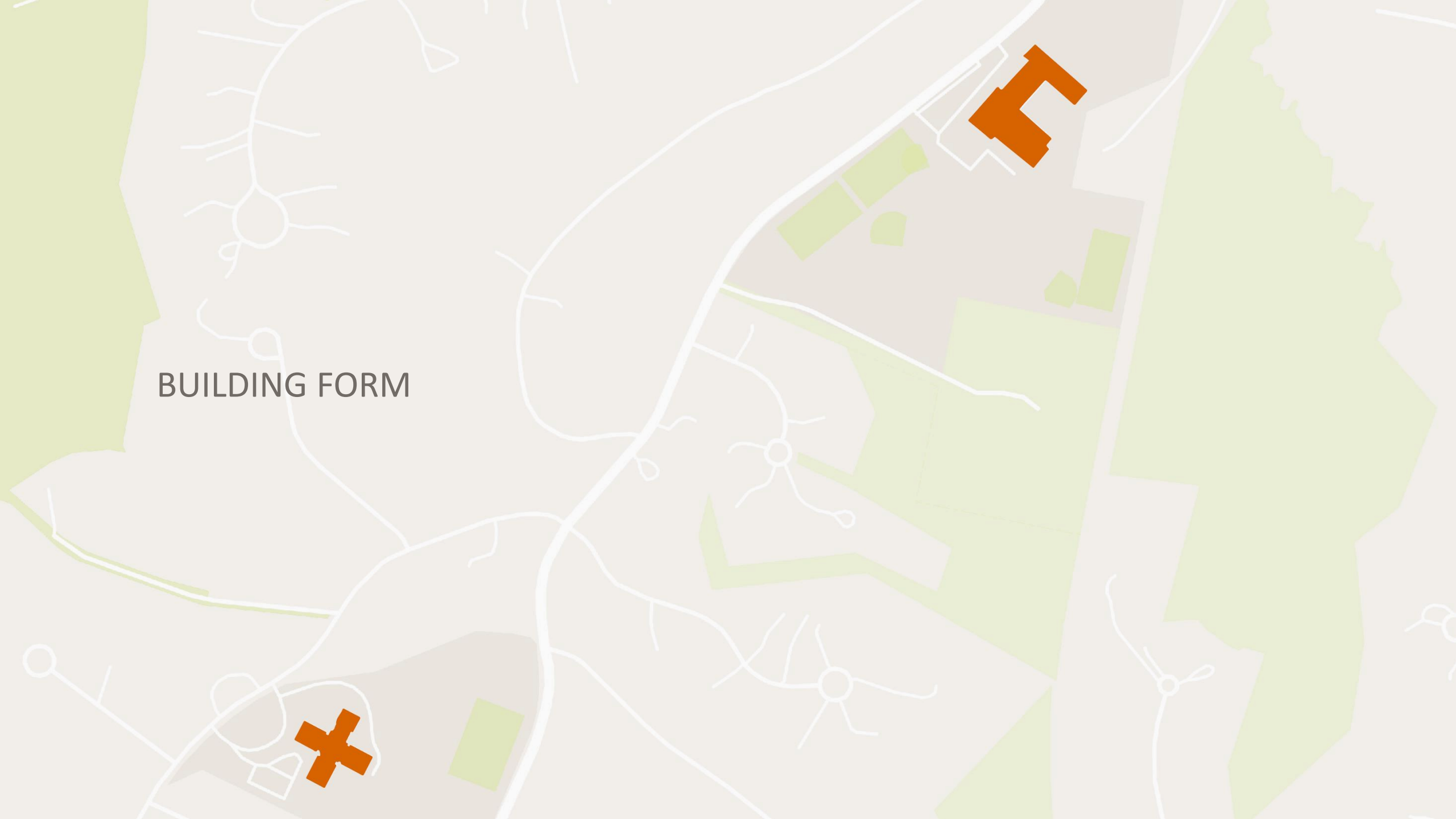
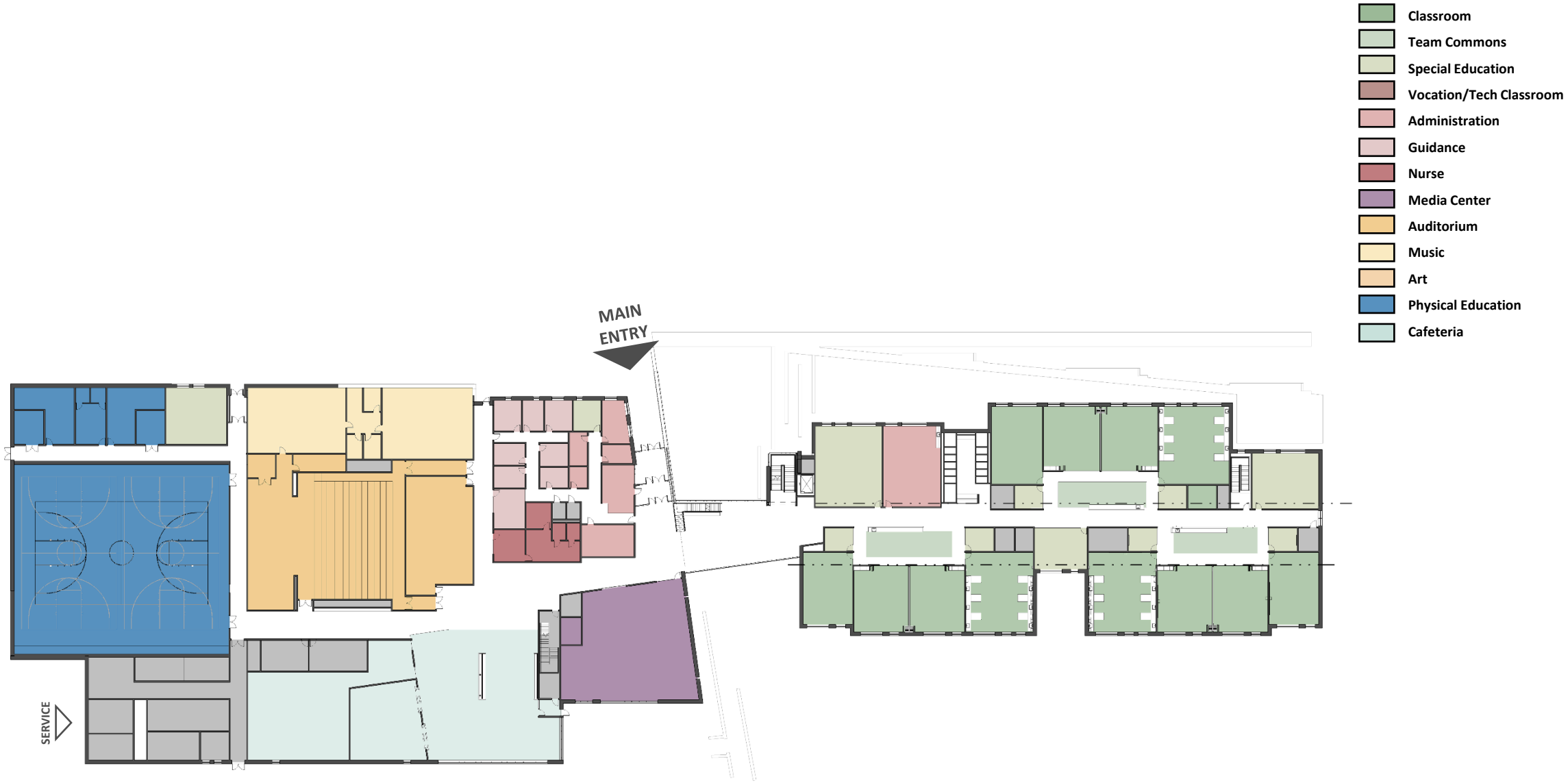
DESIGN SUB COMMITTEE
8.31.2021

BUILDING FORM





GROUND FLOOR PLAN

- Classroom
- Team Commons
- Special Education
- Vocation/Tech Classroom
- Administration
- Guidance
- Nurse
- Media Center
- Auditorium
- Music
- Art
- Physical Education
- Cafeteria

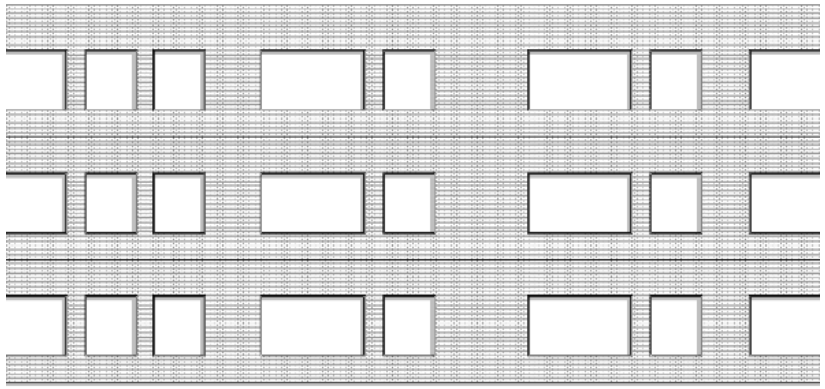
UPPER-LEVEL PLAN

LOWER-LEVEL PLAN

AERIAL PERSPECTIVE - SOUTH

AERIAL PERSPECTIVE - NORTH

CLASSROOM FENESTRATION

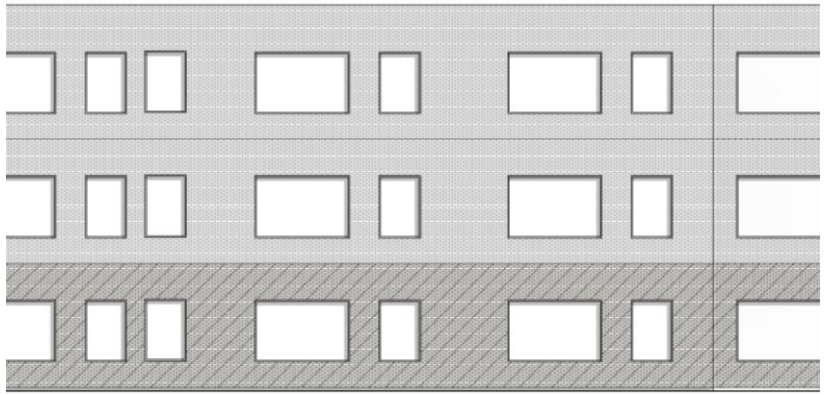


NORTH ELEVATION

Glazing Area/Classroom: 128 SF

Wall Area/Classroom: 350

WWR: 36.6 %



SOUTH ELEVATION

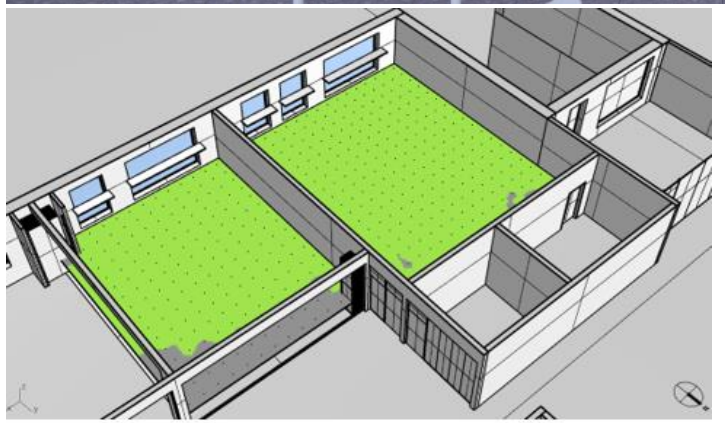
Glazing Area/Classroom: 108 SF

Wall Area/Classroom: 350

WWR: 30.8 %

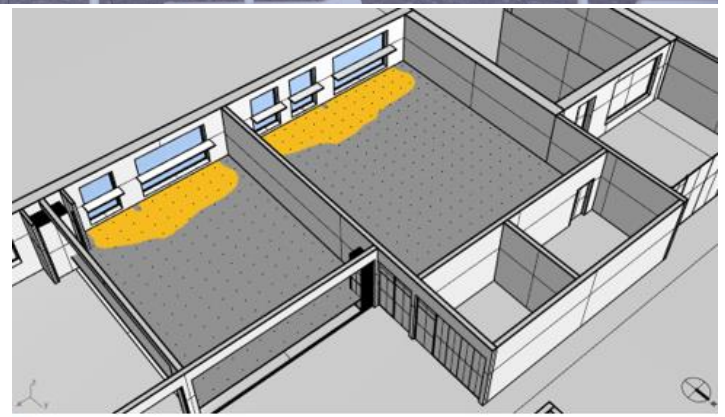
OVERALL WWR: 25%

CLASSROOM OPTION 1

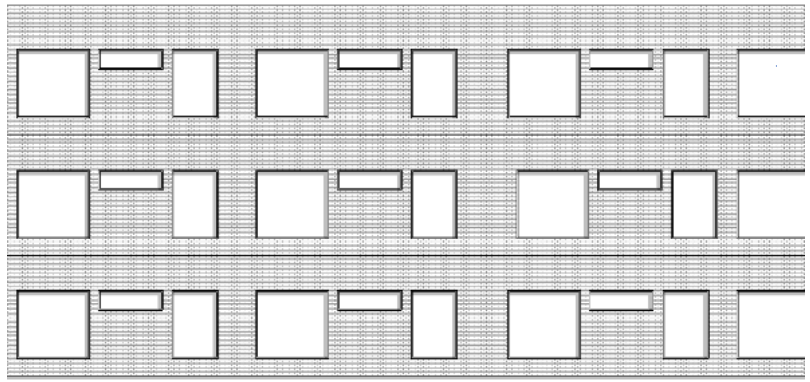


Design Option 1 - South Classrooms: 88.1% SDA

Scenario 3 – Ext. Sunshades 24" deep and interior light shelf 18" deep



Design Option 1 - South Classrooms: 13.9% ASE

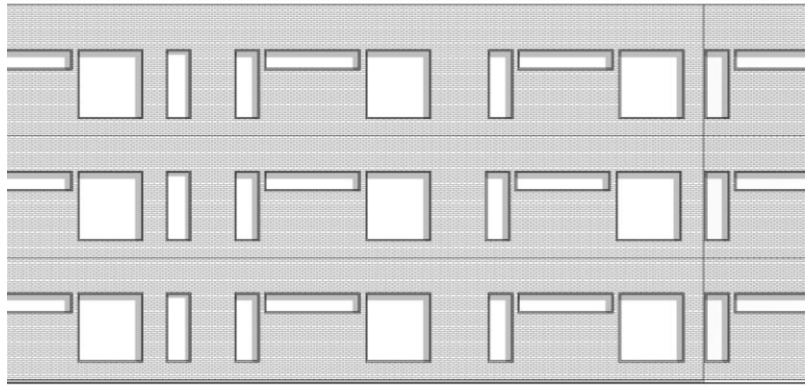


NORTH ELEVATION

Glazing Area/Classroom: 128 SF

Wall Area/Classroom: 350

WWR: 36.6 %



SOUTH ELEVATION

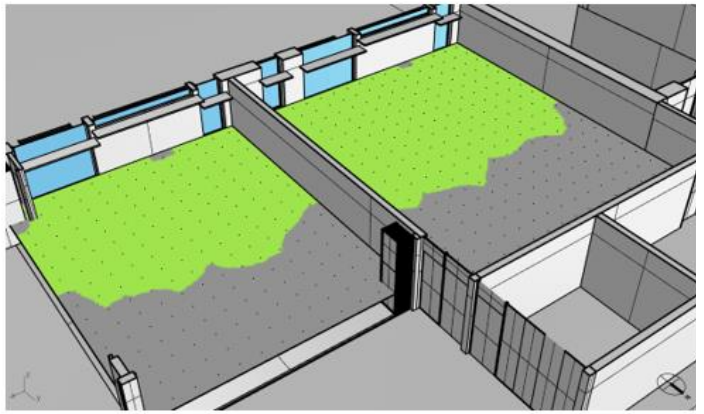
Glazing Area/Classroom: 108 SF

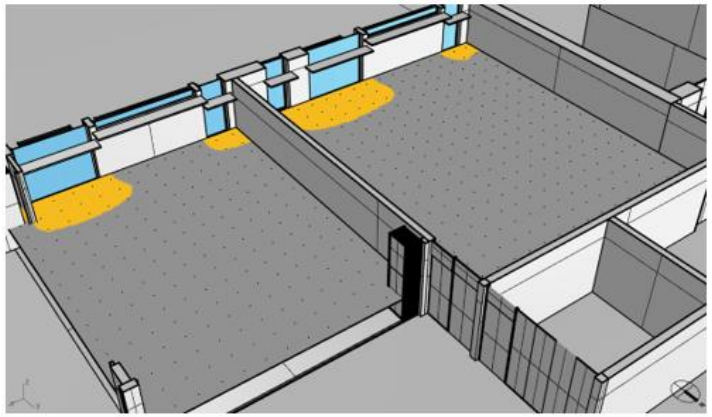
Wall Area/Classroom: 350

WWR: 30.8 %

OVERALL WWR: 25%

CLASSROOM OPTION 3





Design Option 2 - South Classrooms: 58.1% SDA

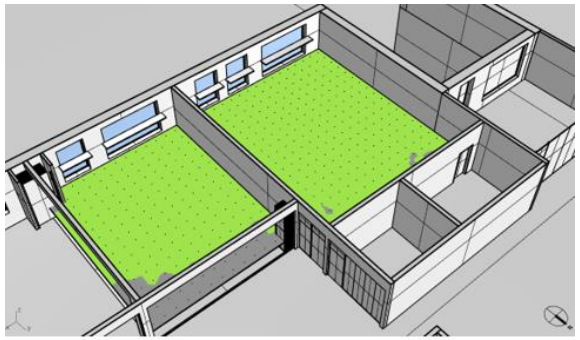
Design Option 2 - South Classrooms: 7.5% ASE

Scenario 3 – Ext. Sunshades 24" deep and interior light shelf 18" deep

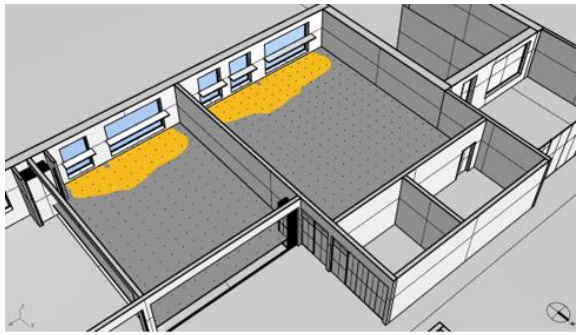
Metric	LEEDv4	
ASE (1000,250)	<= 10%	required
sDA (300/50)	40%	1 pt
	55%	2 pt
	75%	Exemplary

	Design Option 1				Design Option 3				Comments
	sDA (40%, 55% Threshold)		ASE (<= 10%)		sDA (40%, 55% Threshold)		ASE (<= 10%)		
	North	South	North	South	North	South	North	South	
Scenario 1 no sunshade/no light shelf	50.0	95.3	0	13.7	33.8	67.9	0	5.7	
Scenario 2 24” Sunshade (S)/18” light shelf (N)	49.0	93.8	0	10.6	40.0	66.1	0	5.3	
Scenario 3 24” Sunshade (S)/18” light shelf (N/S)	49.0 (same as Scen 2)	91.9	0	9.9	40.0 (same as Scen 2)	36.7	0	4.2	

OPTION 1

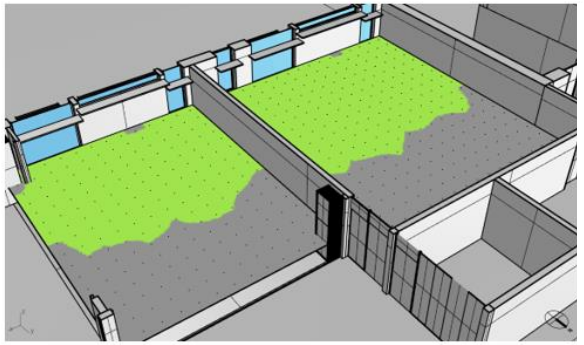


Design Option 1 - South Classrooms: 88.1% SDA

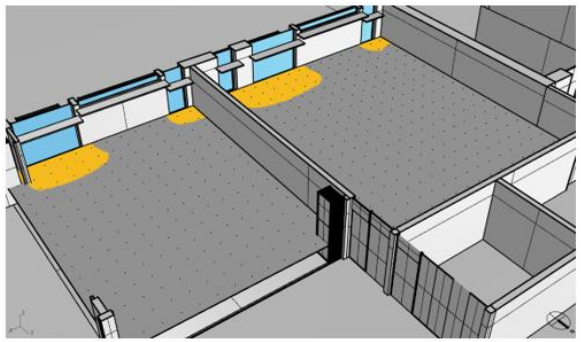


Design Option 1 - South Classrooms: 13.9% ASE

OPTION 3

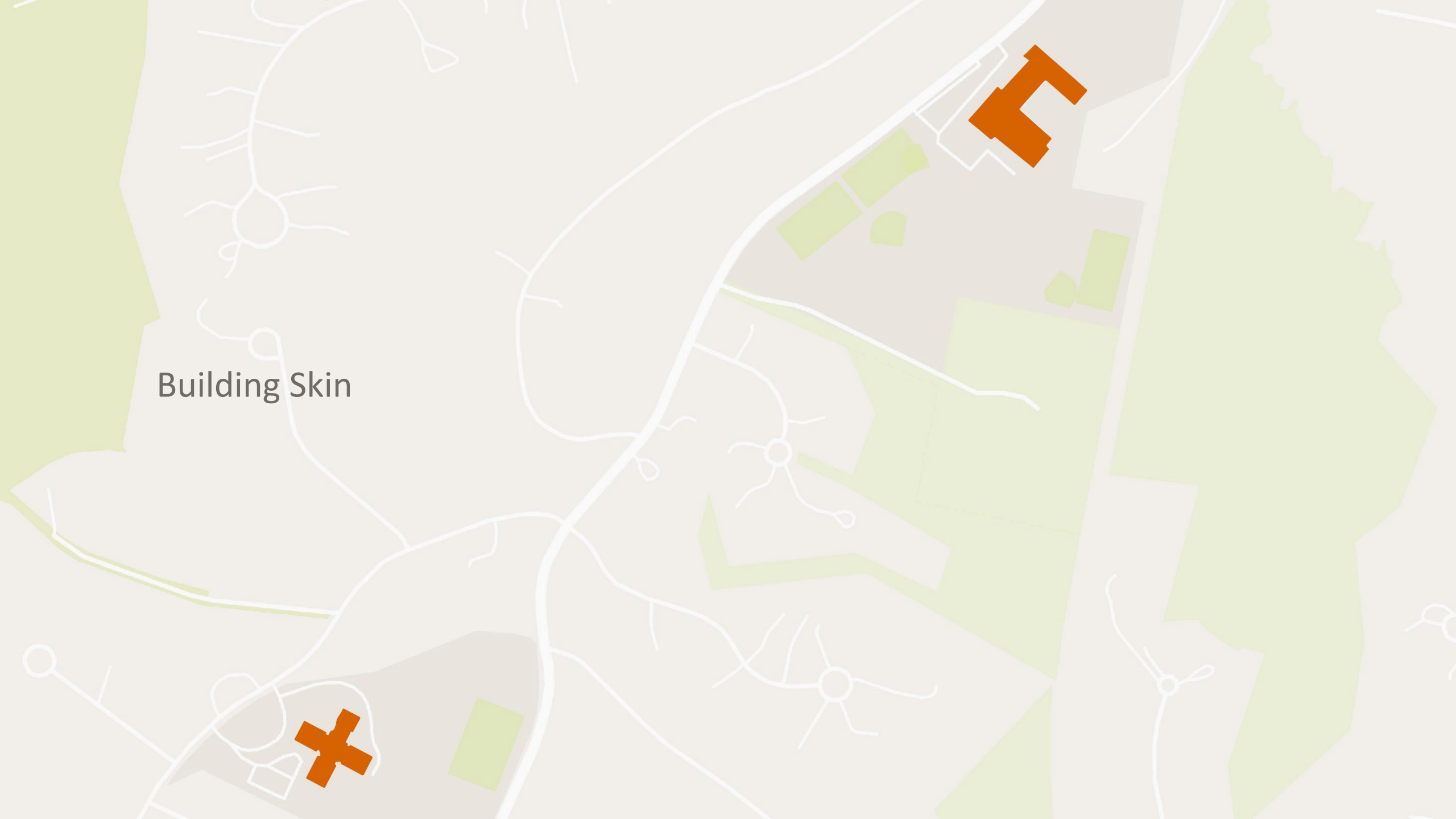


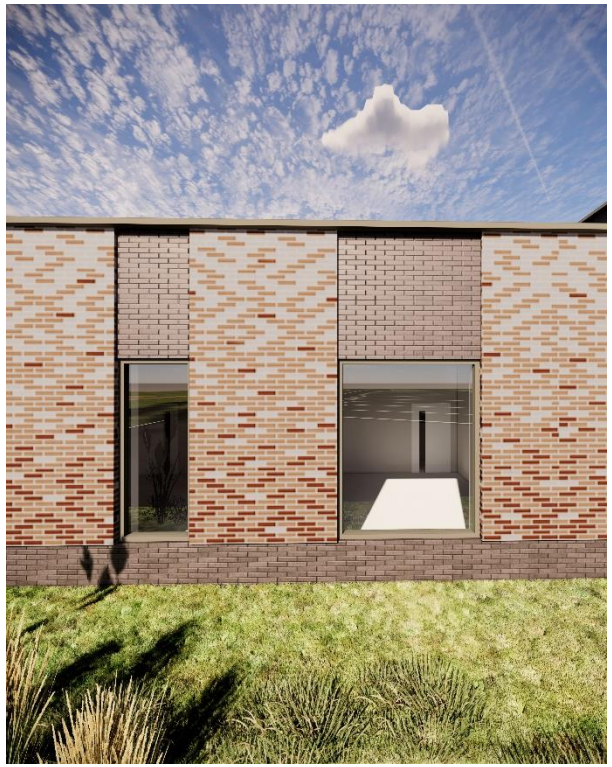
Design Option 2 - South Classrooms: 58.1% SDA



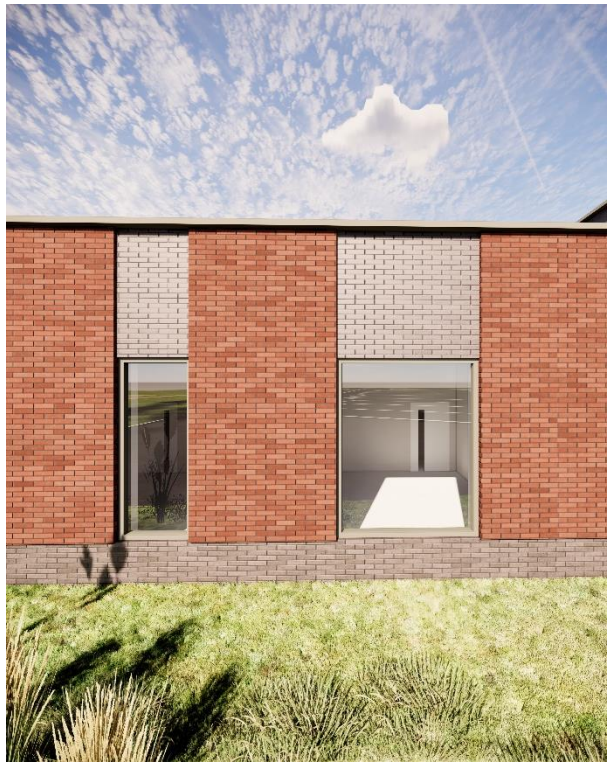
Design Option 2 - South Classrooms: 7.5% ASE

WINDOW OPTION COMPARISON


Building Skin

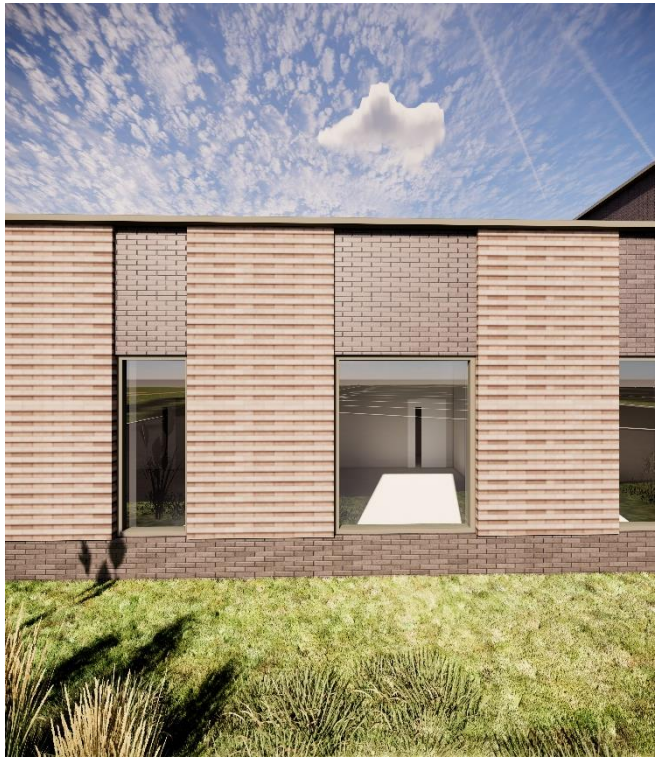


OPTION 1 MIST



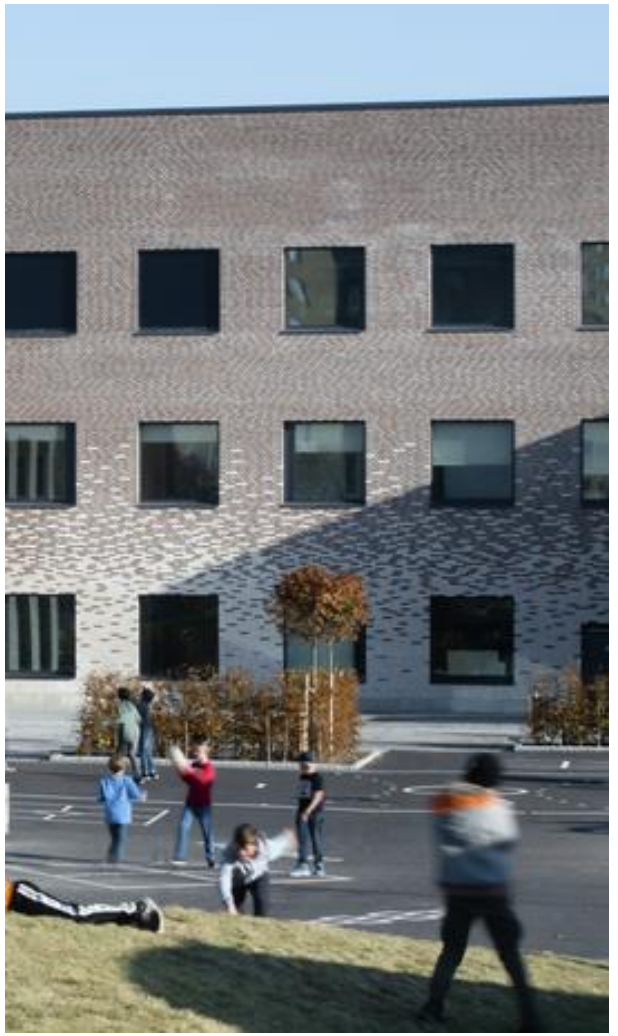
OPTION 2 SOLID

OPTION 3 GRAIN



OPTION 4 TEXTURE

MATERIAL OPTION COMPARISON



OPTION 1 – MIST GRADIENT BRICK

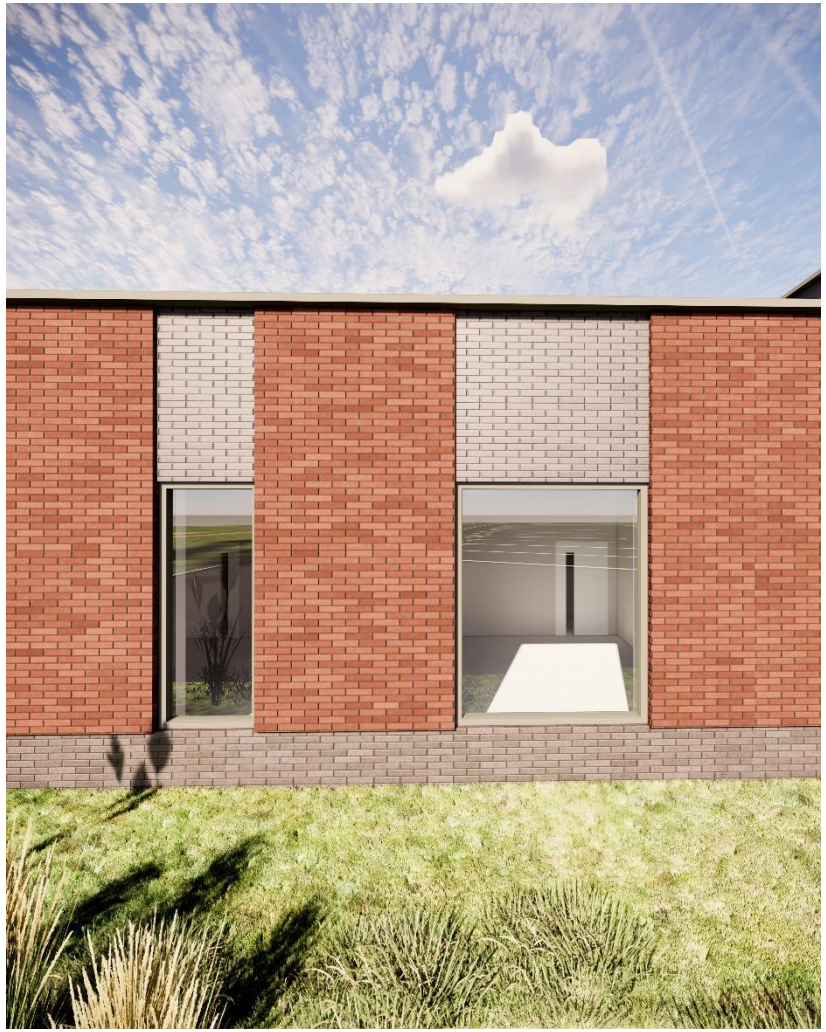

Concord Middle School

OPTION 1 MIST

OPTION 1 MIST

OPTION 1 MIST

OPTION 1 MIST



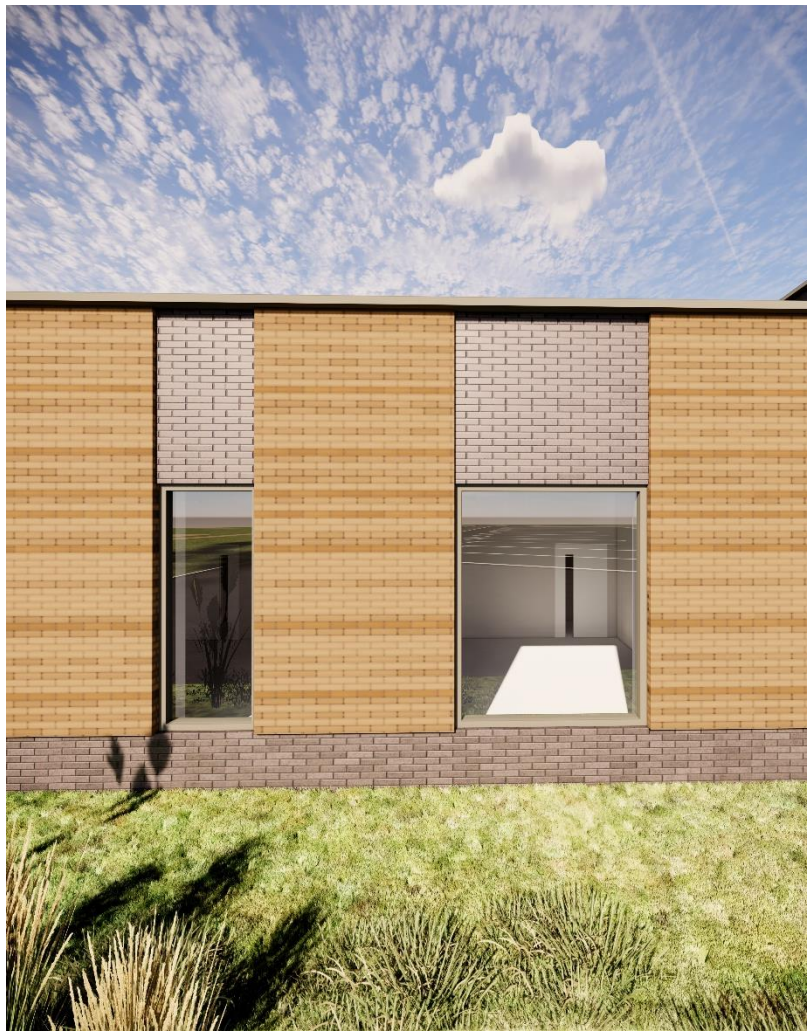
OPTION 2 – SOLID SINGLE COLOR BRICK BLEND


Concord Middle School

OPTION 2 SOLID


Concord Middle School

OPTION 2 SOLID

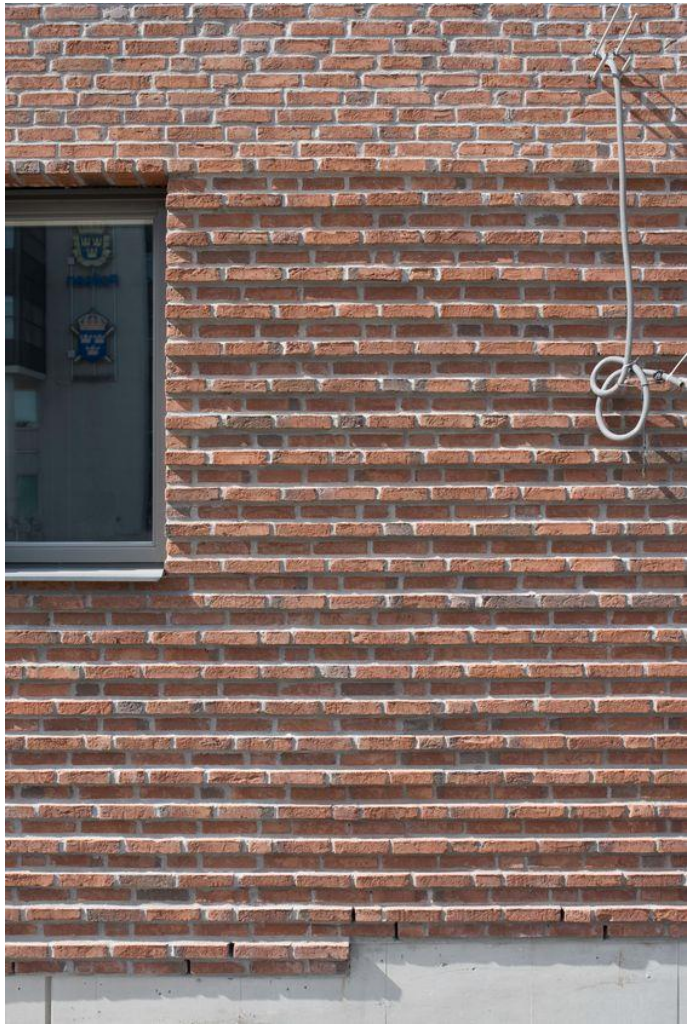


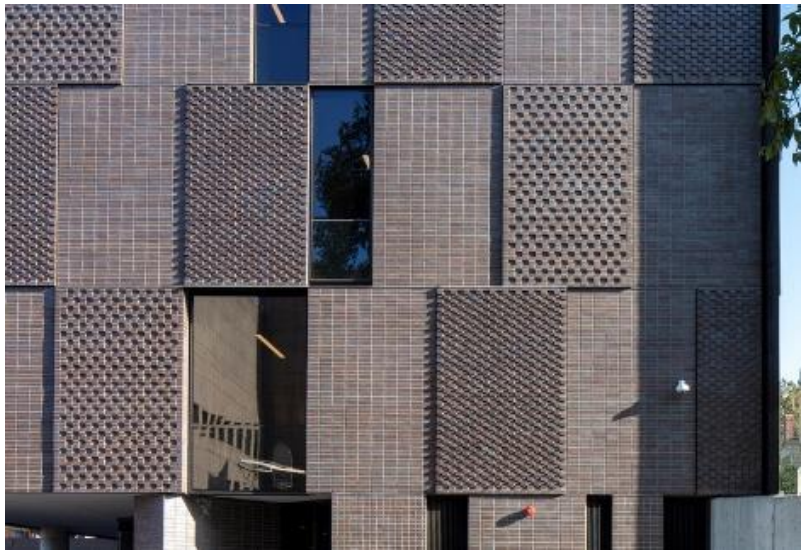
OPTION 3 – GRAIN LAYERED BRICK COLORS


Concord Middle School

solid

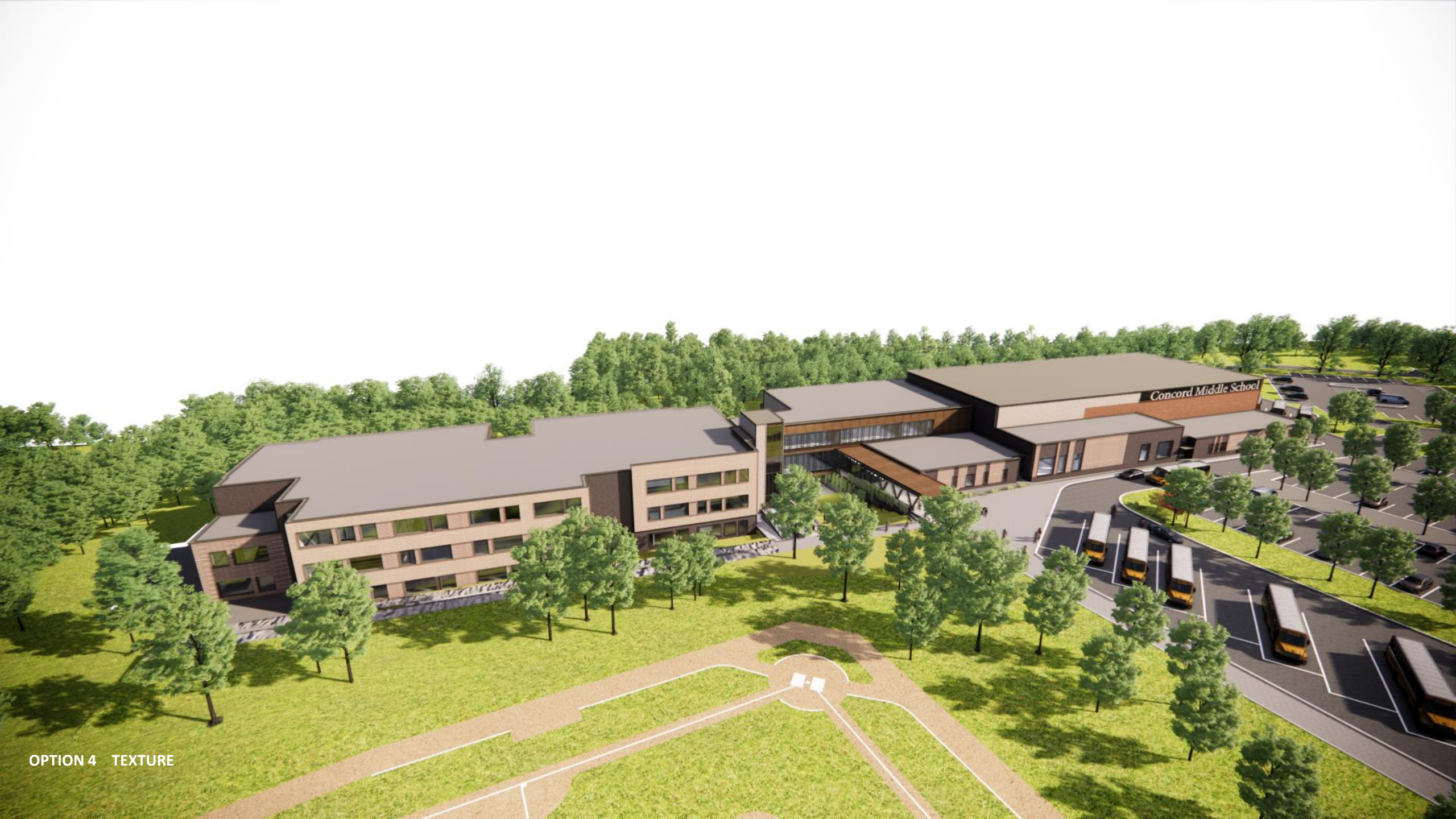

Concord Middle School





OPTION 4 – TEXTURE BRICK (RECESSED COURSES)


Concord Middle School

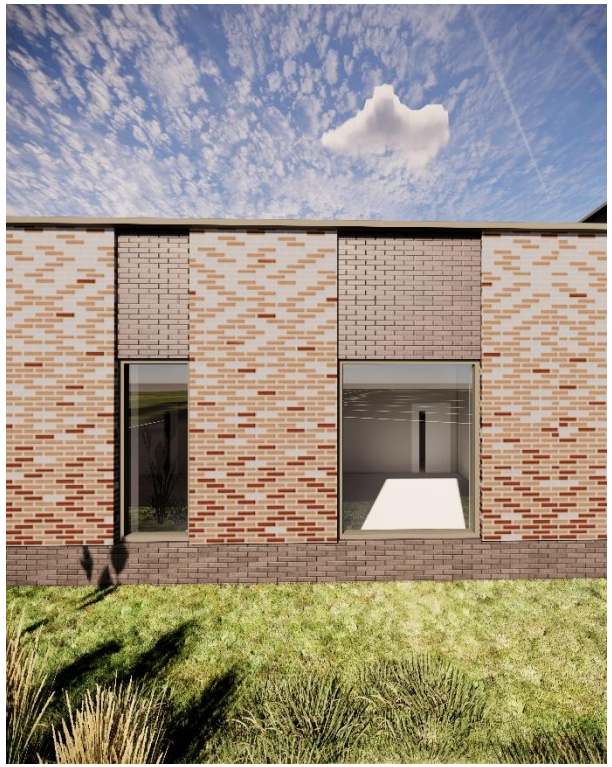


OPTION 4 TEXTURE

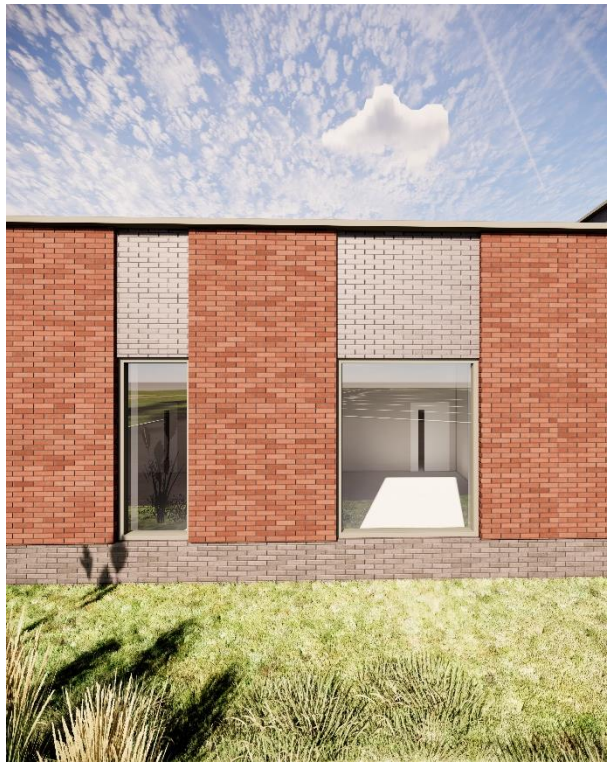

Concord Middle School

OPTION 4 TEXTURE

OPTION 4 TEXTURE

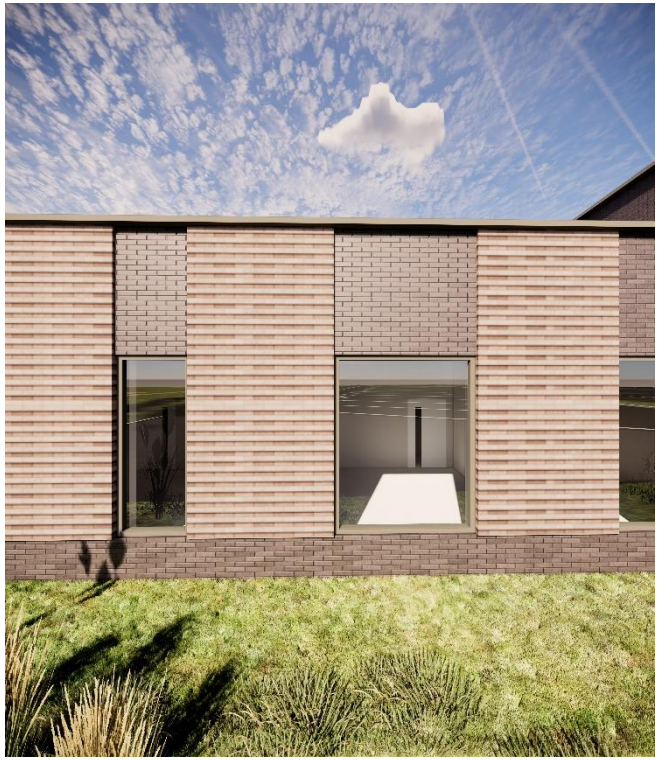


OPTION 1 MIST



OPTION 2 SOLID

OPTION 3 GRAIN



OPTION 4 TEXTURE

MATERIAL OPTION COMPARISON

OPTION 1 MIST

OPTION 2 SOLID

OPTION 3 GRAIN

OPTION 4 TEXTURE

MATERIAL OPTION COMPARISON

OPTION 1 MIST

OPTION 2 SOLID

OPTION 3 GRAIN

OPTION 4 TEXTURE

MATERIAL OPTION COMPARISON

OPTION 1 MIST

OPTION 2 SOLID

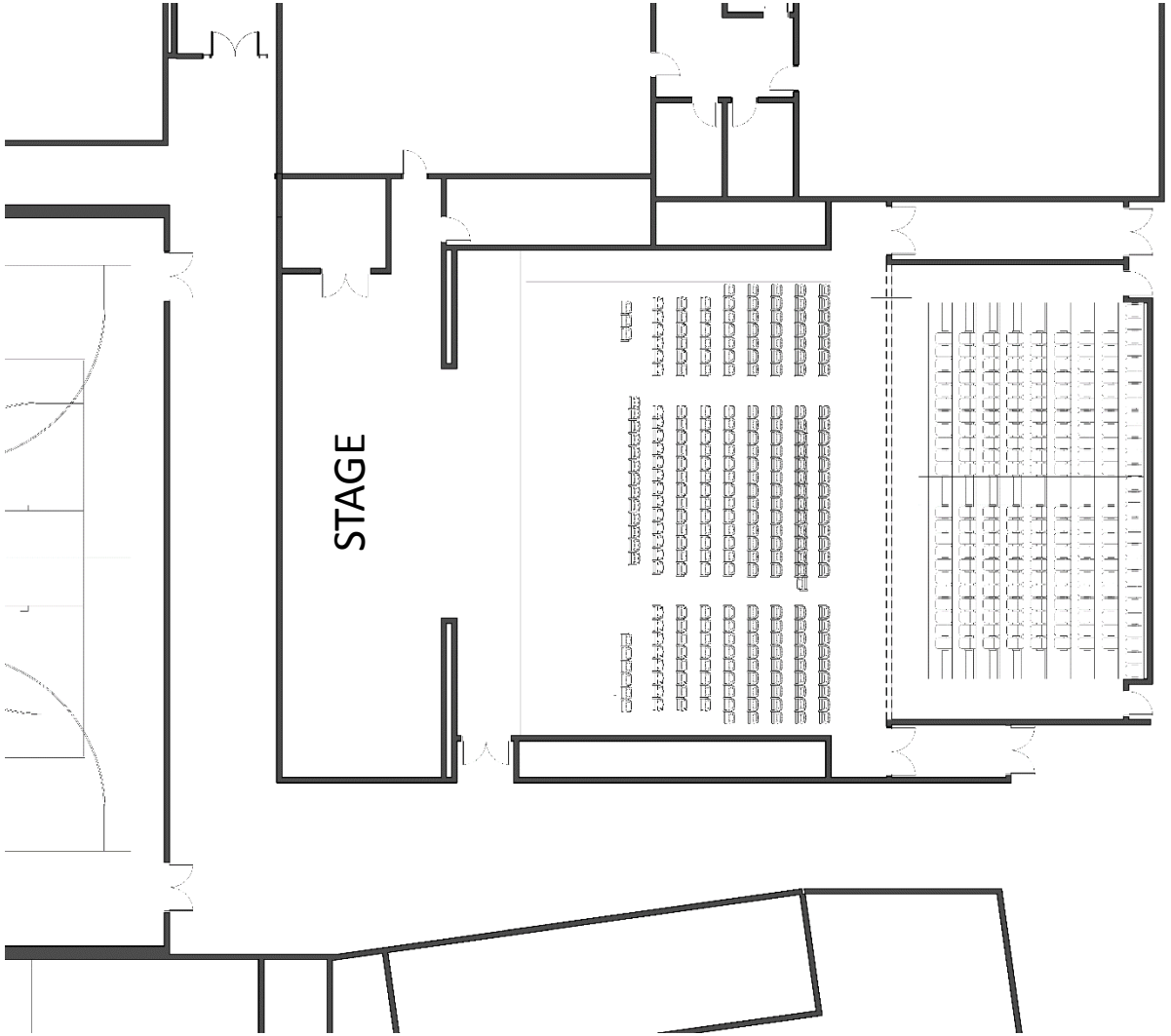
OPTION 3 GRAIN

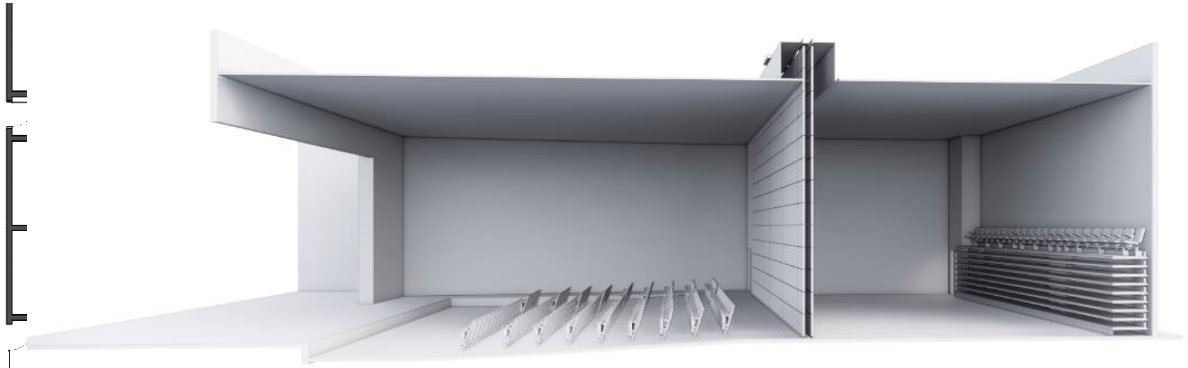
OPTION 4 TEXTURE

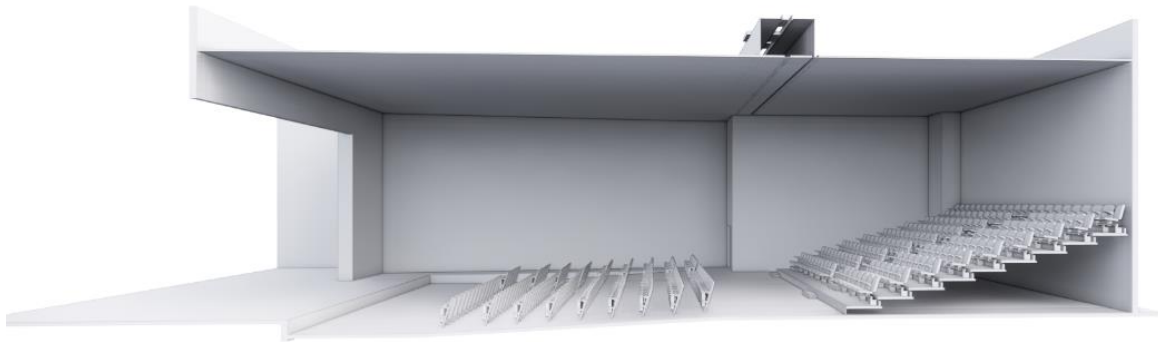
MATERIAL OPTION COMPARISON

AUDITORIUM DESIGN

SEATING LAYOUT







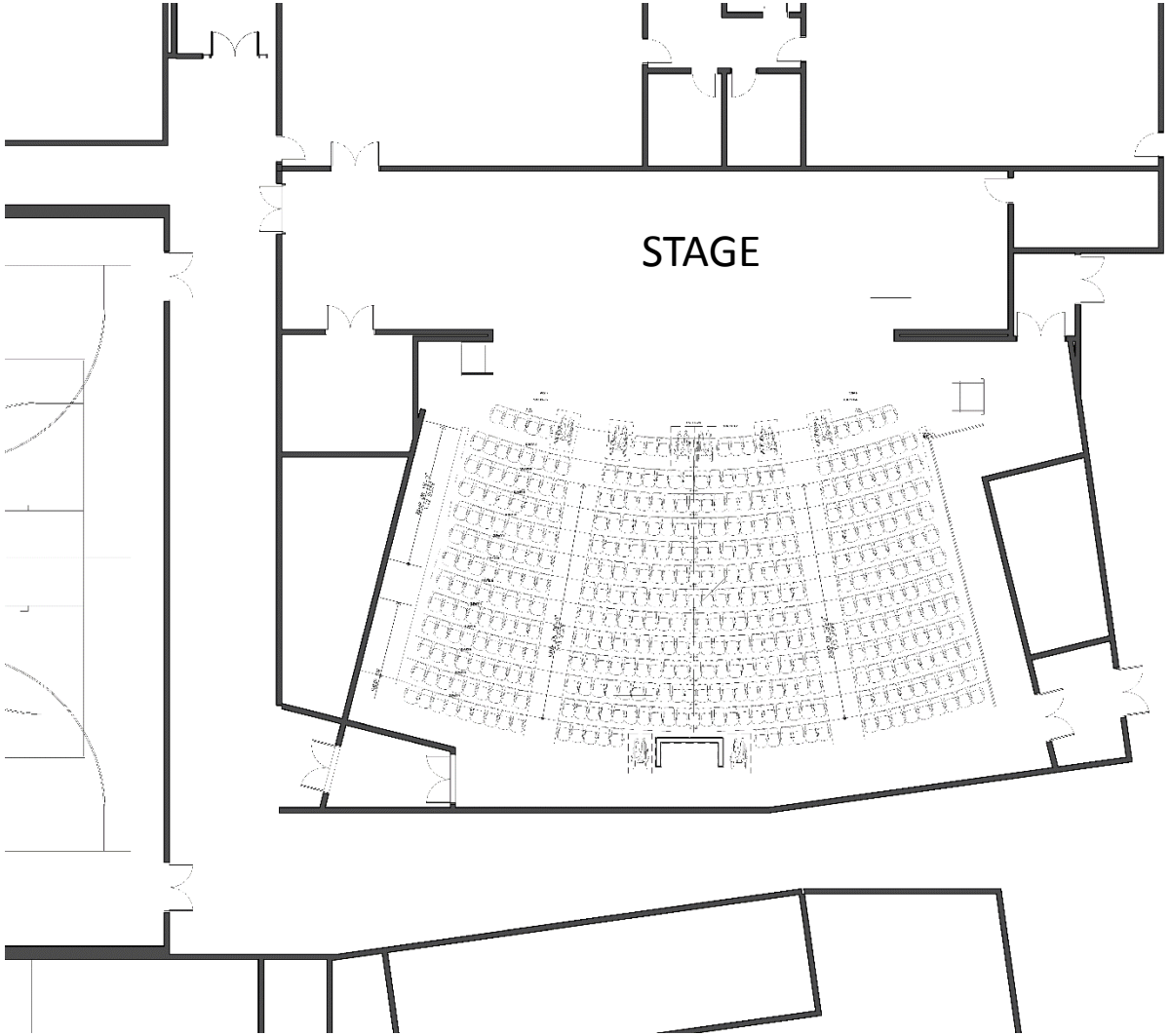
OPTION 1 – HYBRID BLACKBOX FLIPPED

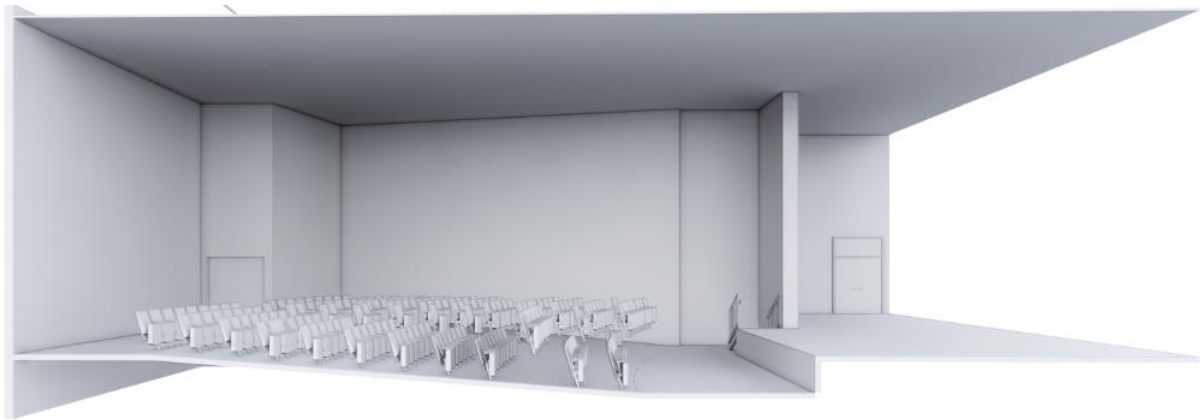
Pro's

- Acoustics, finishes, and mechanical system to match conventional auditorium
- Multiple activities can operate simultaneously – with potential for separate mechanical control
- Front (fixed seating) can accommodate one full grade

Con's

- Increased distance from furthest seat to stage
- Operable partition and seats will require maintenance
- Perception of unconventional





OPTION 2 – SLOPED FLOOR WIDE FAN

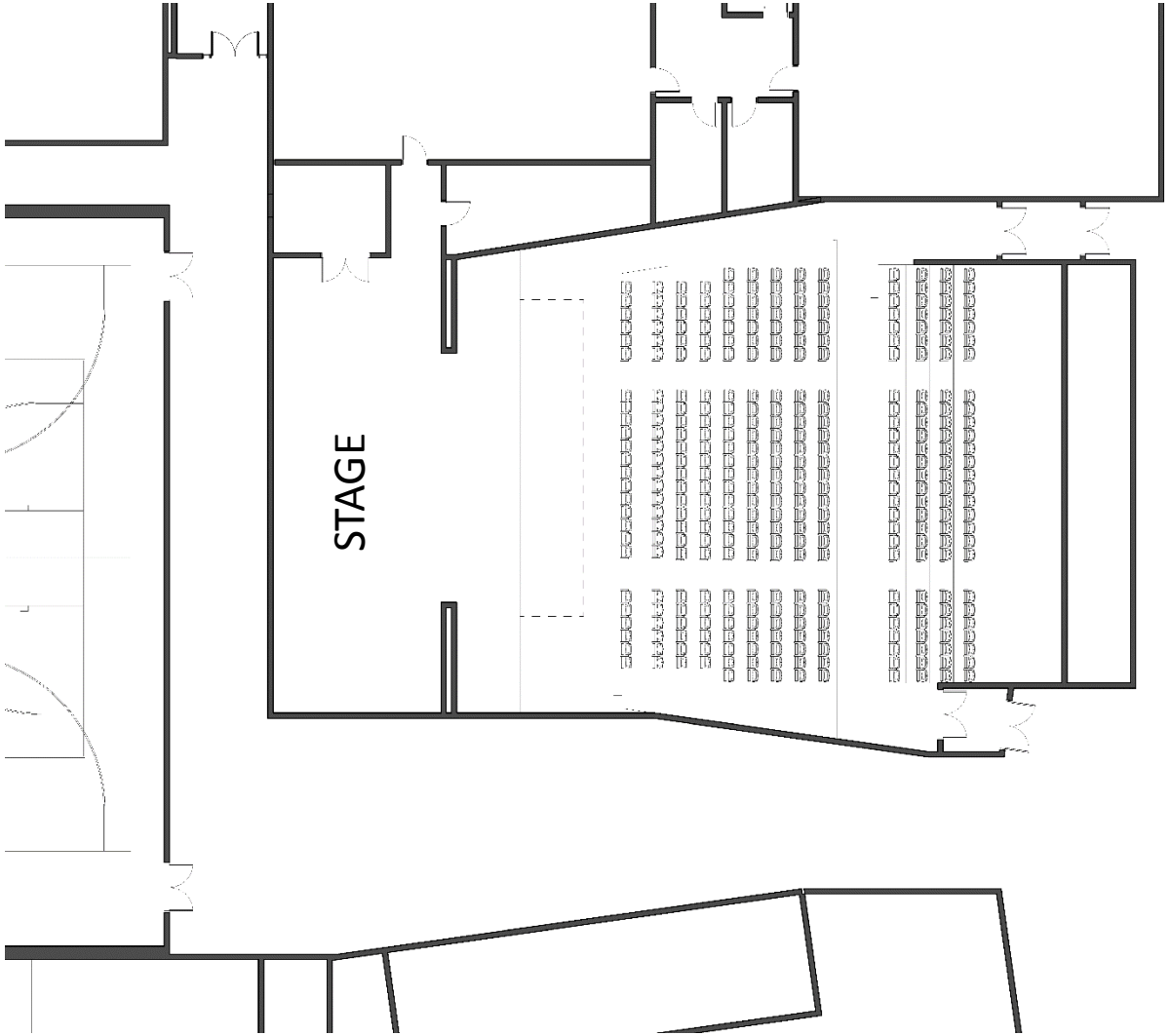
Pro's

- Floor Plan rotation allows for wider seating house
- Shorter sightlines from back row
- Shorter distance walking from back row to stage
- Uniform treatment of space

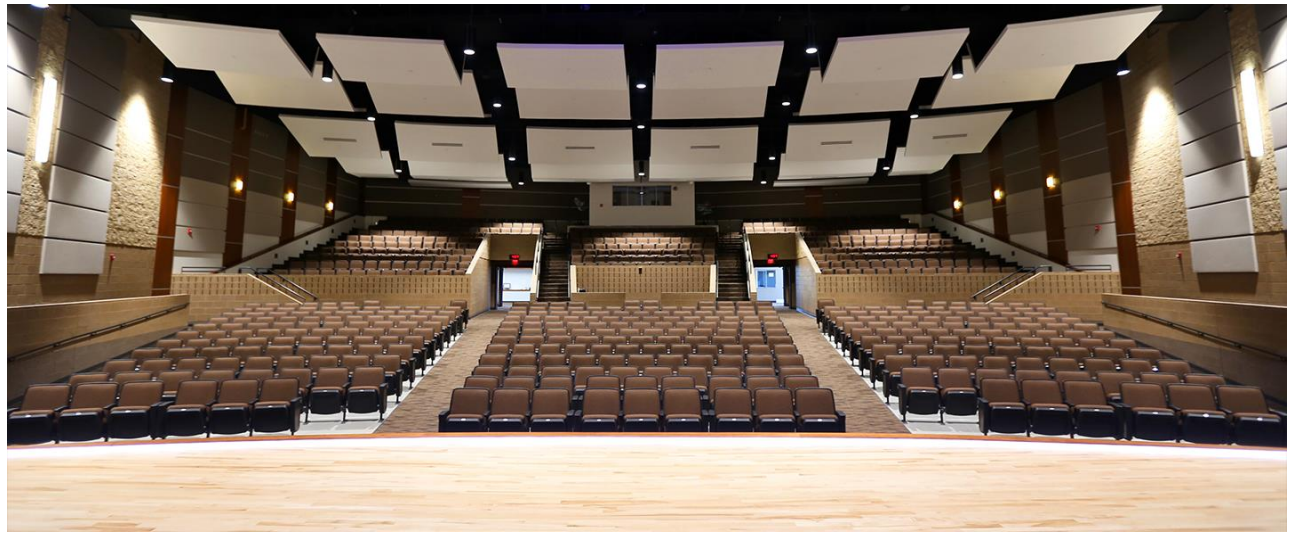
Con's

- Limits use of space only as a conventional auditorium

OPTION 2 – SLOPED FLOOR WIDE FAN



OPTION 3 – TIERED SIDE ENTRANCE FLIPPED



OPTION 3 – TIERED SIDE ENTRANCE FLIPPED

Pro's

- Common layout found in many schools
- Uniform treatment of space
- Potential to use space below stepped seating
- Stepped seating in rear shortens sightlines to stage from back row

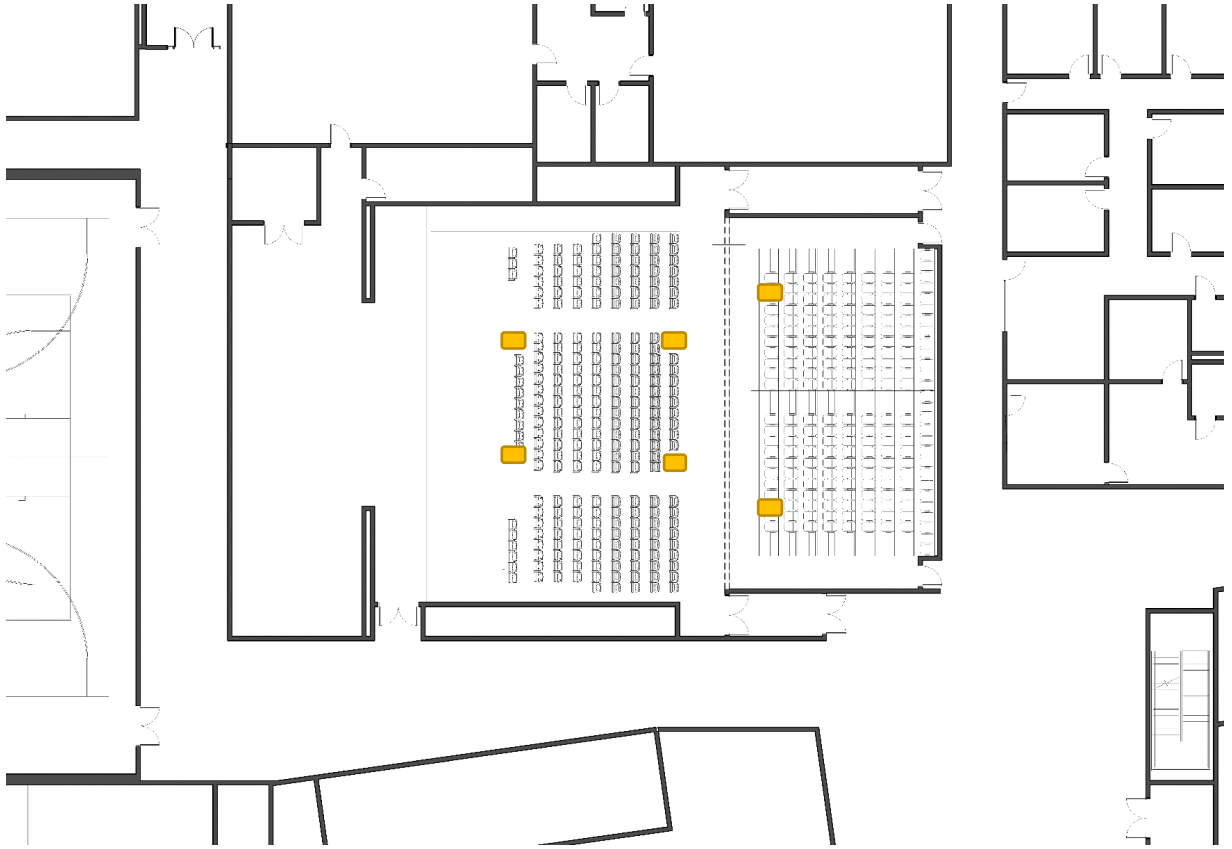
Con's

- Limits use of space only as a conventional auditorium
- Increased distance from furthest seat to stage
- Will require further study of distribution of wheelchair accessible seats

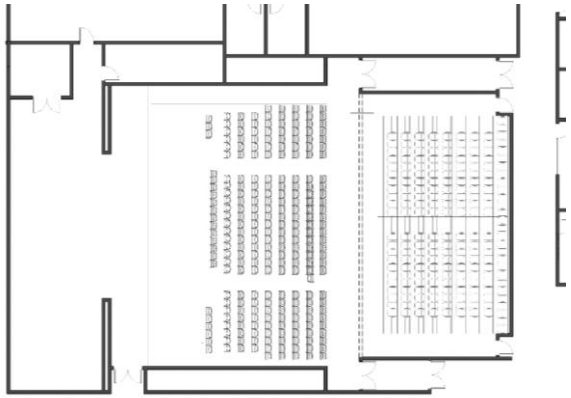
Places of Assembly 521 CMR 14	
Required Wheelchair Spaces	6 (for total seating up to 500)

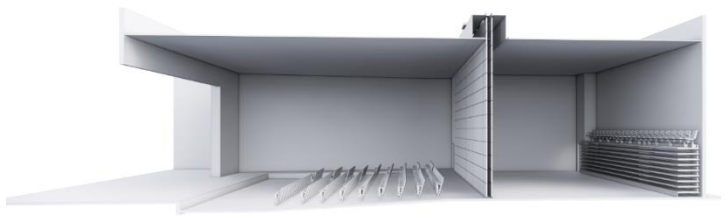
Wheelchair seating locations shall be dispersed throughout all seating areas so as to provide a choice of admission prices and views comparable to those for the general public

Exception: Accessible viewing positions may be clustered for bleachers, balconies, and other areas having sight lines that require slopes of greater than 5%



OPTION 1: HYBRID



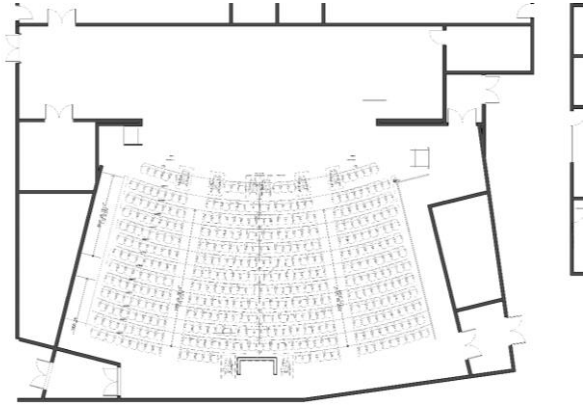


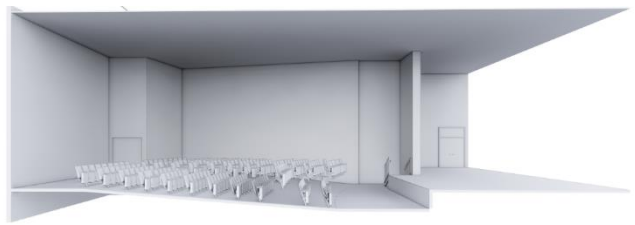
Furthest Seat: 82’ Feet from Proscenium

Seating House: 74’x84’

Stage Width: 38’

OPTION 2: LOW SLOPED FLOOR



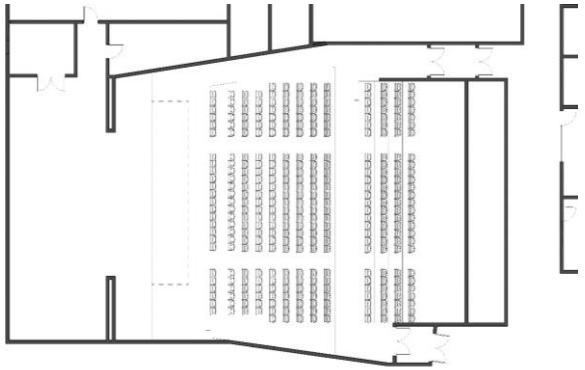


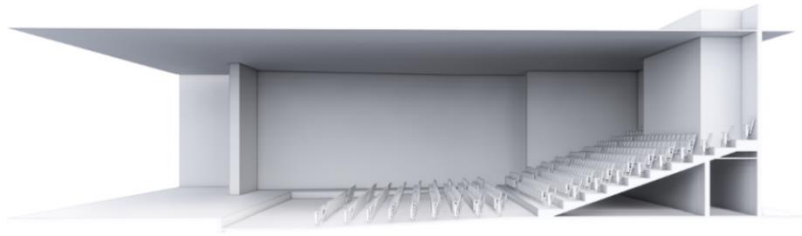
Furthest Seat: 55’ Feet from Proscenium

Seating House: 65’x94’

Stage Width: 45’

OPTION 3: SLOPED & STEPPED SEATING





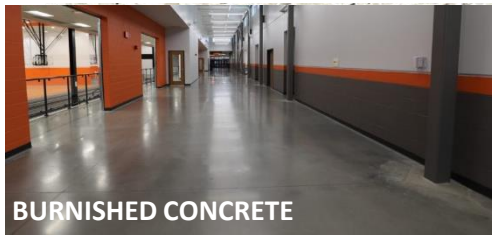
Furthest Seat: 82’ Feet from Proscenium

Seating House: 74’x84’

Stage Width: 38’

INTERIOR FINISHES

FLOORING


BURNISHED CONCRETE


PORCELAIN TILE

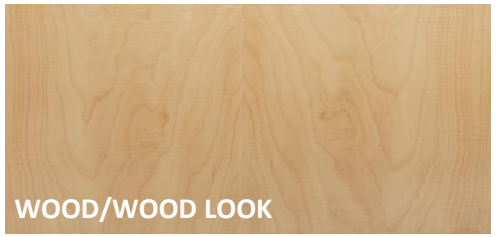
FLOORING

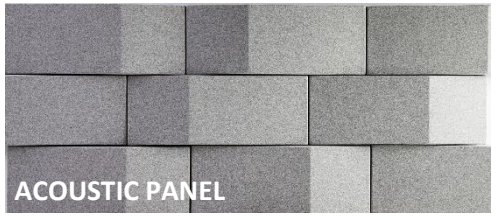
RUBBER FLOORING/ LINOLEUM

CARPET TILE

WALLS


CERAMIC TILE

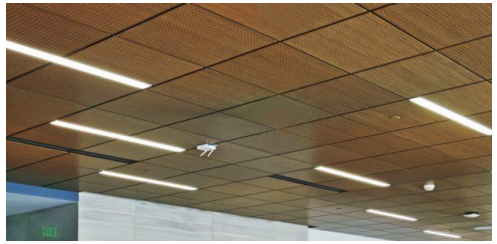

WOOD/WOOD LOOK


ACOUSTIC PANEL


ACCENT TILE

CEILINGS

ACT/WOOD DECK
EXPOSED



INTERIOR MATERIAL OPTIONS

	Burnished Concrete	Ceramic Tile	Carpet Tile	VCT	LVT	Rubber	Linoleum
Sizes / Format	Slab	Tile	Tile	Sheet or tile	Plank	Sheet or tile	Sheet or tile
Description	Structural slab with finish coating;	Ceramic tile, mortar;	carpet tile;	Vinyl composite tile; site applied top coat;	Luxury vinyl tile; factory-applied UV cured finish;	Natural rubber, no additional coating;	Linoleum tile; wax polish;
Refrence Manufacturer				*Armstrong, Shaw*	*Armstrong, Shaw*	*Nora Sentico*	*Forbo, Armstrong*
Cost/sf							
FACTOR 1: PROGRAM CAPABILITY	Circulation	Toilet Rooms, Lockers	Media Center, Admin Office, Sensitive Sound	Corridor, Classrooms, Labs, Team Commons	Corridor, Classrooms, Labs, Team Commons	Corridor, Classrooms, Labs, Team Commons	Corridor, Classrooms, Labs, Team Commons
FACTOR 2: ENVIRONMENTAL IMPACT *Based on results of Life Cycle Assessment (LCA), draws from multiple impact categories*	**Very good** Makes use of structural material, relies on finishing technique	**Poor** High carbon footprint due to energy intensive manufacturing	**Poor** High environmental impacts due to frequent replacement and energy intensive manufacturing	**Very poor** Much of impacts connected to coatings, stripper and polish	**Poor** High levels of vinyl and urethane	**Good** Made from recycled materials, No Red List Chemicals	**Very good** Bio-based material, low environmental impact in all categories
FACTOR 3: RED LIST CHEMICALS / TOXICITY *Includes chemicals of concern & known carcinogens prohibited by project guidelines*	**Good** No Red List Chemicals, VOC free coatings available	**Good** No Red List Chemicals, VOC free	**Good** No Red List Chemicals, VOC free, Some concern for air quality/allergens from dust accumulation	**Poor** Contains phthalates, a Red List Chemical; coatings may pose VOC concerns	**Poor** Contains high levels of phthalates, a Red List Chemical; coatings may pose VOC concerns	**Good** No Red List Chemicals, VOC free	**Good** No Red List Chemicals, VOC free
FACTOR 4: DURABILITY *Approximate life span based on manufacturer warrantee and Environmental Product Declaration (EPD)*	**Very good** Full life of building, structural element	**Very good** 30 year life span; Difficult to replace broken tile	**Poor** 10 year life span; Damaged tiles can be easily replaced	**Poor** 15-20 year life span; Damaged tiles can be easily replaced	**Good** 20 year life span; More durable than VCT, resistant to divots; Damaged planks can be easily replaced	**Very good** 30 year life span; Damaged tiles can be easily replaced; Indentations occur, but rebound	**Very good** 30 year life span; Damaged tiles can be easily replaced; Indentations occur, but rebound
FACTOR 5: MAINTENANCE *Required and recommended maintenance practices*	**Low** None	**Low** No refinished required; potential discoloration of grout over time.	**Medium** Requires vacuuming and Regular deep cleaning in high traffic areas.	**High** Regular stripping, buffing and recoating (urethane) 1-2 x/year; Required for durability.	**Medium** Does not require stripping and recoating, buffing and polish; Recommended for aesthetics.	**Low** No recoating required	**Medium** Periodic recoating (wet mop/wax, no stripping); Recommended for aesthetics/shine.
FACTOR 6: LIFE CYCLE COST *Tracked across 60 years cost/sq ft* material replacement (approx. maintenance cost, if relevant)*	**$ tbd**	**$ tbd**	**$ tbd**	**$ tbd** ($tbd/SqFt /yr maintenance)	**$ tbd** ($tbd/SqFt /yr maintenance)	**$ tbd**	**$ tbd** ($tbd/SqFt /yr maintenance)