Somerville High School

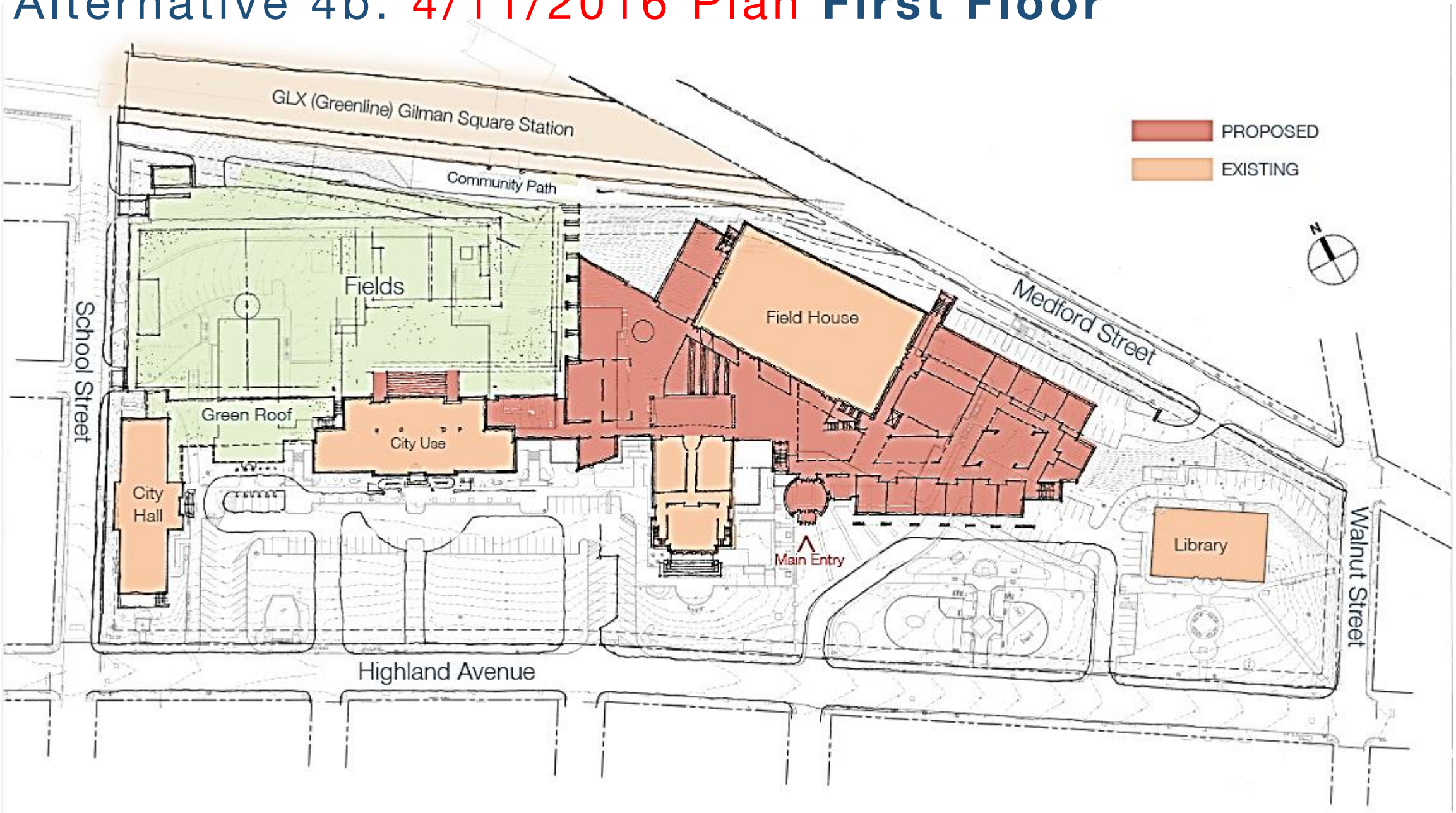
Symmes Maini & McKee Associates

SMMA

May 9, 2016

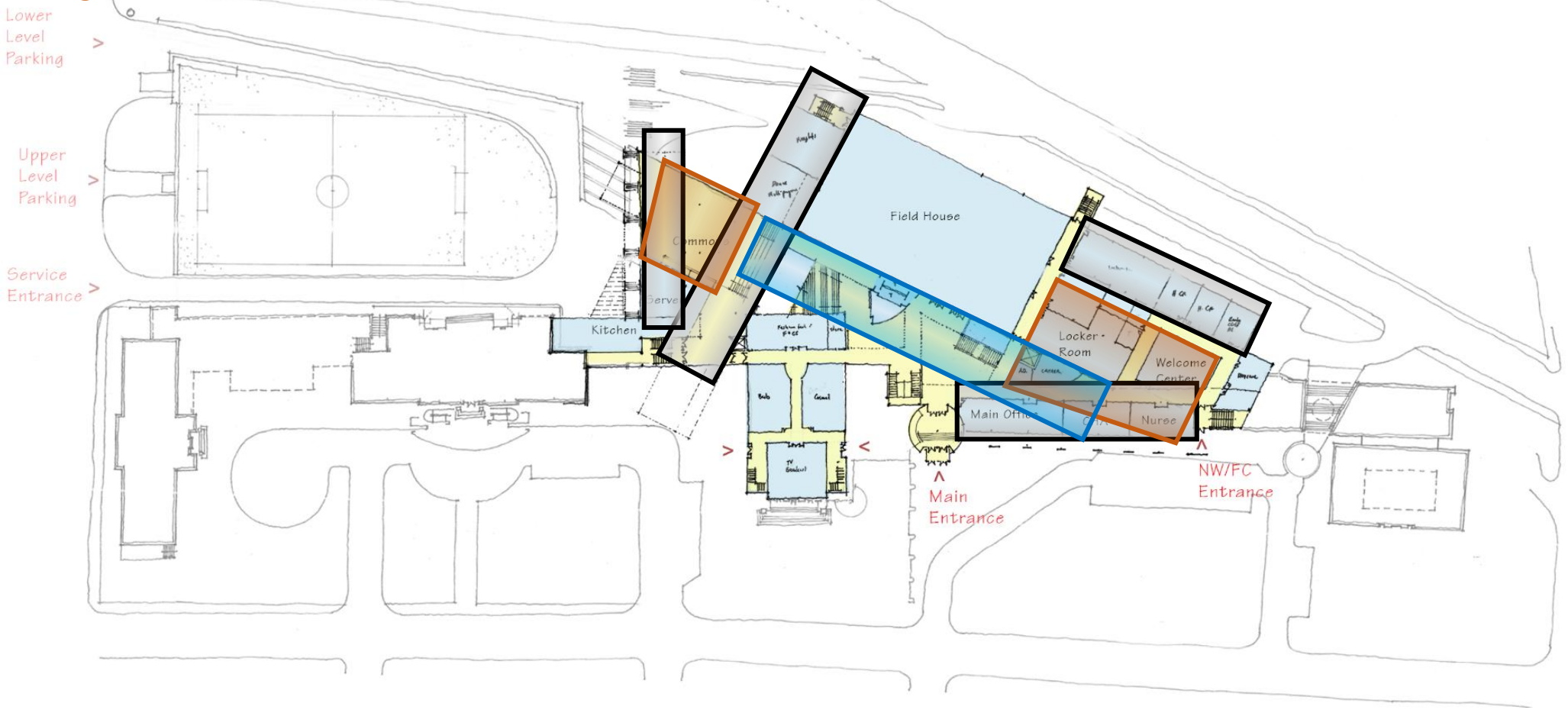
Alternative 4b: Approved 4/11/2016

Alternative 4b: 4/11/2016 Plan **First Floor**

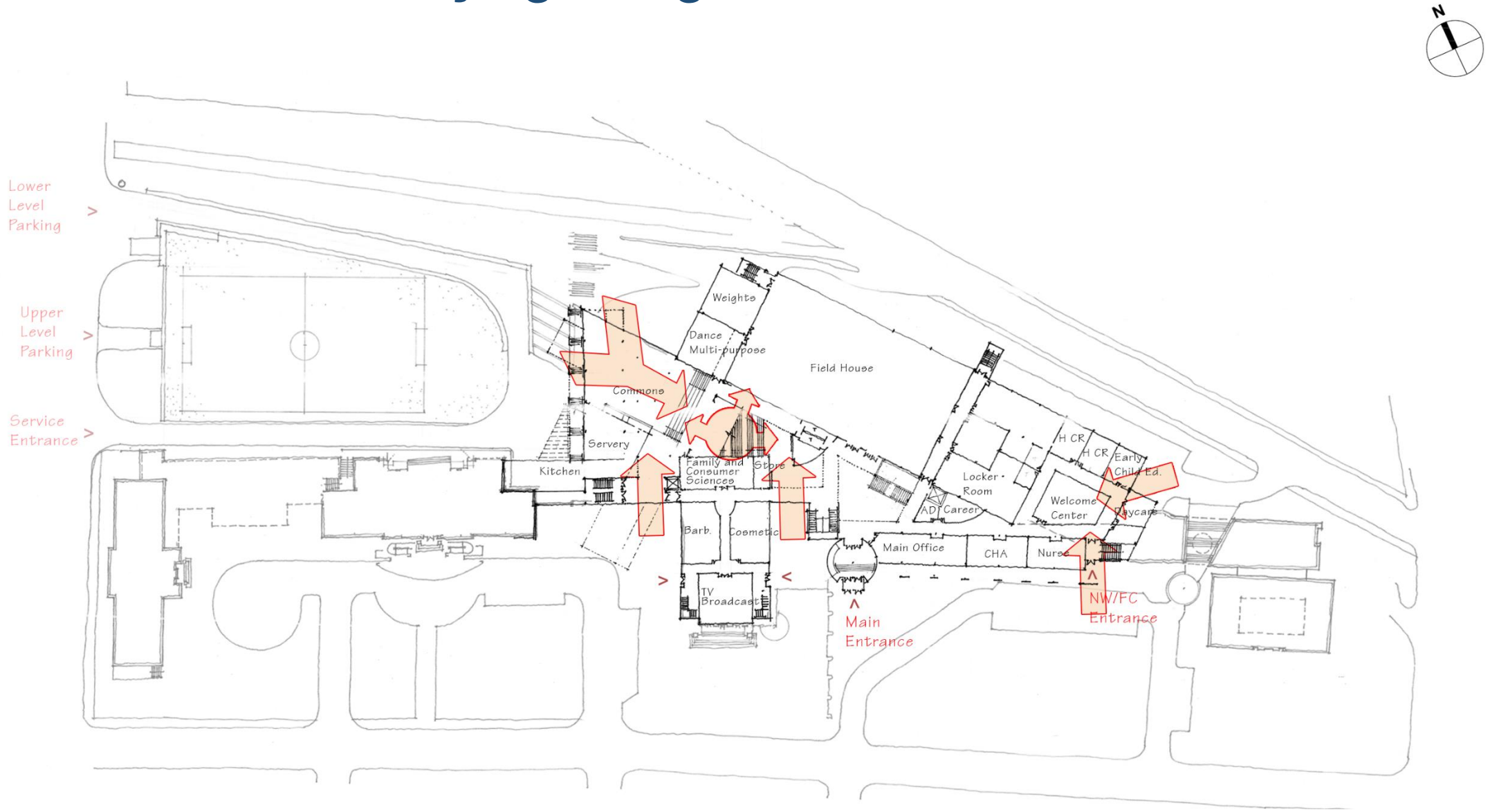


Alternative 4b:

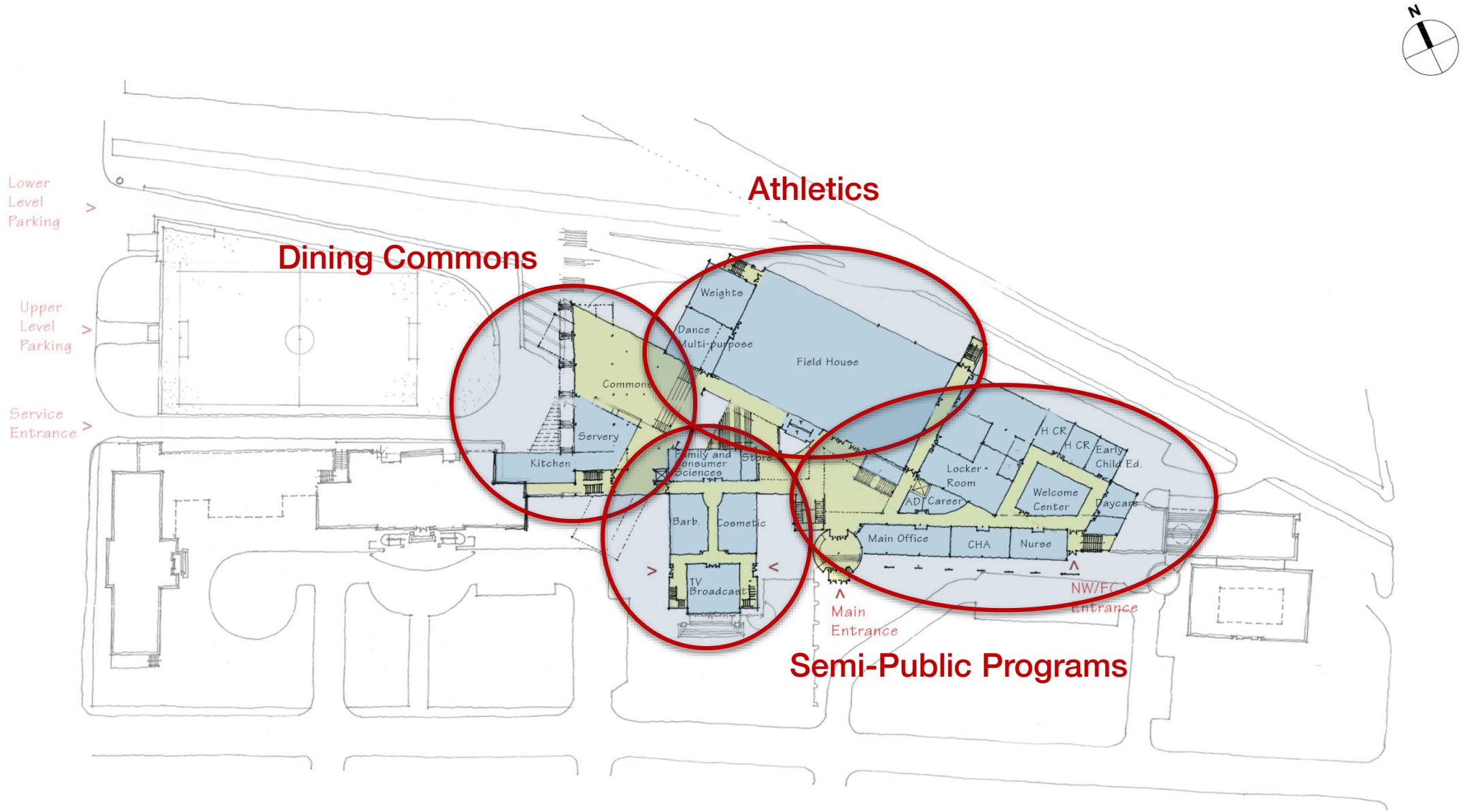
1. Academic “wrapper” – Opened
2. Liner/Centers – LGI/Daylighting/Vertical Linkage
3. Bridges – Commons Areas



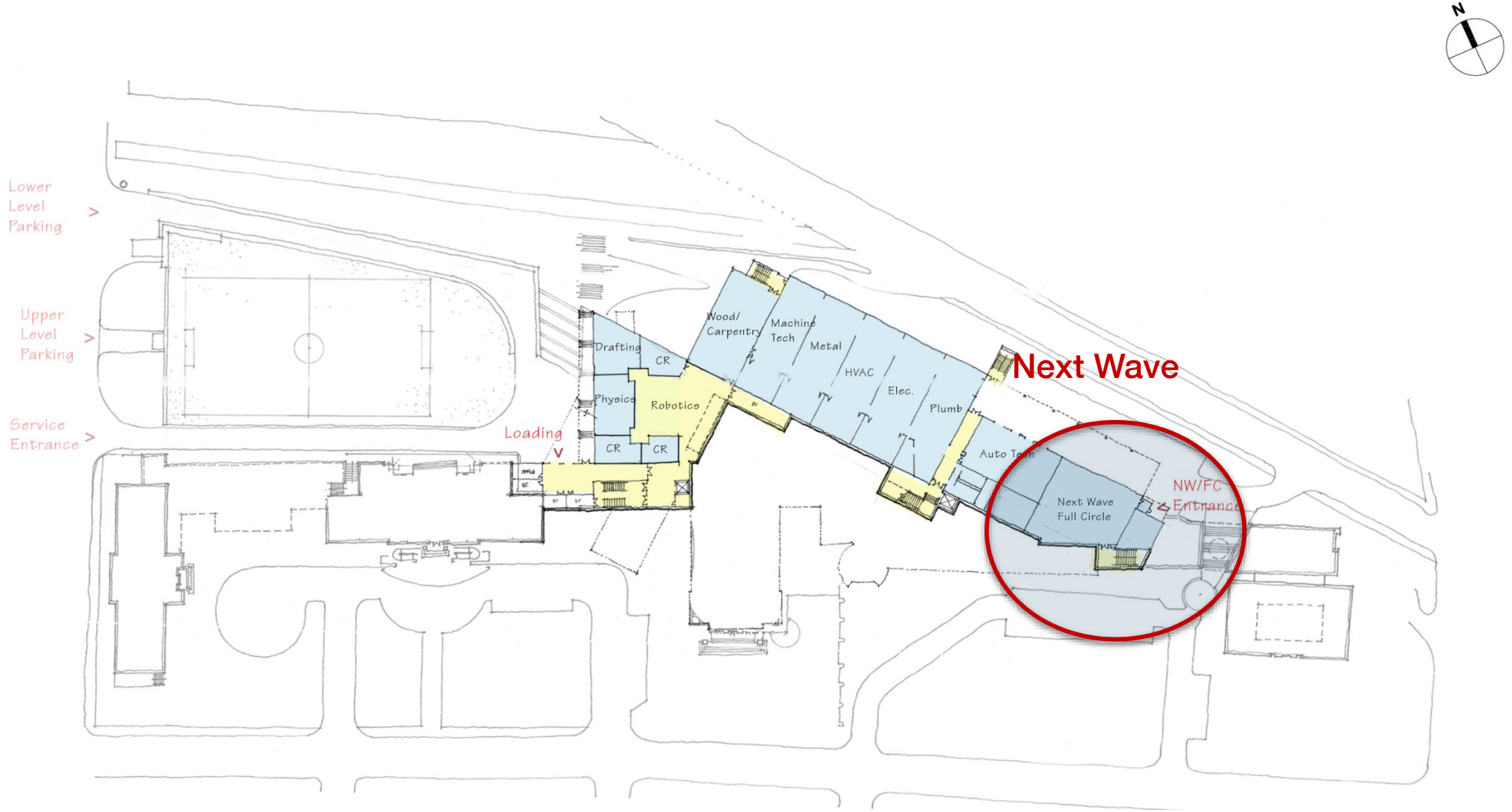
Alternative 4b: **Daylighting**



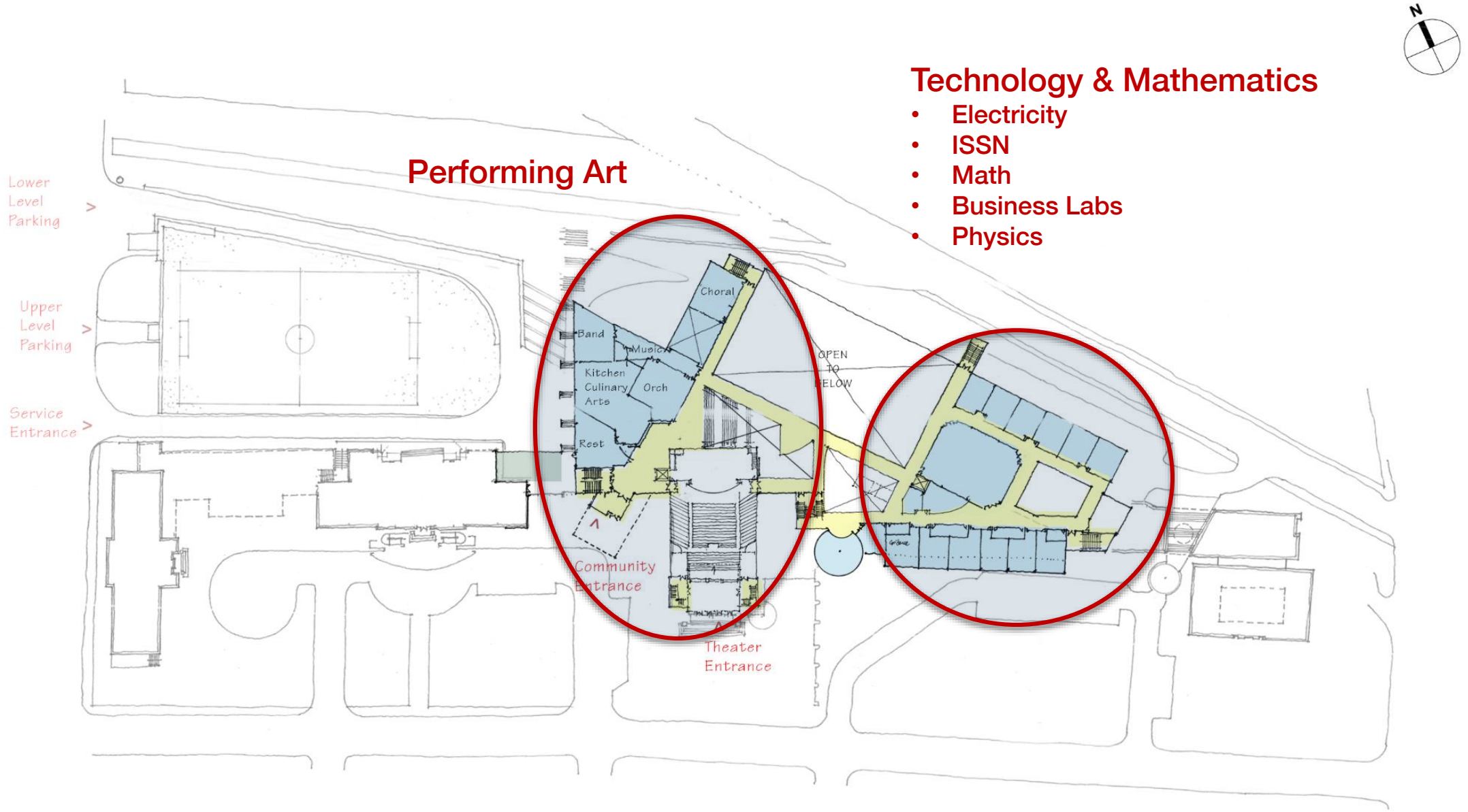
Alternative 4b: **1st Floor**



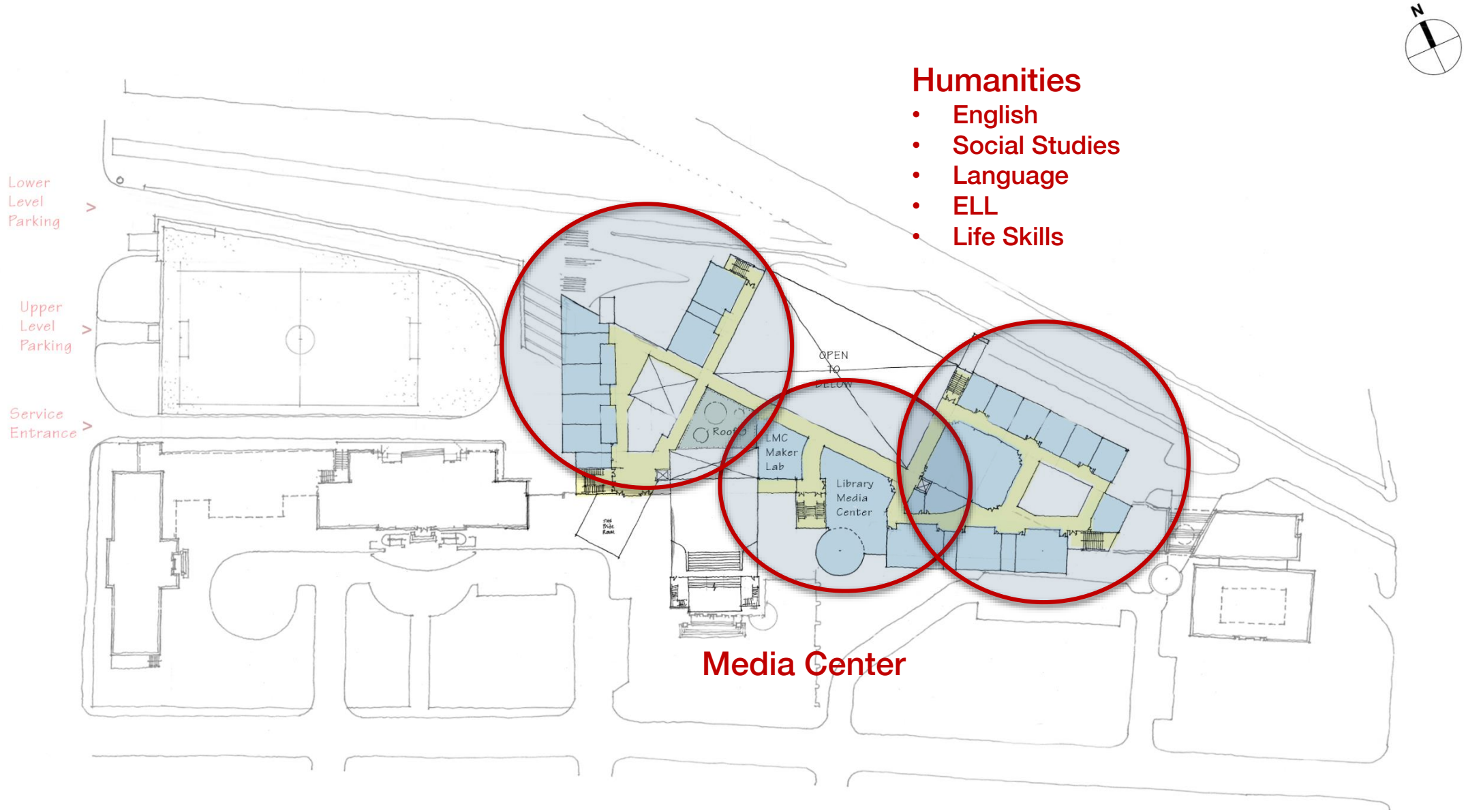
Alternative 4b: **Lower Level Plan**



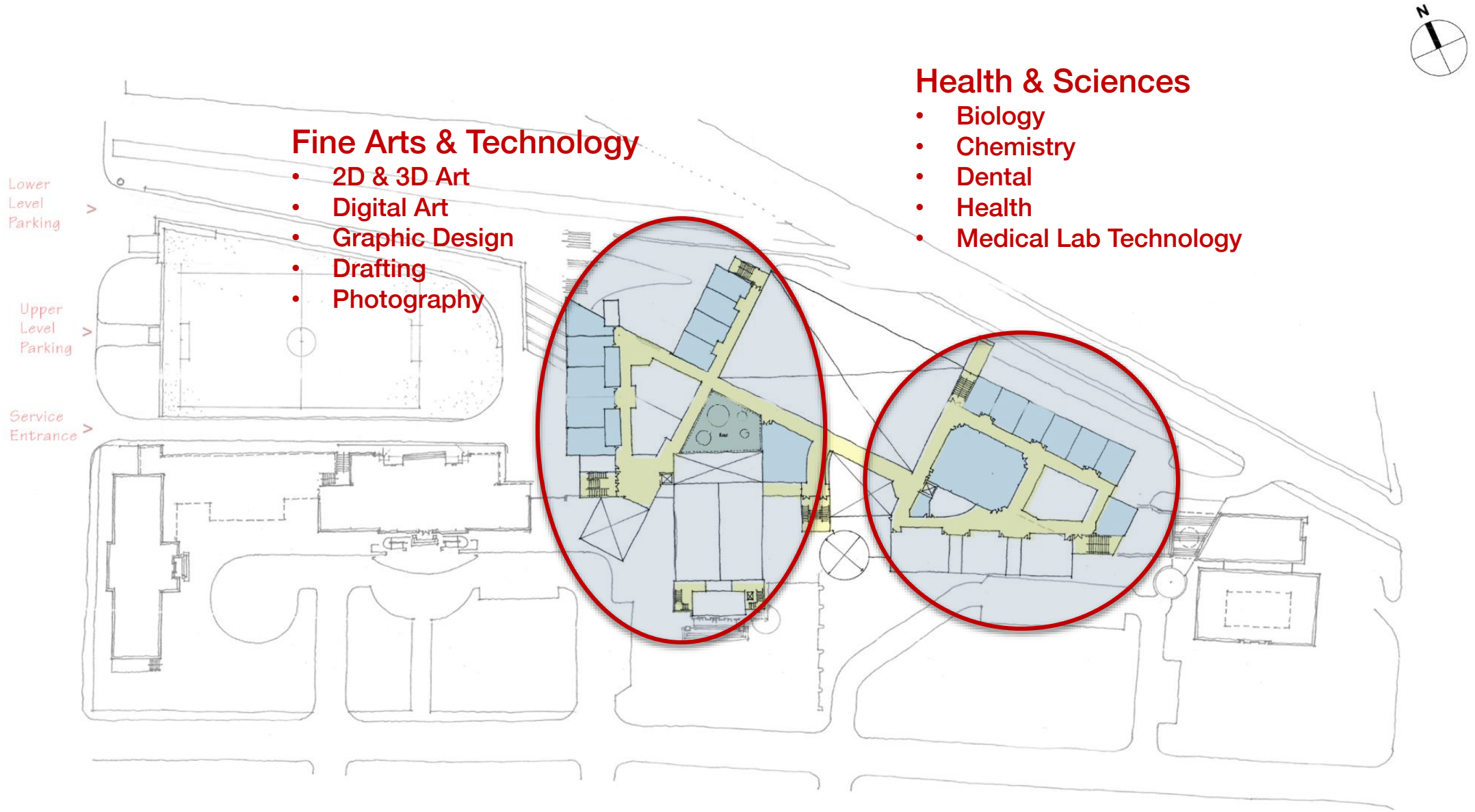
Alternative 4b: 2nd Floor



Alternative 4b: 3rd Floor



Alternative 4b: **4th Floor**



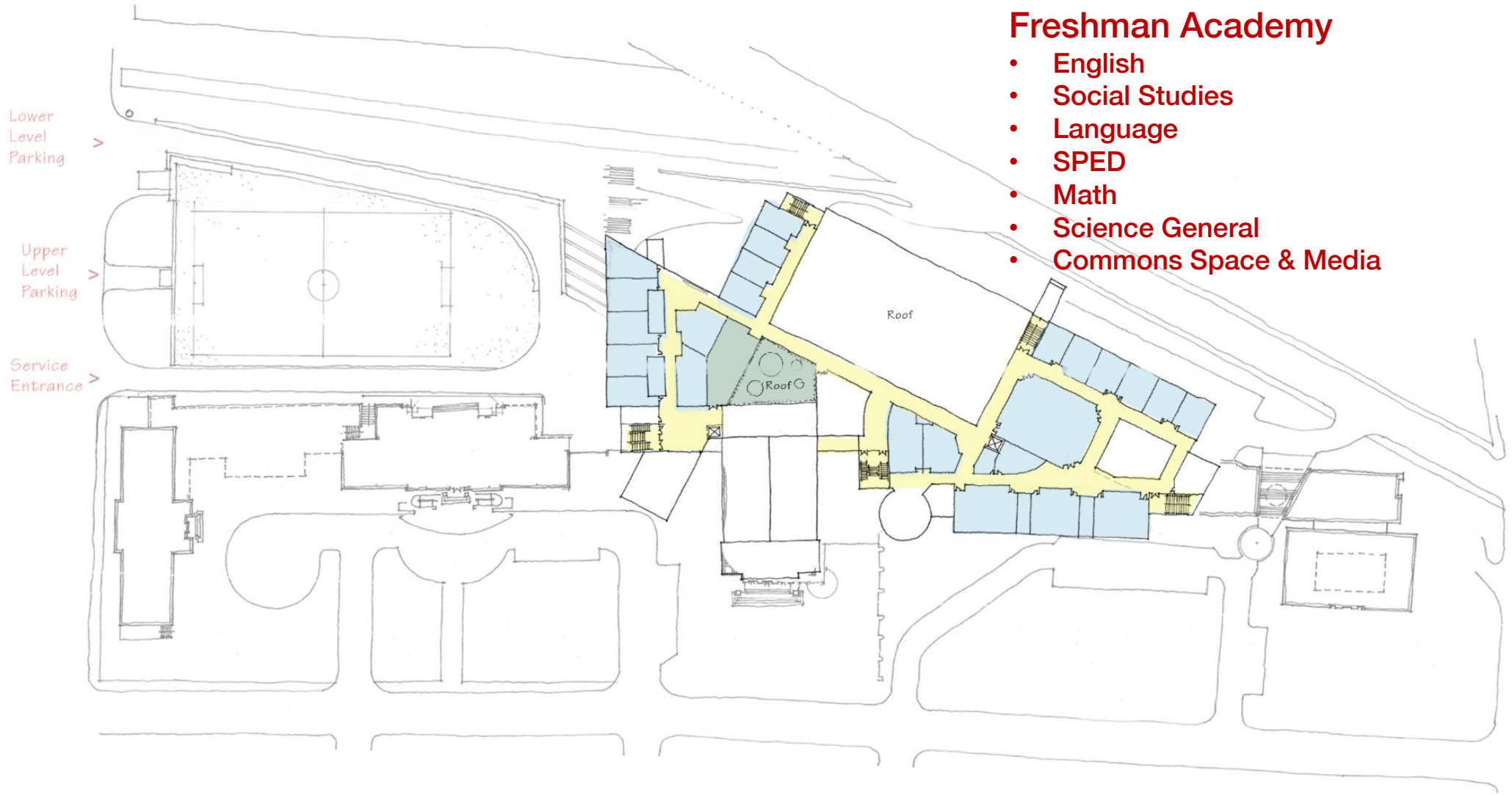
Fine Arts & Technology

- 2D & 3D Art
- Digital Art
- Graphic Design
- Drafting
- Photography

Health & Sciences

- Biology
- Chemistry
- Dental
- Health
- Medical Lab Technology

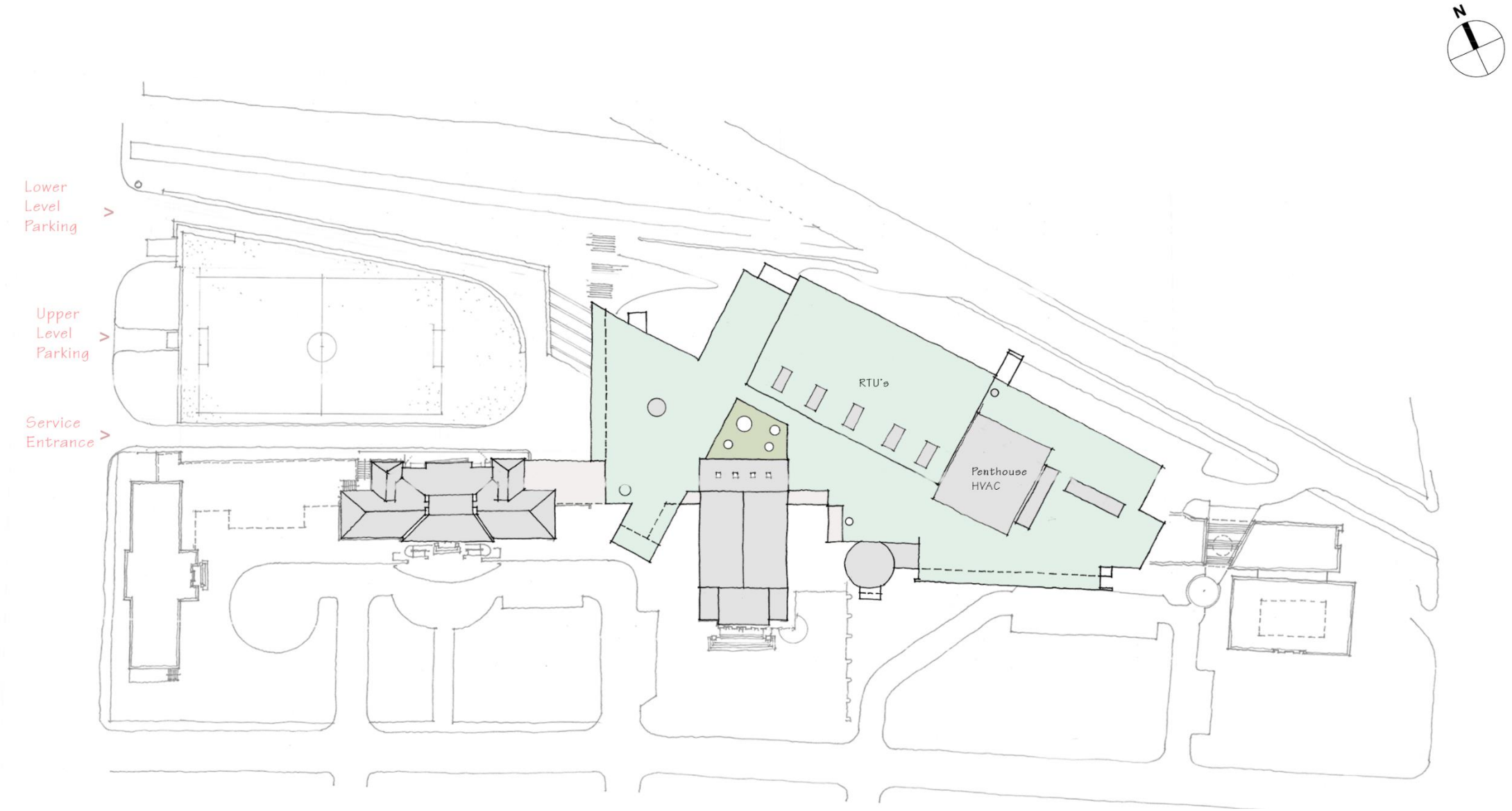
Alternative 4b: **5th Floor Plan**



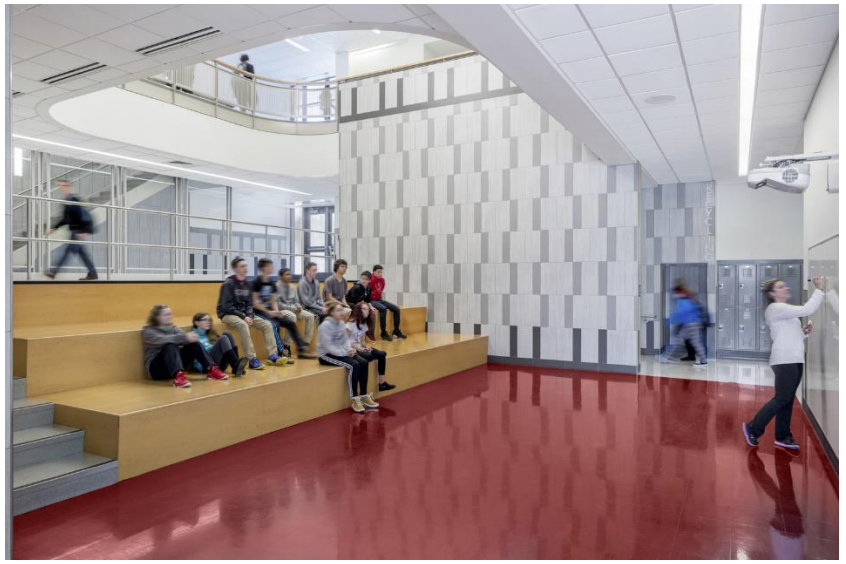
Freshman Academy

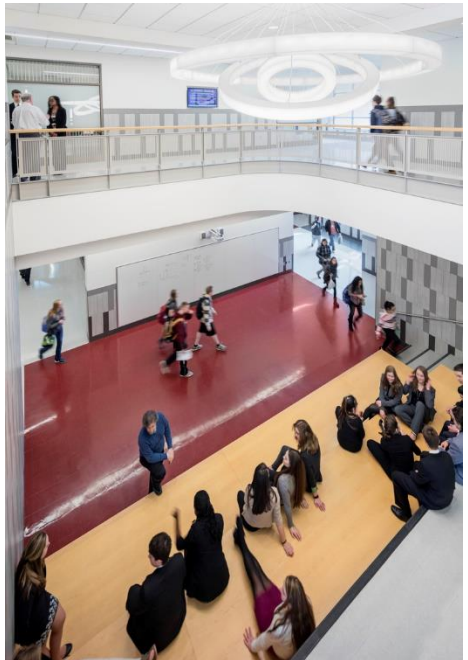
- English
- Social Studies
- Language
- SPED
- Math
- Science General
- Commons Space & Media

Alternative 4b **Roof Plan**



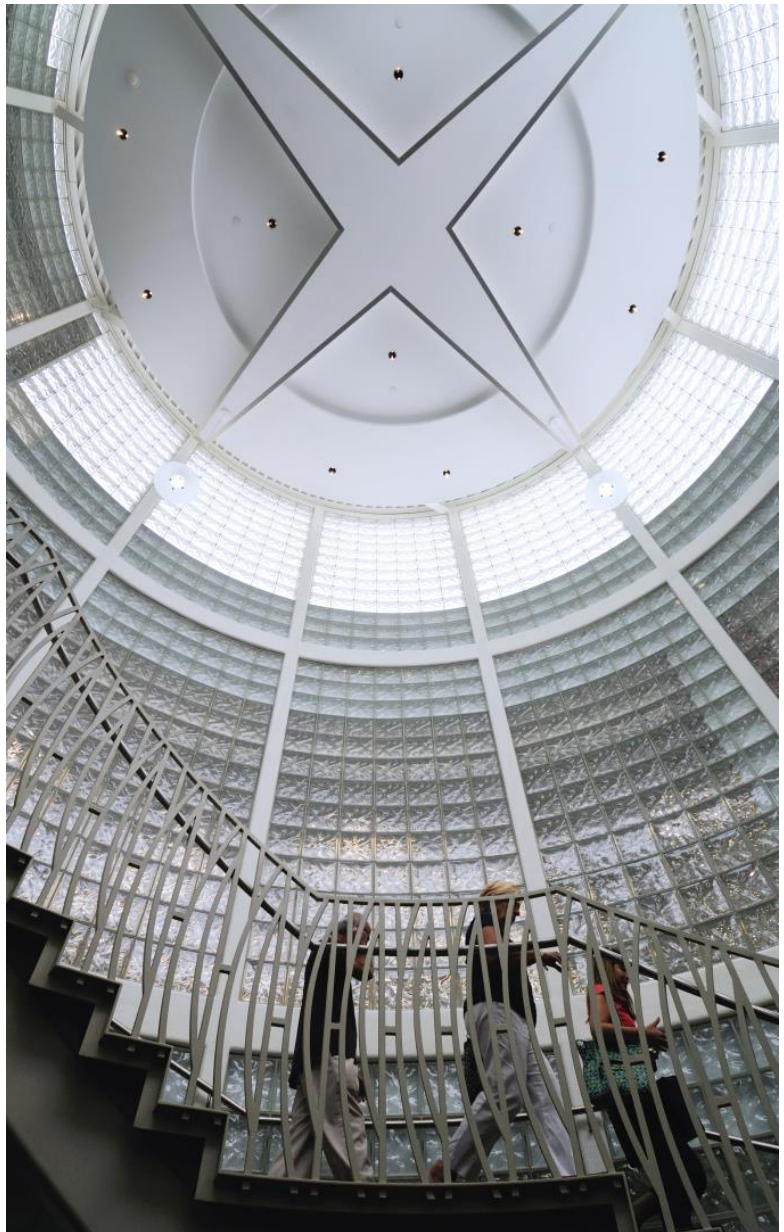
Alternative 4b: **Images**



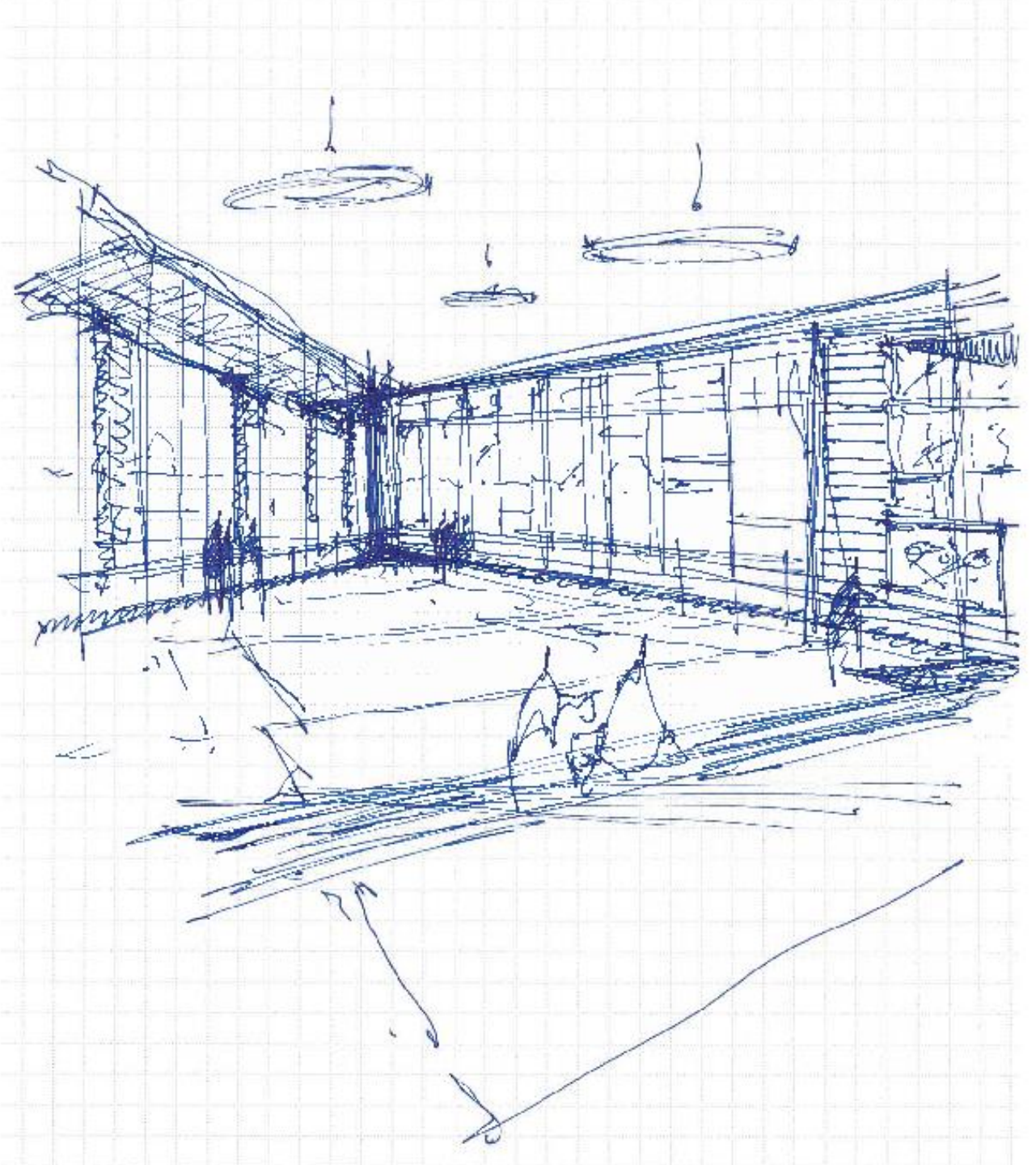


Alternative 4b: **Images**

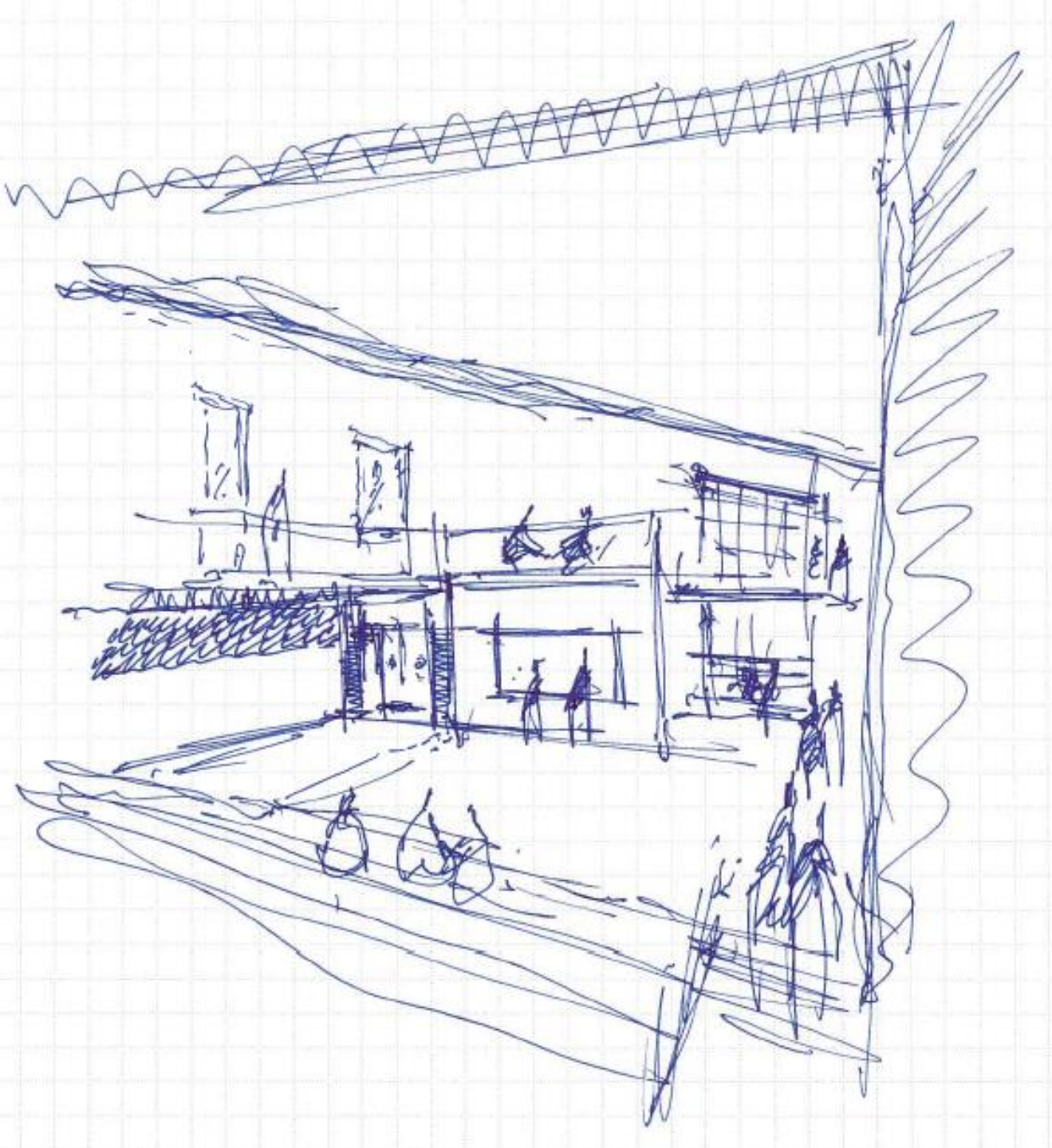
Alternative 4b: **Images**



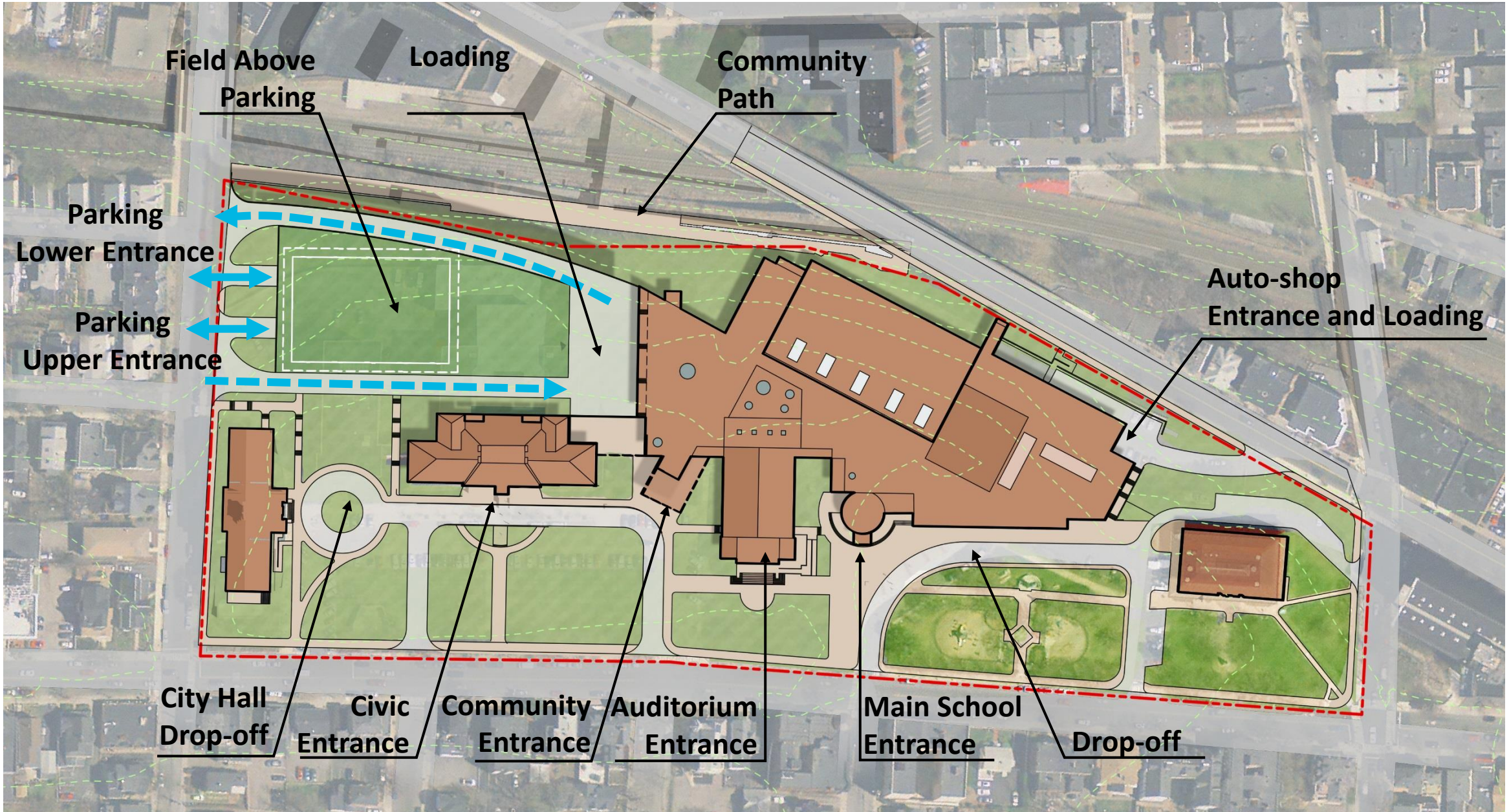
Alternative 4b: **Sketches**



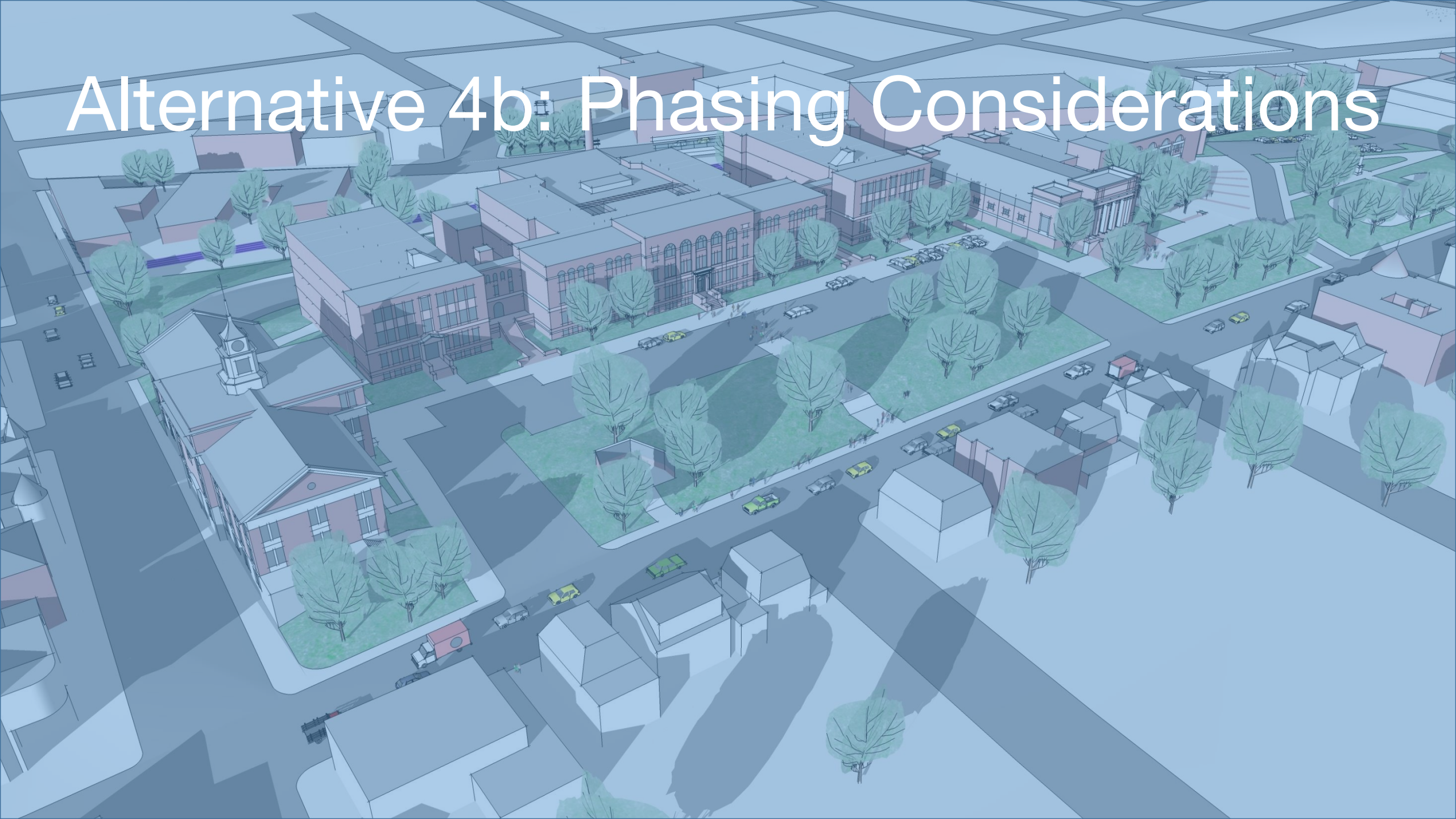
Alternative 4b: **Sketches**



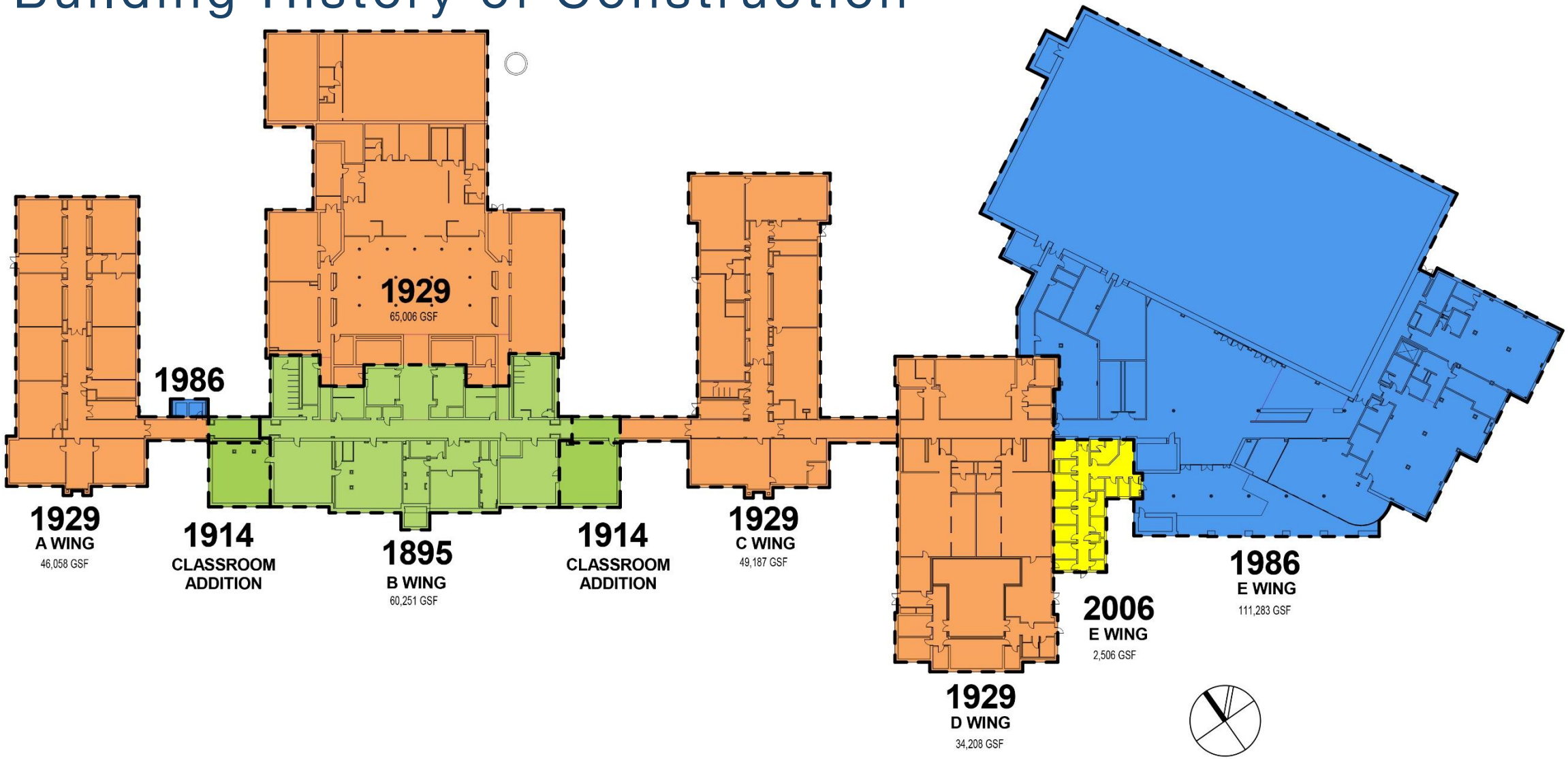
Alternative 4b: **Site Plan**



Alternative 4b: Phasing Considerations

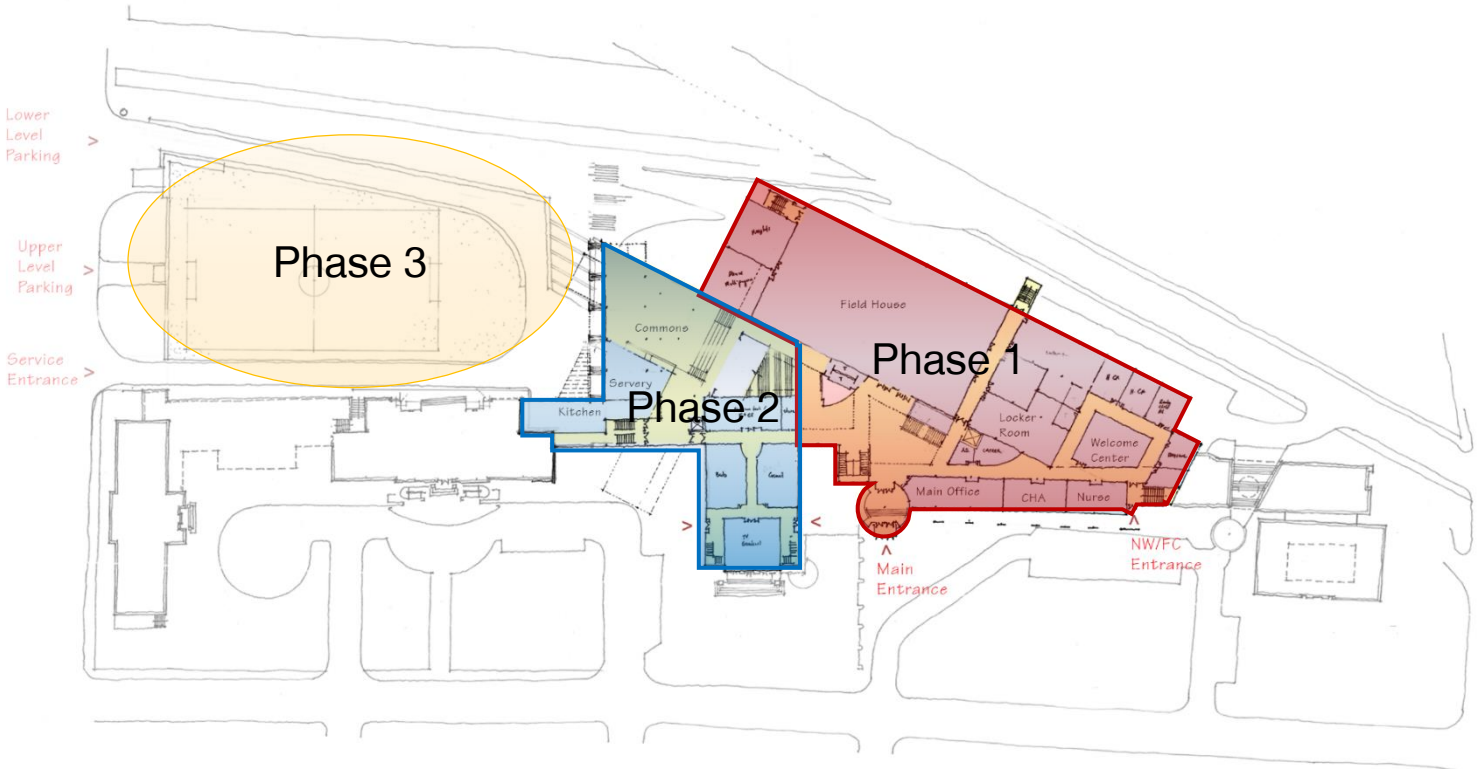


Building History of Construction



SMMA
SYMMES MAINI & McKEE ASSOCIATES

Alternative 4b



Phasing Considerations

- PHASE 1: Programs Affected
  - New STEAM FAB LAB
  - Machine Shop
  - Metal Fab Shop
  - Carpentry
  - Drafting
  - AutoTech
  - Cosmetology
  - Culinary
  - Fitness PE storage AD office
  - Medical suite and CHA
  - Healthcare
  - Graphic arts
  - Electrical
  - ISSN
  - Career service CTE offices
  - Field house
- PHASE 2: Programs Affected
  - Media center
  - TV studio
  - Weight room
  - Health and fashion
  - Life skills
  - English/social studies
  - 30 CRs equivalents (TBD)
  - Band
- PHASE 3:
  - Demolition of Remaining 1929 Wings
  - Stabilization of 1895
  - Construct Parking Structure & Fields

Disruptions

- Access to field house/egress
- Lower level shop loading area
- Toilets

Swing Space

Swing Space:

- Cummings
- St. Anne's
- Modulars

Contractor Lay Down space:

- Homans Site (NA)
- Community Path/Hillside
- Adjacent to Library parking lot/Playground
- Medford Street

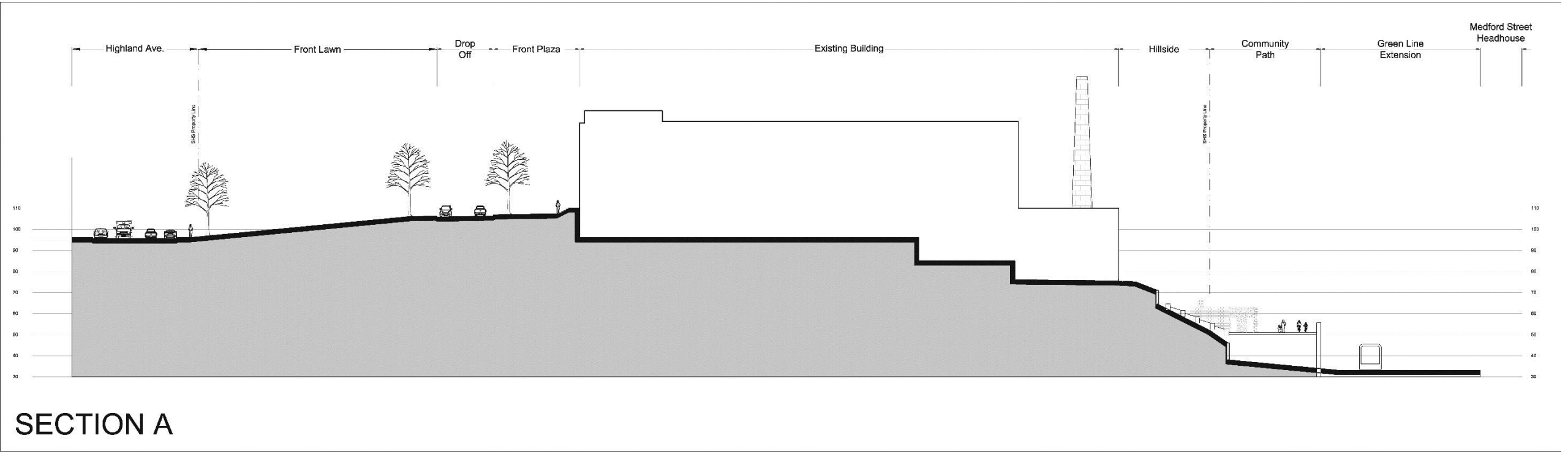
N

SMMA
SYMMES MAINI & McKEE ASSOCIATES

Planning for the Community Path & Site Sections

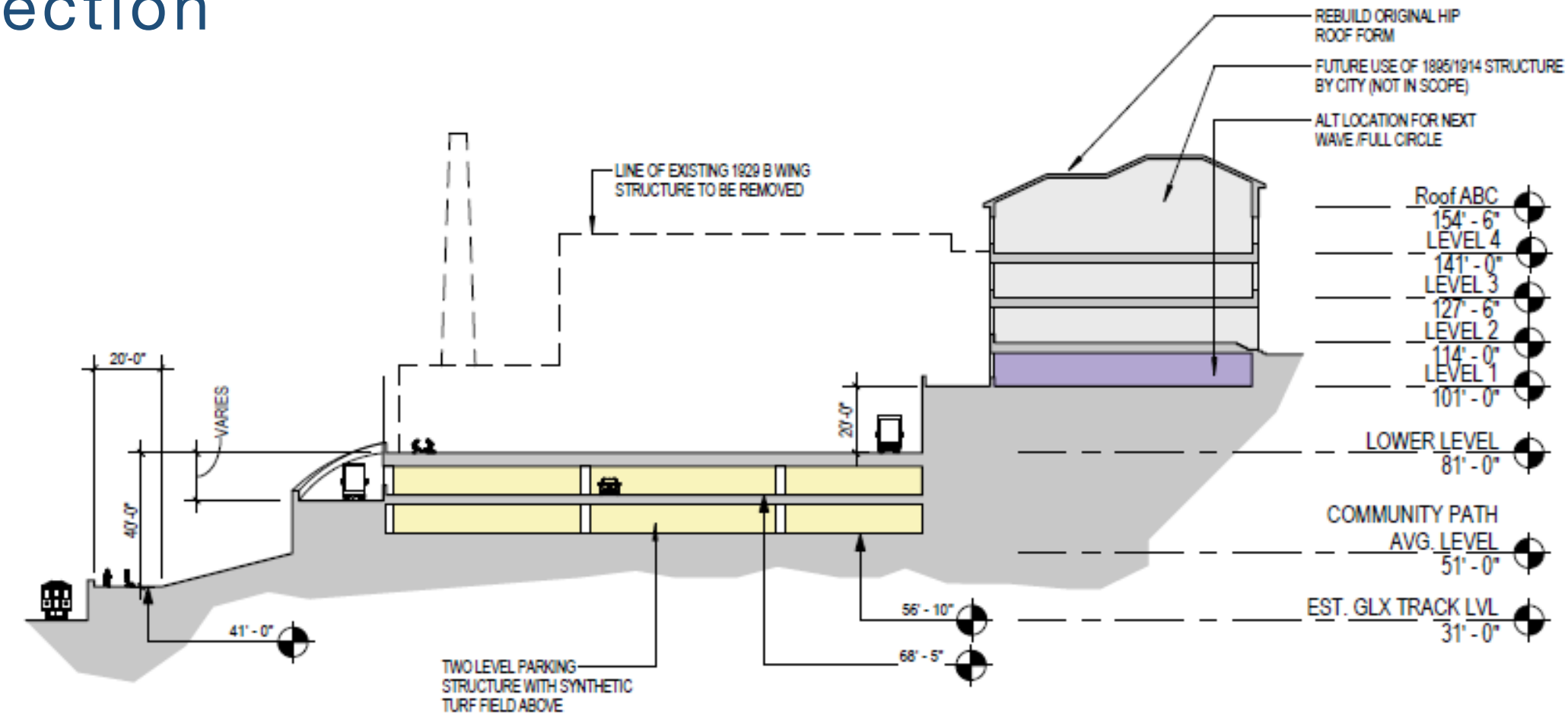
Existing High School Site

Site Section:



SECTION A

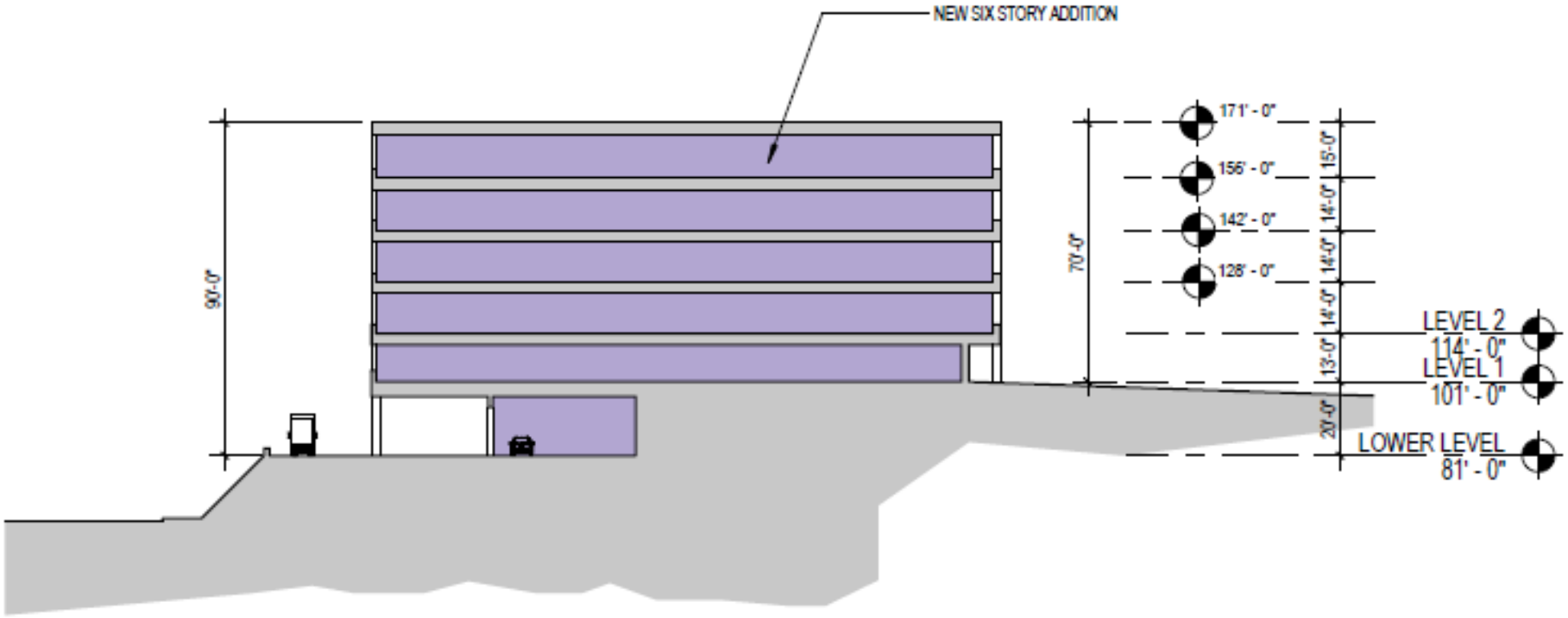
Site Section



B ALT 4B - SITE SECTION B - AT 1895/1914 STRUCTURE AND PARKING GARAGE

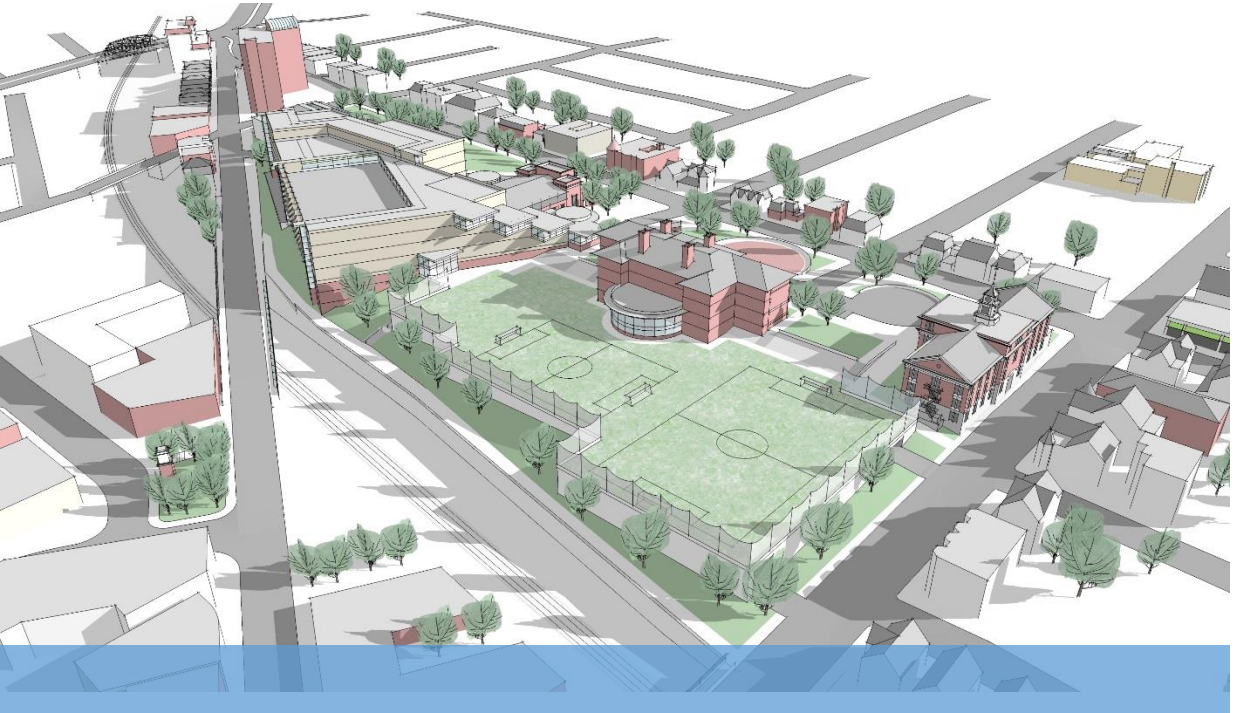
SCALE: 1" = 40'-0"

Building Section



E ALT 4B - SITE SECTION E - AT NEW SIX STORY ADDITION

SCALE: 1" = 40'-0"

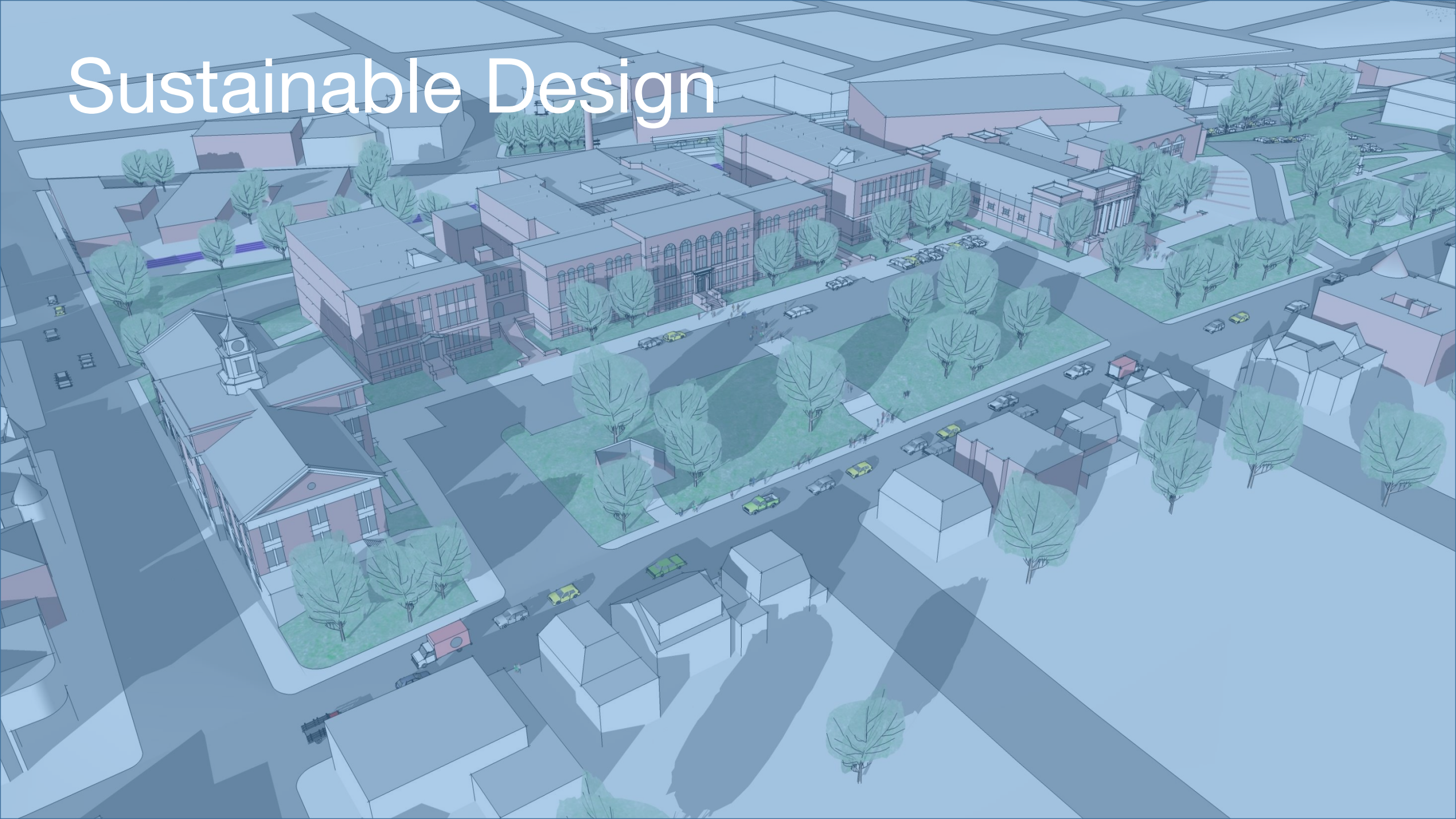


Alternative 4B

Alternative 4b:

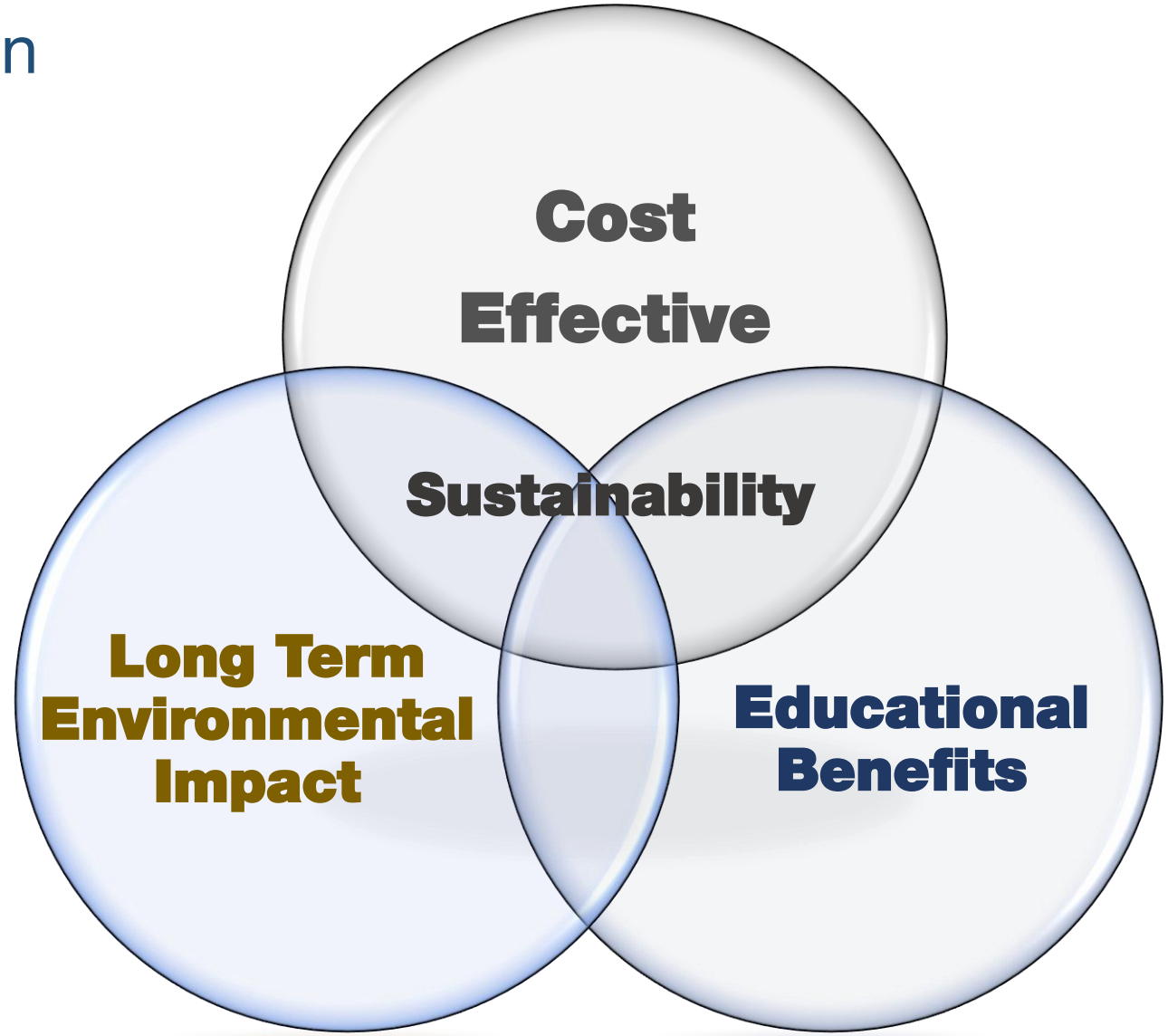
Alternative 4b:

Sustainable Design



Sustainable Design

- How does one view and pursue sustainability?
- Green Charette during SD Phase



SMMA
SYMMES MAINI & McKEE ASSOCIATES

MSBA REQUIREMENTS

- Green schools required for all new construction to receive state funding
  - LEED v4 for Schools Certified – 40 points out of 110 meets this threshold (Required)

- MSBA Reimbursement Budget based on Project Cost
  - Additional Reimbursement of 2% for reaching:
    - LEED v4 for Schools Silver - 50 points out of 110
    - 6 Points in Energy Optimization
      (16% better performance than a baseline building)

CURRENT LEED PROJECTIONS

- Our most current estimates place us having:
  - 58 Points that are Likely
  - 41 Points that are Maybes
  - 11 Points that we are not pursuing

- Based on experience, a 6 point buffer (we have 8) is a good margin of error to ensure the project meets targeted certification

CURRENT LEED SCORECARD:

LEED v4 for BD+C: New Construction and Major Renovation - Schools

Somerville Add/Reno Preliminary Scorecard

Project Name: Somerville High School PNUM: 15070

Date: 5/02/2016

Y	?+	?-	N			
1				Credit 1	Integrative Process	1
10	3	0	2	**Location and Transportation**	**Possible Points:**	15
				Credit 1	LEED for Neighborhood Development Location	15
1				Credit 2	Sensitive Land Protection	1
			2	Credit 3	High Priority Site	2
5				Credit 4	Surrounding Density and Diverse Uses	5
2	2			Credit 5	Access to Quality Transit	4
1				Credit 6	Bicycle Facilities	1
	1			Credit 7	Reduced Parking Footprint	1
1				Credit 8	Green Vehicles	1
3	3	5	1	**Sustainable Sites**	**Possible Points:**	12
Y				Prereq 1	Construction Activity Pollution Prevention	Required
Y				Prereq 2	Environmental Site Assessment	Required
1				Credit 1	Site Assessment	1
		2		Credit 2	Site Development--Protect or Restore Habitat	2
		1		Credit 3	Open Space	1
	2	1		Credit 4	Rainwater Management	3
	1	1		Credit 5	Heat Island Reduction	2
1				Credit 6	Light Pollution Reduction	1
			1	Credit 7	Site Master Plan	1
1				Credit 8	Joint Use of Facilities	1
8	1	2	1	**Water Efficiency**	**Possible Points:**	12
Y				Prereq 1	Outdoor Water Use Reduction	Required
Y				Prereq 2	Indoor Water Use Reduction	Required
Y				Prereq 3	Building-Level Water Metering	Required
2				Credit 1	Outdoor Water Use Reduction	2
5	1		1	Credit 2	Indoor Water Use Reduction	7
		2		Credit 3	Cooling Tower Water Use	2
1				Credit 4	Water Metering	1
18	4	6	3	**Energy and Atmosphere**	**Possible Points:**	31
Y				Prereq 1	Fundamental Commissioning and Verification	Required
Y				Prereq 2	Minimum Energy Performance	Required
Y				Prereq 3	Building-Level Energy Metering	Required
Y				Prereq 4	Fundamental Refrigerant Management	Required
5	1			Credit 1	Enhanced Commissioning	6
10	2	2	2	Credit 2	Optimize Energy Performance	16
1				Credit 3	Advanced Energy Metering	1
2				Credit 4	Demand Response	2
	1	2		Credit 5	Renewable Energy Production	3
			1	Credit 6	Enhanced Refrigerant Management	1
		2		Credit 7	Green Power and Carbon Offsets	2
5	4	3	1	**Materials and Resources**	**Possible Points:**	13
Y				Prereq 1	Storage and Collection of Recyclables	Required
Y				Prereq 2	Construction and Demolition Waste Management Planning	Required
3	1		1	Credit 1	Building Life-Cycle Impact Reduction	5
	1	1		Credit 2	Building Product Disclosure and Optimization - Environmental Product Declarations	2
	1	1		Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
	1	1		Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
2				Credit 5	Construction and Demolition Waste Management	2
6	6	1	3	**Indoor Environmental Quality**	**Possible Points:**	16
Y				Prereq 1	Minimum Indoor Air Quality Performance	Required
Y				Prereq 2	Environmental Tobacco Smoke Control	Required
2				Credit 1	Enhanced Indoor Air Quality Strategies	2
	3			Credit 2	Low-Emitting Materials	3
1				Credit 3	Construction Indoor Air Quality Management Plan	1
	1	1		Credit 4	Indoor Air Quality Assessment	2
1				Credit 5	Thermal Comfort	1
2				Credit 6	Interior Lighting	2
			3	Credit 7	Daylight	3
	1			Credit 8	Quality Views	1
	1			Credit 9	Acoustic Performance	1
5	1	0		**Innovation**	**Possible Points:**	6
4	1			Credit 1	Innovation	5
1				Credit 2	LEED Accredited Professional	1
2	1	1		**Regional Priority**	**Possible Points:**	4
1				Credit 1	Regional Priority: Indoor Water Use Reduction - 40%	1
1				Credit 2	Regional Priority: Optimize Energy Performance - 8 pts. Min.	1
		1		Credit 3	Regional Priority: Rainwater Management - Both Points	1
	1			Credit 4	Regional Priority: Renewable Energy (2 pt. min), Building Life Cycle 50% reuse, High Priority	1

Y	?+	?-	N			
58	23	18	11	**Total**	**Possible Points:**	110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Somerville High School

Sustainable Design Overview

SMMA

Integrative Process

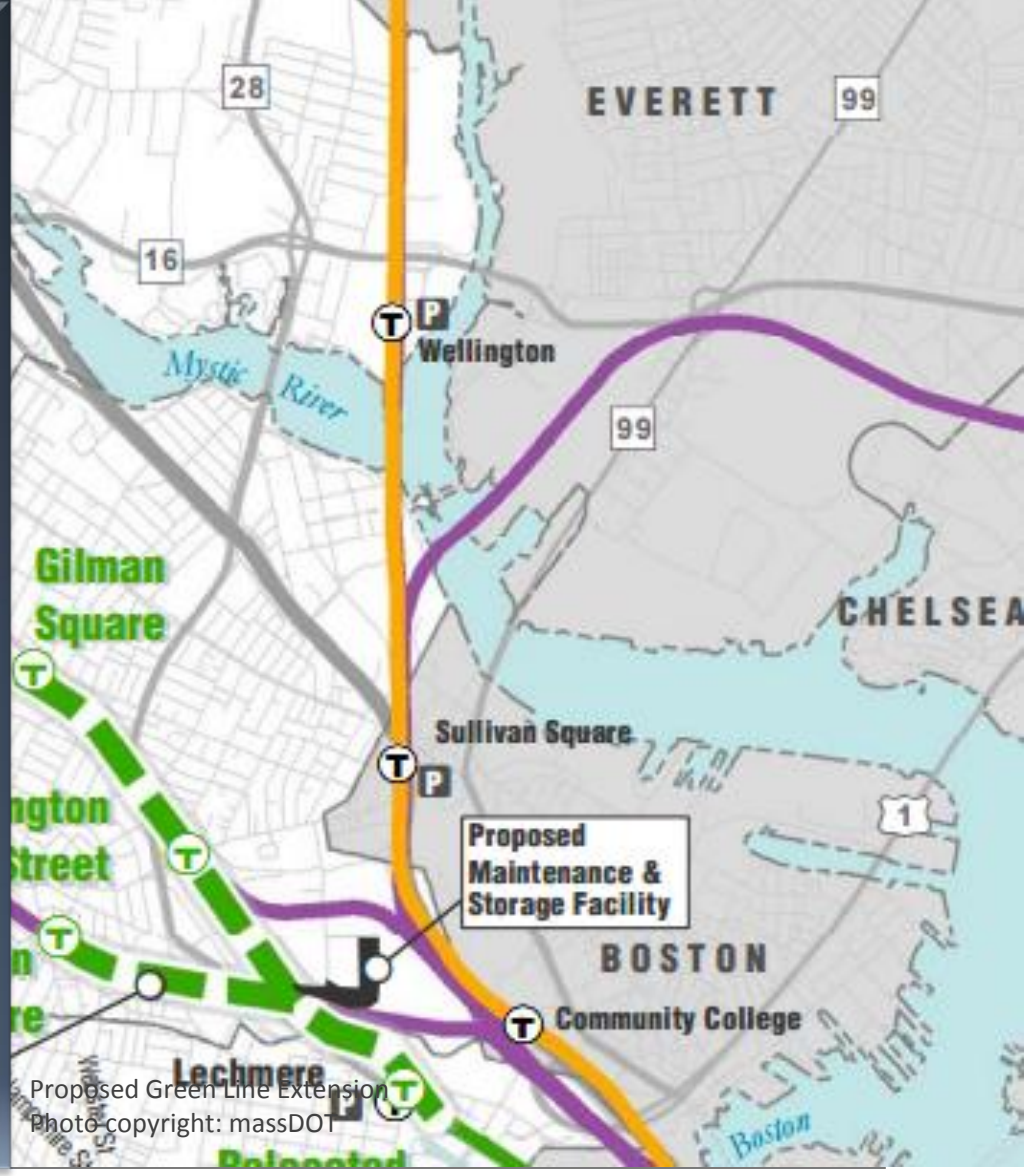
(New Credit and Credit Category for 1 Point)

- Credit targets the intent of LEED – integrated design and frontloaded collaboration
  - "Encourages early analysis of energy and water systems to inform design"
- Simple box energy model to assess load reduction opportunities
- Preliminary water budget analysis that documents at least one source of reduction
- Analyses are used to inform the Owner's Project Requirements (OPR), the Basis of Design (BOD), and the eventual design of the project

Quincy High School
Photo copyright: SMMA

Location and Transportation

- Credits are awarded based on how people move to and from the project site
- May obtain extra points from the green line extension
- Bike storage will be built into the building plan
- Preferred parking for Green Vehicles and E/V Charging



Proposed Green Line Extension
Photo copyright: massDOT

Sustainable Sites

- Credits are awarded based on site design, community integration, and habitat preservation
- Community use of facilities planned
- Strategies for reducing heat island effect will be integrated
- Reduction of nocturnal light pollution
- Site open space will be a goal but inhibited by large turf areas

Providence College
Photo copyright: SMMA

Water Efficiency

- Credits are awarded based on indoor and outdoor water
- No irrigation water use is a common strategy
- Increased focus on indoor water use reduction, including kitchen equipment
- Includes water use sub-metering
- Potential credit points for water use reduction in projects with cooling towers

Turner Falls High School
Photo copyright: SMMA

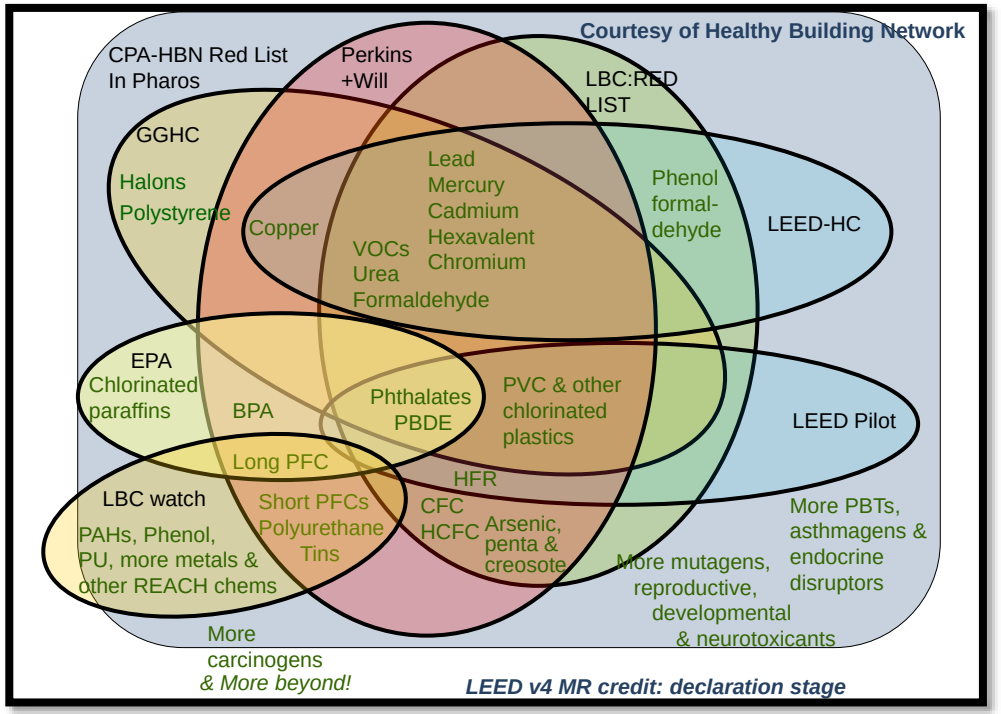
Energy Efficiency

- Credits are awarded based on energy optimization
- Demand Response participation will be investigated
- Enhanced Commissioning, including envelope commissioning, will be provided through the MSBA
- Energy efficiency will be a focal point
- Renewable energy is a possible path to earn more points

Turner Falls High School
Photo copyright: SMMA

Materials and Resources

- Credits are awarded based on material optimization and waste reduction
- Life cycle impact of structure and enclosure to be evaluated
- Recycling program is a prerequisite
- Construction waste will be minimized
- Many new product standards likely not accessible due to publicly bid project and requirement for 3 equal products



Indoor Environmental Quality

- Credits are awarded based on healthy and comfortable interiors
- Low VOC materials will be specified
- Access to natural light and views will be considered
- Thermal comfort controls will be provided
- Acoustic performance a prerequisite
- No smoking on campus
- High quality lighting will be used
- Sufficient fresh air will create a well ventilated building

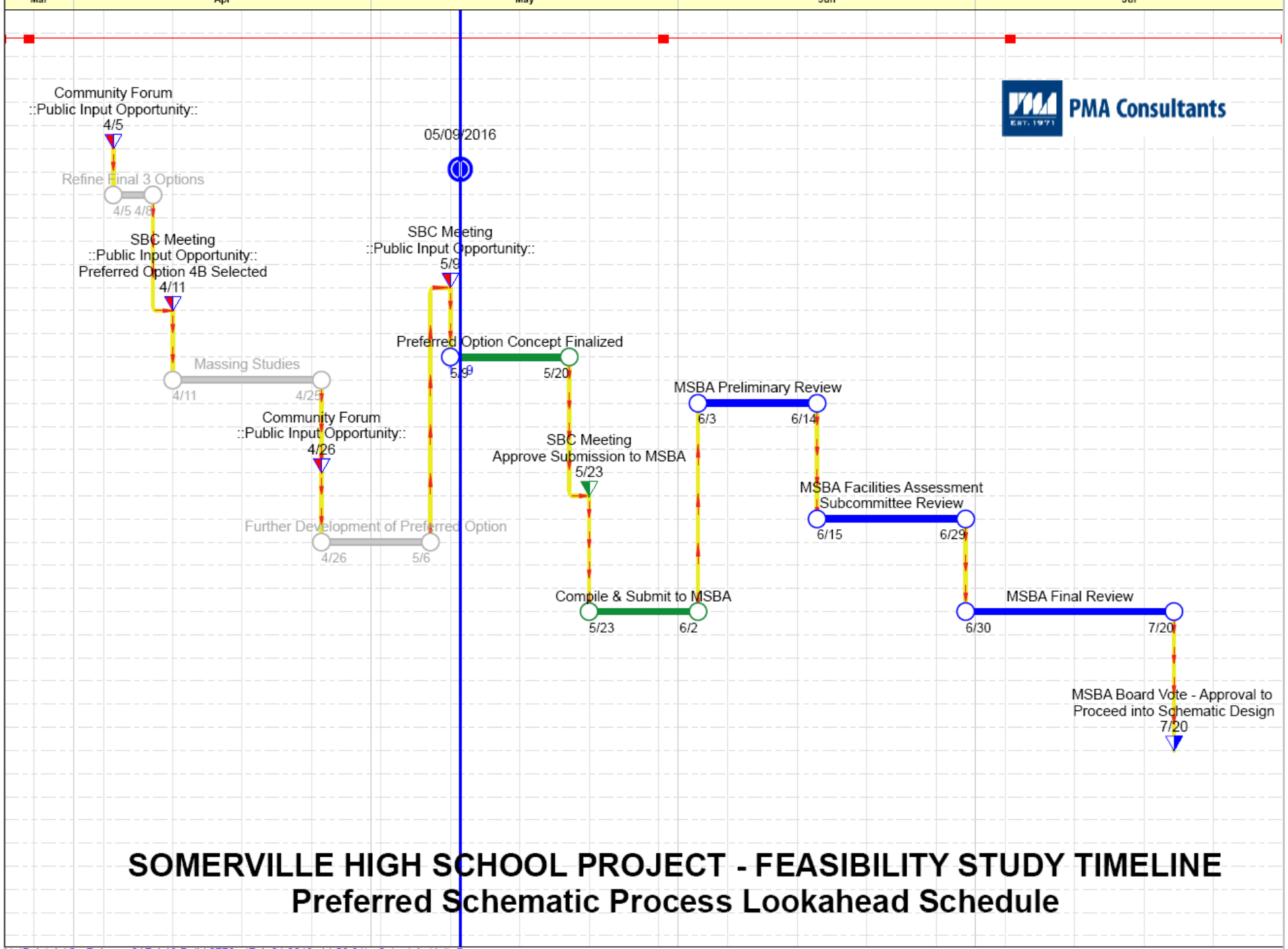
Quincy High School
Photo copyright: SMMA

Innovation in Design and Regional Priority

- Credits are awarded for innovative practices and targeting credits that are regionally prioritized
- Up to the project team to pick the innovation and pilot credits
- The US Green Building Council chooses regional priorities based off project location

North Middlesex Regional High School
Photo copyright: SMMA

Schedule & Next Steps


Community Forum
::Public Input Opportunity::
4/5
Refine Final 3 Options
4/5 4/8
SBC Meeting
::Public Input Opportunity::
Preferred Option 4B Selected
4/11
Massing Studies
4/11
4/25
Community Forum
::Public Input Opportunity::
4/26
Further Development of Preferred Option
4/26
5/6
05/09/2016
SBC Meeting
::Public Input Opportunity::
5/9
Preferred Option Concept Finalized
5/9
5/20
SBC Meeting
Approve Submission to MSBA
5/23
Compile & Submit to MSBA
5/23
6/2
MSBA Preliminary Review
6/3
6/14
MSBA Facilities Assessment
Subcommittee Review
6/15
6/29
MSBA Final Review
6/30
7/20
MSBA Board Vote - Approval to
Proceed into Schematic Design
7/20
PMA Consultants
SOMERVILLE HIGH SCHOOL PROJECT - FEASIBILITY STUDY TIMELINE
Preferred Schematic Process Lookahead Schedule

Somerville High School

Frequently Asked Questions:

Q: Where can I obtain more information about the project?

A: A project web site has been established for the project, and will be continuously updated with project information. The web site address is:

http://www.somervillema.gov/highschool/

Symmes Maini & McKee Associates | SMMA


Thank you!