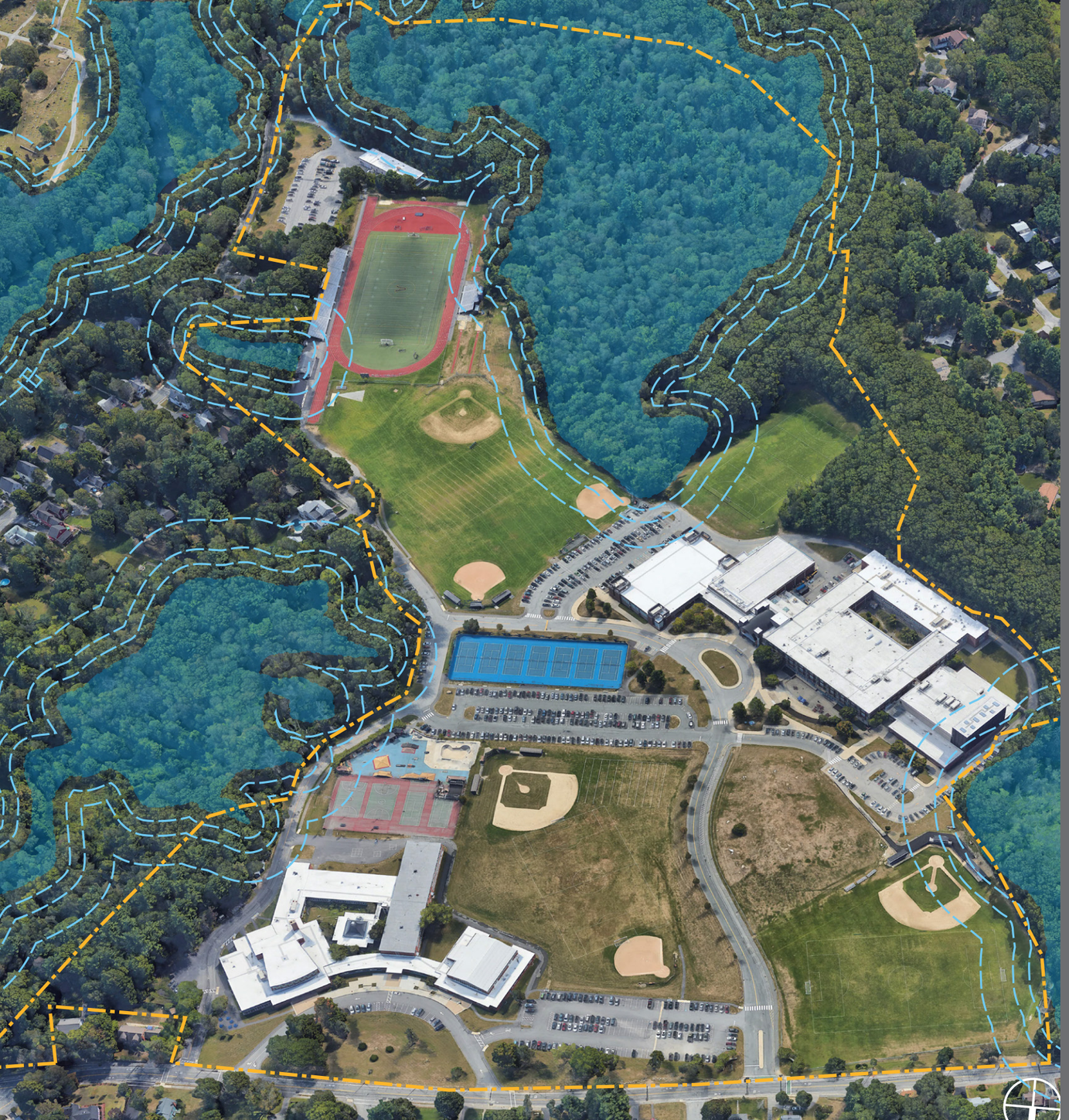


Andover High School Building Committee

January 12, 2022

HMFH ARCHITECTS

DRAFT FEASIBILITY STUDY & SCHEMATIC DESIGN TIMELINE

Andover High School Project

PMA Consultants Est. 1971

HMFH ARCHITECTS

NOVEMBER 2022
- Project Website Launched. Community Forums, Educational Programming, Site Development, Student Groups, & Sustainability Meetings Ongoing
- 11/22/2022 SBC Meeting Site Development: Preliminary Site Options Presented

DECEMBER 2022
- 12/8/2022 SBC Meeting Site Development: Review Evaluation Criteria
- 12/8/2022 Community Forum #2 (Virtual)
- 12/20/2022 SBC Meeting **Decision Point:** Selection of 3 Site Approaches for Further Review

JANUARY 2023
- 1/11/2023 Community Tours of Andover HS #1 & Community Forum #3 (In-person)
- 1/12/2023 SBC Meeting Design Progress: Building Layout Development

WE ARE HERE

JANUARY 2023
- Draft Education Plan Provided by District (Targeting mid-January)
- 1/21/2023 Community Tours of Andover HS #2
- 1/23/2023 Meet with Select Board
- 1/26/2023 SBC Meeting Design Progress: Building Options Review

FEBRUARY 2023
- Feasibility Study Education Plan Presented to School Committee (Targeting 2/2/2023)
- 2/9/2023 SBC Meeting **Decision Point:** Select Two (2) Building Options for Pricing
- Community Forum #4 (Targeting mid-February)
- 2/23/2023 SBC Meeting Review Progress & Evaluation Criteria

MARCH 2023
- 3/9/2023 SBC Meeting Review Progress & Evaluation Criteria
- Community Forum #5 (Targeting mid-March)
- 3/23/2023 SBC Meeting Present Preliminary Cost Information

APRIL 2023
- 4/13/2023 SBC Meeting Review Progress, Continue Evaluation/Cost Conversations
- Community Forum #6 (Targeting mid-April)
- 4/27/2023 SBC Meeting **Decision Point:** SBC Votes to Recommend Preferred Option

MAY 2023
- Meetings with Select Board, School Committee, and Finance Committee
- Community Forum #7 (Targeting mid-May)
- **Select Board & School Committee Approval** (Targeting End of May)
- **Town Meeting Approval** of Schematic Design Funds

JUNE 2023 – JAN 2024
- **Schematic Design**
- Outreach Efforts Continue
- Determine Construction Delivery Method
- Cost Estimates Performed (September or October 2023)
- **Potential Funding Approval @ January 2024 Town Meeting**

Nov-Dec 2022 | Jan 2023 | Feb-Mar 2023 | April 2023 | May 2023 | Jun'23 to Jan'24

THE BIG PICTURE

Feasibility Study
September 2022 – April 2023

Schematic Design
May 2023 – January 2024

Note: Preliminary timeline, under review by Town of Andover

Last updated 1.12.2023

DRAFT PROJECT TIMELINE – FEASIBILITY STUDY

Andover High School Project

PMA Consultants

HMFH ARCHITECTS

JANUARY 2023
- Education Plan Provided by District (Targeting mid-January)

MARCH 2023
- 3/23/2023 SBC Meeting Present Preliminary Cost Information

MAY 2023
- **Select Board & School Committee Approval** (Targeting End of May)
- **Town Meeting Approval** of Schematic Design Funds

WE ARE HERE

Jan 2023 — Feb 2023 — Mar 2023 — April 2023 — May 2023

TO DATE:

NOVEMBER 2022
- Project Website Launched. Community Forums, Educational Programming, Site Development, Student Groups, & Sustainability Meetings Ongoing
- 11/22/2022 SBC Meeting Site Development: Preliminary Site Options Presented

DECEMBER 2022
- 12/20/2022 SBC Meeting
  Decision Point:
  Selected 3 Site Approaches for Further Review

FEBRUARY 2023
- 2/9/2023 SBC Meeting
  Decision Point:
  Select Two (2) Building Options for Pricing

APRIL 2023
- 4/27/2023 SBC Meeting
  Decision Point:
  Vote to Recommend Preferred Option

SCHEMATIC DESIGN
MAY 2023 – JAN 2024
- Cost Estimates Performed (September or October 2023)
- **Potential Funding Approval January 2024 Town Meeting**

THE BIG PICTURE

Feasibility Study
September 2022 – April 2023

Schematic Design
May 2023 – November 2023

Last updated 1.12.2023

Cost analysis process - Feasibility Phase

March 2023 - Preliminary Construction Cost Analysis

- High level construction cost information for comparison and decision-making purposes (ex: New vs. Add/Reno, Collins Ctr, parking garage)
- Two independent construction cost analysis of initial concept drawings, reconciled to verify understanding of scope and associated cost assumptions
- At this phase, costs estimated on cost SF basis plus industry standard multipliers for escalation, design contingency for undefined scope
- Team will use industry standard multipliers to translate preliminary construction cost analysis to rough total project costs

DRAFT PROJECT TIMELINE – SCHEMATIC DESIGN

Andover High School Project

PMA Consultants Est. 1971

HMFH ARCHITECTS

TO DATE:

FEASIBILITY STUDY

- One options (New or Add/Reno) Selected to continue into SD
- Additional Funding Approved at TM

May 2023 | June 2023 | July 2023 | Aug 2023 | Sept 2023 | Oct 2023 | Nov 2023 | Dec 2023 | Jan 2024

MAY 2023

- Schematic Design:
  - Stakeholder Meetings
  - Sustainability Check-in
  - Basis of Design:
    - MEP/FP
    - Building Envelope
    - Site Development
    - Sustainable Features

OCTOBER 2023

- Schematic Design Construction **Cost Estimate**:
  - 2 independent reconciled cost estimates
  - Inform final decisions re: parking options, sustainability measures, etc. , prior to becoming the basis of the project budget for Town Funding Approvals

NOVEMBER 2023

- SBC Meeting

Decision Point:

Vote to Recommend Scope and Budget

January 2024

- **Select Board & School Committee Approval**
- **Town Meeting Approval**
- **January Ballot Measure**

STARTING FEBRUARY 2024

- Design Development
- Construction Documents
- Construction

THE BIG PICTURE

Feasibility Study
September 2022 – April 2023

Schematic Design
May 2023 – January 2024

Last updated 1.12.2023

Cost estimate process - Schematic Design

October 2023 - Schematic Design Cost Estimate - the basis of the scope & budget definition which will form the basis of what the town will vote on in January 2024.

- Construction cost estimates based on schematic level drawings and documentation. At this phase, drawings include initial engineering layouts, initial schedules, material call outs, and SD construction specifications
- Follows the same process of two independent reconciled estimates to provide a level of quality assurance
- At this phase, construction estimates quantify materials and systems for the project
- Industry standard multipliers are added for escalation and design contingency for undefined scope. Design contingency is reduced as the documents progress from Schematic Design to 100% Bid Documents
- Team will develop total project cost using negotiated consultant costs, industry standard multipliers for FF&E and technology, and contingencies

Public and Town Meetings

- 2022 - Ten (10) Andover High School Building Committee Meetings
- 9.24 - Andover Day Booth
- 10.17 - Sustainability Charrette #1
- 10.18 - Site Visioning
- 10.27 - Student Environmental and Garden Club Sustainability Charrette
- 11.10 - Community Forum
- 11.14 - Sustainability Charrette #2
- 12.2 - APD & AFD Review
- 12.8 - Community Forum (Virtual)
- 12.15 - Town Planning, Facilities, and Building Departments Review
- 1.7 - AHSBC Tours of Danvers HS and Arlington HS
- 1.11 - Andover High School Tours & Community Forum
- 1.12 - ANDOVER HIGH SCHOOL BUILDING COMMITTEE MEETING
- 1.21 - Andover High School Tours
- 1.23 - Select Board Meeting
- 1.26 - Andover High School Building Committee Meetings

Andover High School Programming

September - November 2022

- 9.30 - HS/APS Admin Visioning Planning
- 10.18 - Educational Visioning w/ Program Coordinators
- 10.24 - HS Departmental Meetings 1 (media center, athletics, student reps, math, science, english language arts, social studies)
- 11.7 - HS Departmental Meetings 2 (custodial, school monitors, medical, guidance & social workers, admin., world language, P. E., student services/special ed., health, art and digital arts)
- 11.9 - HS/APS Admin. Leadership - Program Review
- 11.9 - Special Education - Special Programs 1
- 11.15 - Special Education - Special Programs 2
- 11.18 - Student Clubs
- 11.21 - HS/APS Admin. Leadership - Program Review
- 11.30 - HS/APS Admin. Leadership - Program Review

Andover High School Programming

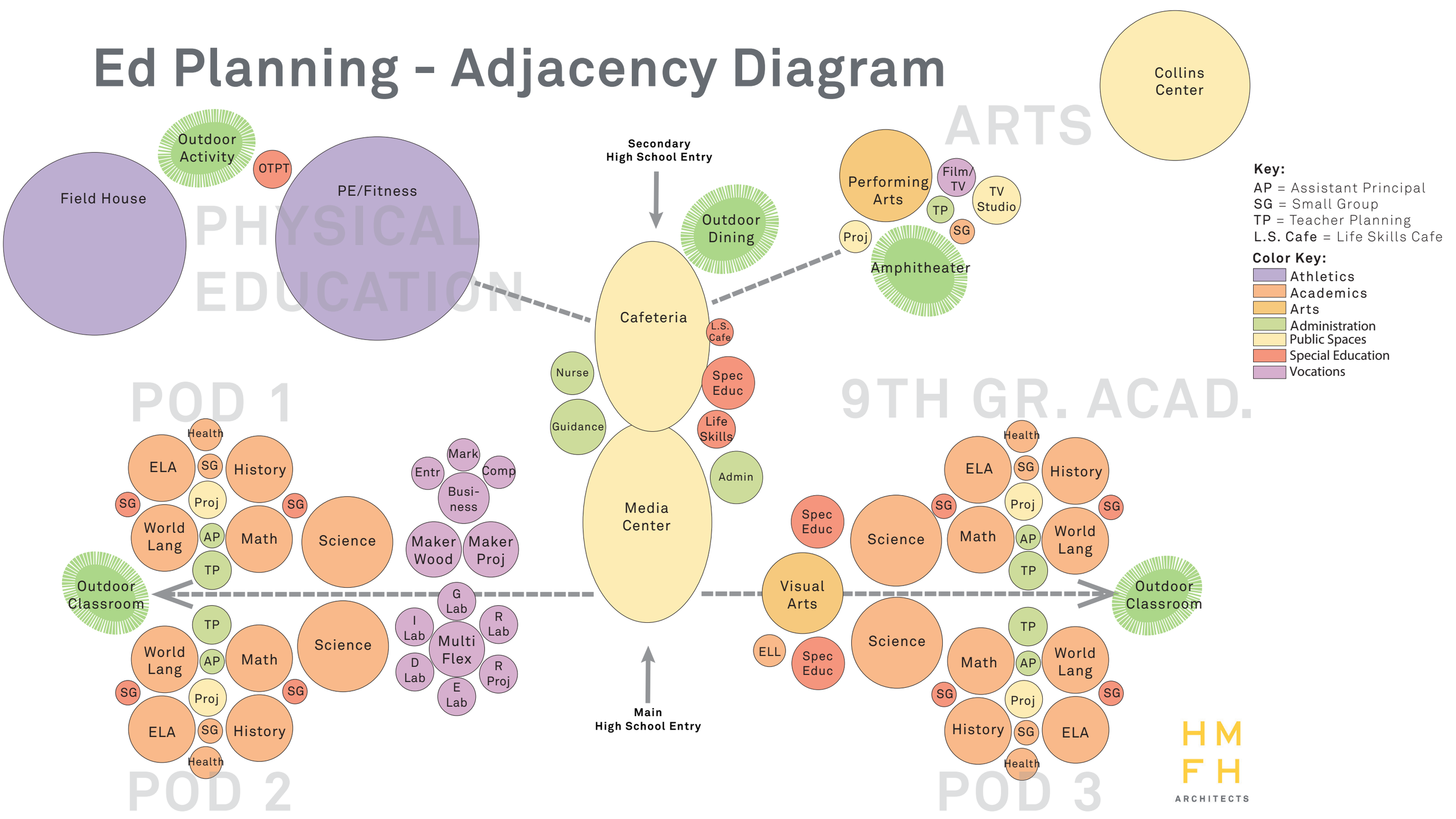
December 2022

- 12.8 - Andover TV/HS Broadcast Program & Collins Center Programming
- 12.9 - Food Service meeting
- 12.9 - HS/APS Admin. Leadership - Arlington HS Tour
- 12.13 - HS/APS Admin. Leadership - Design Approaches 1
- 12.20 - HS/APS Admin. Leadership - Programming Review - Voc. Tech.

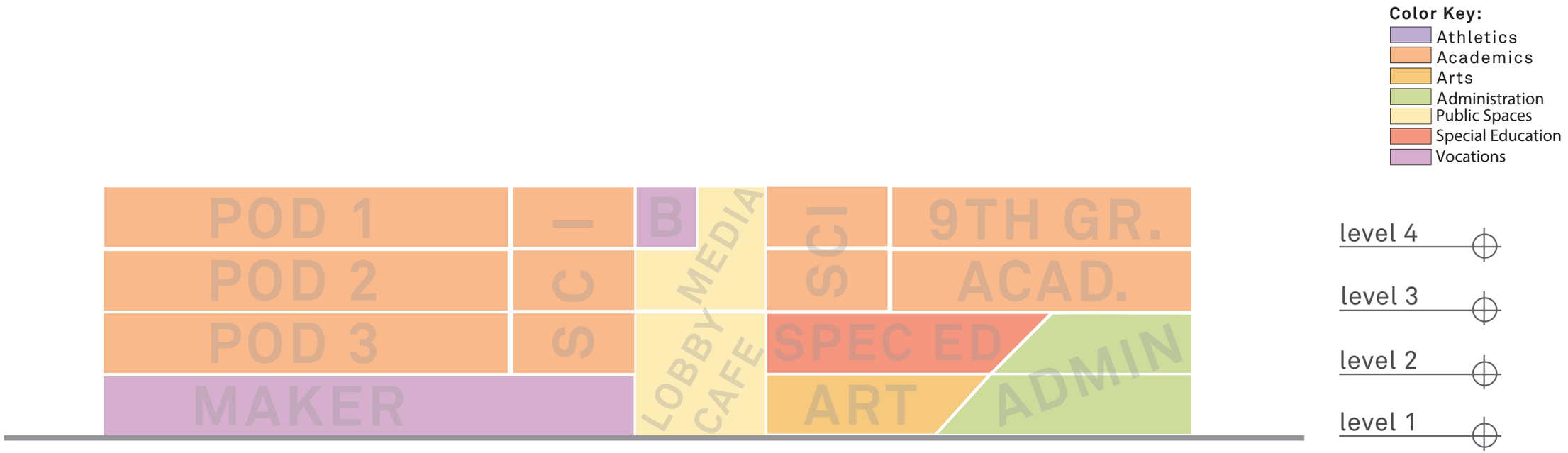
January 2023

- 1.3 - HS/APS Admin. Leadership - Programing Review
- 1.5 - HS/APS Admin. Leadership - Tour of Brookline HS
- 1.17 - HS/APS Admin. Leadership - Programing Review

Ed Planning - Adjacency Diagram



Adjacency Diagram - Sectional Concept

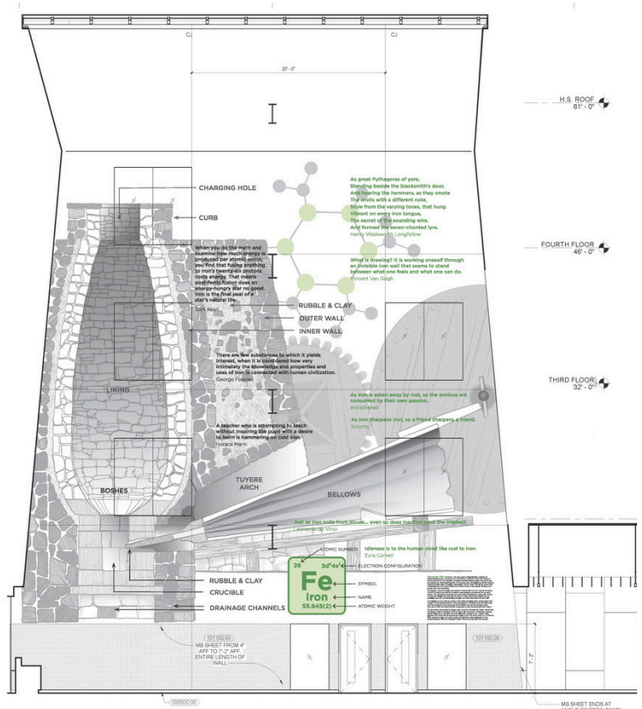


Draft Program - Net to Gross SF

ANDOVER HIGH SCHOOL	Existing	Proposed	MSBA
CORE ACADEMIC SPACES	66,375	104,270	91,830
SPECIAL EDUCATION	7,290	29,840	19,130
ART & MUSIC	10,735	19,175	9,775
CAREER & TECHNOLOGY	6,110	19,175	19,200
HEALTH & PHYSICAL EDUCATION	31,180	35,400	26,840
MEDIA CENTER	6,540	11,775	11,775
DINING & FOOD SERVICE	13,850	18,700	14,650
MEDICAL	1,350	1,720	1,510
ADMINISTRATION & GUIDANCE	6,635	8,658	6,658
CUSTODIAL & MAINTENANCE	4,878	3,800	3,050
OTHER	2,175	2,970	0
SUB-TOTAL HIGH SCHOOL (not including Collins Center CC & Field House FH)		SUB-TOTAL HIGH SCHOOL	SUB-TOTAL HIGH SCHOOL
Total Building Net Floor Area (NFA)	157,118	255,483	204,418
Total Building Gross Floor Area (GFA)[2]	250,000	408,773	306,626
Grossing factor (GFA/NFA)	1.59	1.60	1.50
COLLINS CENTER - AUDITORIUM / DRAMA - Buiding C			
Total CC Net Floor Area (NFA)	21,825	25,820	10,400
Total CC Gross Floor Area (GFA)	35,200	41,200	15,600
FIELD HOUSE - Building F			
Total FH Net Floor Area (NFA)	28,300	30,300	-
Total FH Gross Floor Area (GFA)	30,000	33,000	-
TOTAL HS + CC FH Net Floor Area (NFA)	207,243	311,603	214,818
Total Project Gross Floor Area (GFA)[2]	315,200	482,973	322,226
Grossing factor (GFA/NFA)	1.52	1.55	1.50

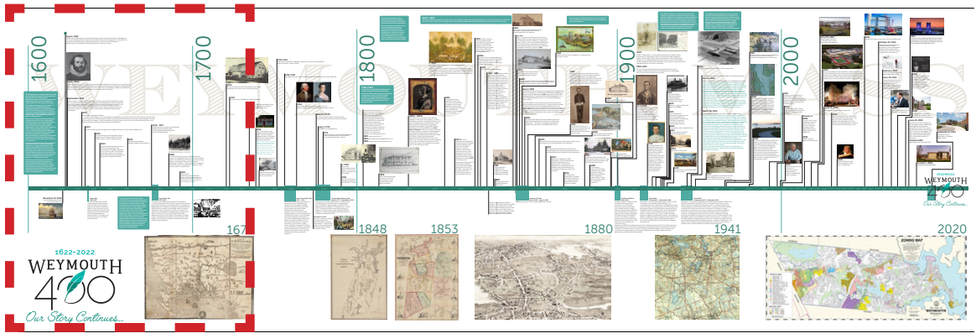
- The existing teaching space would support approximately 1400 students at current MSBA guidelines
- Current enrollment is 1709
- The Proposed area is based on the districts current and projected educational needs for 1900 students
- MSBA guideline is based on enrollment of 1900

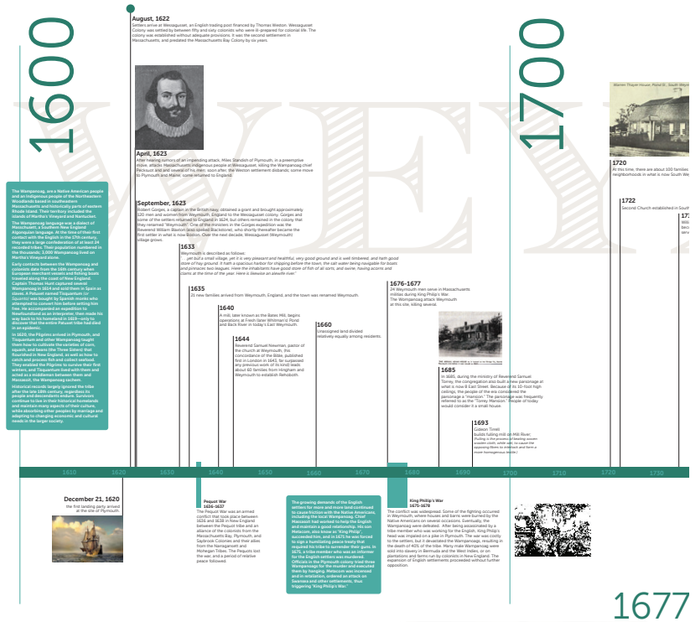
Community Graphics and Museum



Design Progress - 1.12.2023

Community Graphics and Museum





Design Progress - 1.12.2023

Sustainability goals

HEALTH & WELLBEING

GOALS

90% regularly occupied spaces have access to daylight and views

Access to fresh air in all regularly occupied spaces

STRATEGIES

Focus views on nature

Create outdoor learning spaces

Maximize occupant control (lighting, temperature, flexible furniture)

Sustainability goals

MATERIALS & EQUITABLE DESIGN

GOALS

Maximize Redlist Free Materials for touch surfaces
Inclusive and equitable design and process

STRATEGIES

Gender neutral toilet rooms
Mothers' Room for staff and teachers
Extend concept of healthy materials to landscape
Consider planting from seed
Avoid PFAS found in turf fields

Sustainability goals

WASTE & WATER

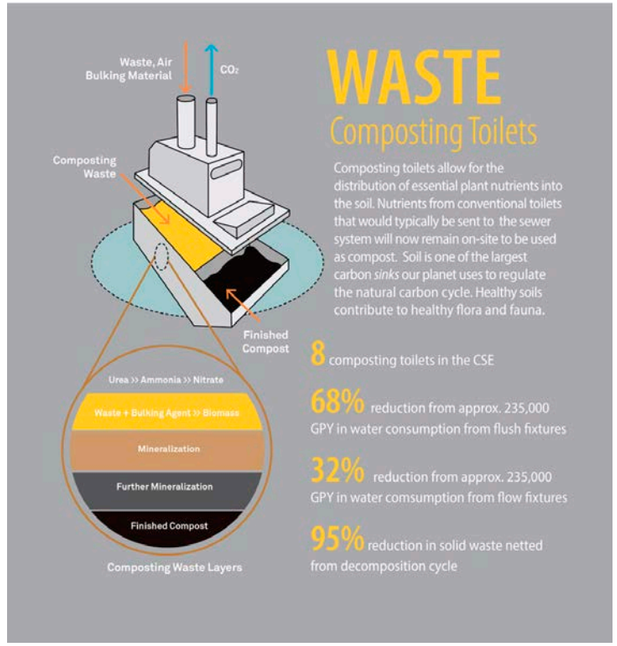
GOALS

Explore comprehensive composting program

No potable water use for irrigation

WASTE AND WATER GOALS

Rain water reuse for irrigation & to recharge the aquifer
Permeable paving
Drought tolerant planting and soil biology
Food composting
Roof gardens



Sustainability goals

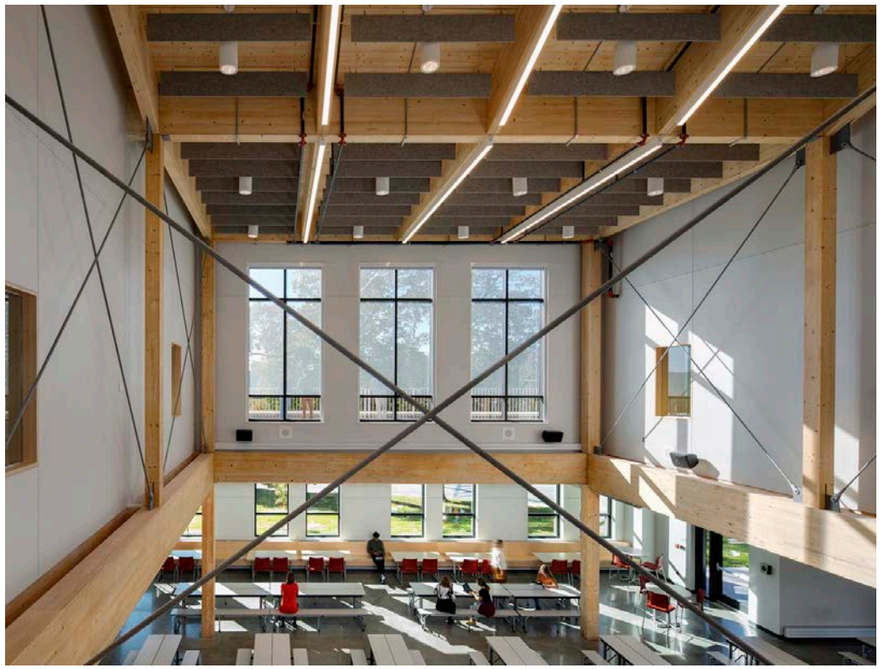
ENERGY & CARBON

GOALS

Zero energy building
Maximize incentives and grants
Measure embodied carbon at each phase
Reduce global warming potential by 5% from baseline

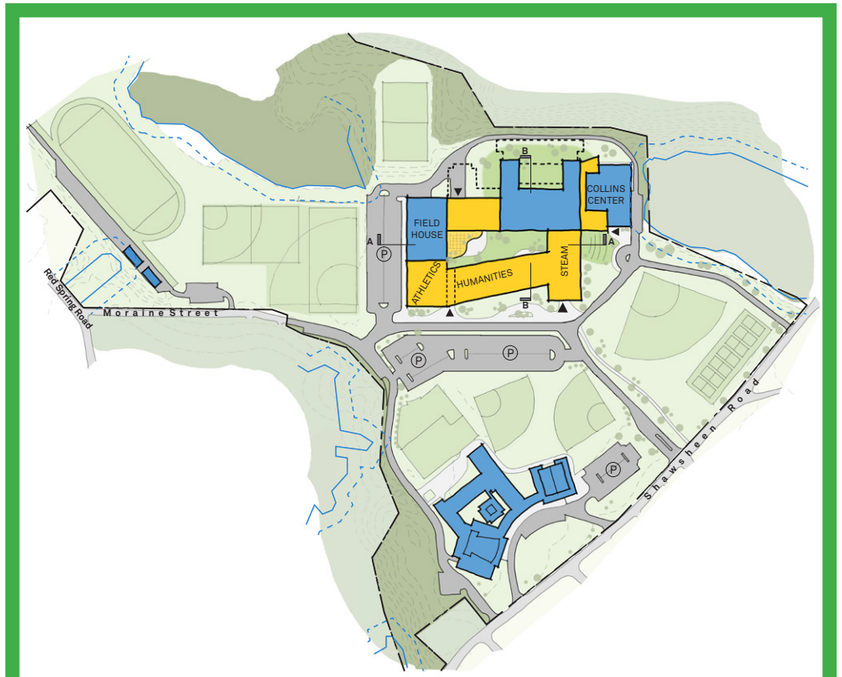
STRATEGIES

All electric building
Target EUI = 25
Geothermal loop for mechanical plant
Maximize renewable energy - solar
Consider timber structural system



Site Approaches - Additions & Renovations

Fully Attached



Courtyard

SELECTED FOR FURTHER DEVELOPMENT

Extended Wings

N

Design Progress - 1.12.2023

Site Approaches - New Construction

Campus

SELECTED FOR FURTHER DEVELOPMENT

Campus #2

SELECTED FOR FURTHER DEVELOPMENT

Campus #2 w/ New HS Auditorium

Connect to Collins Center and Field House

Connect to Collins Center

Connect to Field House

Stand-alone

SELECTED FOR FURTHER DEVELOPMENT

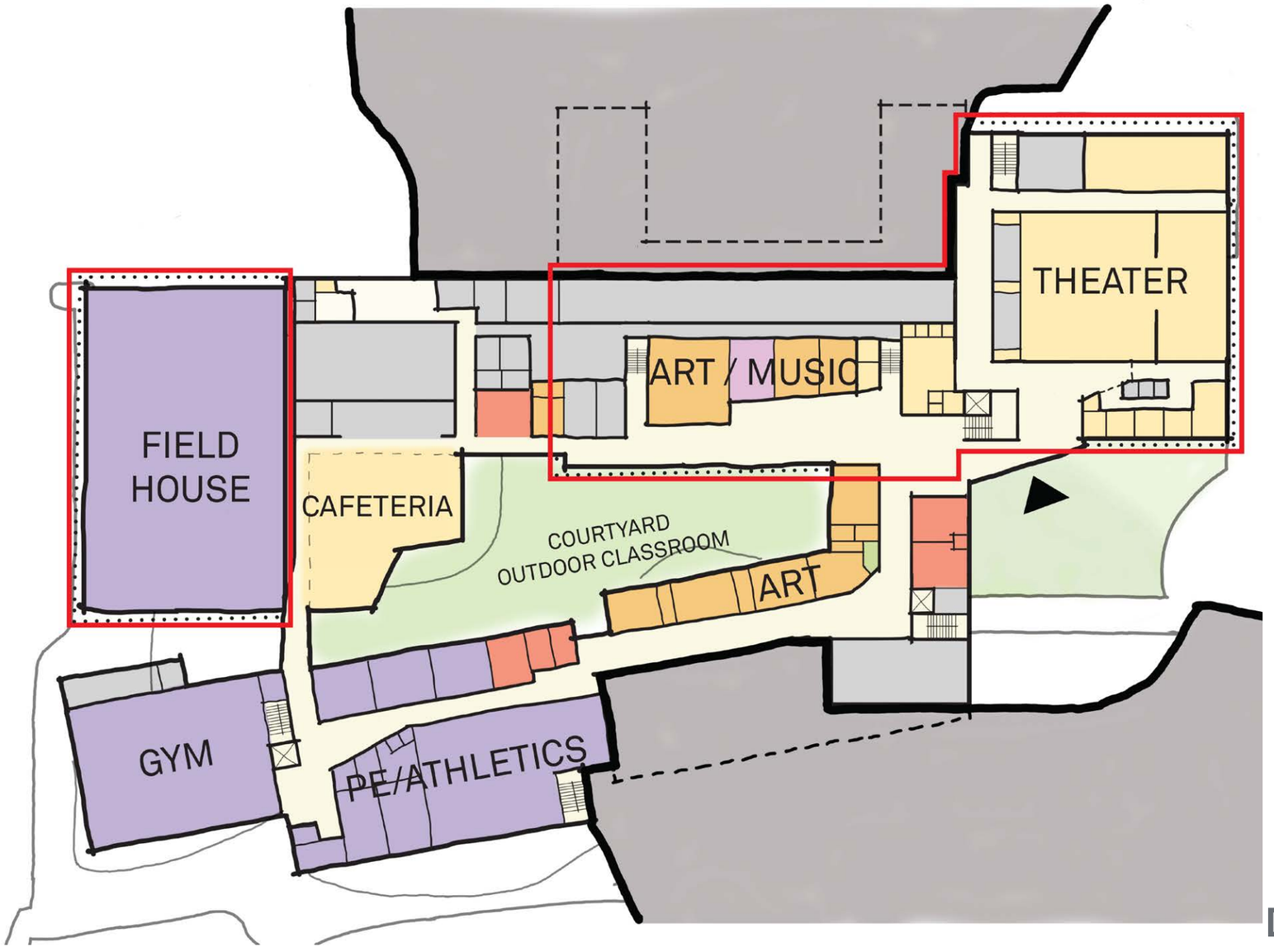
Stand-alone w/ New HS Auditorium

SELECTED FOR FURTHER DEVELOPMENT

ADD/RENO - COURTYARD - SITE PLAN

Design Progress - 1.12.2023

ADD/RENO - COURTYARD - Ground Floor



Entrance Area

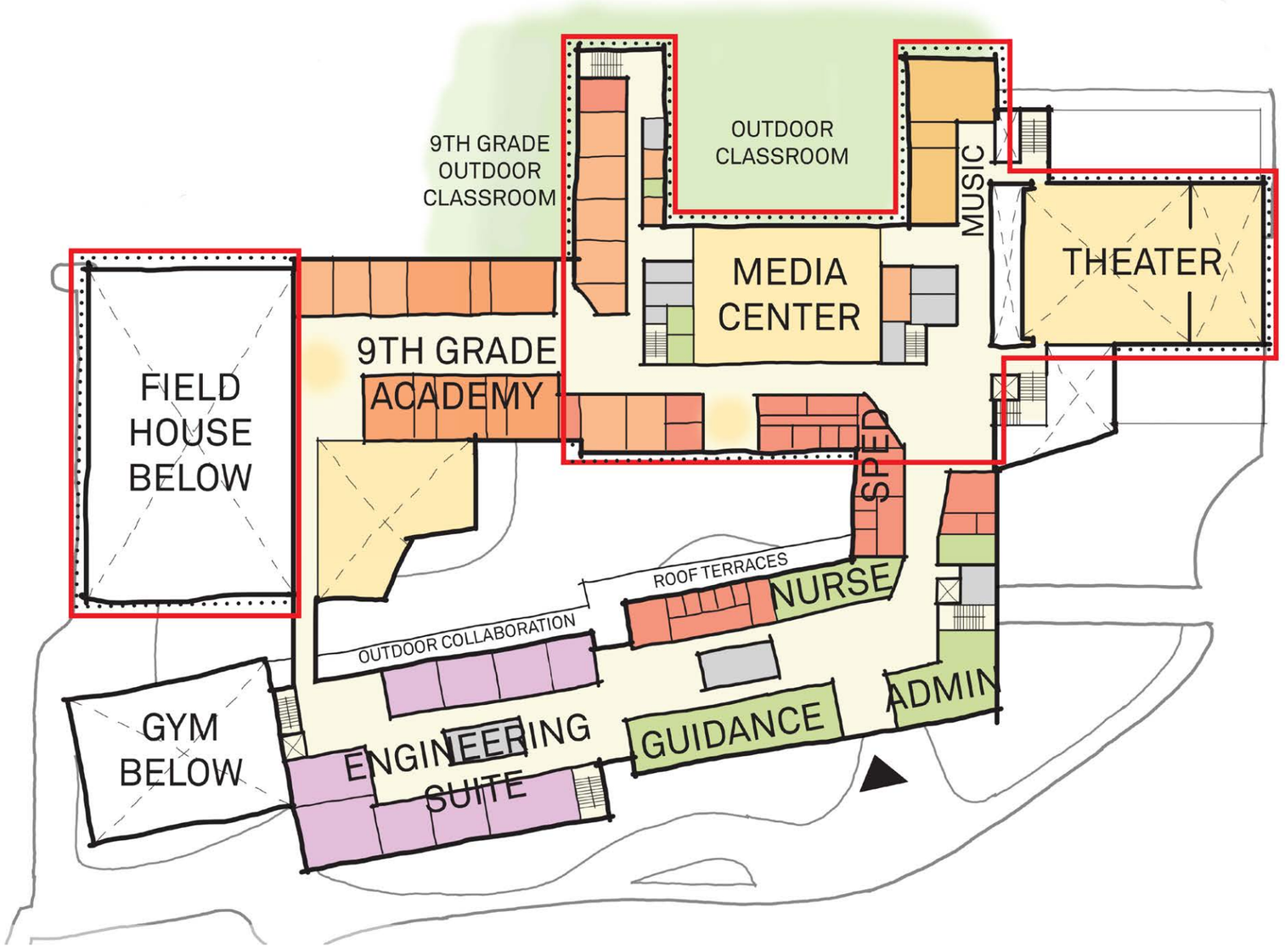
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Renovation Scope
- Ground Below Grade

N

Design Progress - 1.12.2023

ADD/RENO - COURTYARD - First Floor



Entrance Area

Color Key:

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- Special Education
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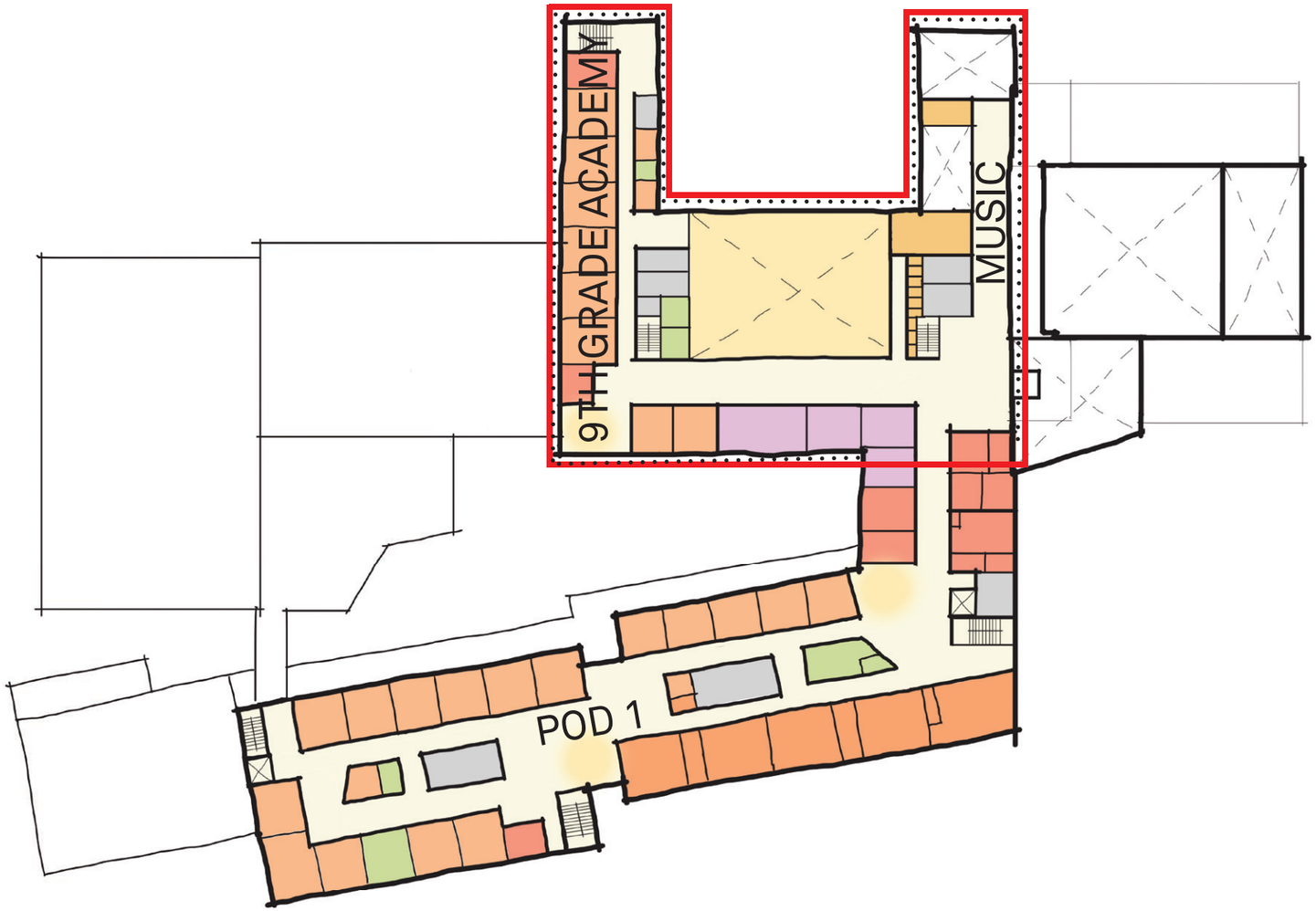
- Support Spaces
- Renovated Facade
- Renovation Scope
- Ground Below Grade

N

Design Progress - 1.12.2023

ADD/RENO - COURTYARD - Second Floor



Color Key:

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- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Renovation Scope
- Ground Below Grade

N

Design Progress - 1.12.2023

ADD/RENO - COURTYARD - Third Floor

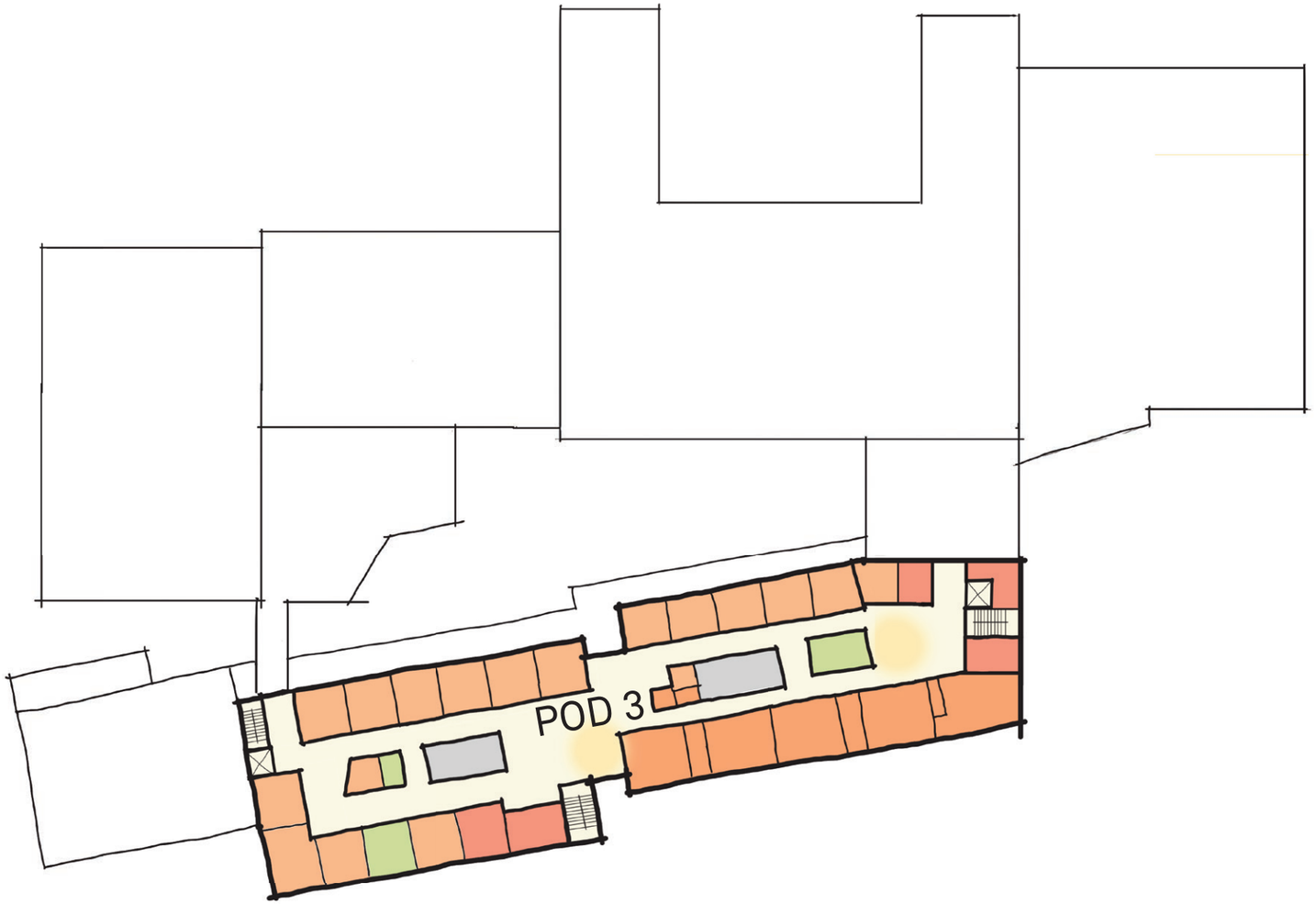
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Renovation Scope
- Ground Below Grade

N

Design Progress - 1.12.2023

ADD/RENO - COURTYARD - Fourth Floor



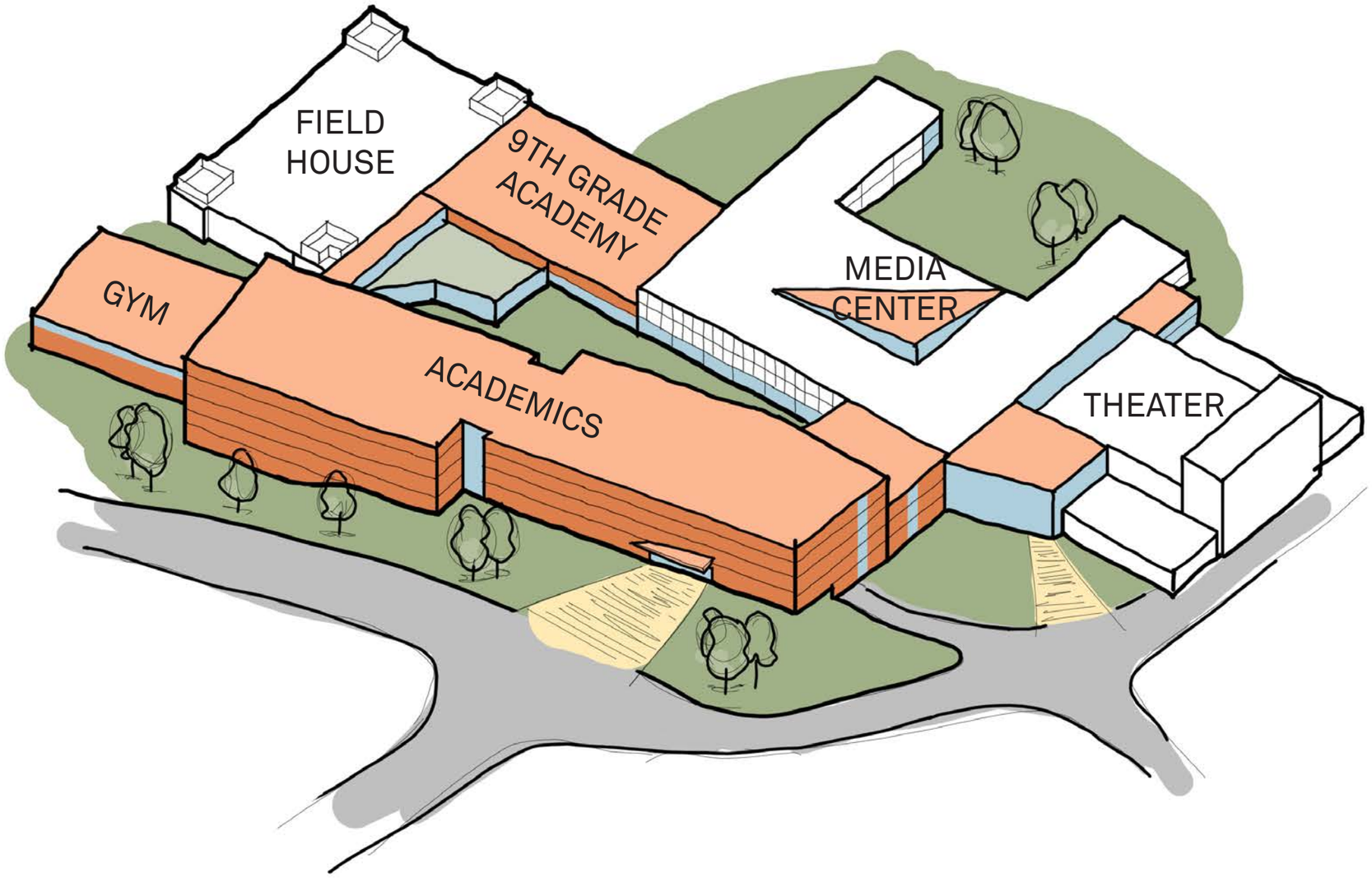
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Renovation Scope
- Ground Below Grade

N

Design Progress - 1.12.2023

ADD/RENO - COURTYARD



NEW- CAMPUS 2 - SITE PLAN

Key

- Existing Building
- New Building
- Entrance Area
- P Parking

Design Progress - 1.12.2023

NEW- CAMPUS 2 - Ground Floor

Entrance Area

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 - First Floor

Entrance Area

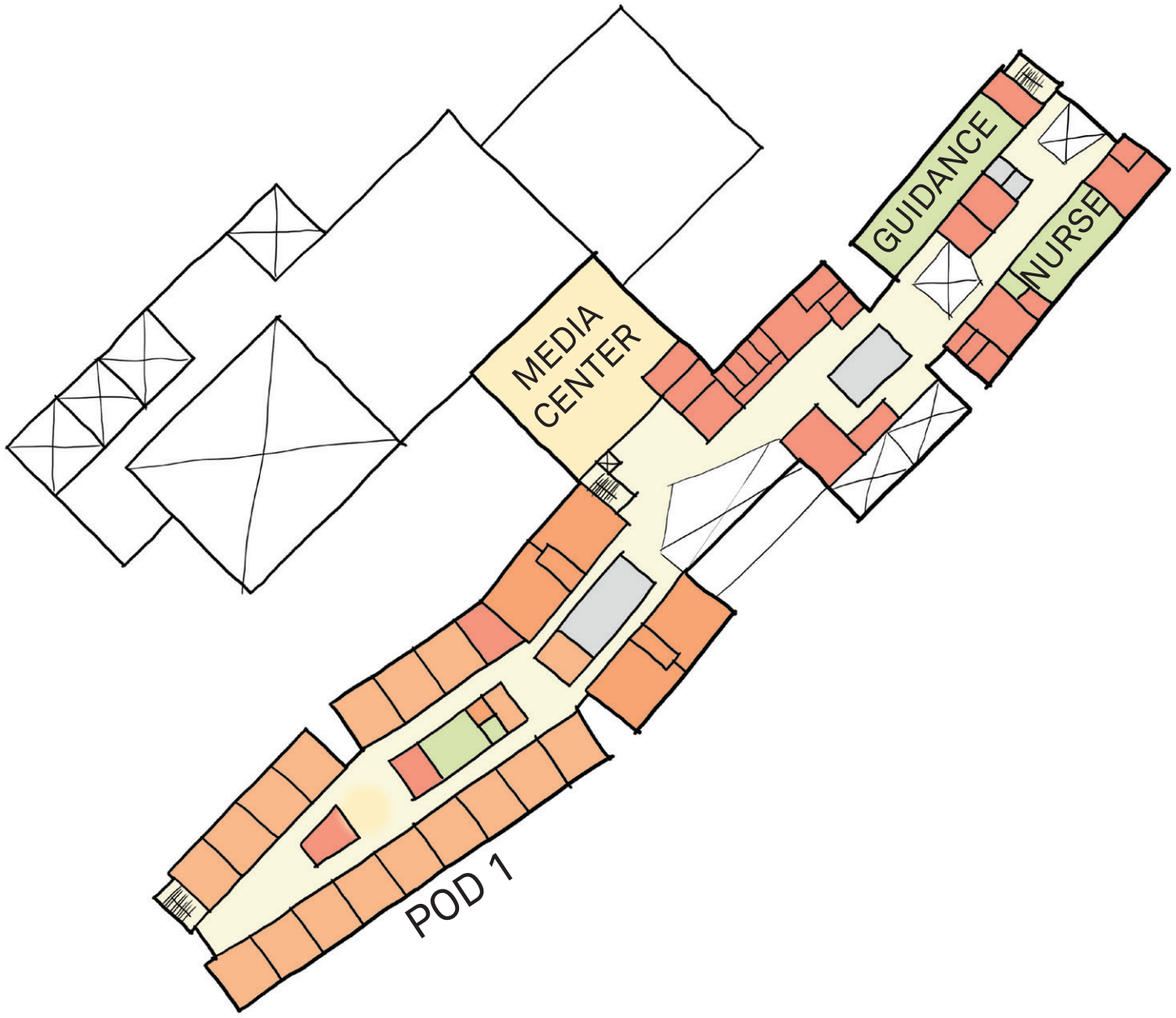
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 - Second Floor



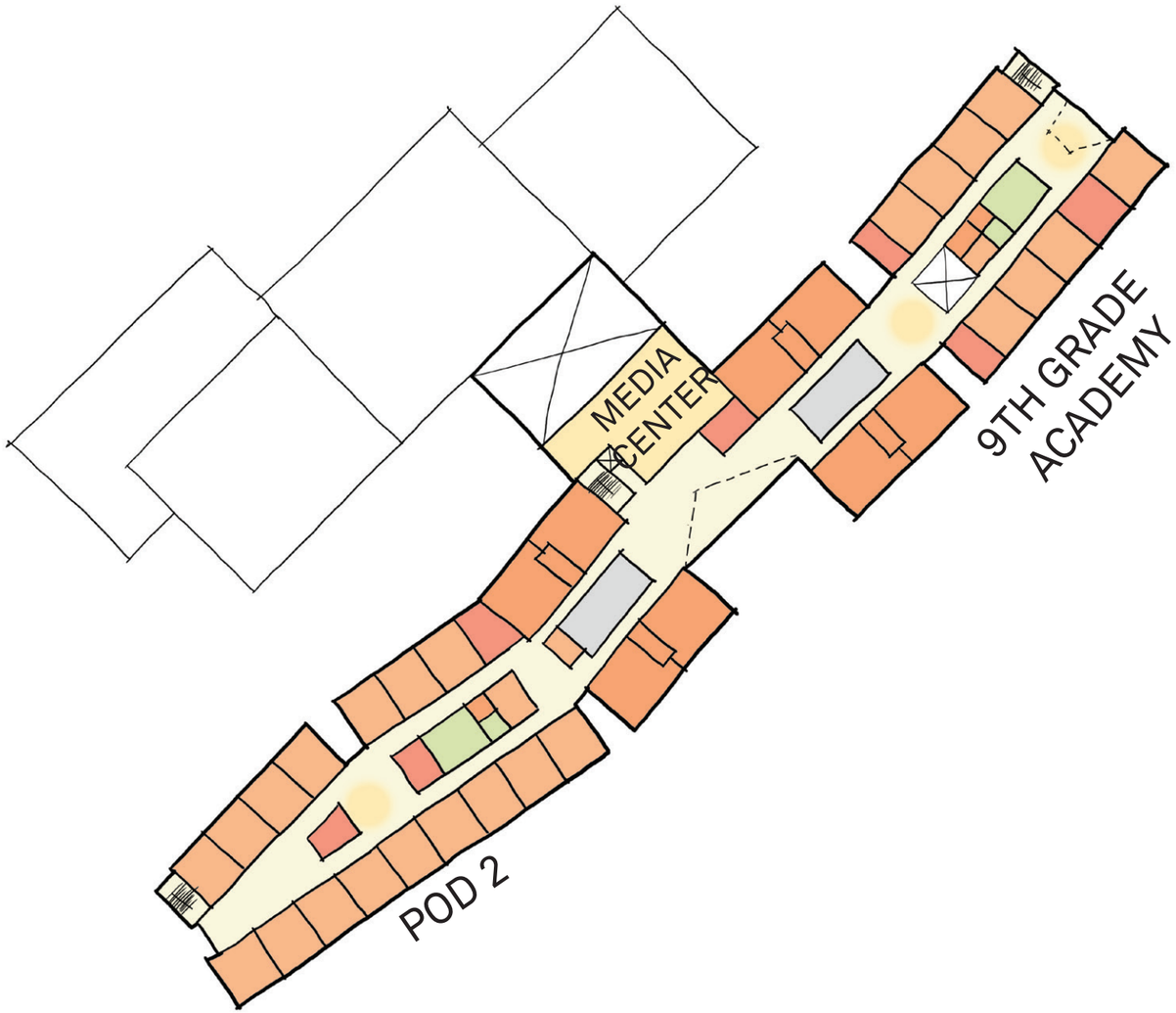
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 - Third Floor



Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 - Fourth Floor

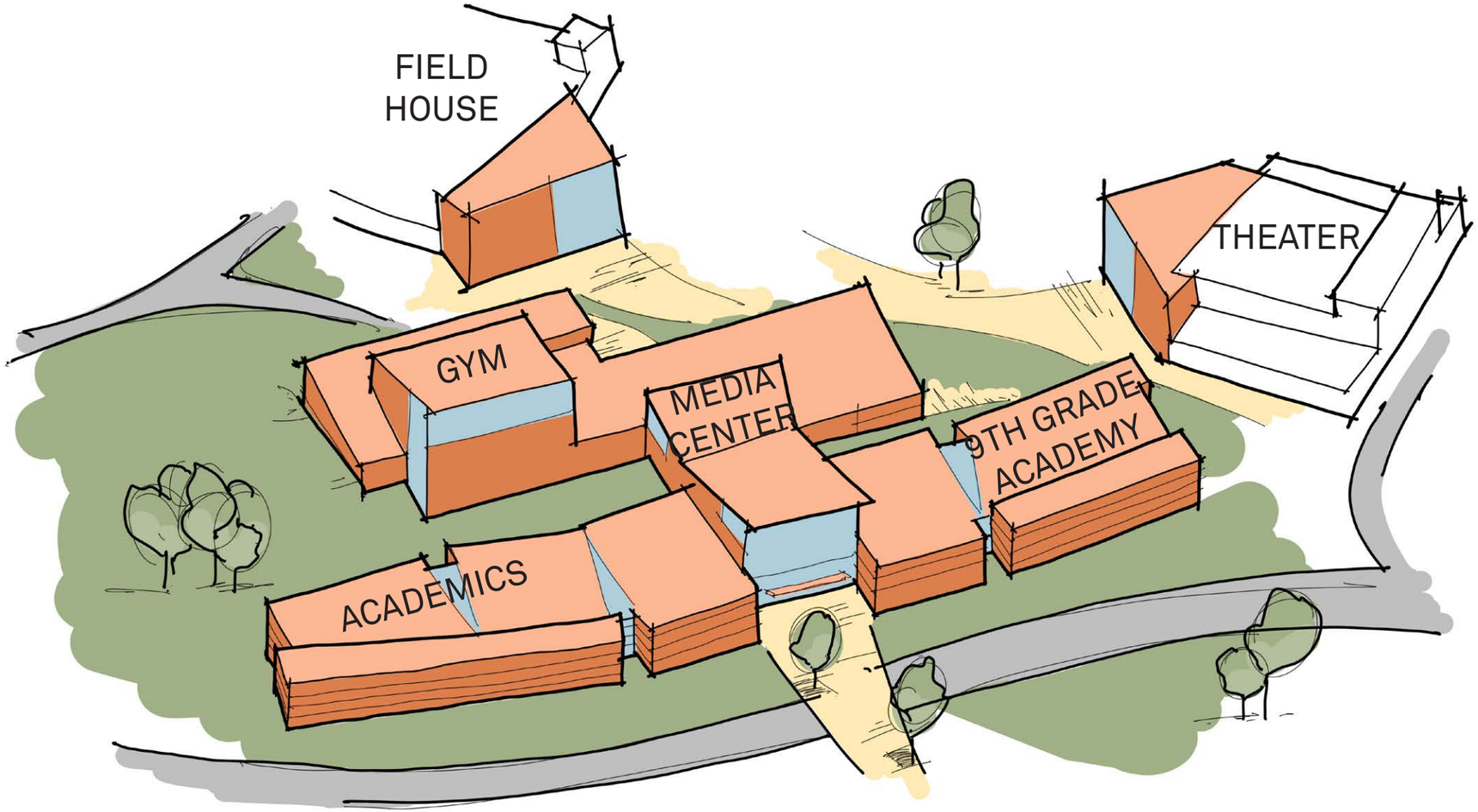
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

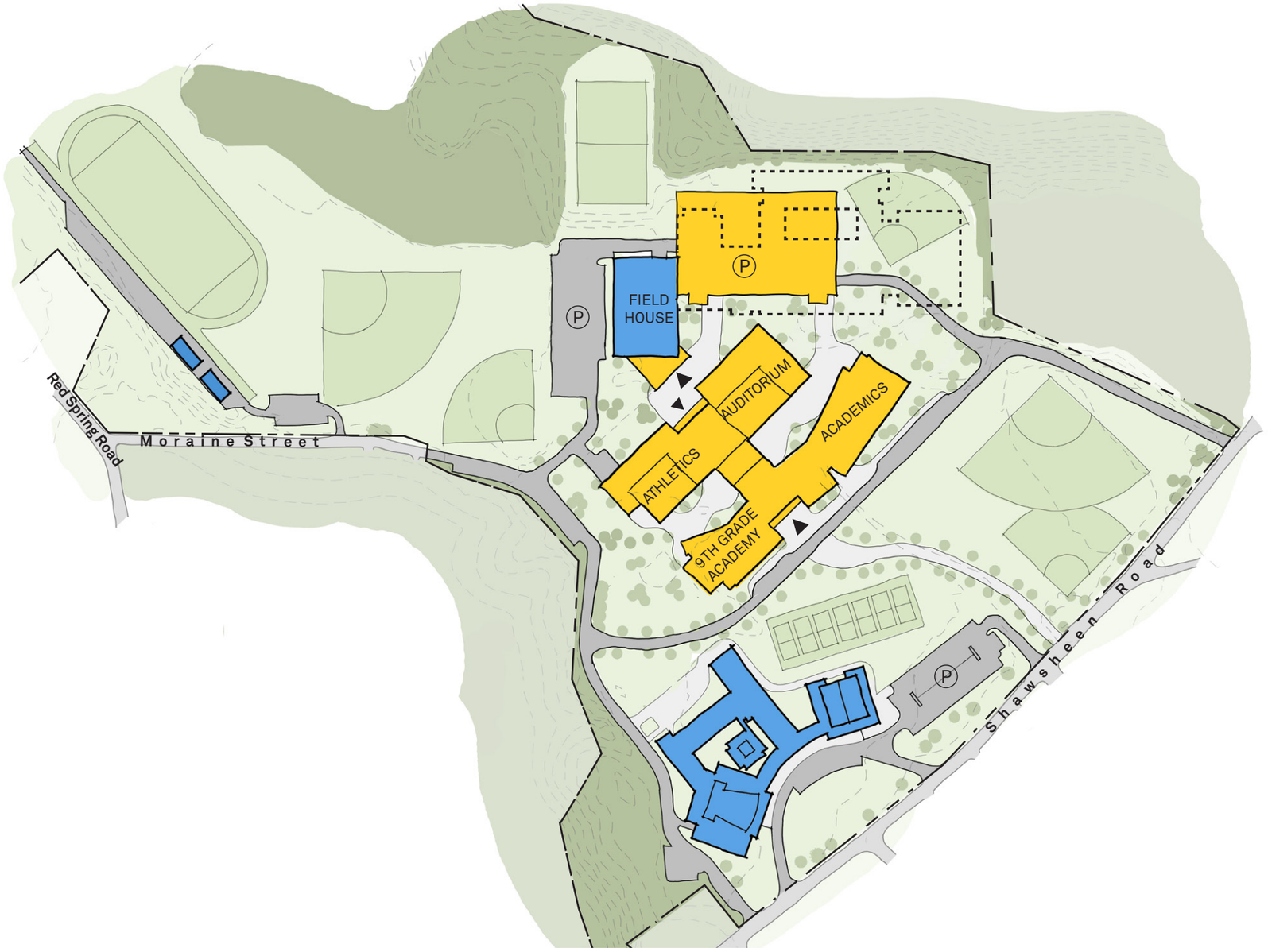
NEW- CAMPUS 2


FIELD
HOUSE
GYM
MEDIA
CENTER
9TH GRADE
ACADEMY
THEATER
ACADEMICS

NEW- CAMPUS 2 + THEATER - SITE PLAN

PMA Consultants

HMFH ARCHITECTS

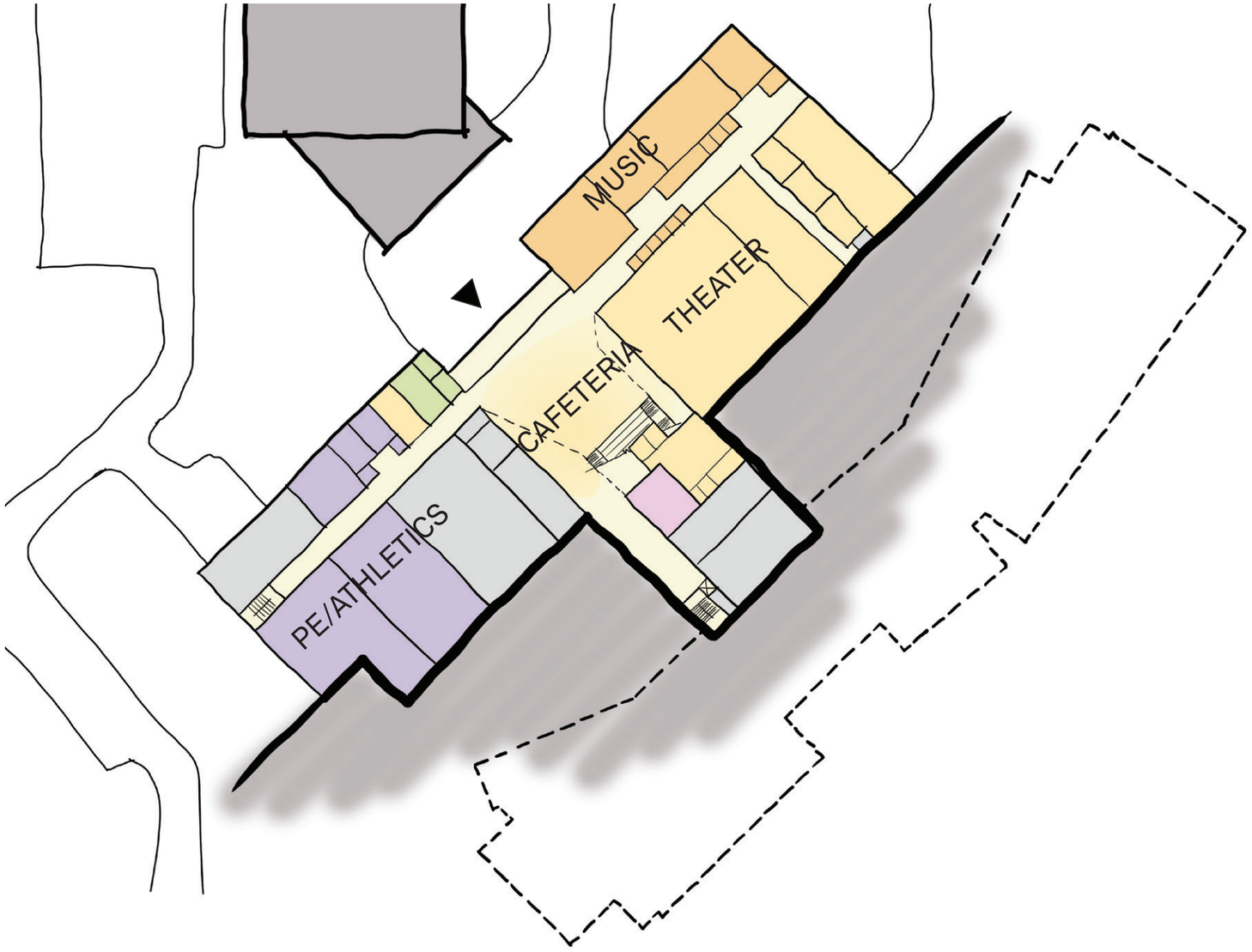


Key

- Existing Building
- New Building
- Entrance Area
- Parking

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER - Ground Floor



Entrance Area

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER - First Floor

Entrance Area

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER - Second Floor

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER - Third Floor

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER - Fourth Floor

Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
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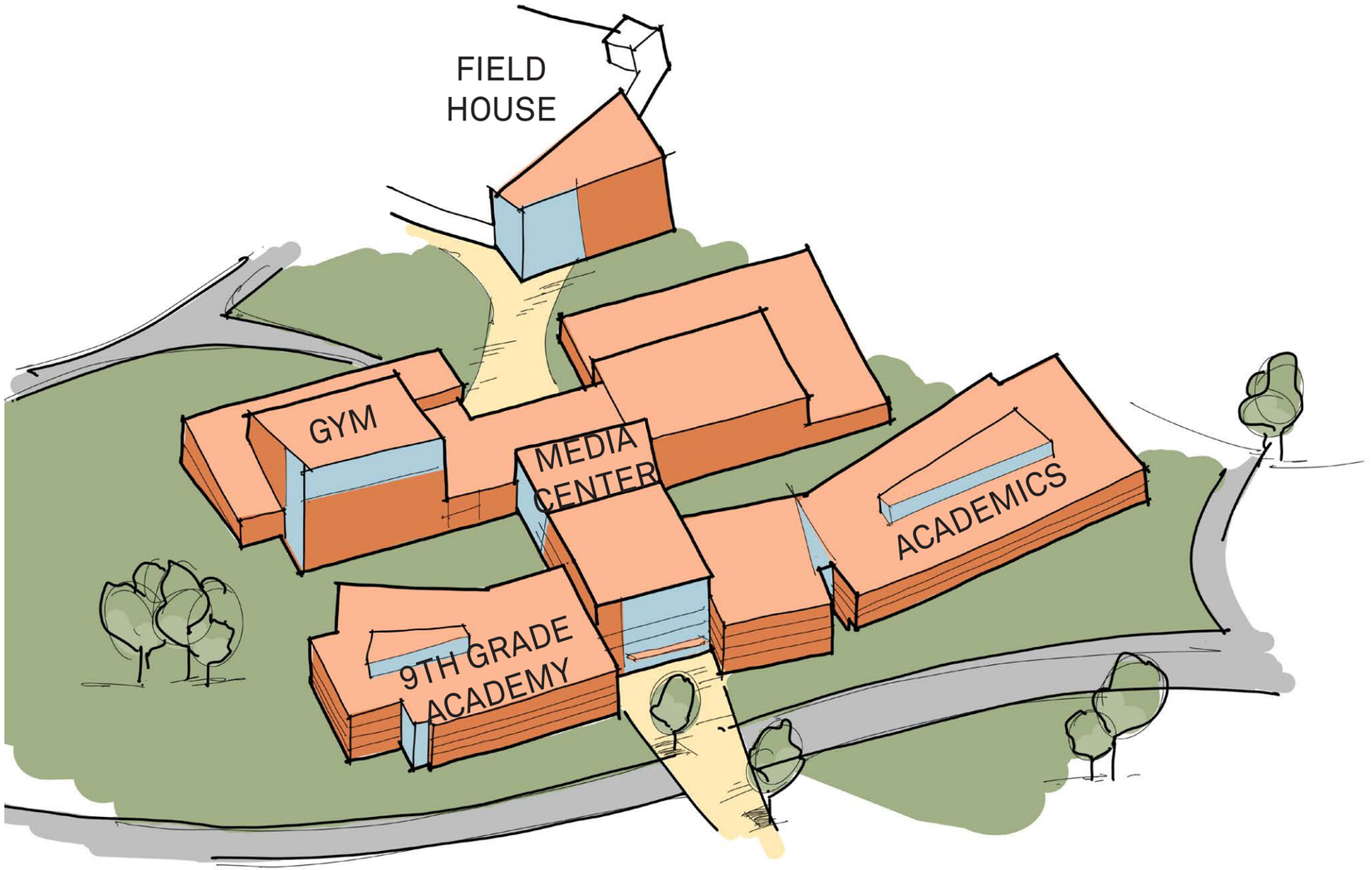
N

Design Progress - 1.12.2023

NEW- CAMPUS 2 + THEATER



NEW- STAND-ALONE - SITE PLAN

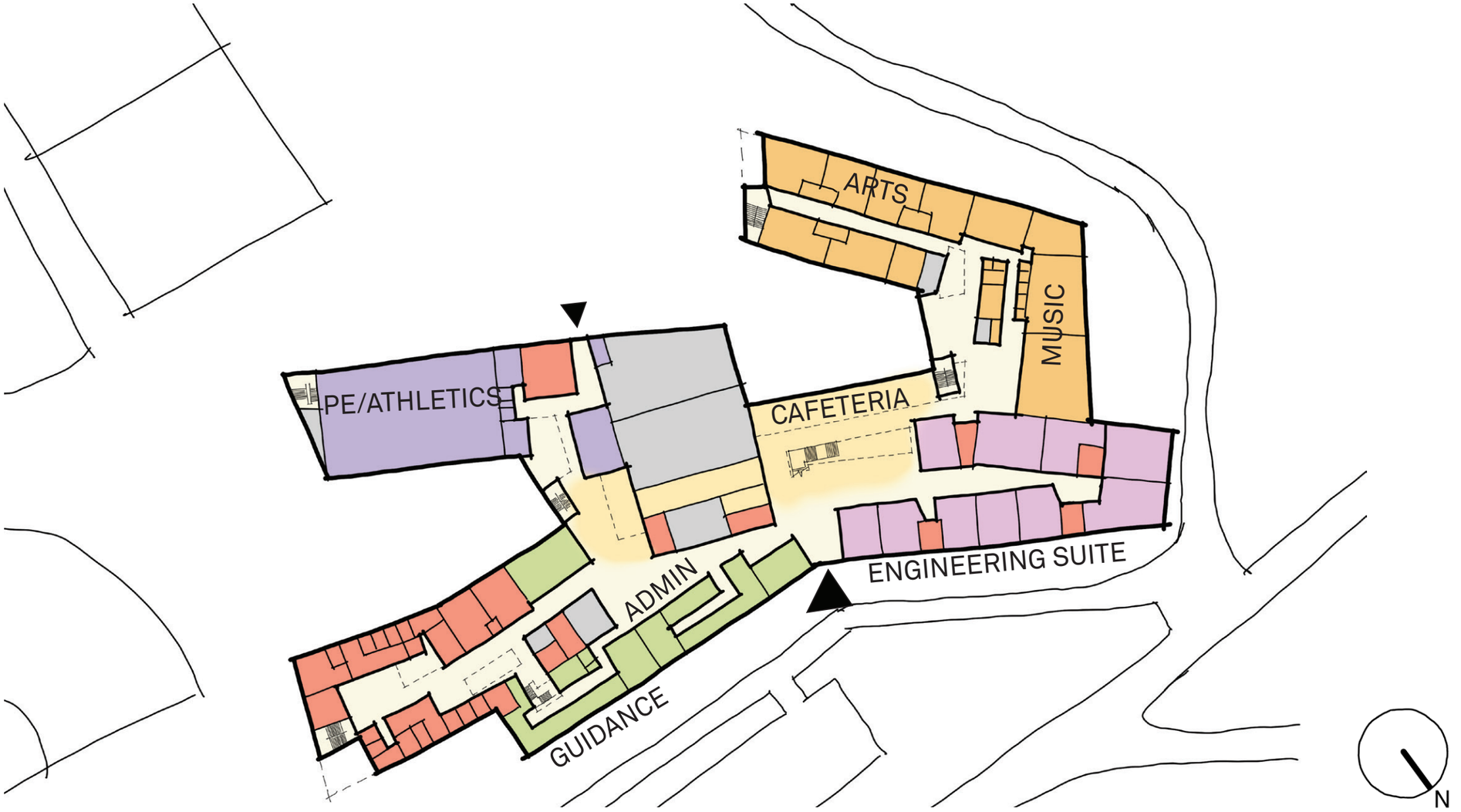
Key

- Existing Building
- New Building
- Entrance Area
- P Parking

N

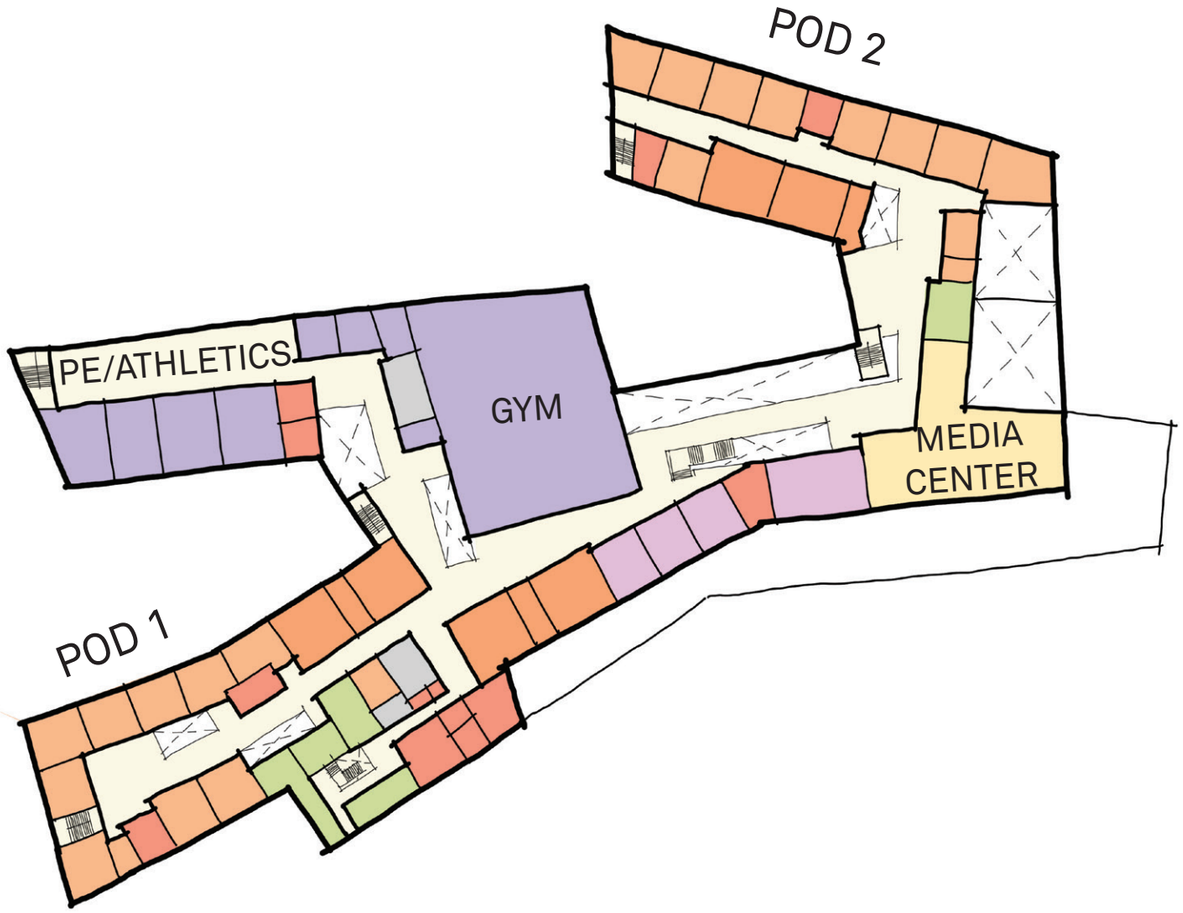
Design Progress - 1.12.2023

NEW- STAND-ALONE - First Floor



Design Progress - 1.12.2023

NEW- STAND-ALONE- Second Floor



Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- STAND-ALONE - Third Floor

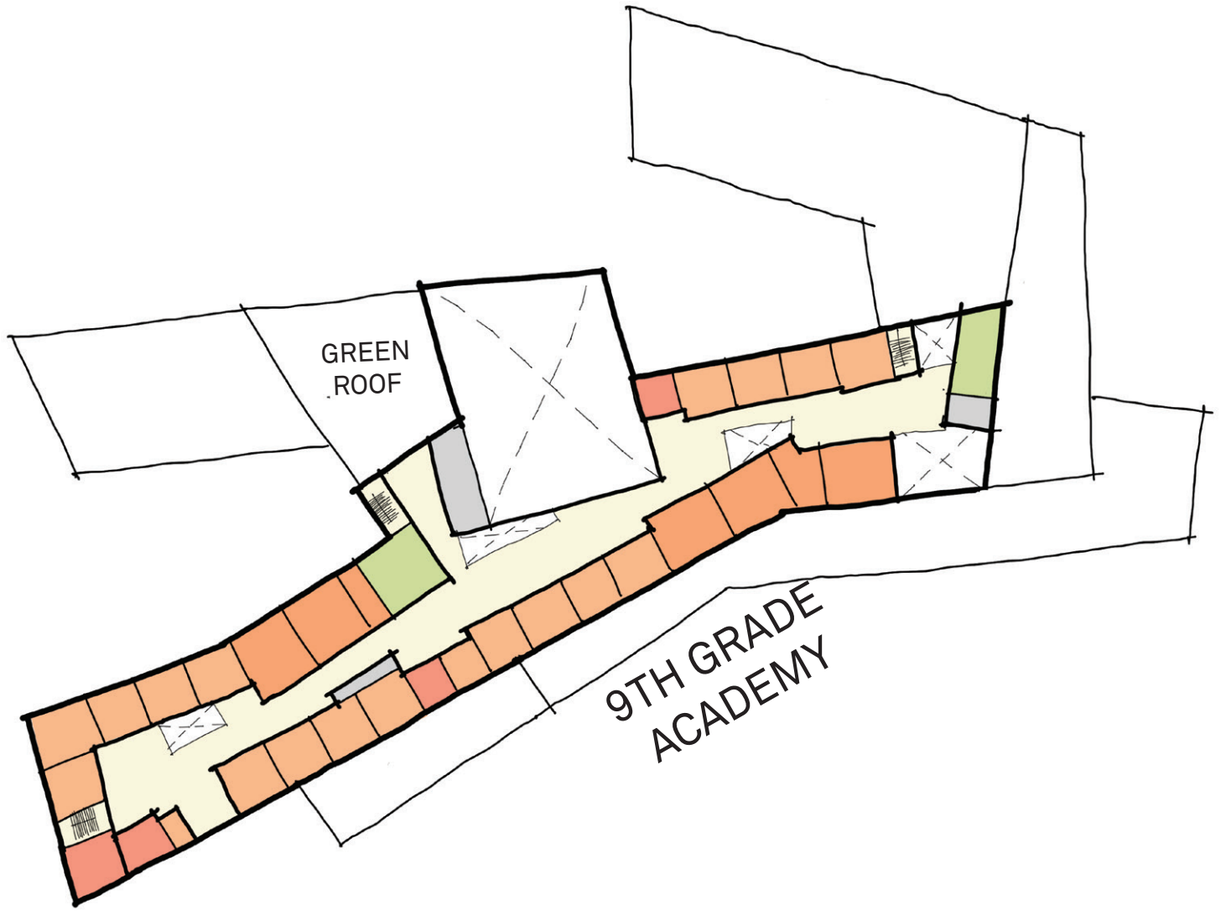
Color Key:

- Athletics
- Academics
- Arts
- Administration
- Public Spaces
- Special Education
- Vocations
- Support Spaces
- Renovated Facade
- Ground Below Grade

N

Design Progress - 1.12.2023

NEW- STAND-ALONE - Fourth Floor



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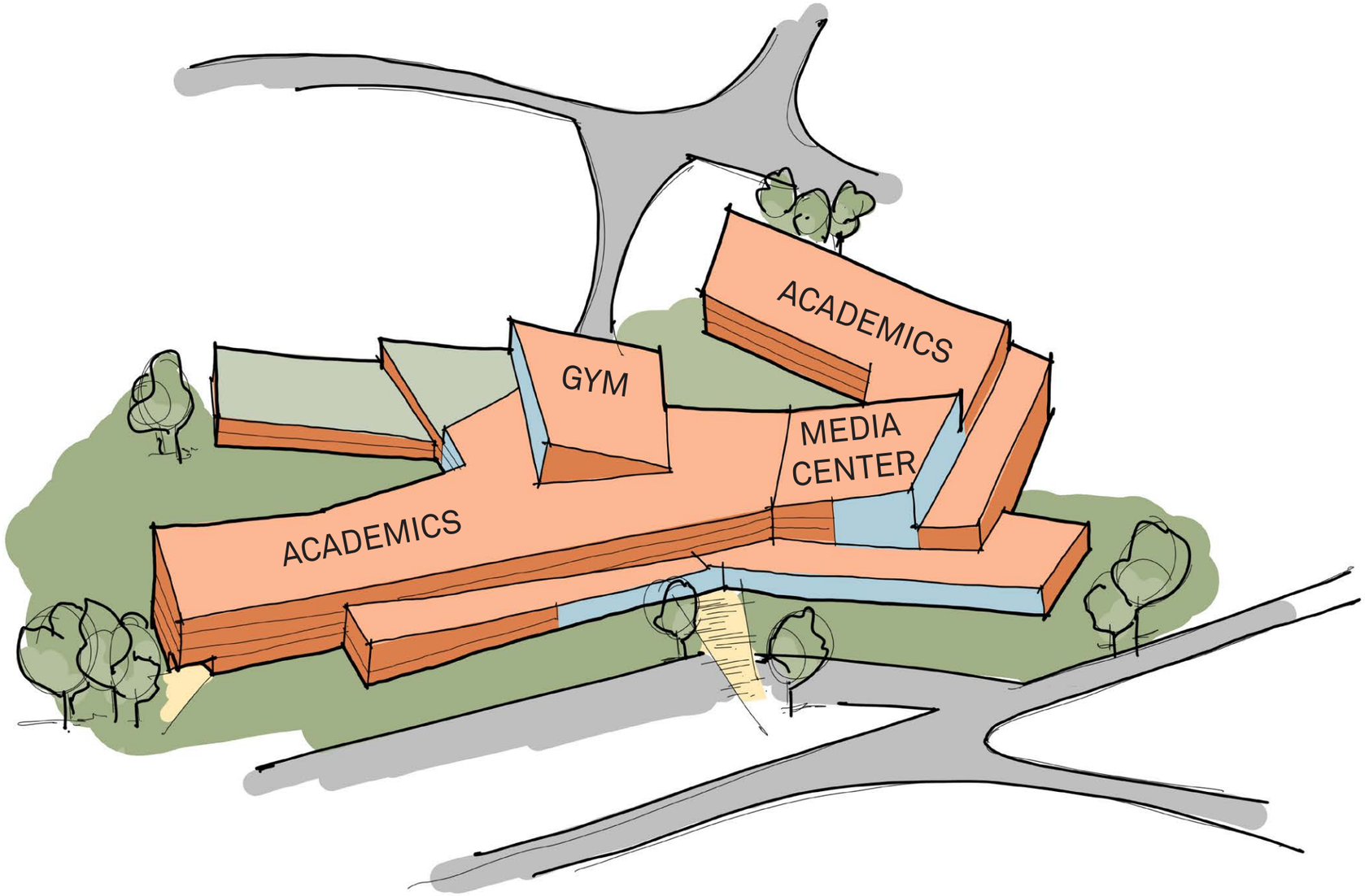
N

Design Progress - 1.12.2023

NEW- STAND-ALONE



NEW- STAND-ALONE + THEATER- SITE PLAN

Key

Existing Building

New Building

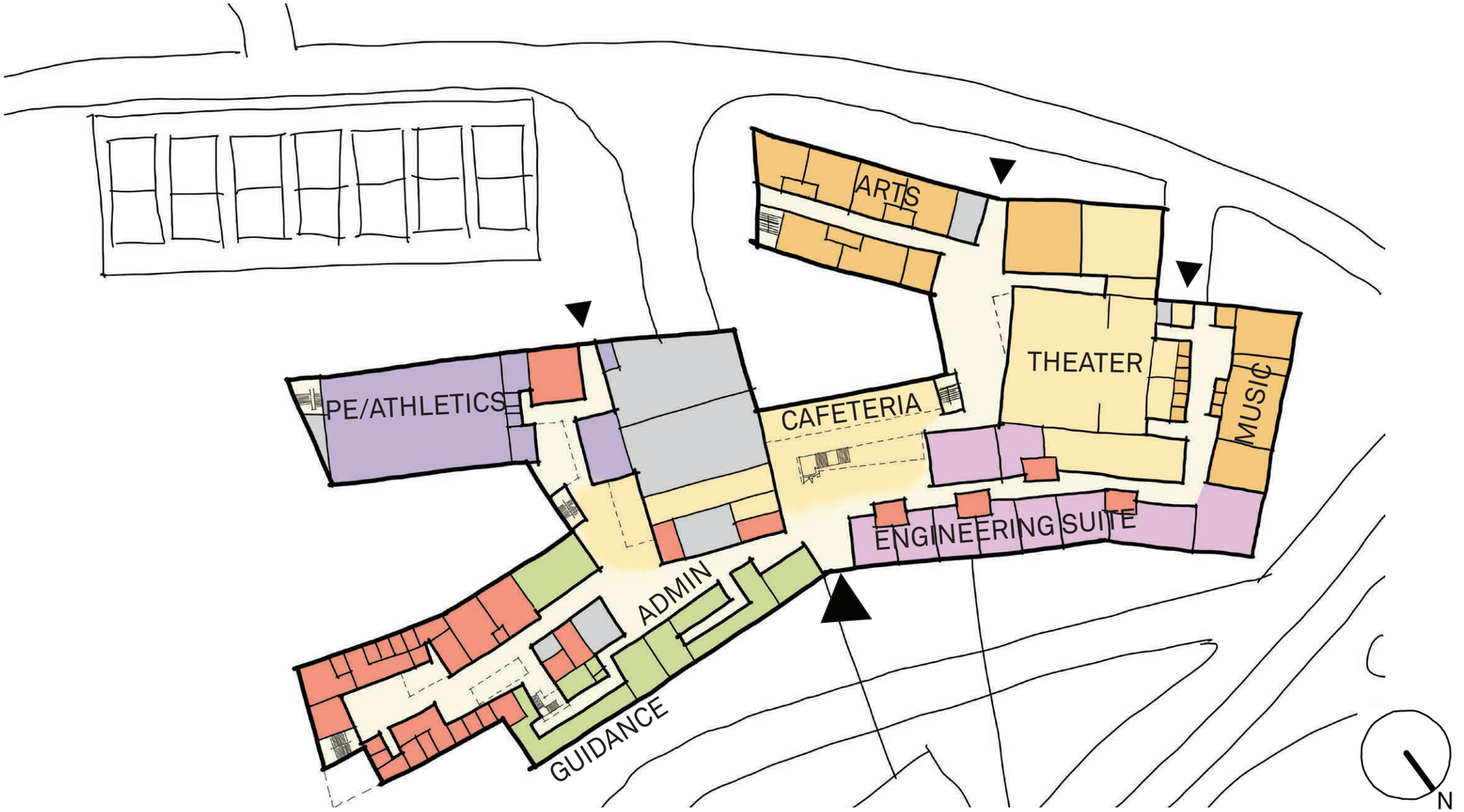
Entrance Area

Parking

N

Design Progress - 1.12.2023

NEW- STAND-ALONE + THEATER - First Floor



Entrance Area

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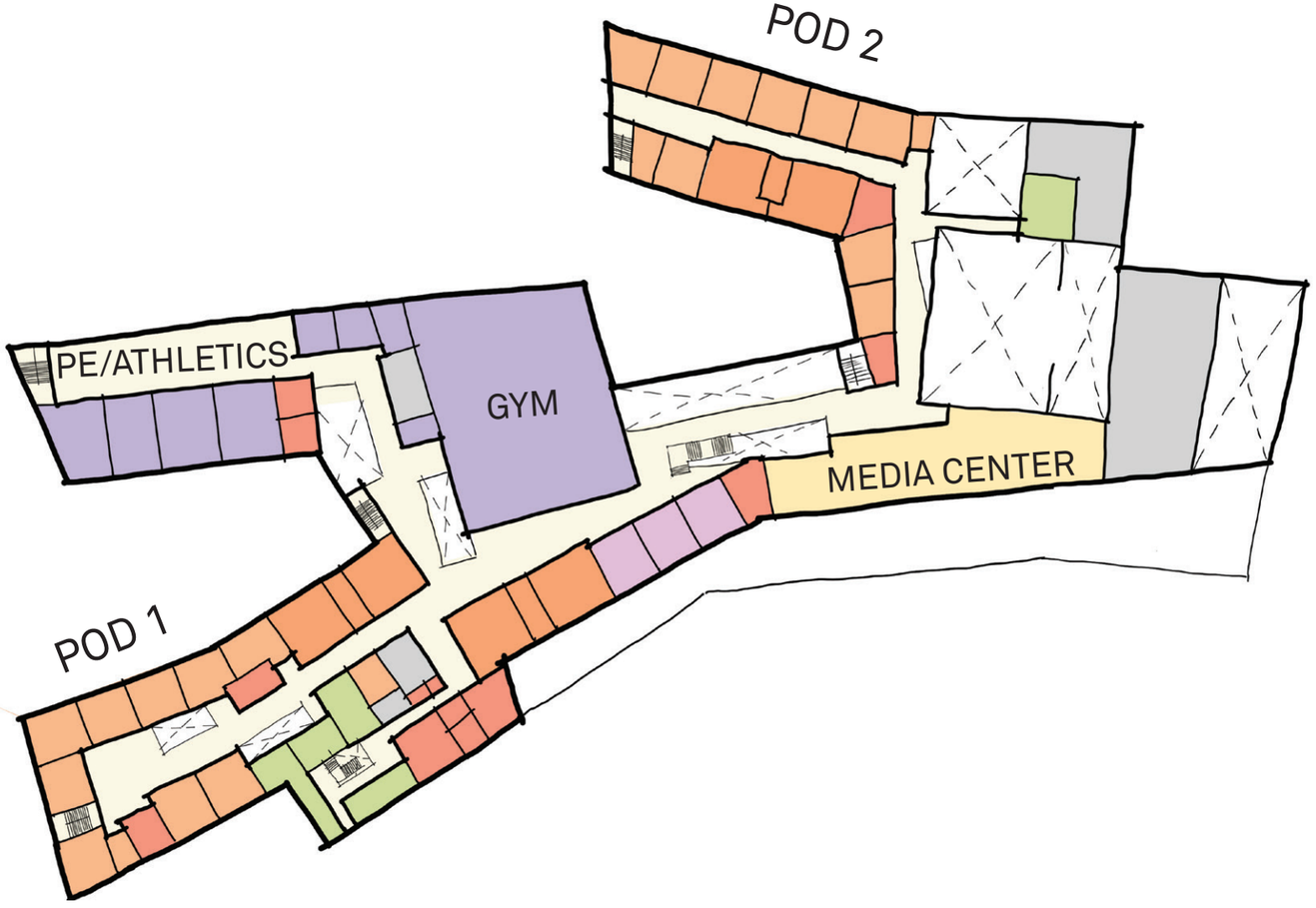
Design Progress - 1.12.2023

NEW- STAND-ALONE + THEATER- Second Floor



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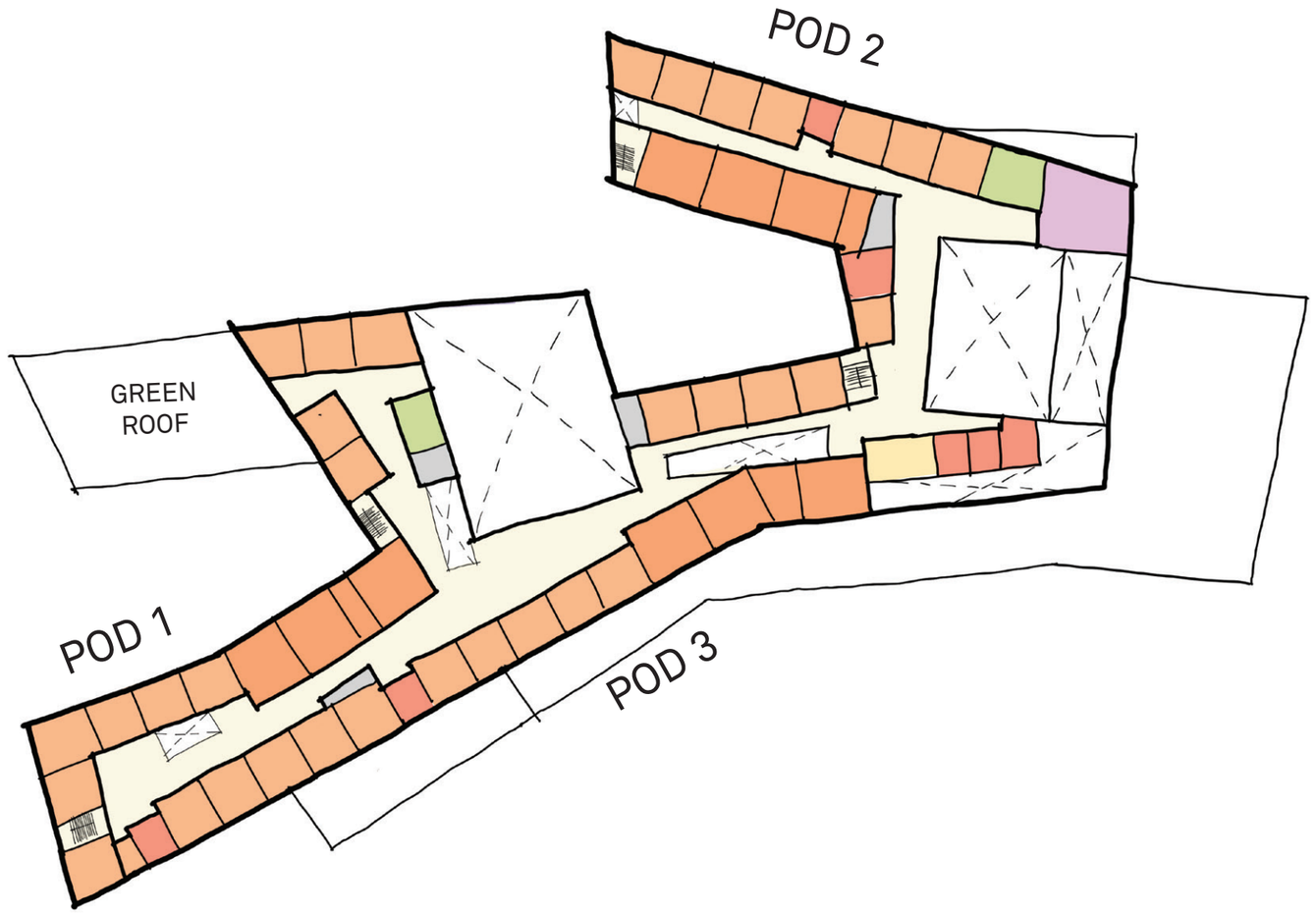
Design Progress - 1.12.2023

NEW- STAND-ALONE + THEATER - Third Floor



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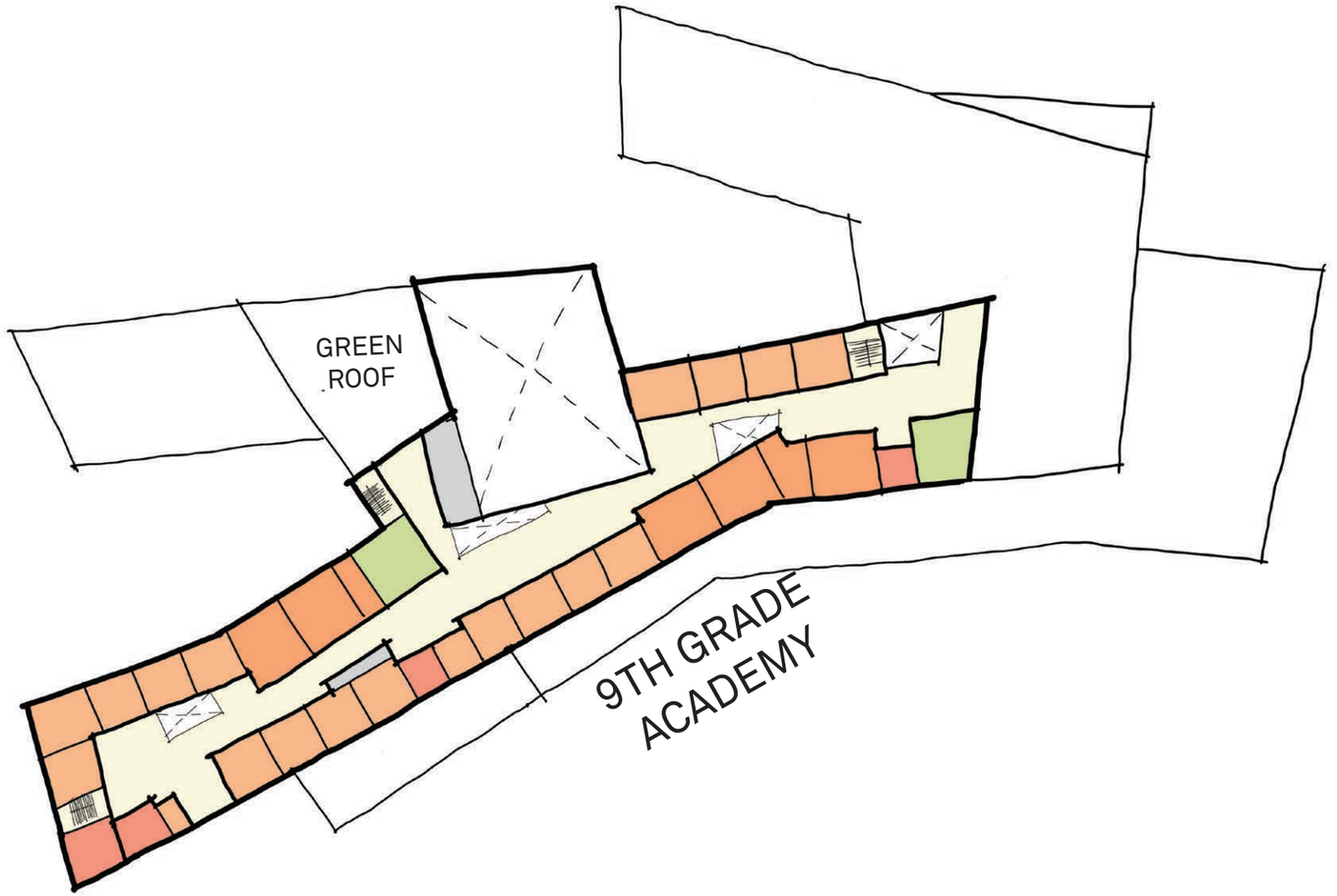
Design Progress - 1.12.2023

NEW- STAND-ALONE + THEATER - Fourth Floor



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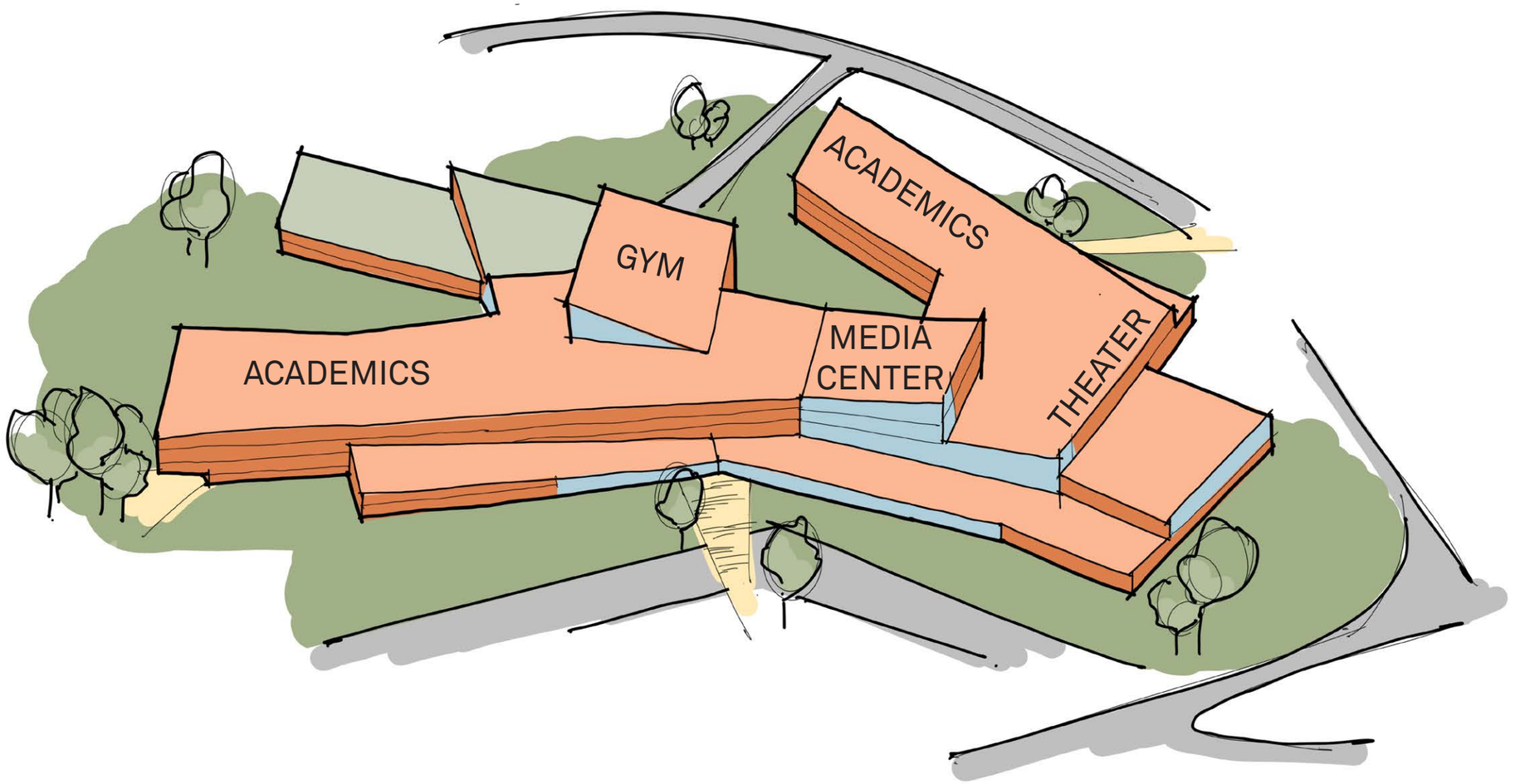
Design Progress - 1.12.2023

NEW- STAND-ALONE + THEATER



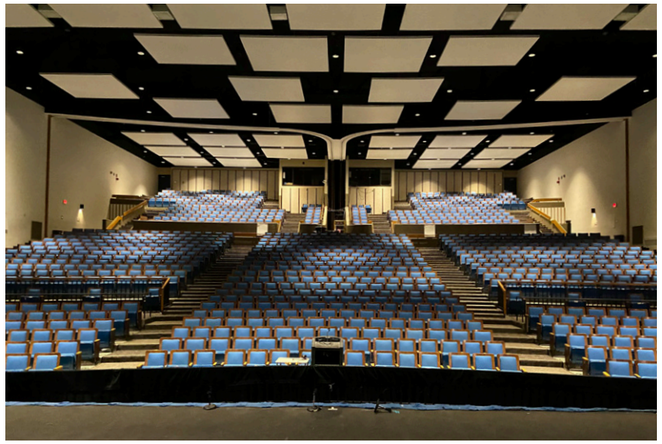
Estimated Comparative Schedules - Draft

Add/Reno: Courtyard	Mo.	Tot.	Ed Impact
Phase 1: Build new in front	24	24	
Phase 2: Replace Entry Reno FH, and A building (partial)	18	42	
Phase 3: Reno A building, add to connect to CC	14	56	
Phase 4: Reno CC	4	60	
Phase 5: Site	10	70	

New: Campus 2	Mo.	Tot.	Ed Impact
Phase 1: Build new school building	30	30	
Phase 2: Demo & Abate, Reno and Add to FH & CC	18	48	
Phase 3: Site	10	58	

Phasing details and durations are approximate, and will be reviewed and refined by the Construction Manager when they are engage by the town.

Why consider a new Theater



Collins Center

Built in 1983, and partial renovation 1995, and exterior partial renovation 2017

38,930 square feet, 3+ levels, and 1200 seats

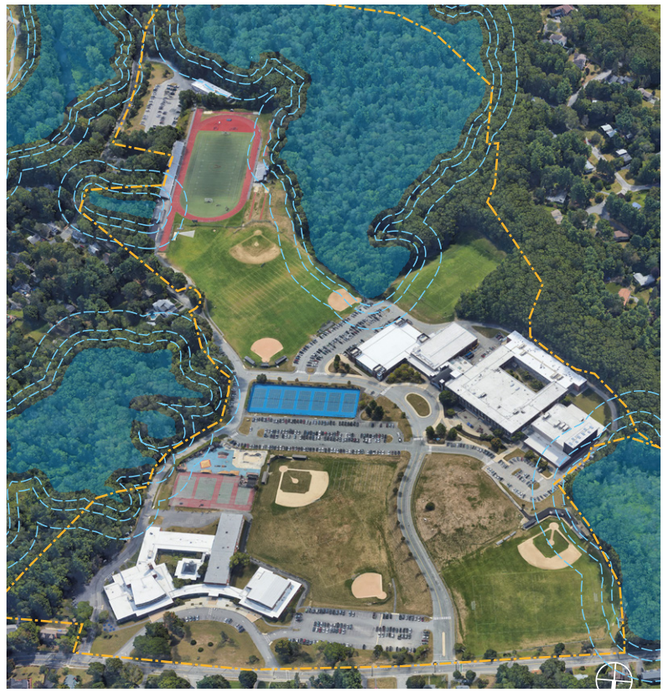
Site

- Built within wetland setback, flooding impacts the orchestra pit, and location constricts opportunities for development
- Entrance, access and parking is restricted

Facility Needs

- Extensive upgrades to mechanical HVAC systems to improve air-quality, energy efficiency, and acoustics; upgrade fire protection sprinklers
- Improve house seating egress and access through the 2nd Floor of AHS
- Fully renovate control rooms and follow-spot positions
- New theater equipment; sound system, lighting, acoustic performance shells, orchestra pit access and platforms, assistive listening system, and rigging
- Improve interior and exterior accessibility at the front-of-house and back-of-house spaces, circulation and security

Why consider a Parking Structure?



- Frees up space on site for additional program elements
- Provides potential opportunity for additional solar panel coverage.
- Provides covered parking for staff
- Value to community / optimizing site layout

Parking Approaches

- 500 parking spaces - structured = ~ **1 acres**
- 500 parking spaces - surface = **~ 4 acre**
- **3 acres saved is approximately equal to (1) Varsity Baseball Field**

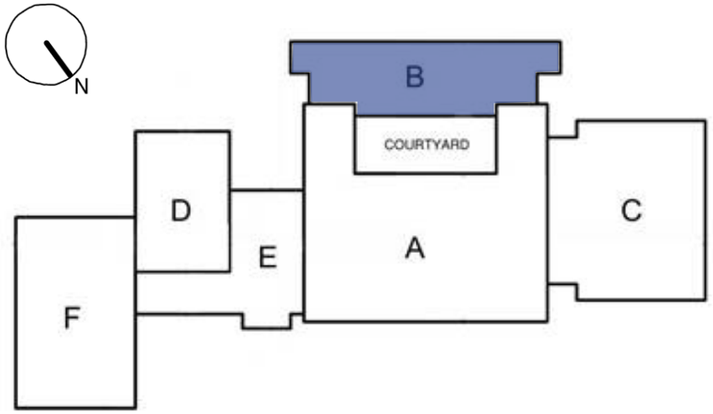
Existing Site

Property at **87 acres**

- Wetlands at 23 acres and Setbacks at 6 acres **~ 29 acres**
- HS and MS Facilities **~ 8 acres**
- Athletic Facilities **~ 24 acres** (inc. space around fields)
- Surface Parking **~ 5.8 acres**
- Hill/Ledge ~ **2.3 acres**

Remaining area (inc. access and roadways) **~ 17.9 acres**

Why remove the Science Wing (built last 1995)



Site

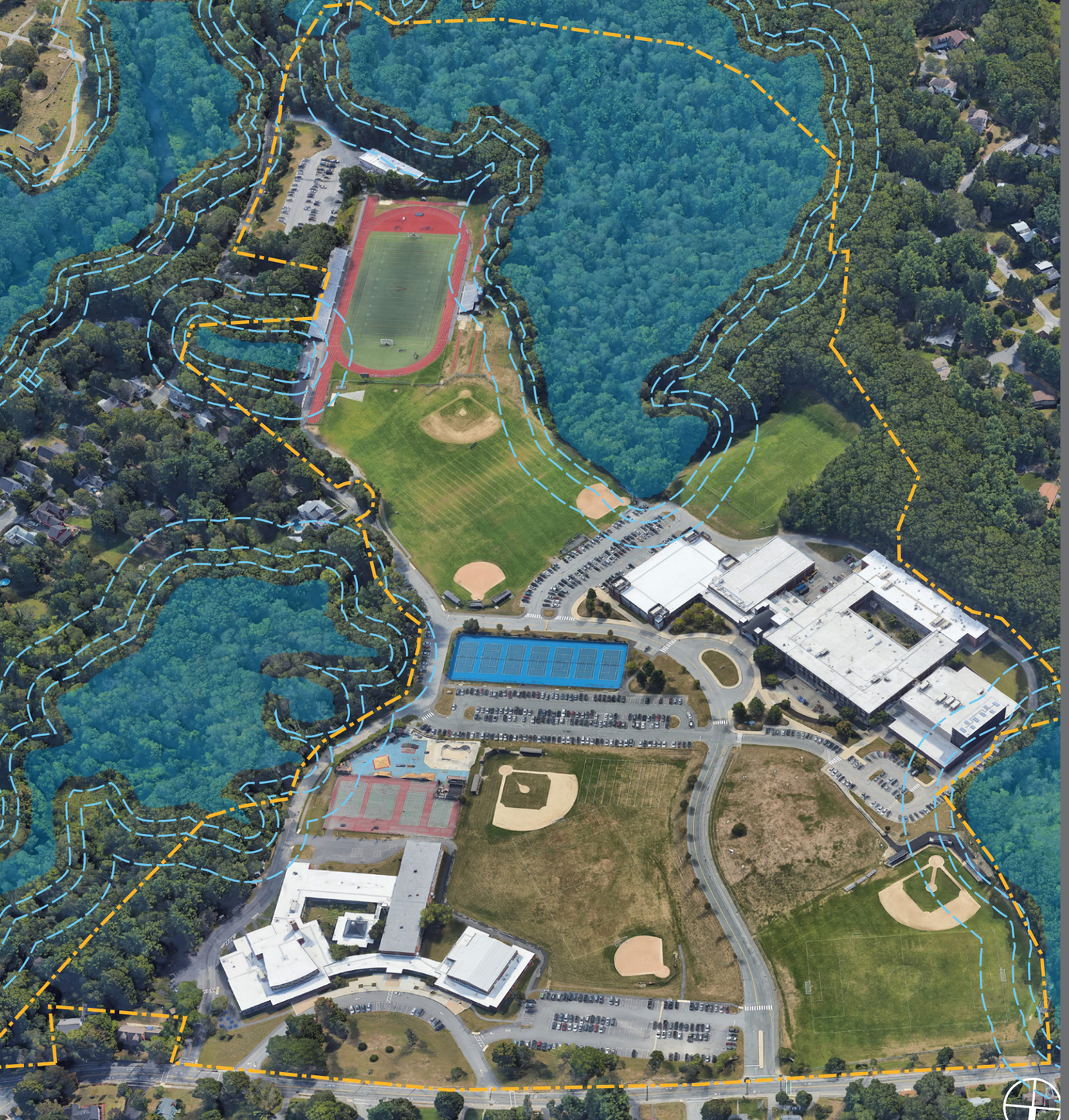
- Poor location at the back southwest corner of the site, up against the hillside, resulting in security and circulation challenges

Building Exterior

- Exterior walls need repair, powerwashing, waterproofing, seal masonry and add expansion joint, and has constricted access to the outdoor courtyard
- Exterior walls and roof require thermal envelope upgrades for 2021 Code compliance

Building Interior

- Inaccessible lab-classrooms - replace all built-in casework, furniture and equipment
- All spaces are undersized and do not meet MSBA standards
- Corroding piping and leaks throughout the Science wing.
- Replace all science room fixtures and provide non-potable water, tempered water to emergency showers.
- Inadequate indoor air-quality systems and temperature controls



THANK YOU

HMFH ARCHITECTS