# Meeting Minutes
# Farmington High School Building Committee Meeting
Wednesday, January 15, 2020
Farmington High School Library
6:30 PM

**Attendees:**
Meg Guerrera, Chair
Michael Smith
Sharon Mazzochi
Ellen Siuta
Garth Meehan
Johnny Carrier
Chris Fagan
Beth Kintner
Kathy Greider, Superintendent
Alicia Bowman, Asst. Superintendent of Finance and Operations
Tim Harris, Director of School Facilities
Scott Hurwitz, FHS Principal
Lisa Kapcinski, FHS Assistant Principal
Russ Crist, FHS Assistant Principal
Kat Krajewski, Assistant Town Manager
Devon Aldave, FHS Building Committee Intern
Roger LaFleur, Construction Solutions Group
QA+M Architecture
TSKP Studio

**A. Call to Order.**
The meeting was called to order at 6:30 P.M.

**B. Pledge of Allegiance.**
The committee members and audience recited the pledge of allegiance.

**C. Chair Report.**
Meg Guerrera presented the progress the committee has made to date and gave an overview of the FHSBC Project Timeline. The presentation is recorded with these minutes as Attachment A. The committee will make a recommendation to the Town Council at the February 4th meeting. The Town Council will set the net municipal cost range and project scope.

**D. Public Comment.**
Rafeena Lee, 3 Hamilton Way, is a member of Comprehensive FHS, a nonpartisan organization that aims to help shape and support a

comprehensive solution for the FHS facility. Rafeena stated that the maintain options do not address the facility’s issues in a comprehensive manner. It is her opinion that QA+M’s maintain option was a light renovation option, while TSKP’s was a true maintain option that would only keep the building afloat for 5-10 more years. She stated that it would be financially irresponsible for the town to spend $50 million on an option that does not address the issues, such as the science classrooms or include air conditioning. Rafeena encouraged the audience to join Comprehensive FHS and to remain engaged throughout the process.

Emily Kaliney, 30 High Street, thanked the committee for their work, and felt that the presentations for a maintain option were an important exercise to demonstrate how much it would cost to just maintain the current facility. She felt that last week’s presentation made it clear to many that a maintain option is not a comprehensive solution, as TSKP’s $40-$50 million option does not address sprawl, security, or hazmat issues. Emily stated that the $40-$50 million figure is now being discussed by members of the public and urged the committee members and audience to use the figure correctly.

Matt Hutvagner, 4 Deepwood Road, also represents Comprehensive FHS. He stated that a comprehensive solution to the FHS facility is a necessary investment for the community and that the maintain option does not address educational programming, sprawl, and security issues. He encouraged audience members to sign up for Comprehensive FHS.

Meghan Naujoks, 5 Trumbull Lane, did not believe that a maintain option is right for the community. She stated that the town needs a comprehensive solution to the FHS facility that meets all specifications and will allow the building to function for decades to come. She was disappointed that both maintain options presented did not meet these criteria.

Jill Pachla, 27 Reservoir Road, is part of Comprehensive FHS, and stated that it is important for information to get out. She feels that there are many in the community that do not understand what is going on with this project, and they will not be able to make informed votes without information.

Steve Lamoureux, 86 Knollwood Road, is a healthcare provider who stated that maintaining is usually a good thing, however we have maintained the building for so long that sprawl is out of hand. He felt

that while it may be hard to say goodbye to this building, he believes it is time to do so. He stated that while a comprehensive solution that meets NEASC standards may be costly, it is the civic duty of taxpayers to better the town and society.

**E. Minutes.**

**1) To approve the attached January 8, 2020 minutes.**
Upon a motion made and seconded (Siuta/Carrier) it was unanimously VOTED: to approve the January 8, 2020 minutes.

**F. Correspondence and Reports.**

**1) Jay Tulin- Friends Program**

**2) Meghan Naujoks- Financing Options**

**3) Josh Davidson- Financing**

**4) Stacey Petruzella- Comments from 1/8/2020 Meeting**

**5) Scott Hurwitz- Lee Donaldson Donation Letter**

**6) Stephen Kay- Classrooms**

**7) Sarah Burns-Feedback on Maintain Options**

Meg Guerrera reviewed the correspondences received. An additional correspondence was received by Bridget Moss via email, which is recorded with these minutes as Attachment B.

Kat Krajewski provided information regarding the Town’s financial policies and issuance of debt. She explained that when determining when, how much, and the duration of any long-term debt the Town issues, overriding consideration is given to the following:

- preserving the fiscal integrity of the Town;
- minimizing the impact on town taxpayers;
- minimizing the impact on the operating budget and on services;
- adhering to Federal, state and local legal requirements.

She also listed examples of some of the criteria the Town uses when preparing a debt issue. They include:

1. Industry best practices, and standards;
2. Town Financial Policies;
3. Current market conditions;
4. Cash Flow needs for individual capital projects currently being undertaken as well as overall Town cash flow needs;
5. The Town’s debt service requirements at the time of issuance;
6. State and Federal legal requirements;
7. Federal Tax restrictions;

All debt is issued using the Town’s adopted debt management policy. After debt is issued it is continuously monitored to determine whether it would be feasible to refinance it in the future.

She also explained that the Farmington Town Council is the ultimate fiscal authority for the Town. Therefore, it is the role of the Town Council to provide financial policy direction to the Town Manager and Director of Finance. While the building committee’s responsibility is to recommend to the Town Council a building project option that best meets the needs of the Town of Farmington and its students both now and for the foreseeable future.

The presentations tonight will show the projected tax impact of the stand-alone options. However, the Town Council will ultimately determine the cost parameters of the project when a final option is selected. At that time, the communication subcommittee will be tasked with putting context around the cost of the project and what that means to the taxpayer.

The Town of Farmington, through its financial policies, Town Council leadership, and financial management has a successful history of issuing and managing its debt obligations as proven by its high bond rating, strong financial position and low taxes.

**G. Presentations.**

Each architectural firm was given 35 minutes to present their renovation option, followed by a question and answer session from the committee.

**1) Presentation of the renovation option and associated cost by TSKP Studio and CSG.**

TSKP Studio presented their conceptual design for the renovation option. The presentation is recorded with these minutes as Attachment C.

Roger LaFleur, CSG, presented the cost estimate for the renovation option presented by TSKP Studio. The cost estimate is recorded with these minutes as Attachment D.

Kat Krajewski, Assistant Town Manager, presented the tax impact for this option. She stated that the estimated tax impact to the average Farmington home assessed at $226,777 is an increase of $480.31 in year one. Costs will decrease by approximately $9.09 per year over 20 years.

Following the presentation, TSKP Studio answered questions from the committee on the following topics:

- Phasing/disruption
- Efficiency
- Accessibility
- Parking
- Security

**2) Presentation of the renovation option and associated cost by QA+M and CSG.**

QA+M presented their conceptual design for the renovation option. The presentation is recorded with these minutes as Attachment E.

Roger LaFleur, CSG, presented the cost estimate for the renovate as new option presented by QA+M. The cost estimate is recorded with these minutes as Attachment F. The cost estimate is through construction of the project.

Kat Krajewski, Assistant Town Manager, presented the tax impact for this option. She stated that the estimated tax impact to the average Farmington home assessed at $226,777 is an increase of $488.70 in year one. Costs will decrease by approximately $9.25 per year over 20 years.

Following the presentation, QA+M Architecture answered questions from the committee on the following topics:

- Project duration
- Square footage
- Parking
- Energy efficiency

**H. Public Comment.**

David Gorden, 38 Tanglewood Road, is a registered architect with selection board experience, who had three sons attend FHS. Prior to TSKP’s renovation option, he felt that the only way to develop a comprehensive solution was through a new building, however he liked that TSKP’s design had busses drop off students at the front door, and that classrooms were located towards the front of the building. He was critical of QA+M’s design for their parking scheme and having classrooms located toward the back of the building, as he felt that this would cause long walks for students and would cause more security issues. David also did not like the idea of an access road being developed on Highwood, as he felt it would cause more traffic in the area.

**I. Executive Session: Review and Discussion of RFP Responses for Architectural Services in accordance with Conn. Gen. Stat. §§1-200(6) and 1-210(b) (24).**

Upon a motion made and seconded (Carrier/Mazzochi) it was unanimously VOTED: to move to executive session at 9:20 P.M.

The committee returned to open session at 10:42 P.M.

**J. Adjournment.**

Upon a motion made and seconded (Carrier/Meehan) it was unanimously VOTED: to adjourn at 10:42 P.M.

Respectfully Submitted,

Devon Aldave
FHS Building Committee Clerk

Attachment A

# FHSBC Project Timeline

We are here.

**1. Conceptual Option Phase (Maintain/Renovate/New)**

***Community Feedback and Priorities Based on the FHS Statement of Needs***

2. Town Council sets net municipal project cost range & project scope
***February 2020***

3. Schematic Design Phase

4. Town Meeting/Referendum
***October 2020***

# FHSBC Conceptual Option Phase

- ✔ FHSBC: Select Professional Partners
- ✔ FHSBC: Create Conceptual Option Evaluation Criteria
- ✔ FHSBC: Create Conceptual Options with both Architects
  - Maintain, Renovate, New
- ❑ FHSBC: Present and Evaluate Conceptual Options
- ❑ FHSBC: Recommend a Conceptual Option to Town Council
- ❑ Town Council: Set a Net Municipal Project Cost Range and Project Scope

# What is a Conceptual Design Option?

*-The primary function of a conceptual design is to determine a starting point-*

- High Level Design Concept
- Categorized as either a Maintain, Renovate or New Building Option
- Focus on meeting the Statement of Needs
- High level costs using an independent estimator
- Estimated Tax Impact is calculated using basic financing methods and point-in-time data

CSG CONSTRUCTION SOLUTIONS GROUP

QA+M architecture

TSKP STUDIO

**From:** Squarespace
**To:** Kathryn Krajewski
**Subject:** Form Submission - New Form - FHS Building Committee Meeting - Public Comment for 1/15/2020
**Date:** Wednesday, January 15, 2020 11:49:25 AM

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**Name:** Bridget Moss

**Email Address:** bridgetageist@yahoo.com

**Subject:** FHS Building Committee Meeting - Public Comment for 1/15/2020

**Message:** Comprehensive FHS is a non-partisan organization made up of town residents. Our goal/mission is to advocate for and support a comprehensive solution for the Farmington High School Facility. A facility that meets all the defined needs and encourages educational and community growth.
After watching last week's presentations, neither option is comprehensive. We are urging the FHS Building committee and the Town Council to choose a design that is a comprehensive solution.
We are looking forward to seeing the options presented tonight and next week and are hopeful that one of them will be the comprehensive solution that is needed.

Bridget Moss
24 Basswood Road

(Sent via *FHS building project*)

Attachment C

# CONCEPTUAL DESIGN PRESENTATION
# OPTION 2 – Renovate as New with Additions
## Farmington High School

TSKP STUDIO ARCHITECTURE | PLANNING | INTERIORS

January 15, 2020

## Building Committee

Meg Guerrera, Chair
Michael Smith
Sharon Mazzochi
Ellen Siuta
Chris Fagan
Garth Meehan
Johnny Carrier

Kathy Blonski
Town Manager
Kathy Greider
Superintendent
Alicia Bowman
Asst. Superintendent – Finance & Operations
Tim Harris
Director School Facilities
Scott Hurwitz
FHS Principal
Lisa Kapcinski
FHS Assistant Principal
Kat Krajewski
Assistant Town Manager
Devon Aldave
FHS Building Committee Intern
Paul Cianci
Town Council Liaison
Beth Kintner
Town Council Liaison

## Consultants

Construction Solutions Group
Construction Management

TSKP STUDIO
Architects

Kohler Ronan Consulting Engineers
MEP, FP, and IT Systems

Michael Horton Associates, Inc.
Structural Engineering

Milone & MacBroom
Civil Engineering, Landscape Design

# FHS Options | What Are The Options?

## Option 1

Maintain Existing FHS

## Option 2

Renovate Existing FHS As New With Additions

Max Reimbursement Rate

30¢ per eligible dollar

## Option 3

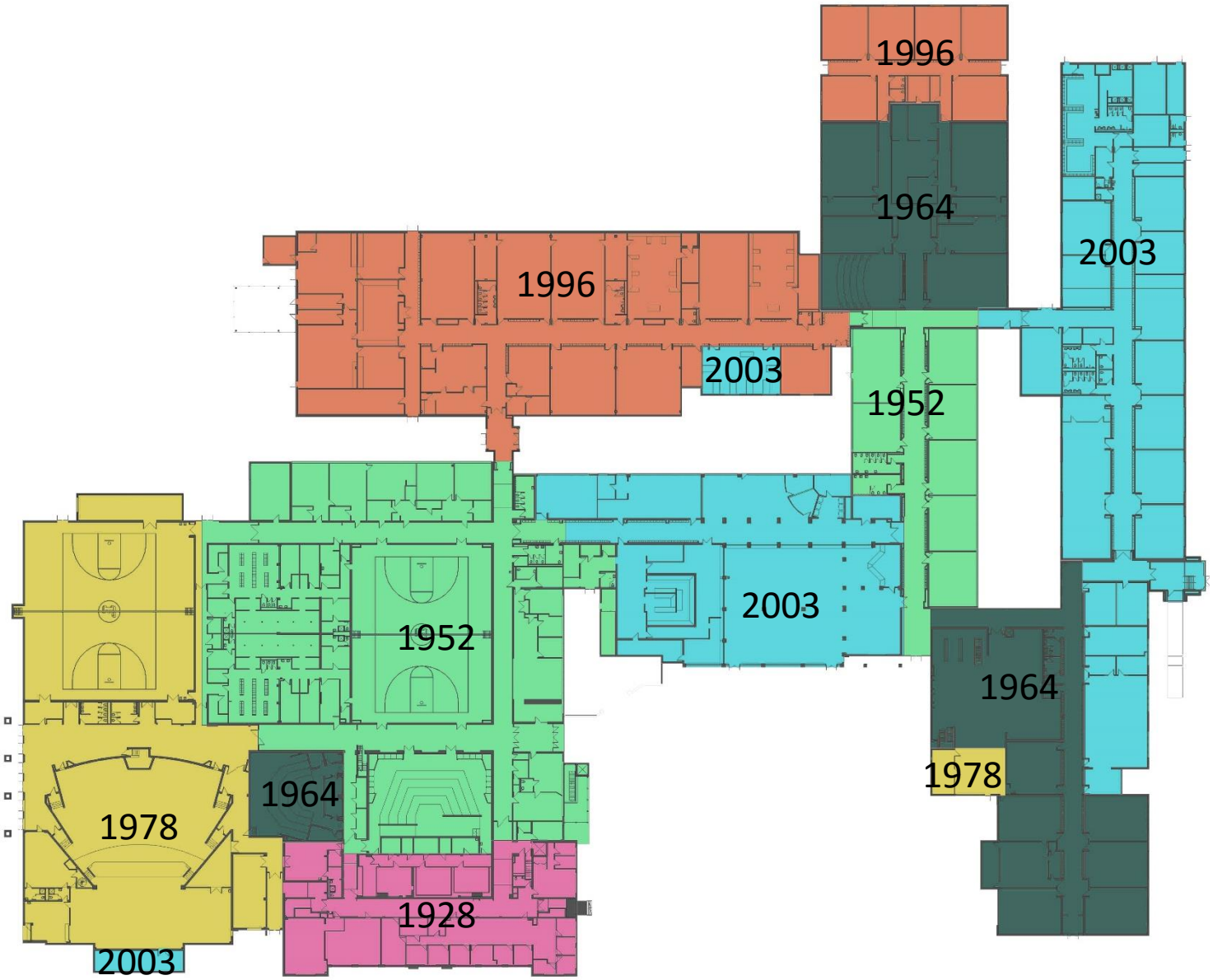
New FHS

Max Reimbursement Rate

20¢ per eligible dollar

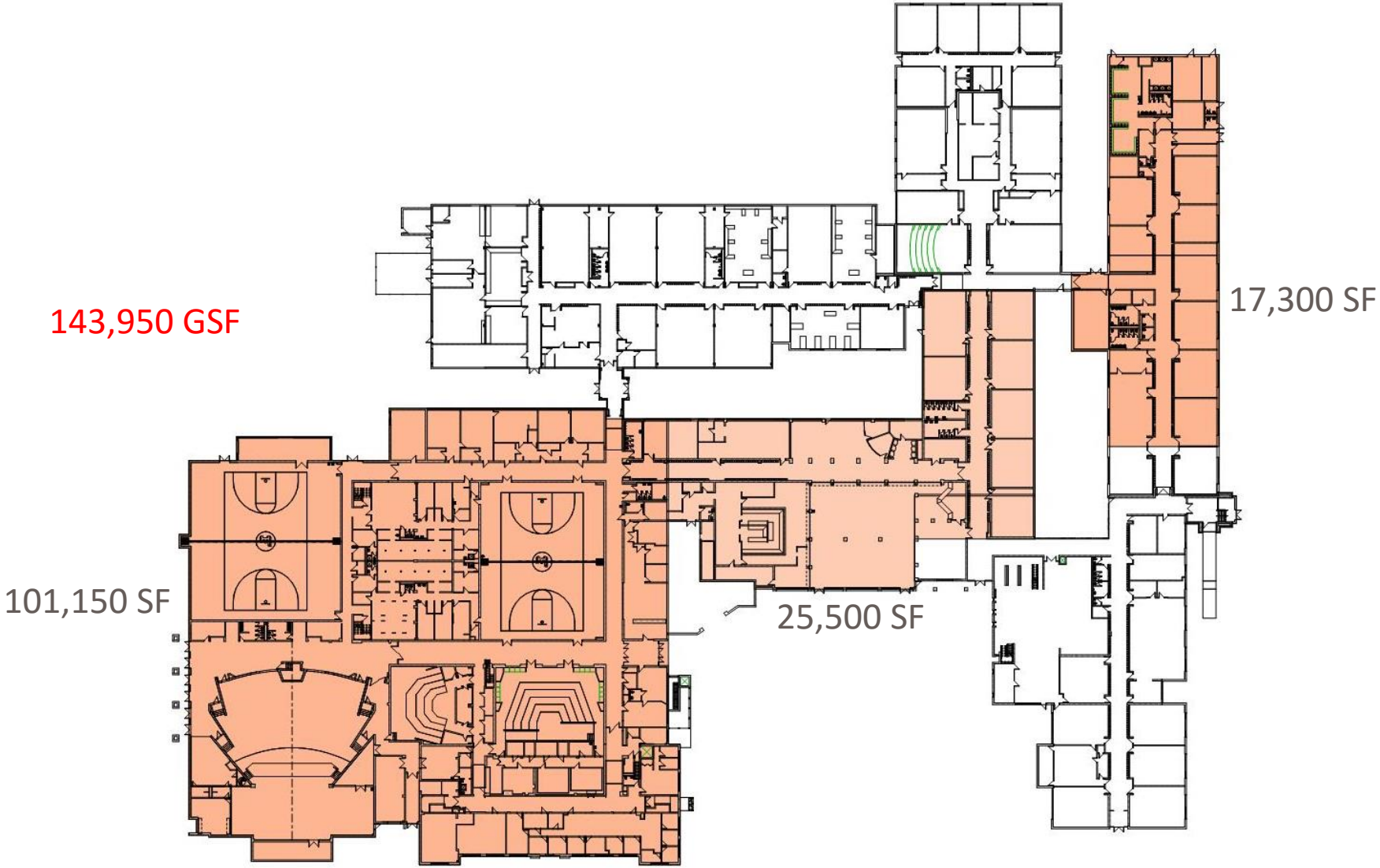
# Option 2 | How Much Should We Renovate?

# Option 2 | Strategy for Addition



# Option 2 | Renovate Approximately 66% of Existing GSF

Remember that we need to renovate at least 55% in order to meet the State's definition of "Renovate-As-New".



# Option 2 | Renovate Approximately 66% of Existing GSF

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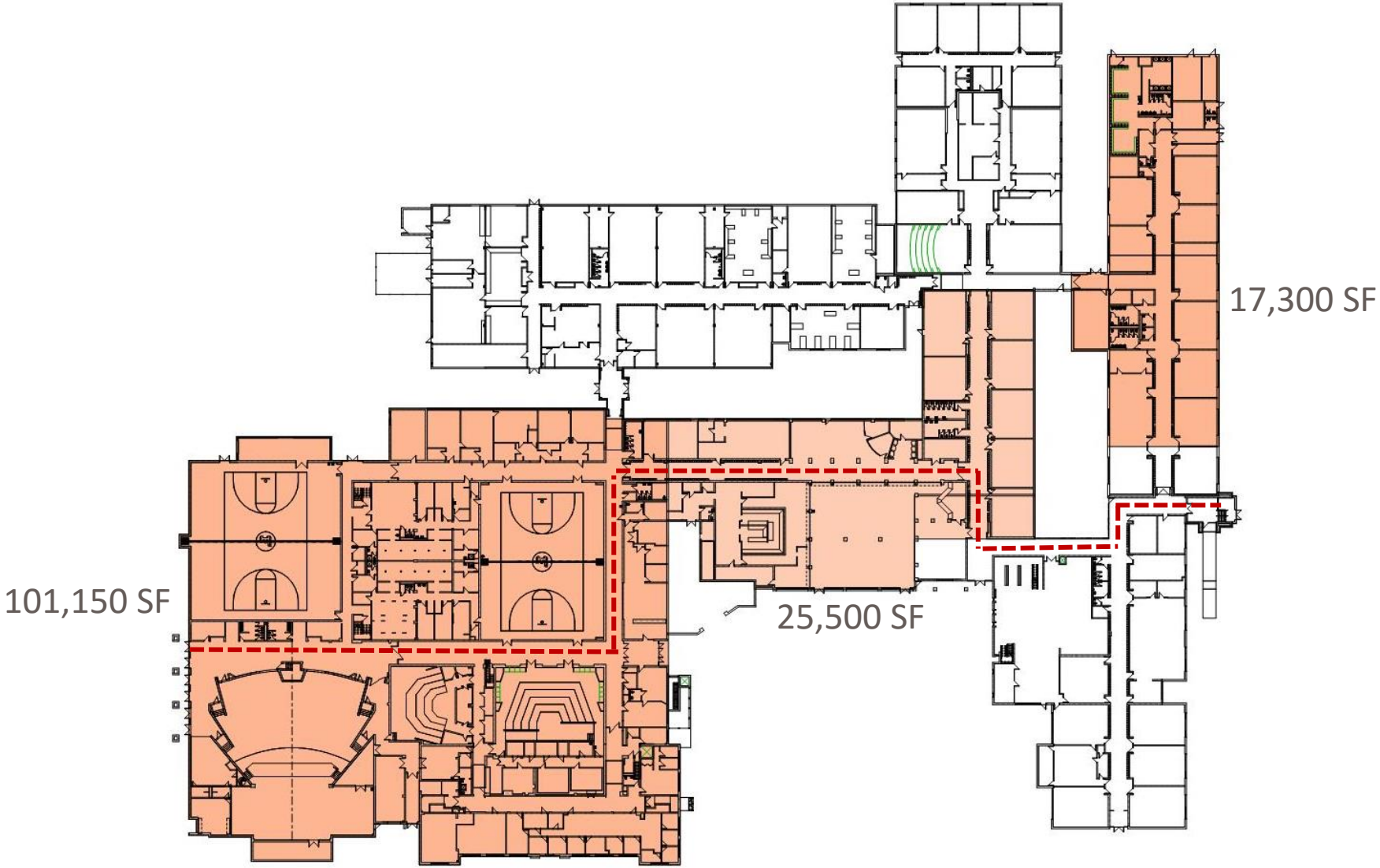
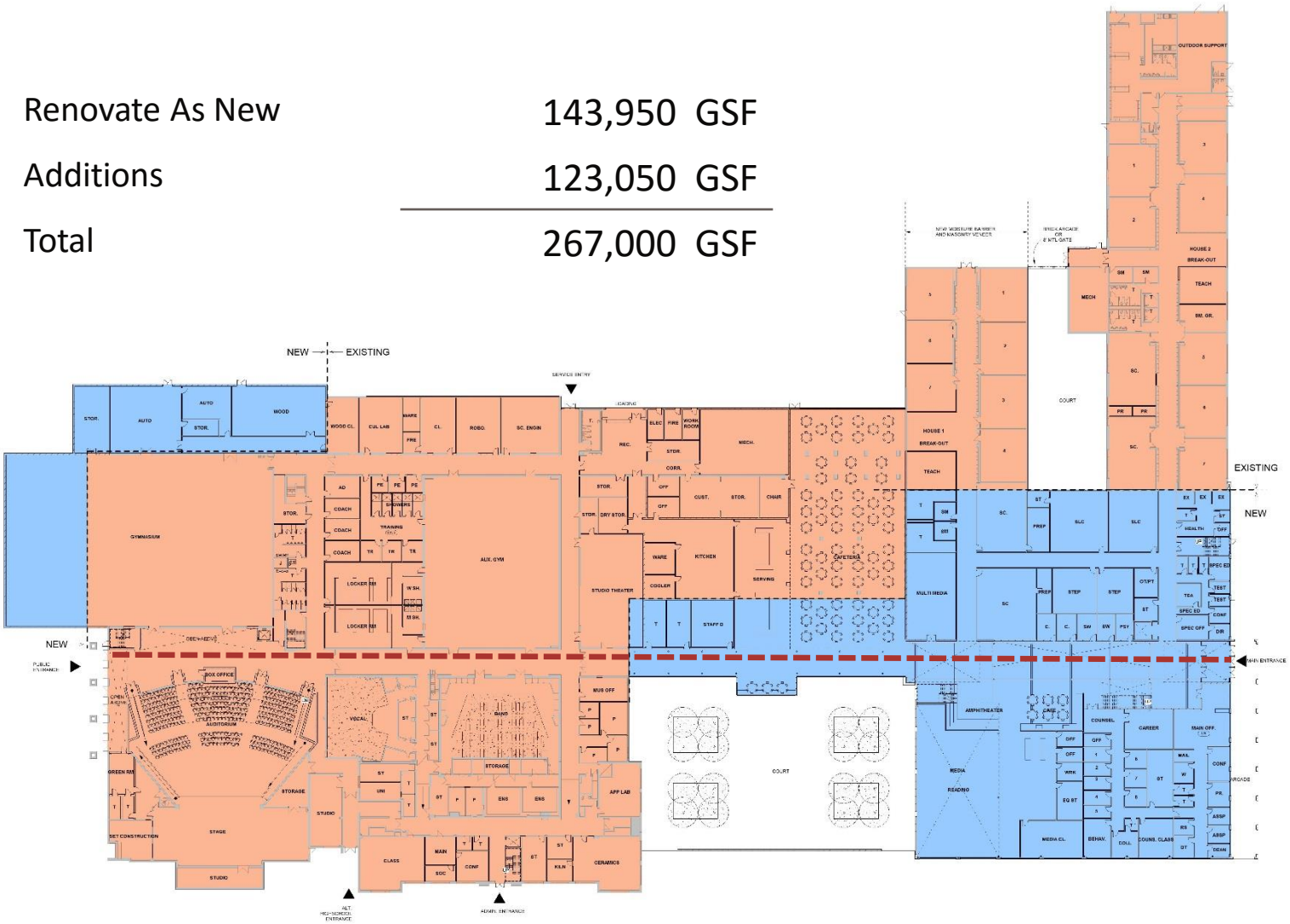


# Option 2 | Strategy for Addition

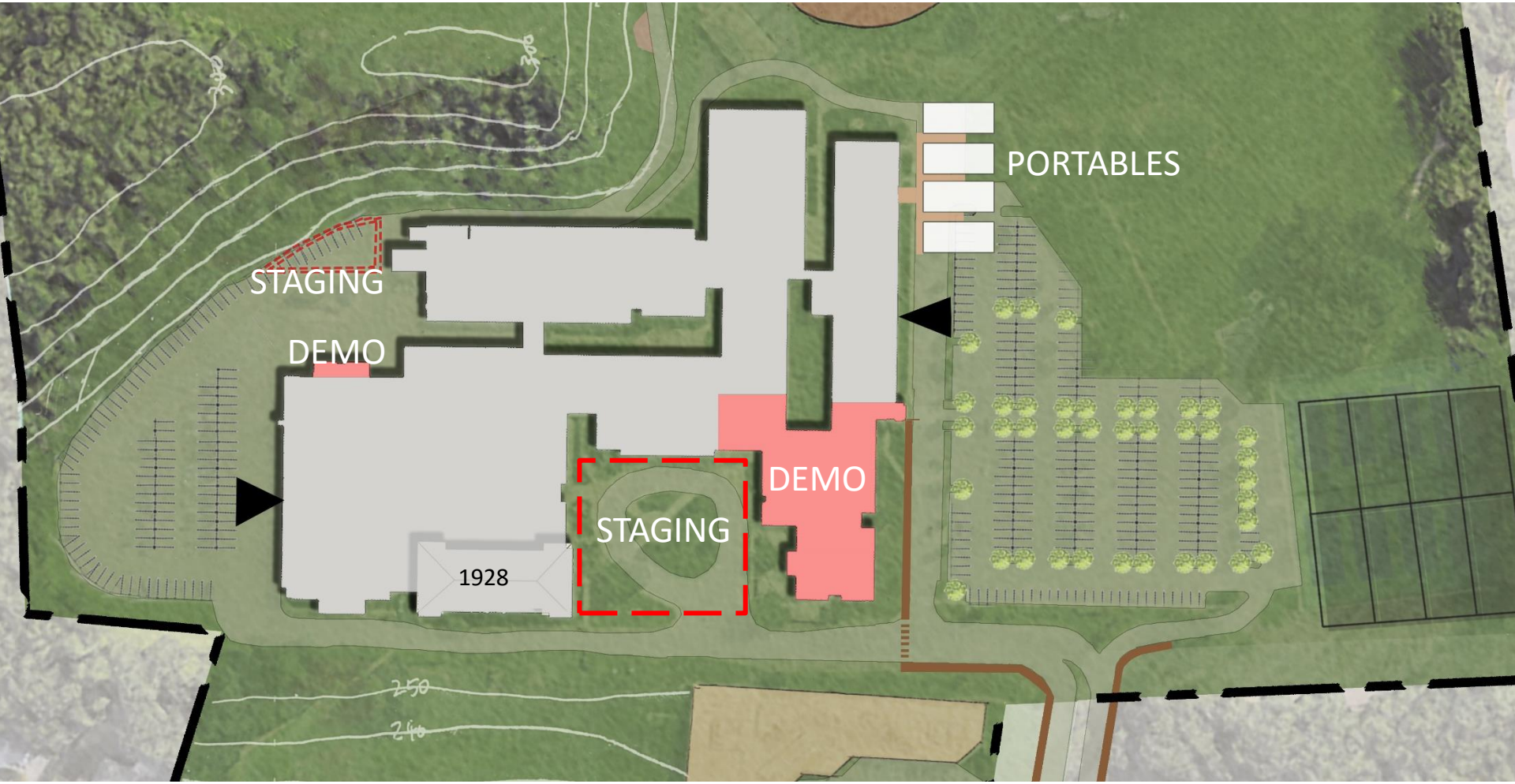
| | |
|---|---|
| Renovate As New | 143,950 GSF |
| Additions | 123,050 GSF |
| Total | 267,000 GSF |



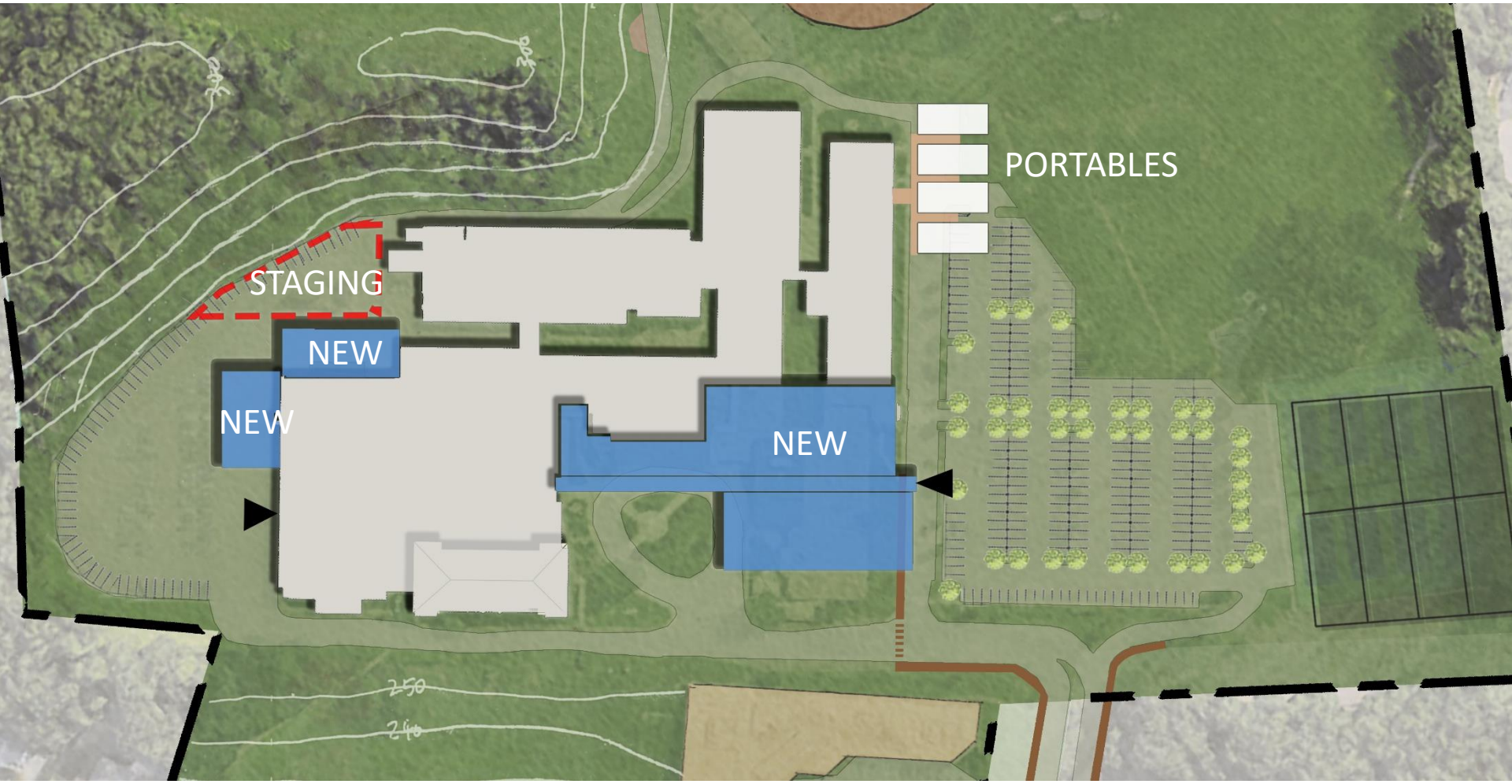
# Option 2 | Important Design Issues

1) Sequence of Construction
2) Site Improvements
3) Plan Organization
4) Meeting the Educational Specifications
5) Appearance

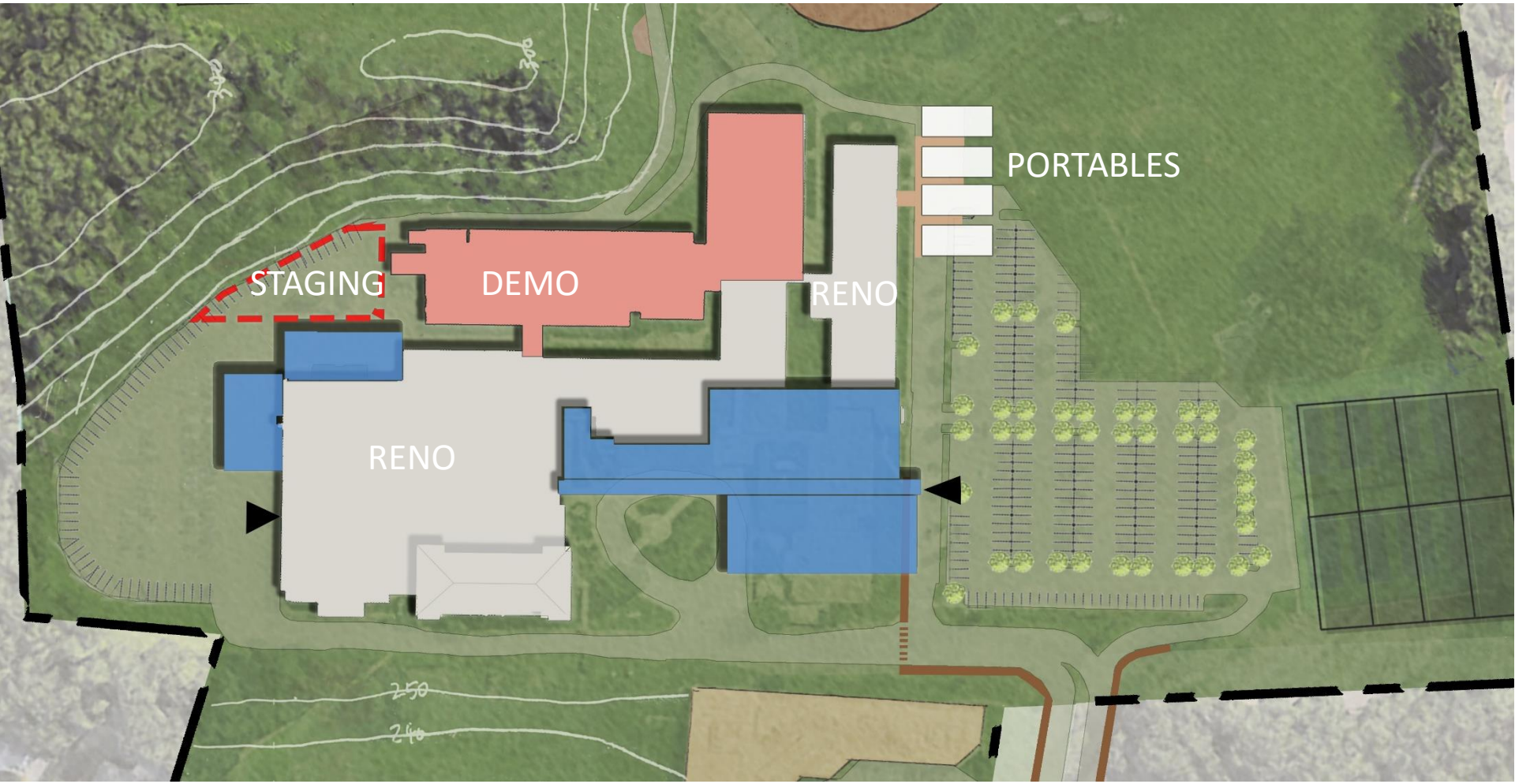
# Option 2 | Sequence of Construction



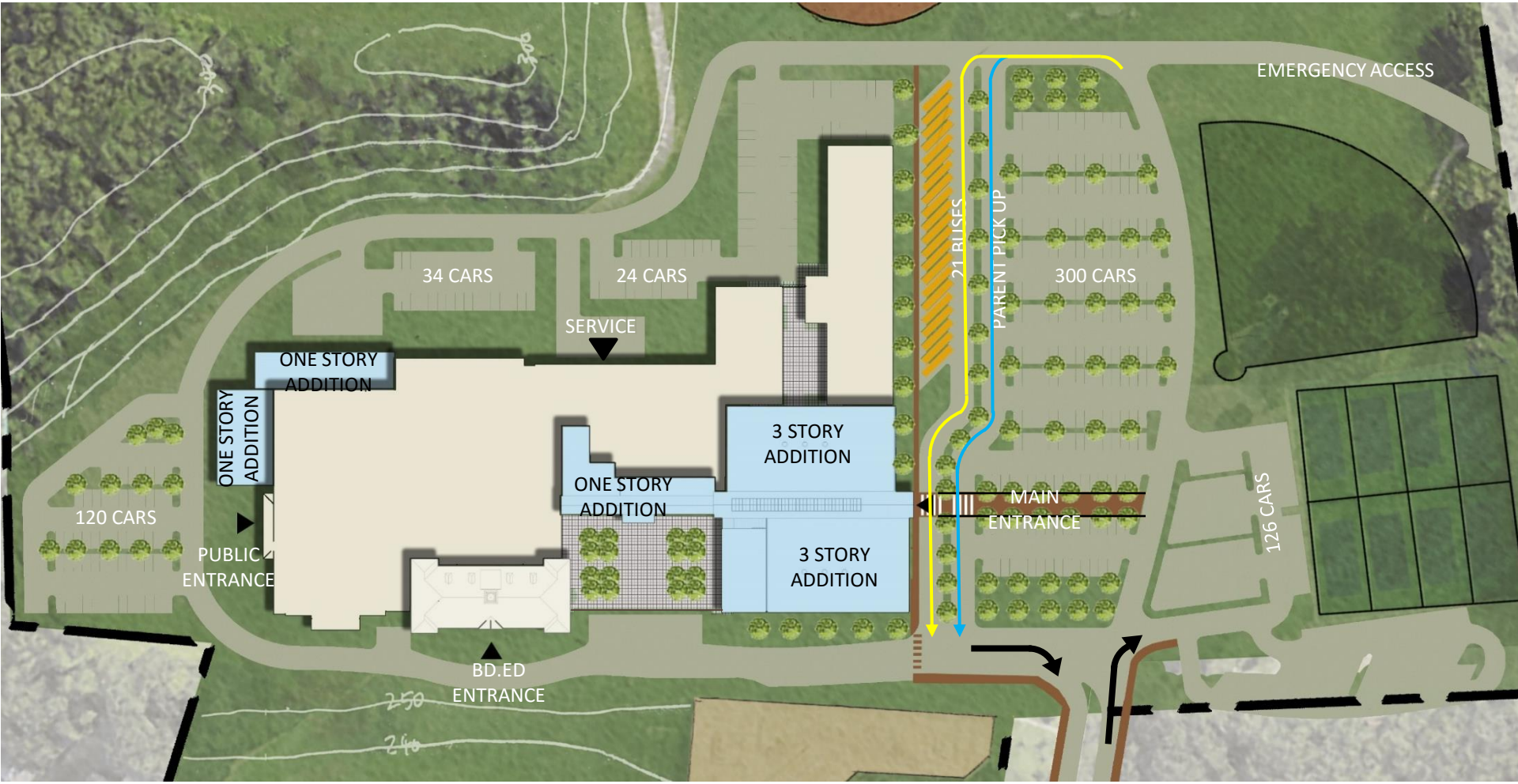
# Option 2 | Sequence of Construction



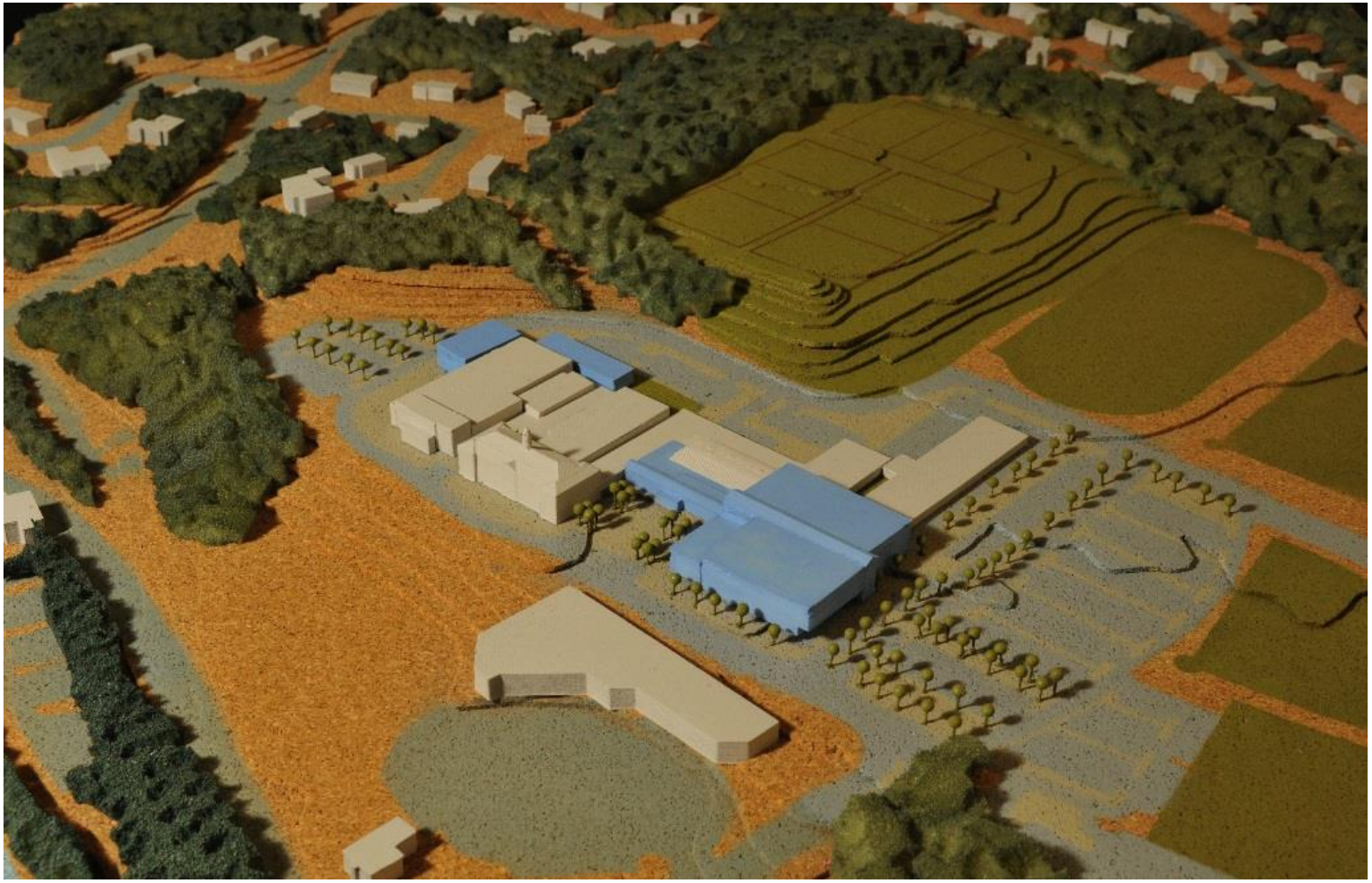
# Option 2 | Sequence of Construction



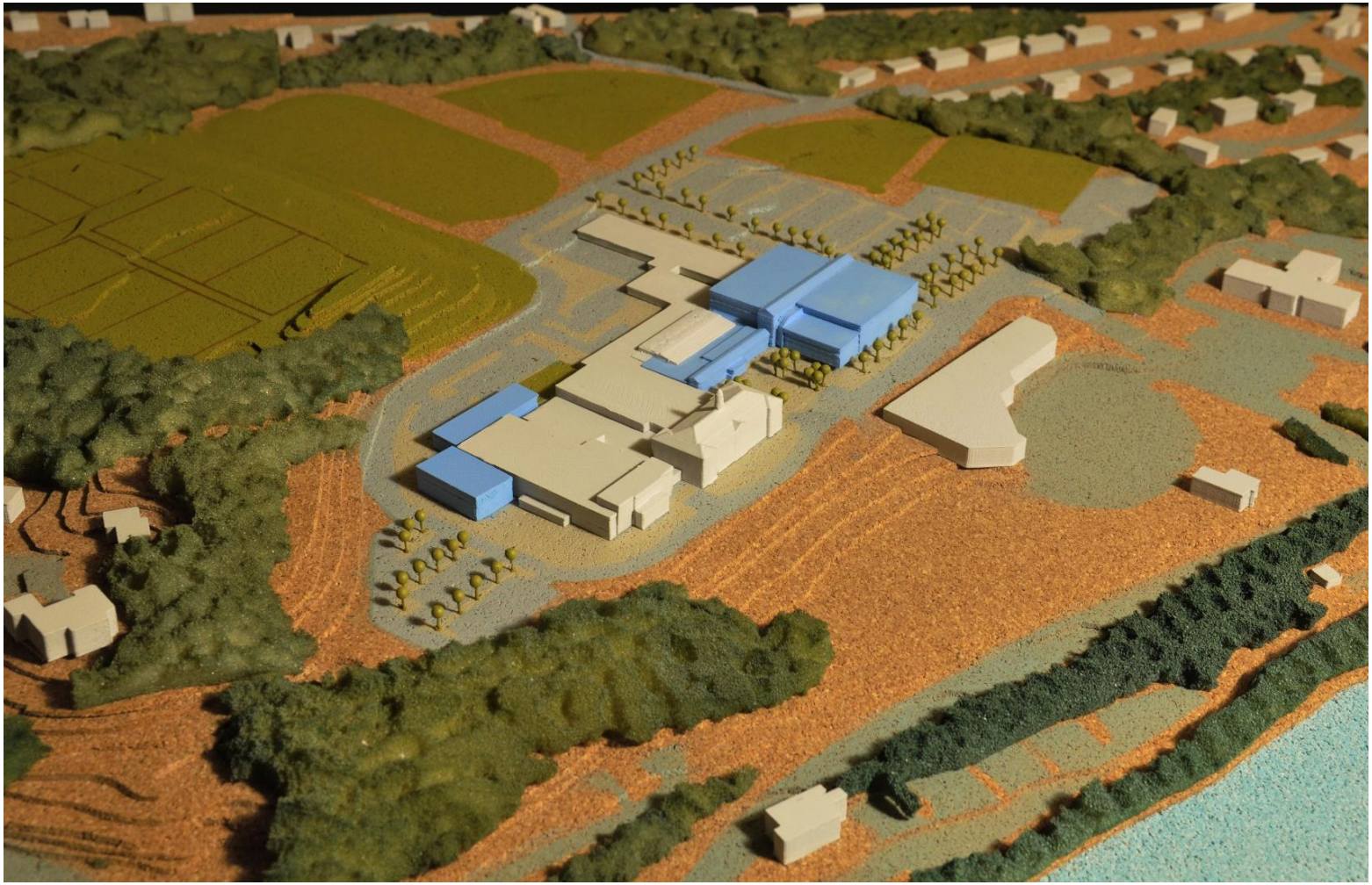
# Option 2 | Site Improvements



# Option 2 | Study Model



# Option 2 | Study Model



NEW
NEW
OUTDOOR SUPPORT
HOUSE 2
TEACH
SM. GR.
HOUSE 1
TEACH
MECH
SC.
SLC
SLC
HEALTH
SPEC ED
TEST
CONF
SPEC OFFIR
MULTI MEDIA
SC
STEP
STEP
PREP
SERVICE
LOADING
REC.
MECH.
CORR.
CUST.
CHAIR
CAFETERIA
KITCHEN
WARE
SERVING
STAFF D
STUDIO THEATRE
MUS OFF
APP LAB
CERAMICS
KILN
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TRAINING
LOCKER RM
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M SH.
PUBLIC
BOX OFFICE
STAGE
STUDIO
SET CONSTRUCTION
GREEN RM
MAIN ENTRANCE
AMF
READING
MEDIA CL.
CAREER
MAIN OFF.
MAIL
CONF
PR.
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DEAN
COUNS CLASS
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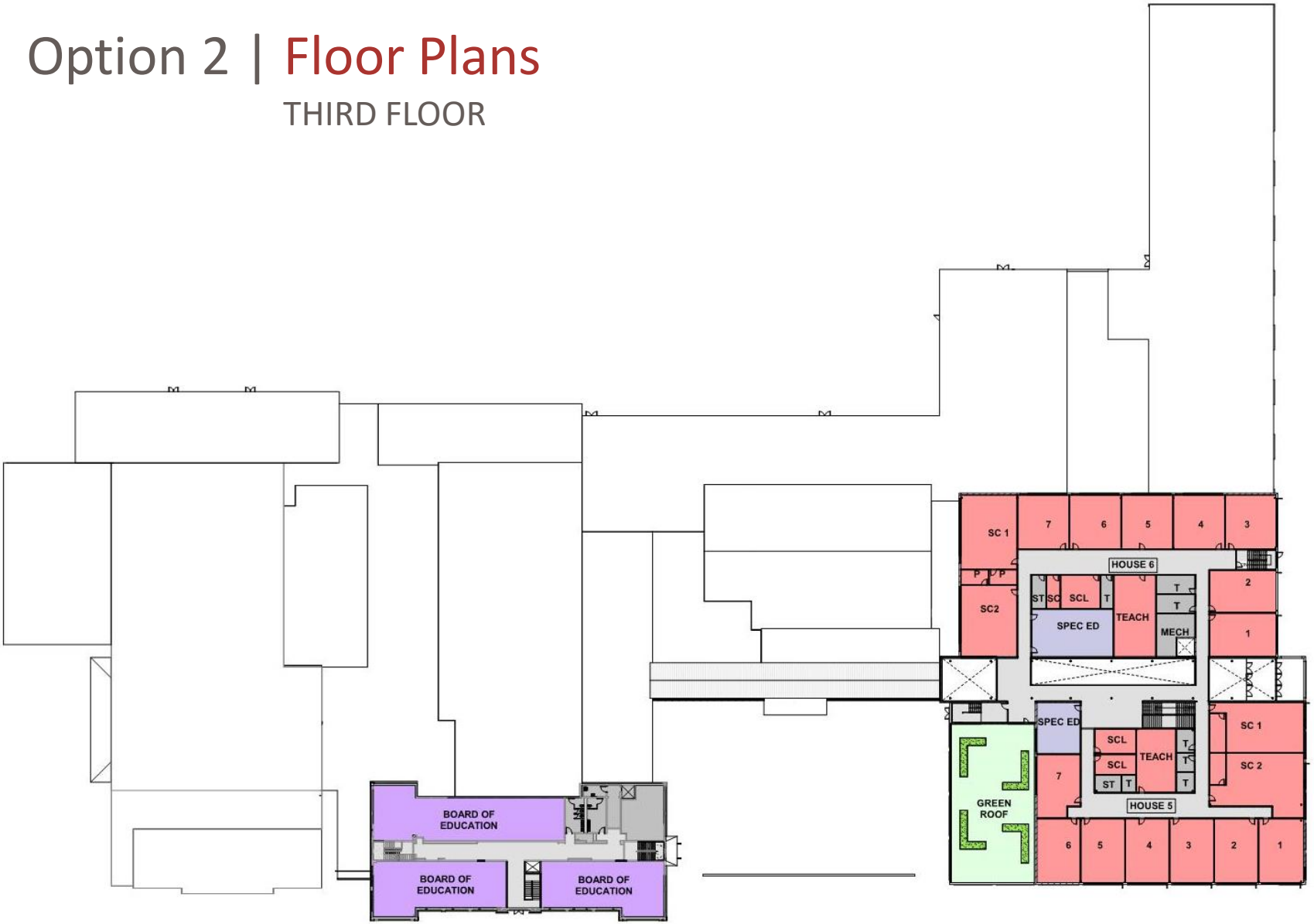
# Option 2 | Floor Plans

## SECOND FLOOR

# Option 2 | Floor Plans

## THIRD FLOOR



TSKP STUDIO

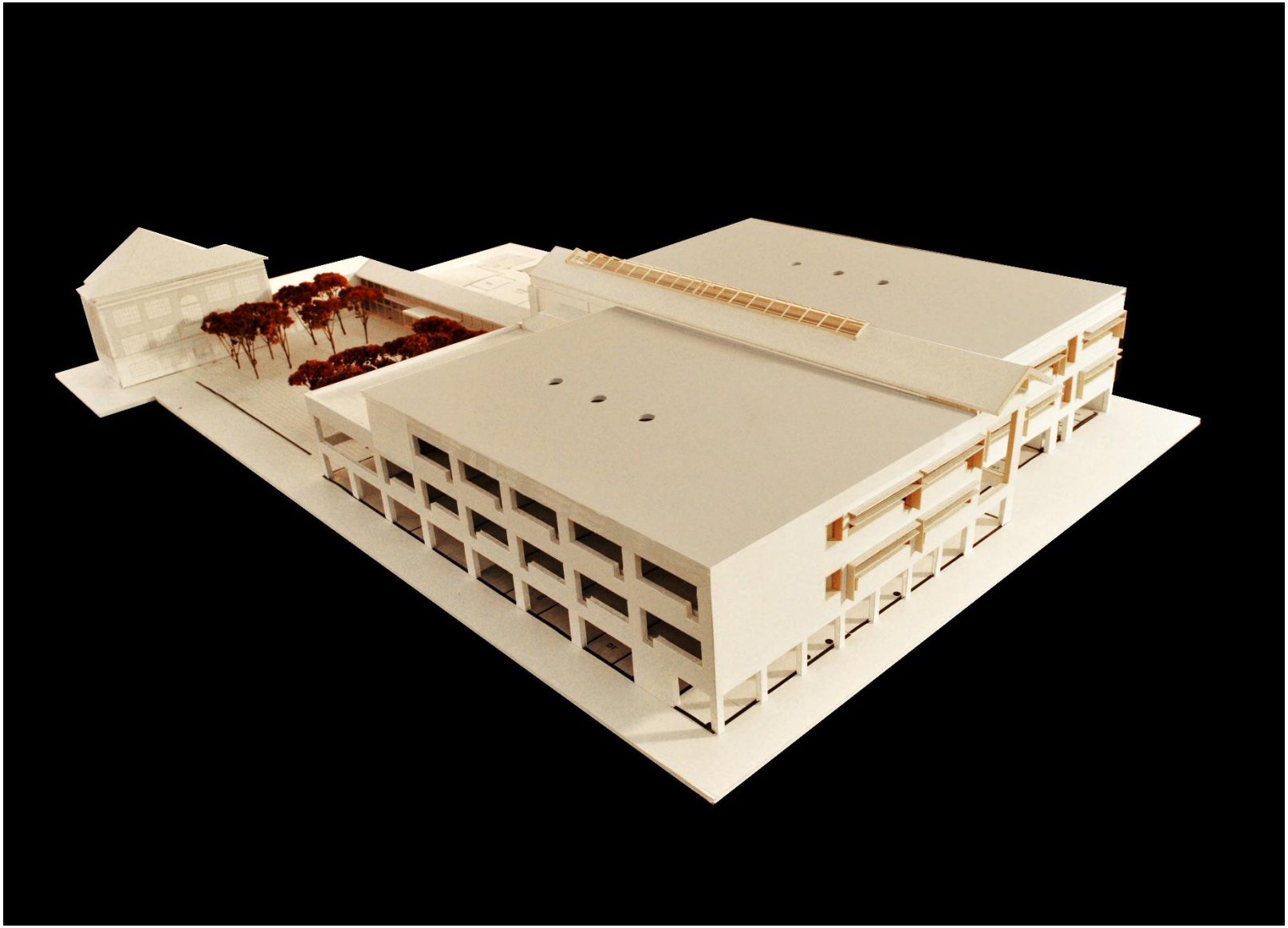
# Cafeteria and Courtyard

# Aerial View

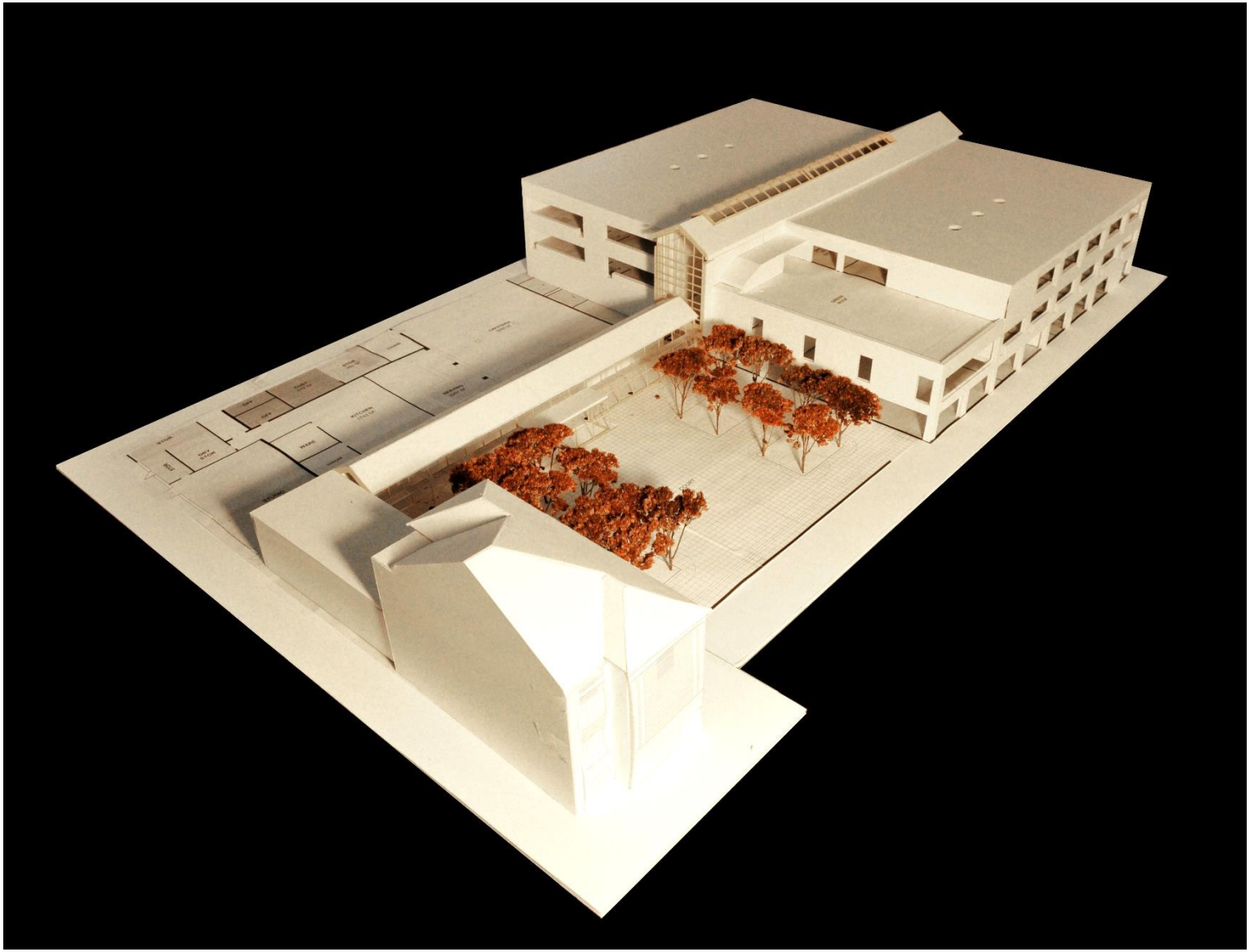
# Exterior View

# Option 2 | Exterior

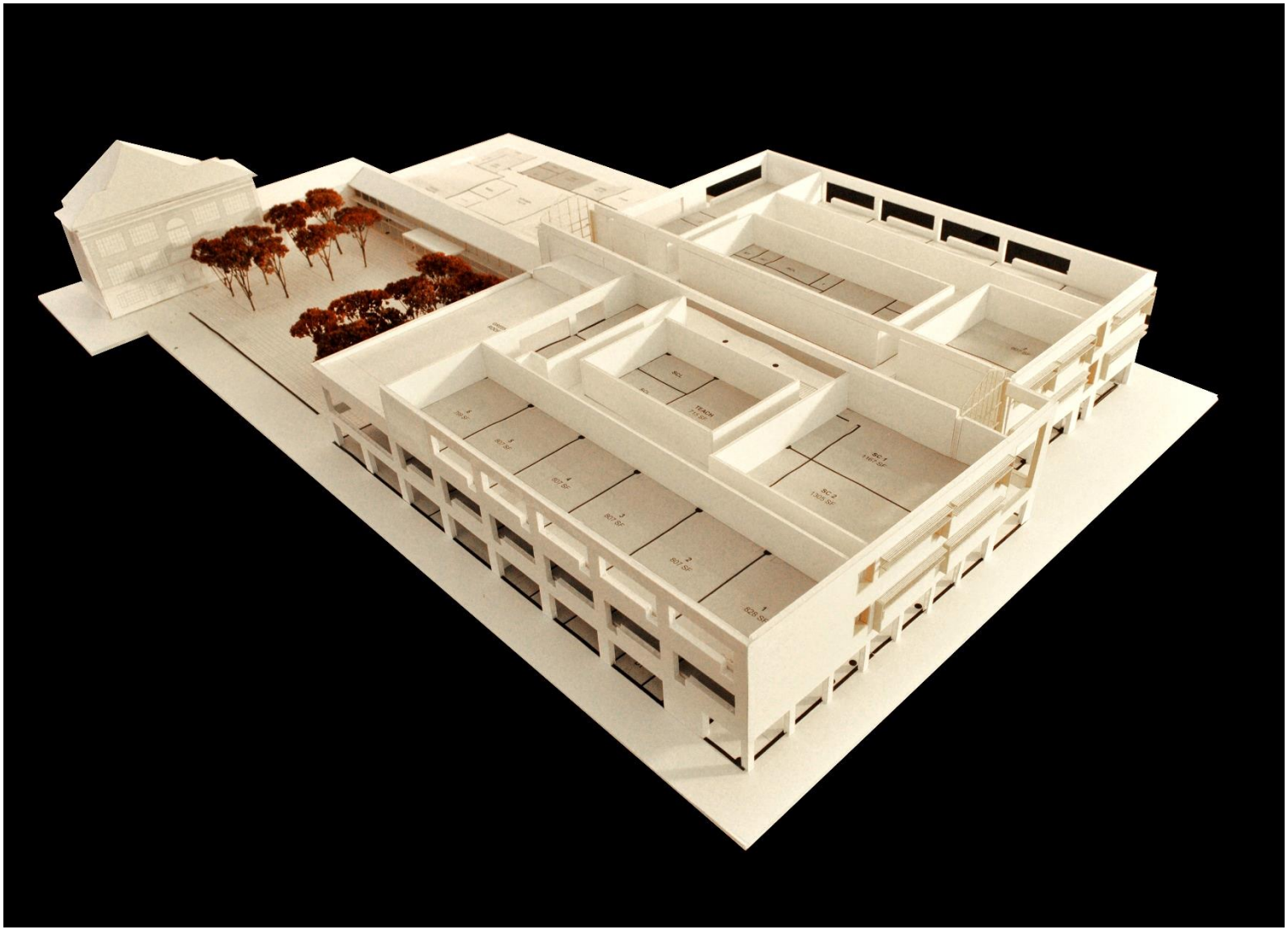
# Option 2 | Large Study Model



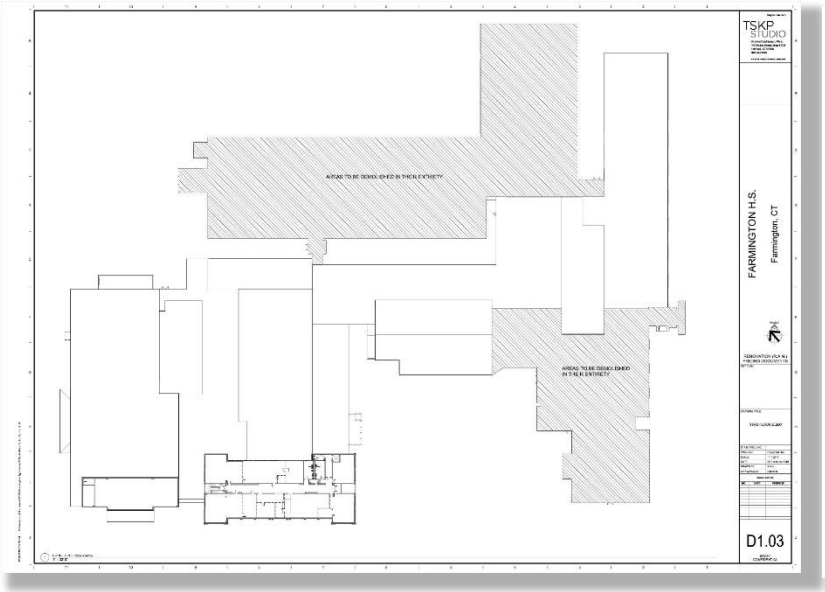
# Option 2 | Large Study Model

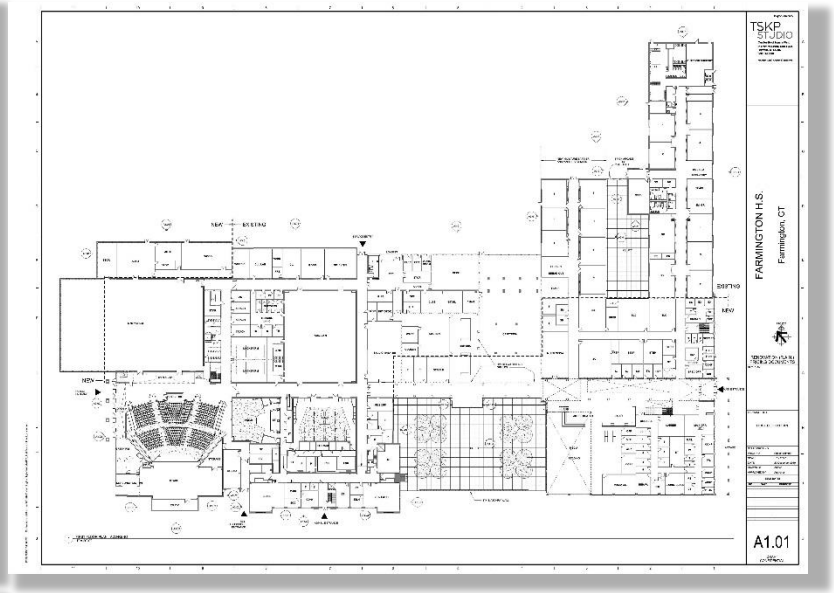


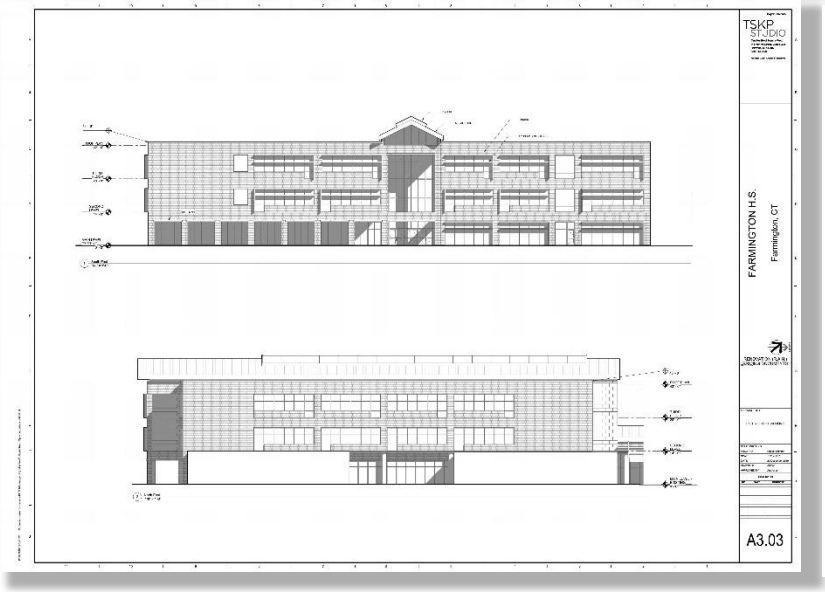
# Option 2 | Large Study Model

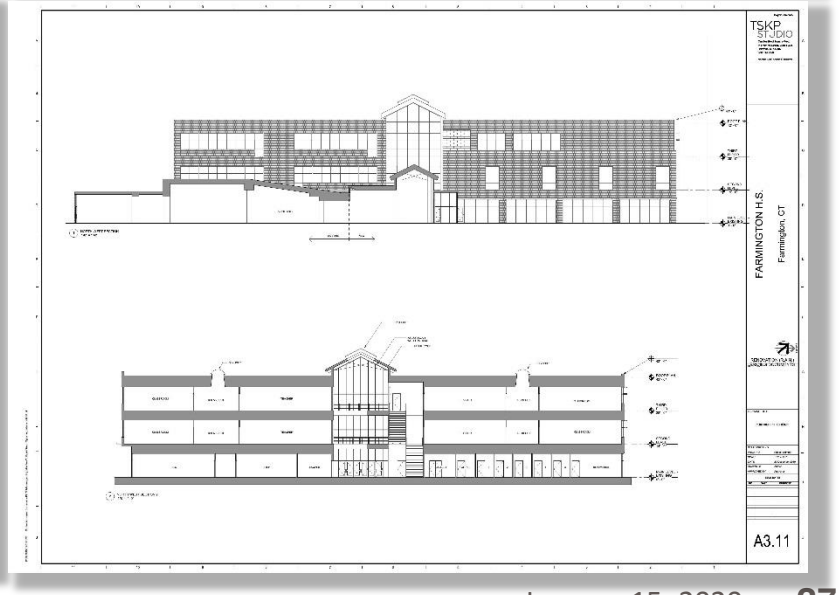


# Option 2 | Pricing Documents



# Option 2 | Pricing Documents



**Division 03 30 00 – Cast-In-Place Concrete:**
All cast-in-place concrete shall conform to ACI 301-84 "Specifications for Structural Concrete for Buildings", and ACI 318-89 "Building Code Requirements for Reinforced Concrete".

A. Reinforcing bars: ASTM A615, Grade 60
B. Welded wire fabric: ASTM A185
C. Portland cement: ASTM C150, Type I.
D. Aggregates: ASTM C33
E. Water: clean, free from deleterious amounts of acid, alkalis and organic materials.
F. Admixtures:
   1 Air-entraining admixture: ASTM C260
   2 Water reducing, accelerating, high range water reducing admixtures: ASTM C494
G. Concrete:
   1 Slabs on grade: 3500 psi (no air entrainment) at 28 days. Water-cement ratio shall not exceed 0.50 by weight. Air content 6 percent by volume. Include moisture vapor reducing admixture in design mix.
   2 Elevated slabs: Lightweight 3500 psi (no air entrainment) at 28 days. Include moisture vapor reducing admixture in design mix
   3 Other interior concrete: 3000 psi at 28 days.
   4 Exterior concrete: 3000 psi at 28 days, with air-entraining admixture. Concrete subject to de-icers shall have water-cement ratio not exceeding 0.40.

**Division 05 12 00 – Structural Steel:**

A. Structural steel: in accordance with the current AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
B. All welding: by welders holding active welding certificates only.
C. Structural steel: ASTM A36
D. Welding electrodes: E70XX
E. High strength bolts: ASTM A325
F. Shop welding, field welding, and high strength bolting: laboratory controlled.

**Division 05 21 00 – Steel Joists:**

A. Steel joists: designed, fabricated and erected in accordance with Steel Joist Institute Standard Specifications and Recommendations.
B. Joist manufacturer: Member of SJI, approved for joist types specified.
C. Field welding: laboratory controlled, performed by welders holding active welding certificates only.
D. Shop paint: fabricators standard lead-free shop paint. Touch up shop paint after installation.

**Division 05 30 00 – Metal Deck:**

E. Metal roof deck: 1 1/2" deep, 20 gage, galvanized steel roof deck with nesting side seams.
F. Acoustic Metal Roof Deck: 3" deep, 20 gage, galvanized acoustic metal roof deck





G. Composite floor deck: 2" deep, 20 gage galvanized steel deck with interlocking type side laps produced with integral locking lugs to provide mechanical lock between concrete and steel.
H. Manufacture and install in accordance with Steel Deck Institute Design Specifications and Code of Recommended Standard Practice. Manufacturer: Member of SDI.
I. Form metal from hot dipped galvanizing sheet conforming to ASTM A446-76, Grade A, with zinc coating conforming to ASTM A525-76, Coating Designation G-60.
J. Installation and fastening: Conform to SDI Tentative Recommendations for Design of Steel Deck Diaphragms.
K. Shear connectors: stud type conforming to ASTM A 108, Grade 1015 or 1020. Dimensions and tolerances in accordance with figure 4.22.1 of the AWS "Structural Welding Code - Steel".
   1 An arc shield (ferrule) of heat resistant ceramic or other suitable material shall be furnished with each shear connector.
   2 A suitable deoxidizing and arc stabilizing flux for welding shall be furnished with each shear connector.

**Division 05 51 00 – Cold Formed Metal Framing:**

A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.
   1 Design Loads: Wind Loads: per ASCE-07-10
   2 Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions.
B. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 25 percent.
   1 Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows.
      i Grade: As required by structural performance
      ii Coating: G60.
C. Exterior Non-Load-Bearing Wall Framing
   1 Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
      i Minimum Base-Metal Thickness: 0.0428 inch.
      ii Flange Width: 1-5/8 inches.

**EXTERIOR ENVELOPE**

Masonry exterior walls will be masonry veneer on metal stud backup. The assembly will consist of 6" metal studs with densglass sheathing, fluid applied moisture barrier, polystyrene insulation and either clay masonry or cast stone trim on masonry anchors. New walls over 2 stories high will be relieved at the third floor slab with continuous steel angles.

# Option 2 | Cost Analysis

| | Detailed Estimate | In Millions |
|---|---|---|
| 1. Arch./Eng. Design Fee | $ 4,895,000 | $ 4.9 |
| 2. Professional Fees | $ 3,355,384 | 3.3 |
| 3. Construction Costs | $ 111,698,063 | 111.7 |
| 4. Alternates | $ 5,580,677 | 5.6 |
| 5. FF&E and Technology | $ 5,591,000 | 5.6 |
| 6. Owner Contingency (5%) | $ 7,000,000 | 7.0 |
| **Grand Total** | **$ 138,120,124** | **$ 138.1** |

# Option 2 | Cost Analysis

| | Detailed Estimate | In Millions |
|---|---|---|
| 1. Arch./Eng. Design Fee | $ 4,895,000 | $ 4.9 |
| 2. Professional Fees | $ 3,355,384 | 3.3 |
| 3. Construction Costs | $ 111,698,063 | 111.7 |
| 4. Alternates | $ 5,580,677 | 5.6 |
| 5. FF&E and Technology | $ 5,591,000 | 5.6 |
| 6. Owner Contingency (5%) | $ 7,000,000 | 7.0 |
| **Grand Total** | **$ 138,120,124** | **$ 138.1** |

# FHS Options | What Are The Options?

## Option 1

Maintain Existing FHS

Estimated
Net Reimbursement Rate

approx 8¢
per dollar

## Option 2

Renovate Existing FHS As New
With Additions

Estimated
Net Reimbursement Rate

approx 29¢
per dollar

## Option 3

New FHS

# Option 2 | Where Does the Money Go?

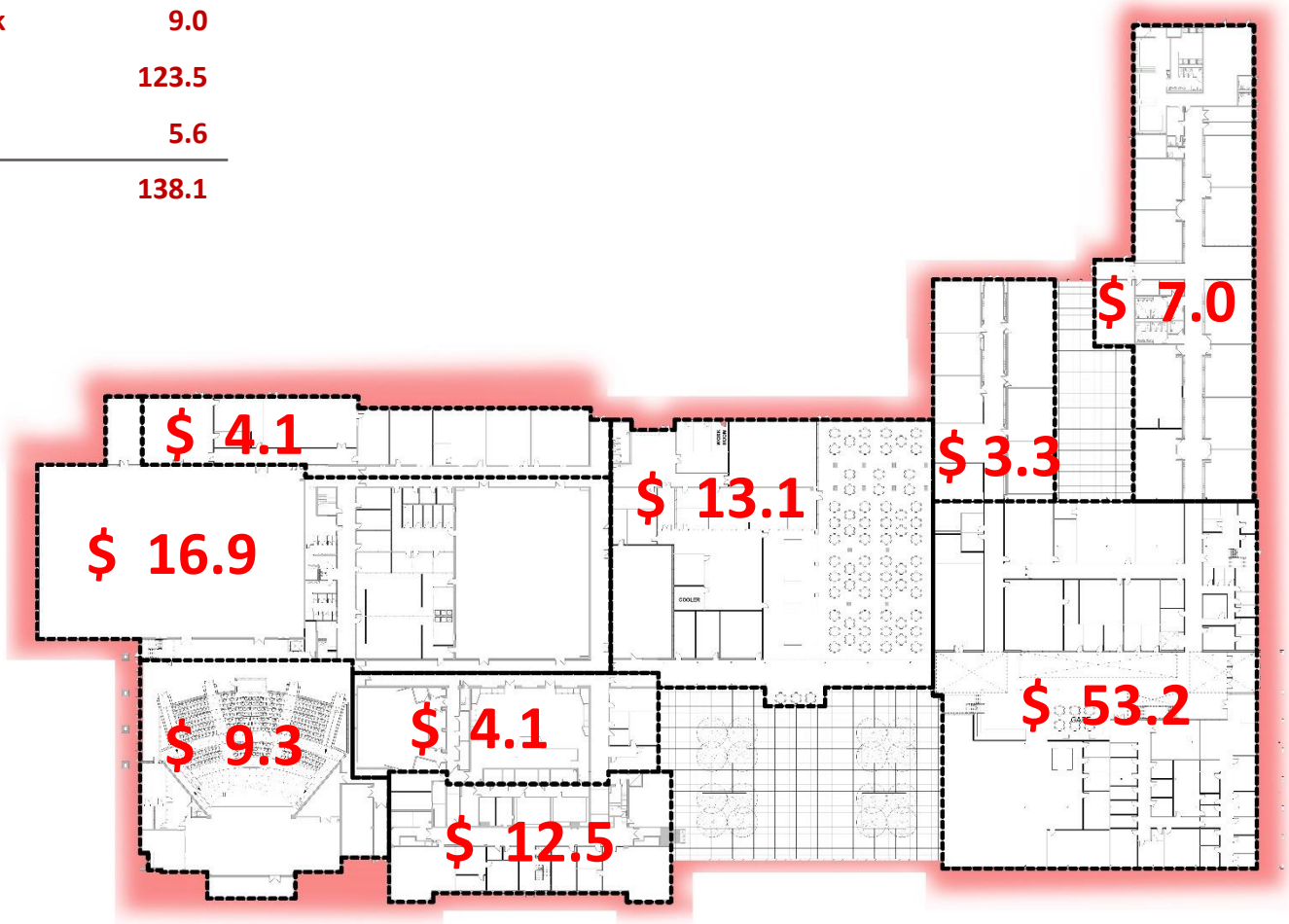
**In Millions:**

| | | | |
|---|---|---|---|
| | **External Requirements** | | |
| $ 33.1 | **ACCREDITATION** | IA | **High School Accreditation:** The New England Association of Schools and Colleges has placed FHS on "warning" status for "serious facilities deficiencies, including ADA access, heating and ventilation problems, leaky roof, inadequate science, cafeteria, auditorium, and library and media facilities, and other facilities issues that limit educational opportunities for students." Although FHS met and exceeded expectations in six (6) NEASC accreditation standards, it was placed on "warning" status for standard seven (7) – "Community Resources for Learning." |
| | **ACCESSIBILITY** | IB | **ADA Compliance**: FHS must adhere to an Office of Civil Rights (OCR) report indicating multiple areas of the school that do not meet Americans with Disabilities (ADA) Act requirements. Examples include music spaces, media center, gymnasium, some classrooms, bathrooms, weight room, auditorium, stage, orchestra pit, 2nd/3rd floors of 1928 building, outdoor athletic facilities, culinary spaces, and various spaces throughout the building. |
| | **Challenges and Needs** | | |
| $ 12.6 | **SECURITY COMPLIANCE** | IIA | *There have been seven (7) additions / renovations to FHS when heightened security expectations were not a consideration.*<br>✓ 23 separate entry points, sightline issues, lack of private/public separation and difficult building orientation even with signage<br>✓ Current parking lot configuration does not provide for clear pedestrian traffic pathways which is a safety concern |
| $ 9.1 | **SPRAWLING LAYOUT** | IIB | *FHS is a large, mostly one floor inefficient facility with too many long and narrow hallways.*<br>✓ Built in 1928 with renovations/additions in 1952, 1964, 1969, 1974, 1978, 1996, and 2003<br>✓ Hallway overcrowding and lengthy passing time for students to get to classes on time<br>✓ 30% of the square footage is used for hallways instead of instructional space<br>✓ Sprawling building is associated with increased energy costs |
| $ 30.9 | **EDUCATIONAL PROGRAMMING** | IIC | *FHS is reaching its limits for providing 21st Century programming and learning spaces that prepare today's learners for the future.*<br>✓ Inadequate classroom space to accommodate all programmatic offerings and active vs. passive learning<br>✓ Overcrowded study halls<br>✓ Undersized library at capacity every period of the school day<br>✓ Inadequate space for robotics, special education, science labs and performance spaces<br>✓ Lack of collaborative work spaces that reflect the way students learn in today's educational setting<br>✓ Auditorium and cafeteria are undersized for the population, impacting scheduling, educational programming, and state and federal requirements for food services.<br>*Education today requires:*<br>✓ Open, flexible spaces to promote independence, collaborative spaces to mirror real world work environments, public spaces to showcase learning and display work, and quiet places for reflection<br>✓ Technology and imagination rich environments to foster a maker mindset |
| $ 52.4 | **BUILDING ENVELOPE CODE COMPLIANCE (MEP)**<br>**ENERGY EFFICIENCY** | IID<br>IIE | *FHS is currently an inefficient building from an energy standpoint and also has code compliance issues.*<br>✓ An inefficient building envelope impacts energy costs and efficiencies (insulation, façade, windows-except for 900 wing)<br>✓ Mechanical, electrical, plumbing, fire alarm and building-protection systems are out-of-date and not in code compliance<br>✓ A "Green Design" (new or renovated MEP systems) could save 35-45% of annual costs per year depending upon design |

# Option 2 | Where Does the Money Go?

## In $ Millions:

| | |
|---|---|
| Site Work | 9.0 |
| Building | 123.5 |
| FF&E | 5.6 |
| TOTAL | 138.1 |



# FHS Options | Develop Criteria for Evaluation

1. Local, State, & Federal Requirements

Security Needs

3. Consolidation of Space

2. Programmatic Needs

4. Building Systems

| External Requirements | |
|---|---|
| ACCREDITATION AND ACCESSIBILITY I A I B | **High School Accreditation:** The New England Association of Schools and Colleges has placed FHS on "warning" status for "serious facilities deficiencies, including ADA access, heating and ventilation problems, leaky roof, inadequate science, cafeteria, auditorium, and library and media facilities, and other facilities issues that limit educational opportunities for students." Although FHS met and exceeded expectations in six (6) NEASC accreditation standards, it was placed on "warning" status for standard seven (7) – "Community Resources for Learning."<br><br>**ADA Compliance**: FHS must adhere to an Office of Civil Rights (OCR) report indicating multiple areas of the school that do not meet Americans with Disabilities (ADA) Act requirements. Examples include music spaces, media center, gymnasium, some classrooms, bathrooms, weight room, auditorium, stage, orchestra pit, 2nd/3rd floors of 1928 building, outdoor athletic facilities, culinary spaces, and various spaces throughout the building. |
| **Challenges and Needs** | |
| SECURITY COMPLIANCE II A | *There have been seven (7) additions / renovations to FHS when heightened security expectations were not a consideration.*<br>✓ 23 separate entry points, sightline issues, lack of private/public separation and difficult building orientation even with signage<br>✓ Current parking lot configuration does not provide for clear pedestrian traffic pathways which is a safety concern |
| SPRAWLING LAYOUT II B | *FHS is a large, mostly one floor inefficient facility with too many long and narrow hallways.*<br>✓ Built in 1928 with renovations/additions in 1952, 1964, 1969, 1974, 1978, 1996, and 2003<br>✓ Hallway overcrowding and lengthy passing time for students to get to classes on time<br>✓ 30% of the square footage is used for hallways instead of instructional space<br>✓ Sprawling building is associated with increased energy costs |
| EDUCATIONAL PROGRAMMING II C | *FHS is reaching its limits for providing 21st Century programming and learning spaces that prepare today's learners for the future.*<br>✓ Inadequate classroom space to accommodate all programmatic offerings and active vs. passive learning<br>✓ Overcrowded study halls<br>✓ Undersized library at capacity every period of the school day<br>✓ Inadequate space for robotics, special education, science labs and performance spaces<br>✓ Lack of collaborative work spaces that reflect the way students learn in today's educational setting<br>✓ Auditorium and cafeteria are undersized for the population, impacting scheduling, educational programming, and state and federal requirements for food services.<br>*Education today requires:*<br>✓ Open, flexible spaces to promote independence, collaborative spaces to mirror real world work environments, public spaces to showcase learning and display work, and quiet places for reflection<br>✓ Technology and imagination rich environments to foster a maker mindset |
| BUILDING ENVELOPE CODE COMPLIANCE (MEP) II D ENERGY EFFICIENCY II E | *FHS is currently an inefficient building from an energy standpoint and also has code compliance issues.*<br>✓ An inefficient building envelope impacts energy costs and efficiencies (insulation, façade, windows-except for 900 wing)<br>✓ Mechanical, electrical, plumbing, fire alarm and building-protection systems are out-of-date and not in code compliance<br>✓ A "Green Design" (new or renovated MEP systems) could save 35-45% of annual costs per year depending upon design |

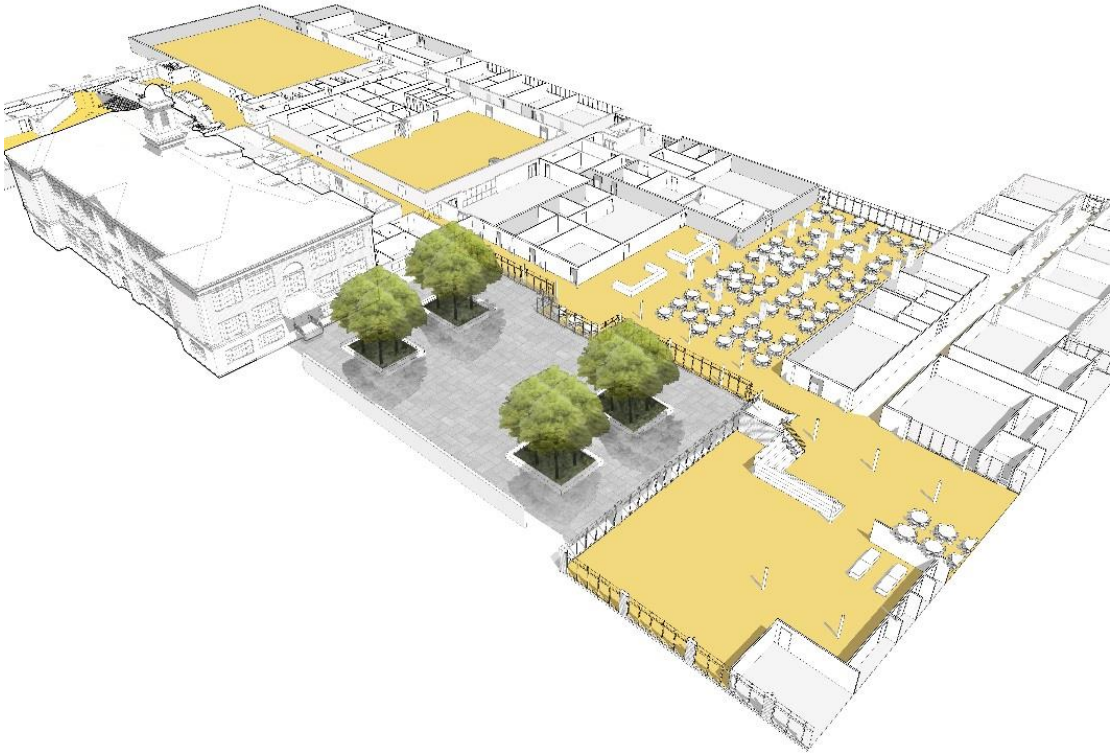
and add 5. Site Improvements, 6. Benefits to the Community, 7. Fit & Feel for Farmington and 8. Cost

# FHS Options | Evaluation of TSKP Option 2

| | CRITERIA | Total Points Available | PRESENTATION 1 OF 3- JANUARY 8, 2020 | | PRESENTATION 2 OF 3- JANUARY 15, 2020 | | PRESENTATION 3OF 3- JANUARY 22, 2020 | |
|---|---|---|---|---|---|---|---|---|
| | | | OPTION 1 | | OPTION 2 | | OPTION 3 | |
| | | | MAINTAIN EXISTING FHS | | RENOVATE EXISTING FHS AS NEW WITH ADDITIONS | | NEW FHS BUILDING | |
| | | | TSKP | QA&M | TSKP | QA&M | TSKP | QA&M |
| 1 | **LOCAL, STATE, AND FEDERAL REQUIREMENTS** | | | | | | | |
| | Address ADA Compliance (OCR Requirements) | 4 | | | | | | |
| | Address Security Needs (School Safety Infrastructure Council Standards) | 4 | | | | | | |
| | Public/Private Separation | 4 | | | | | | |
| | Address NEASC Requirements | 4 | | | | | | |
| 2 | **PROGRAMMATIC NEEDS** | | | | | | | |
| | Education Disruption (Phasing) | 4 | | | | | | |
| | Satisfies Ed Specs | 4 | | | | | | |
| | Address Undersized Learning Spaces (Cafeteria, Gym, Media Center, Performing Arts) | 4 | | | | | | |
| | Flexible and Collaborative Learning Environments | 4 | | | | | | |
| | Space for New or Enhanced Educational Programming | 4 | | | | | | |
| 3 | **CONSOLIDATION OF SPACE** | | | | | | | |
| | Reduce Sprawl and Improve Internal Circulation | 4 | | | | | | |
| | Utilization of Space | 4 | | | | | | |
| | Robotics | 4 | | | | | | |
| | Farmington Alternate High School | 4 | | | | | | |
| | School District Administration Offices | 4 | | | | | | |
| 4 | **BUILDING SYSTEMS** | | | | | | | |
| | Energy Efficiency | 4 | | | | | | |
| | Mechanical, Electrical, Plumbing | 4 | | | | | | |
| | Building Envelope | 4 | | | | | | |
| | Green Design | 4 | | | | | | |
| 5 | **SITE IMPROVEMENTS** | | | | | | | |
| | Traffic Flow, Pedestrian Safety, and Parking | 4 | | | | | | |
| | Athletic Fields | 4 | | | | | | |
| | ADA Compliance | 4 | | | | | | |
| | Site Layout Plan | 4 | | | | | | |
| 6 | **BENEFITS TO THE COMMUNITY** | | | | | | | |
| | Community Use of the Building | 4 | | | | | | |
| | Shelter in Place | 4 | | | | | | |
| 7 | **FIT AND FEEL FOR FARMINGTON** | | | | | | | |
| | Internal Design | 4 | | | | | | |
| | External Design | 4 | | | | | | |
| | Overall fit and feel for Farmington | 4 | | | | | | |
| | | | | | | | | |
| | **TOTAL** | 28 | | | | | | |

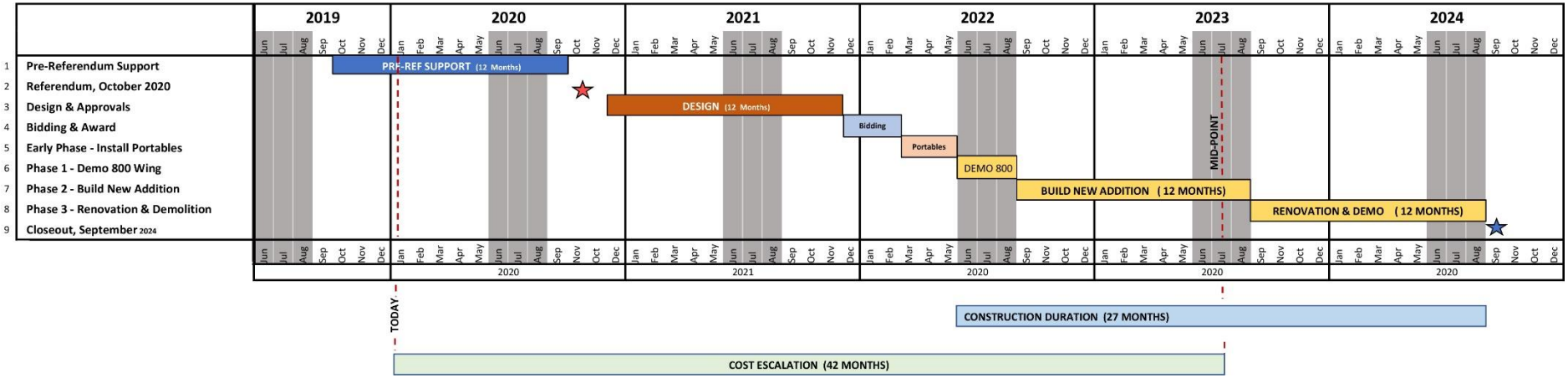
# Option 2 | 1. Local, State & Federal Requirements

| CRITERIA | | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 1 | **LOCAL, STATE, AND FEDERAL REQUIREMENTS** | | | |
| | Address ADA Compliance (OCR Requirements) | 4 | 4.0 | **Meets all ADA requirements.** |
| | Address Security Needs (School Safety Infrastructure Council Standards) | 4 | 4.0 | **Addresses Security Needs.** |
| | Public/Private Separation | 4 | 4.0 | **Achieves Public/Private Separation.** |
| | Address NEASC Requirements | 4 | 4.0 | **Addresses NEASC Requirements.** |



# Option 2 | 2. Programmatic Needs

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 2 | **PROGRAMMATIC NEEDS** | | | |
| | Education Disruption (Phasing) | 4 | 3.0 | **Requires Swing Space and 27 Months of Additions and Renovation.** |
| | Satisfies Ed Specs | 4 | | |
| | Address Undersized Learning Spaces (Cafeteria, Gym, Media Center, Performing Arts) | 4 | | |
| | Flexible and Collaborative Learning Environments | 4 | | |
| | Space for New or Enhanced Educational Programming | 4 | | |



# Option 2 | 2. Programmatic Needs

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 2 | **PROGRAMMATIC NEEDS** | | | |
| | Education Disruption (Phasing) | 4 | 3.0 | **Requires Swing Space and 27 Months of Additions and Renovation.** |
| | Satisfies Ed Specs | 4 | 4.0 | **Satisfies Ed Specs.** |
| | Address Undersized Learning Spaces (Cafeteria, Gym, Media Center, Performing Arts) | 4 | 4.0 | **Fully Addresses Undersized Learning Spaces, including Cafeteria, Gym, Media Center, Performing Arts.** |
| | Flexible and Collaborative Learning Environments | 4 | | |
| | Space for New or Enhanced Educational Programming | 4 | | |

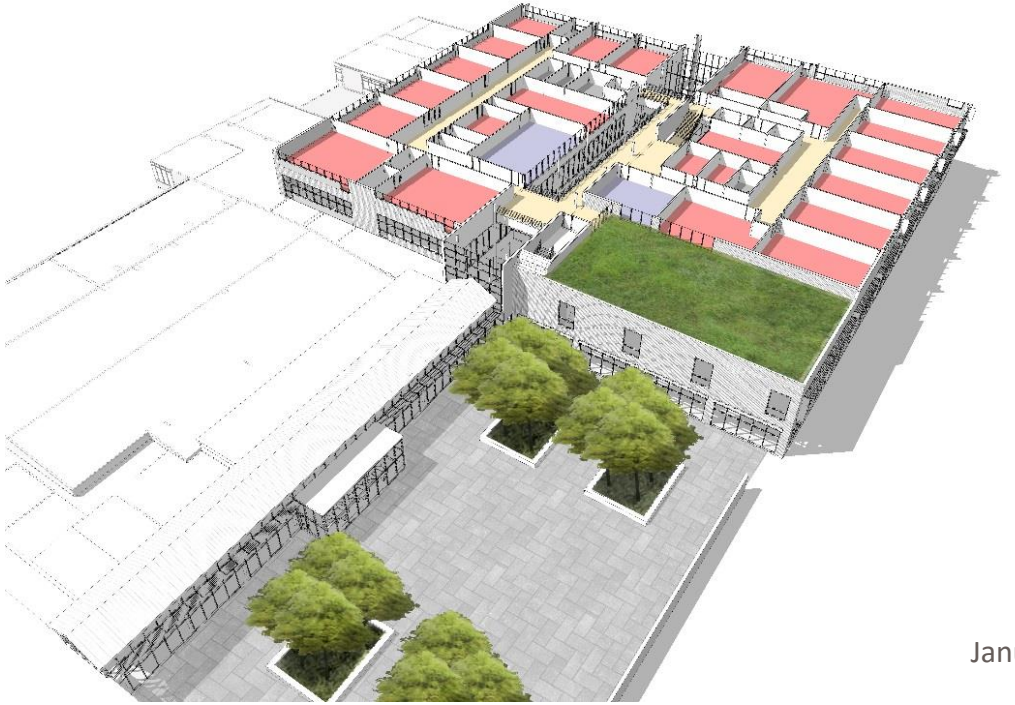
| | Ed Specs | Option 2 |
|---|---|---|
| | Including Central Office | Renovate As New with Additions |
| | **Estimated Square Feet** | **Actual Square Feet** |
| **A. Program Area** | **187,884** | **188,000** |
| **B. Building Services / Core Areas** | **60,194** | **45,000** |
| **C. Total Building Area per State** | **248,078** | **260,000** |
| **D. Exterior Wall Thickness** | **26,230** | **7,000** |
| **E. Total Gross Square Footage** | **274,308** | **267,000** |

# Option 2 | 2. Programmatic Needs

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 2 | **PROGRAMMATIC NEEDS** | | | |
| | Education Disruption (Phasing) | 4 | 3.0 | **Requires Swing Space and 27 Months of Renovation.** |
| | Satisfies Ed Specs | 4 | 4.0 | **Satisfies Ed Specs.** |
| | Address Undersized Learning Spaces (Cafeteria, Gym, Media Center, Performing Arts) | 4 | 4.0 | **Cafeteria Capacity Increased, Gym, Media Center, Performing Arts Improved.** |
| | Flexible and Collaborative Learning Environments | 4 | 4.0 | **Creates Flexible and Collaborative Learning Environments.** |
| | Space for New or Enhanced Educational Programming | 4 | 4.0 | **Adds New Space for Enhanced Educational Programming.** |

# Option 2 | 3. Consolidation of Space

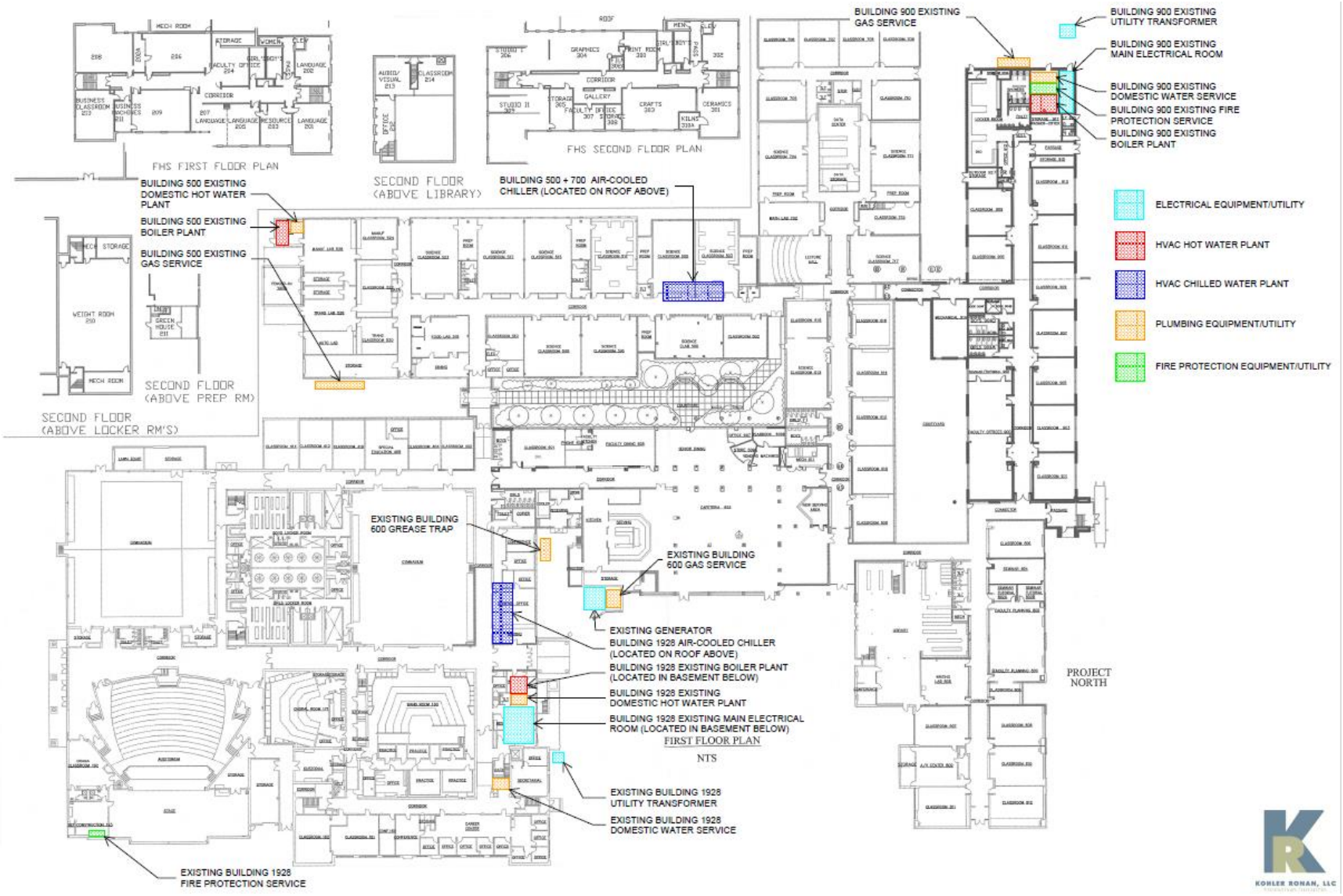
| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 3 | **CONSOLIDATION OF SPACE** | | | |
| | Reduce Sprawl and Improve Internal Circulation | 4 | 4.0 | **Reduces Sprawl and Improves Internal Circulation.** |
| | Utilization of Space | 4 | 4.0 | **Very Efficient Utilization of Space.** |
| | Robotics | 4 | 4.0 | **Included.** |
| | Farmington Alternate High School | 4 | 4.0 | **Included.** |
| | School District Administration Offices | 4 | 4.0 | **Included.** |



# Option 2 | 4. Building Systems

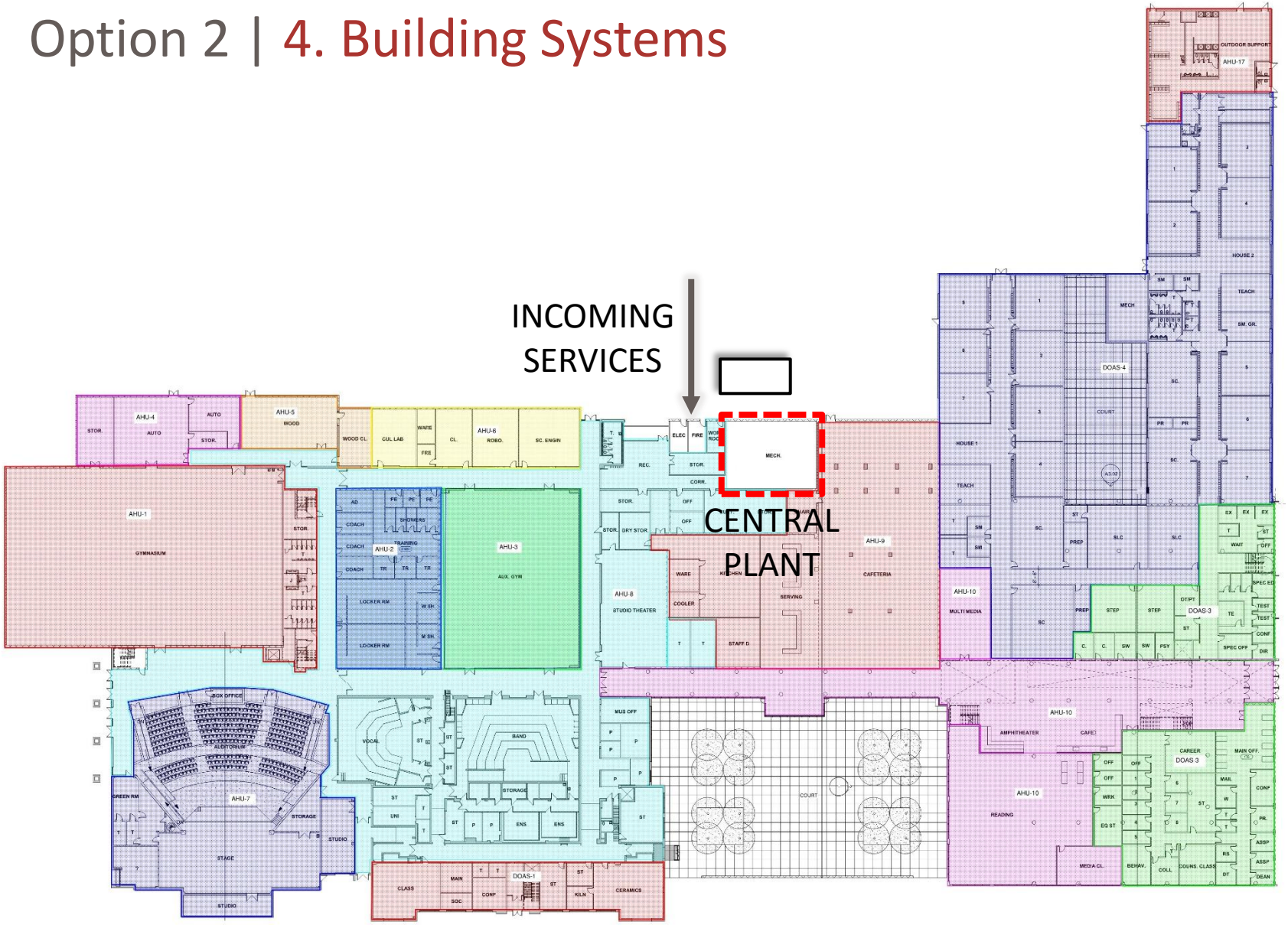
| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 4 | **BUILDING SYSTEMS** | | | |
| | Energy Efficiency | 4 | 4.0 | **Change MEP Systems and Configuration Completely.** |
| | Mechanical, Electrical, Plumbing | 4 | 4.0 | **New Mechanical, Electrical, Plumbing Components.** |
| | Building Envelope | 4 | 3.0 | **New and Upgraded Envelope.** |
| | Green Design | 4 | 4.0 | **Included as Add Alternates.** |

# Option 2 | 4. Building Systems




## Existing MEP/FP Utility Plan

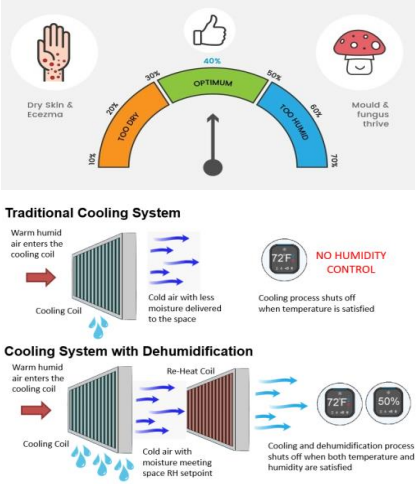
# Option 2 | 4. Building Systems




**Proposed MEP/FP Utility Plan**

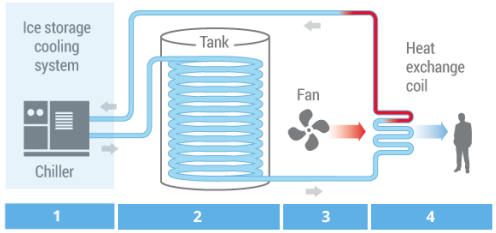
# Option 2 | 4. Building Systems (Green Technologies)

Photovoltaic Panels

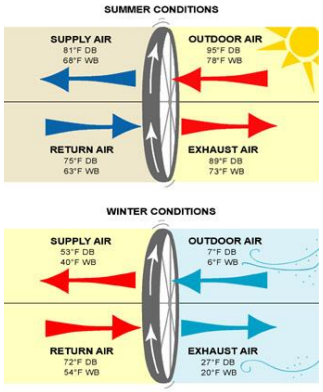



Humidification & Dehumidification

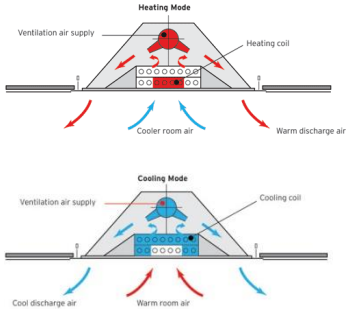
Modular Systems



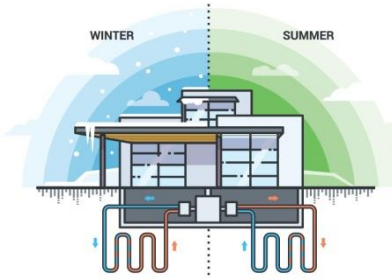

Ice Storage




Energy Recovery




Chilled Beams




Geothermal HX

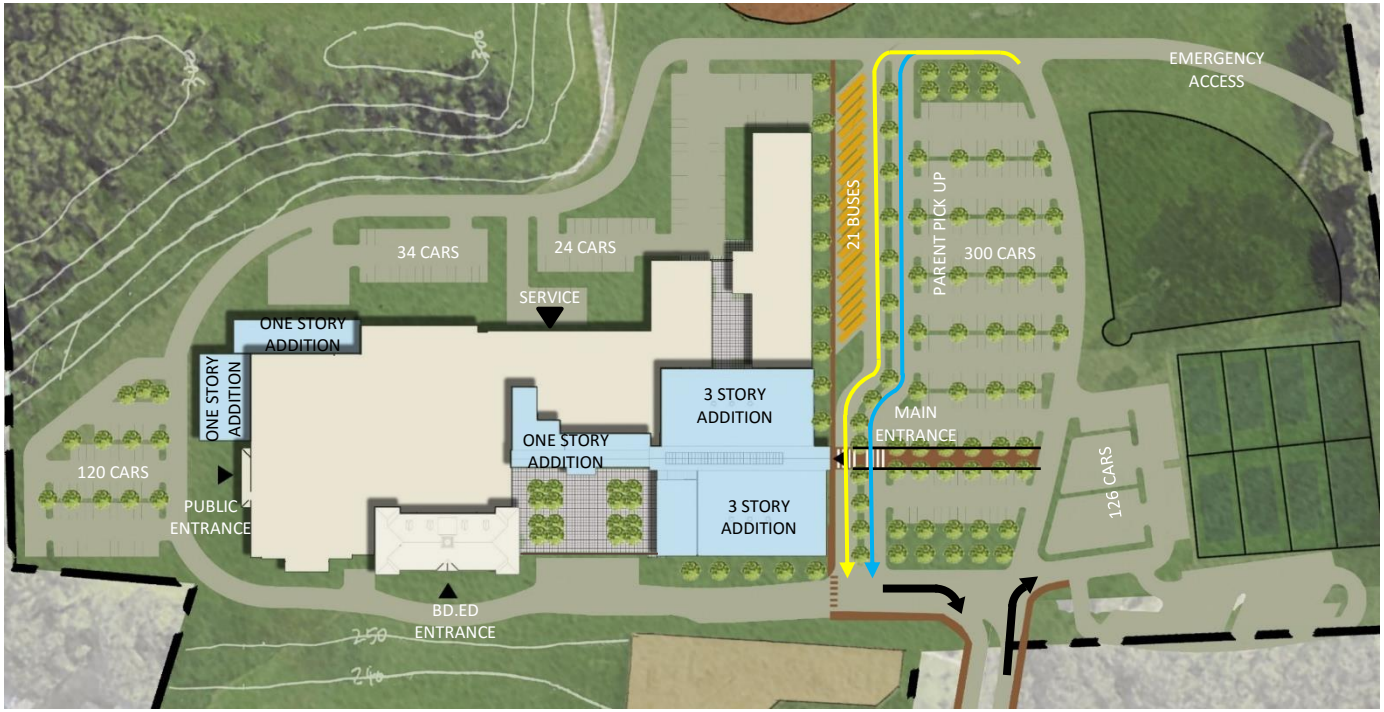
Geothermal Wells

# Option 2 | 4. Building Systems

| Case | Utility Cost | Years to payback | Comments |
|---|---|---|---|
| Current Building | $328K/year | | 218,000 SF<br>Less than half air conditioned |
| Renovate as New | $368K/year | | 267,000 SF<br>Fully air conditioned, 11 months/year |
| Renovate as New w/ PV Array | $239K/year | | PV array $4.7M first cost included in $138.1M project cost |
| Renovate as New w/ PV Array and Partial Ice Storage | $214K/year | 6 | Ice Storage has a $150K first cost |
| Renovate as New w/ PV Array and Partial Ice Storage and Chilled Beams | $194K/year | 30 | Chilled Beams have a $1.7M first cost |

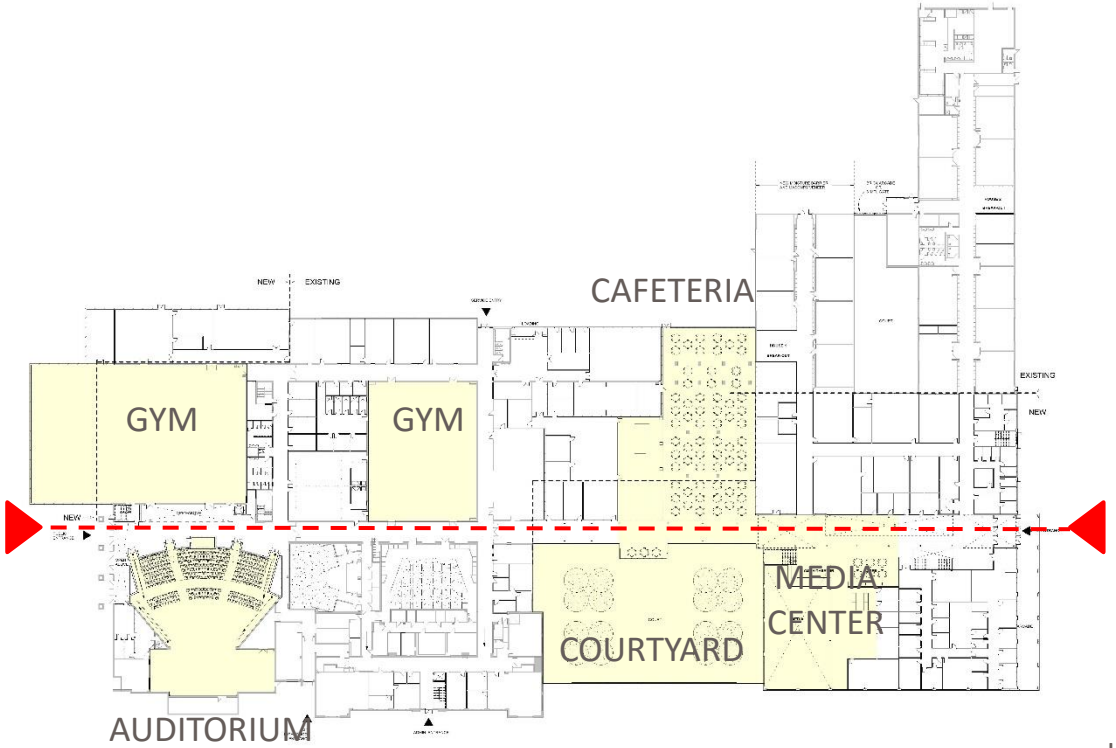
# Option 2 | 5. Site Improvements

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 5 | **SITE IMPROVEMENTS** | | | |
| | Traffic Flow, Pedestrian Safety, and Parking | 4 | 4.0 | **Improvements in Traffic Flow, Pedestrian Safety, and Parking.** |
| | Athletic Fields | 4 | 4.0 | **No Reduction in Athletic Fields. No Interruption in Use of Fields.** |
| | ADA Compliance | 4 | 4.0 | **ADA Compliant** |
| | Site Layout Plan | 4 | 4.0 | **Improved Site Layout Plan. Better Traffic Configuration.** |



# Option 2 | 6. Benefits to Community

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 6 | **BENEFITS TO THE COMMUNITY** | | | |
| | Community Use of the Building | 4 | 4.0 | **Building Configuration Allows Community Use of the Building.** |
| | Shelter in Place | 4 | 4.0 | **Included.** |



# Option 2 | 7. Fit & Feel for Farmington

| | CRITERIA | Total Points Available | OPTION 1 | |
|---|---|---|---|---|
| | | | MAINTAIN EXISTING FHS | |
| | | | TSKP | Comments |
| | | | RS OPINION | |
| 7 | **FIT AND FEEL FOR FARMINGTON** | | | |
| | Internal Design | 4 | 4.0 | **Completely Transforms Internal Design.** |
| | External Design | 4 | 4.0 | **Preserves Legacy Building and Adds Compatible New Building.** |
| | Overall fit and feel for Farmington | 4 | 4.0 | **Conserves Existing Resources and Invests in the Future.** |

# The End

# TSKP Option 2 Cost Estimate

| TSKP Option II Renovate as New with Additions | |
|---|---|
| **Item** | **Cost Estimate** |
| Architectural Design Fee | $ 4,895,000.00 |
| *reduced to match projected duration* | |
| | |
| Professional Fees | $ 3,355,384.00 |
| | |
| Construction Costs | $ 111,698,063.00 |
| | |
| Alternates | $ 5,580,677.00 |
| | |
| Furniture/Equipment/ Technology | $ 5,591,000.00 |
| | |
| 5% Owner Contingency | $ 7,000,000.00 |
| | |
| **Total Project Cost** | $ 138,120,124.00 |

| CRITERIA | PRESENTATION 1 OF 3- JANUARY 8, 2020<br>OPTION 1<br>MAINTAIN EXISTING FHS | | PRESENTATION 2 OF 3- JANUARY 15, 2020<br>OPTION 2<br>RENOVATE EXISTING FHS AS NEW WITH ADDITION | | PRESENTATION 3 OF 3- JANUARY 22, 202<br>OPTION 3<br>NEW FHS BUILDING | |
|---|---|---|---|---|---|---|
| | TSKP | QA&M | TSKP | QA&M | TSKP | QA&M |
| **TOTAL PROJECT COST:** Total Project Cost includes construction and soft costs. This is the number that would appear on the referendum ballot and interest is not included in the total project | $49,863,339 | | $ 138,120,124.00 | | | |
| **LESS STATE REIMBURSEMENT OF ELIGIBLE COSTS( NOT ALL ITEMS ELIGIBLE):** Farmington's reimbursement rate depends on the type of building project that is proposed. A renovation is up to 30%, and a new building is up to 20%. However, the exact reimbursement is not known until the very | $4,188,520 | | $ 40,836,037.00 | | | |
| **NET PROJECT COST:** | $45,674,819 | | $97,284,087.00 | 0.0 | 0.0 | 0.0 |
| **ADDITIONAL CAPITAL EXPENDITURES OVER 20 YEARS** | $1,170,000 | | $0 | | | |
| **TOTAL PROJECTED COST OVER 20 YEARS--TOWN SHARE** | $46,844,819 | | $97,284,087.00 | | | |
| **Tax Impact Year 1 *** | $229.16 | | $480.31 | | | |
| The Tax Impact is for the Farmington High School Building Project ONLY. The tax impact is calculated based on the Average Residental Assessment of $226,777. | *Costs will decrease by approximately $4.27/year over 20 years | | *Costs will decrease by approximately $9.09/year over 20 years | | | |
| **ANNUAL OPERATIONAL COST:** This cost is the best estimate of running the building compared to what it costs to run the building now. | | | | | | |
| **ENERGY COST** | | | | | | |
| **MAINTENANCE COST** | | | | | | |
| **TAX IMPACT** | | | | | | |

Attachment E

# Farmington High School

## Creating New Possibilities | Option 2

QA+M architecture

BSC GROUP

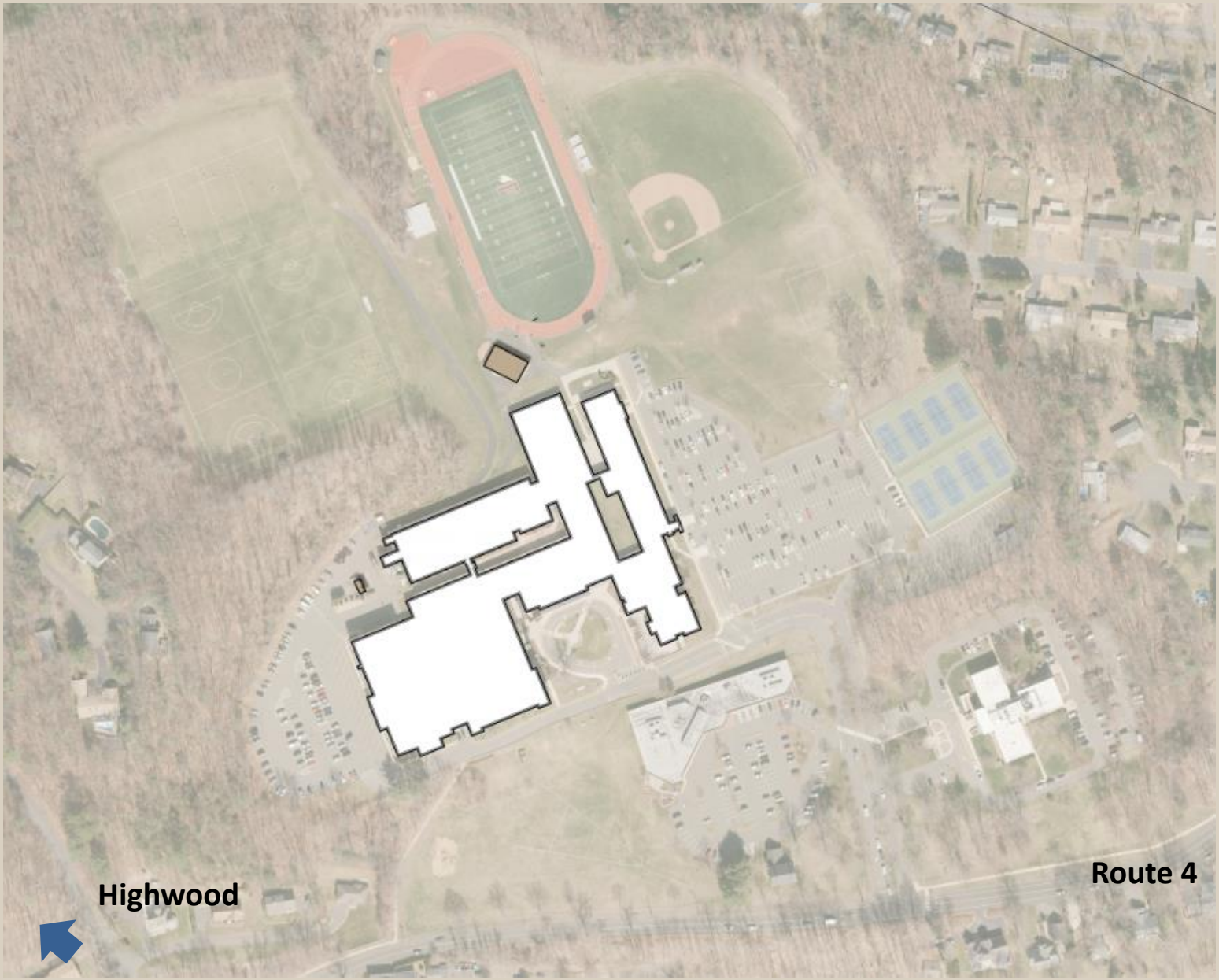
VANZELM ENGINEERS

# RFP Guidelines

## "A comprehensive design solution as defined in the Statement of Needs…and falls within a category of Renovate as New…"

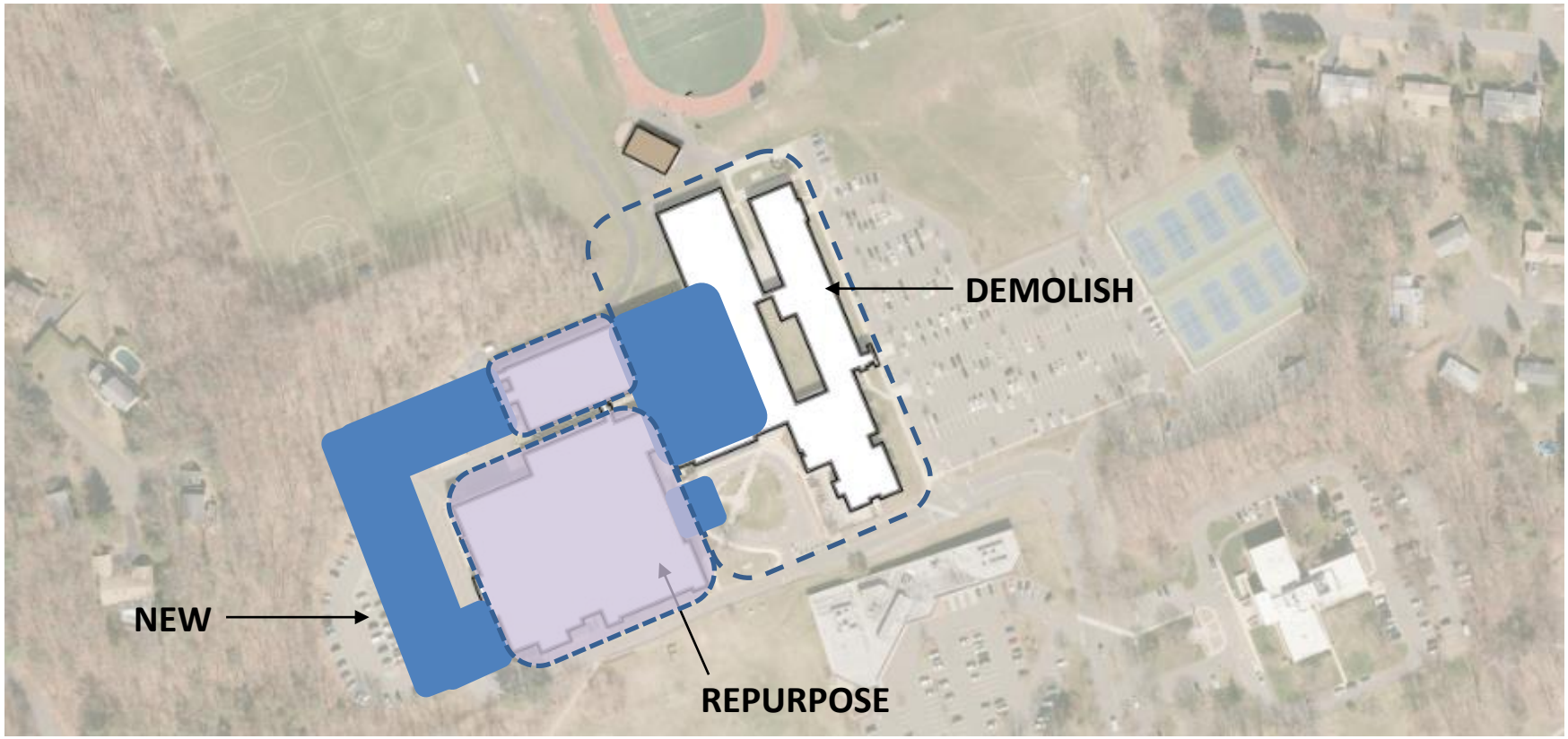
+ **Educational Specifications – Full compliance**
+ **Disruption to Education - Minimized**
+ **HVAC / mechanical systems – New energy efficient systems**
+ **Auditorium – New in place**
+ **Safety & Security – Meet all standards**
+ **NEASC Report – Full compliance**
+ **Codes, Accessibility & OCR Reports – Full compliance**
+ **BOE Central Office – Program space provided**
+ **Alternative Education – Program space provided**
+ **Sprawl & Circulation Efficiency – Resolved and optimized**
+ **Public & Private Separation – Fully addressed**
+ **Green / Sustainable Design – Strategies implemented**

# Existing Site Plan



# Design Goal

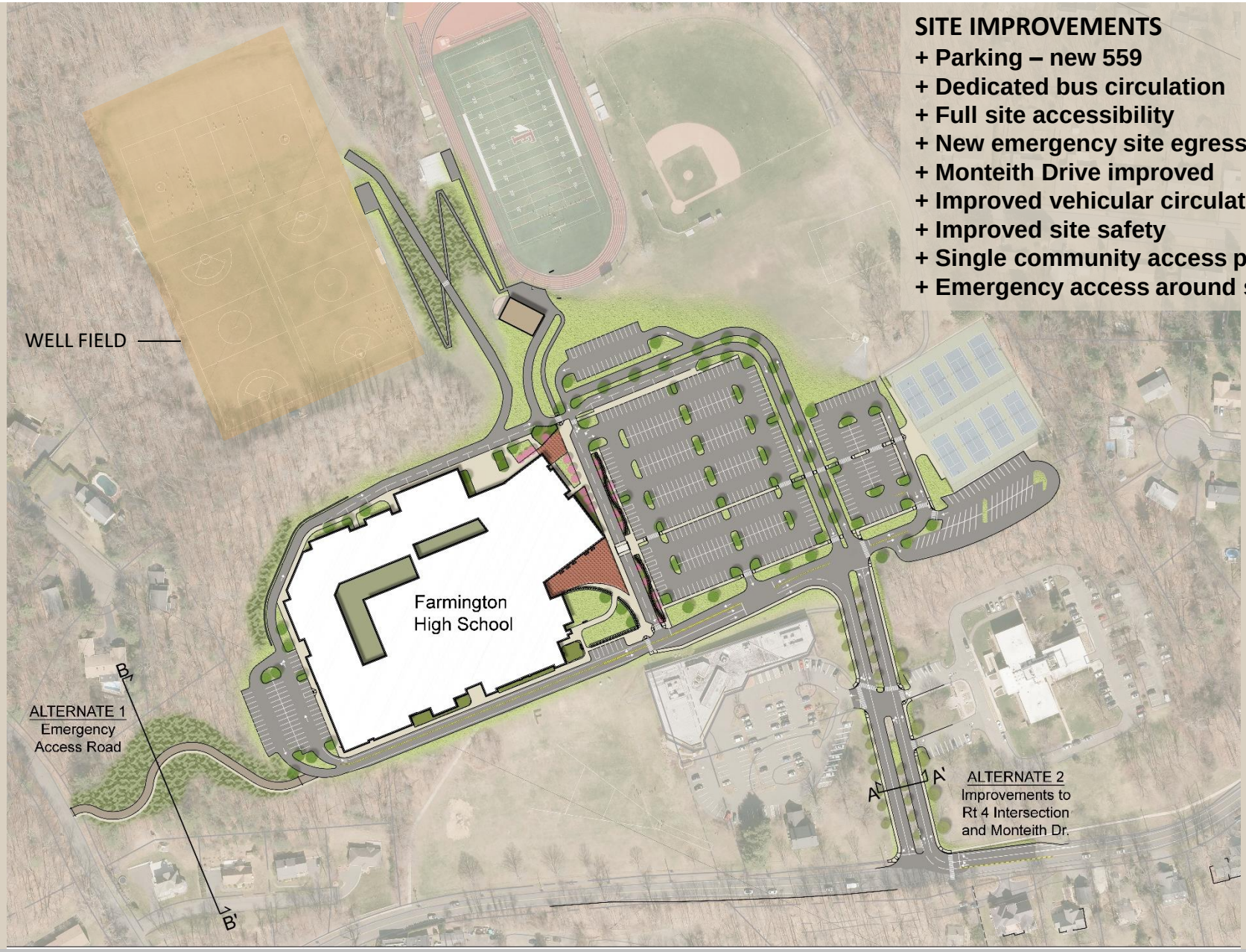
***…to meet all criteria identified in the educational program and statement of needs by repurposing, demolishing and rebuilding, the existing occupied 218,000-SF facility into a reimagined future ready high school of approximately 275,000-SF, while minimizing disruption to education.***



Farmington High School | Creating New Possibilities | Option 2

QA+M architecture

# Proposed Site Plan




**SITE IMPROVEMENTS**

- + Parking – new 559
- + Dedicated bus circulation
- + Full site accessibility
- + New emergency site egress
- + Monteith Drive improved
- + Improved vehicular circulation
- + Improved site safety
- + Single community access point
- + Emergency access around school

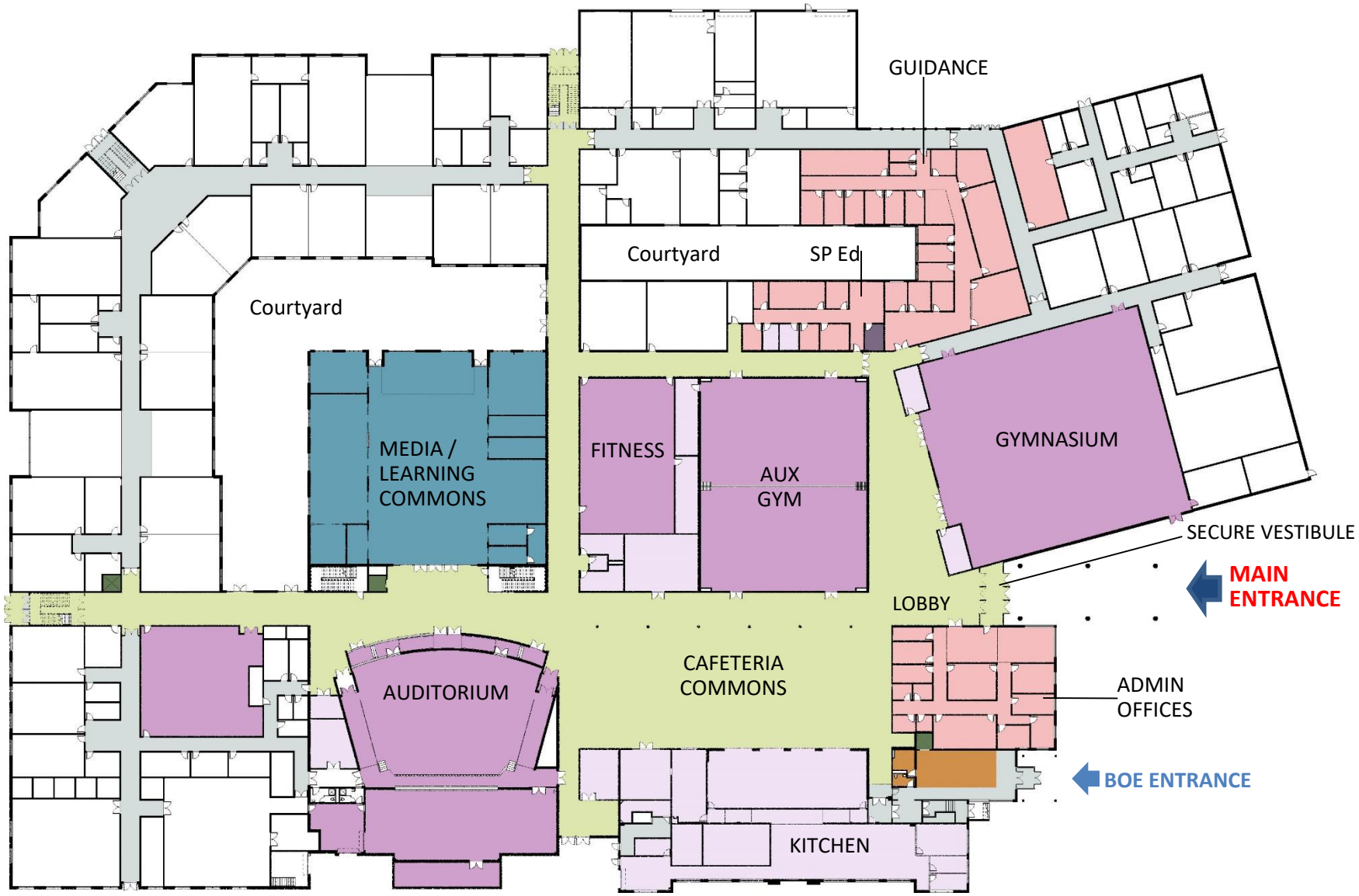


BSC GROUP

QA+M architecture

# Main Entrance

QA+M architecture




# First Floor Plan

# Main Entrance | View to Gym Lobby

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# New Gymnasium

QA+M architecture

# Main Entrance | View from Lobby

QA+M architecture

# Cafeteria | Commons

QA+M architecture

# Cafeteria | Commons

QA+M architecture

# Media / Learning Commons + Auditorium

QA+M architecture

# Media / Learning Commons

QA+M architecture

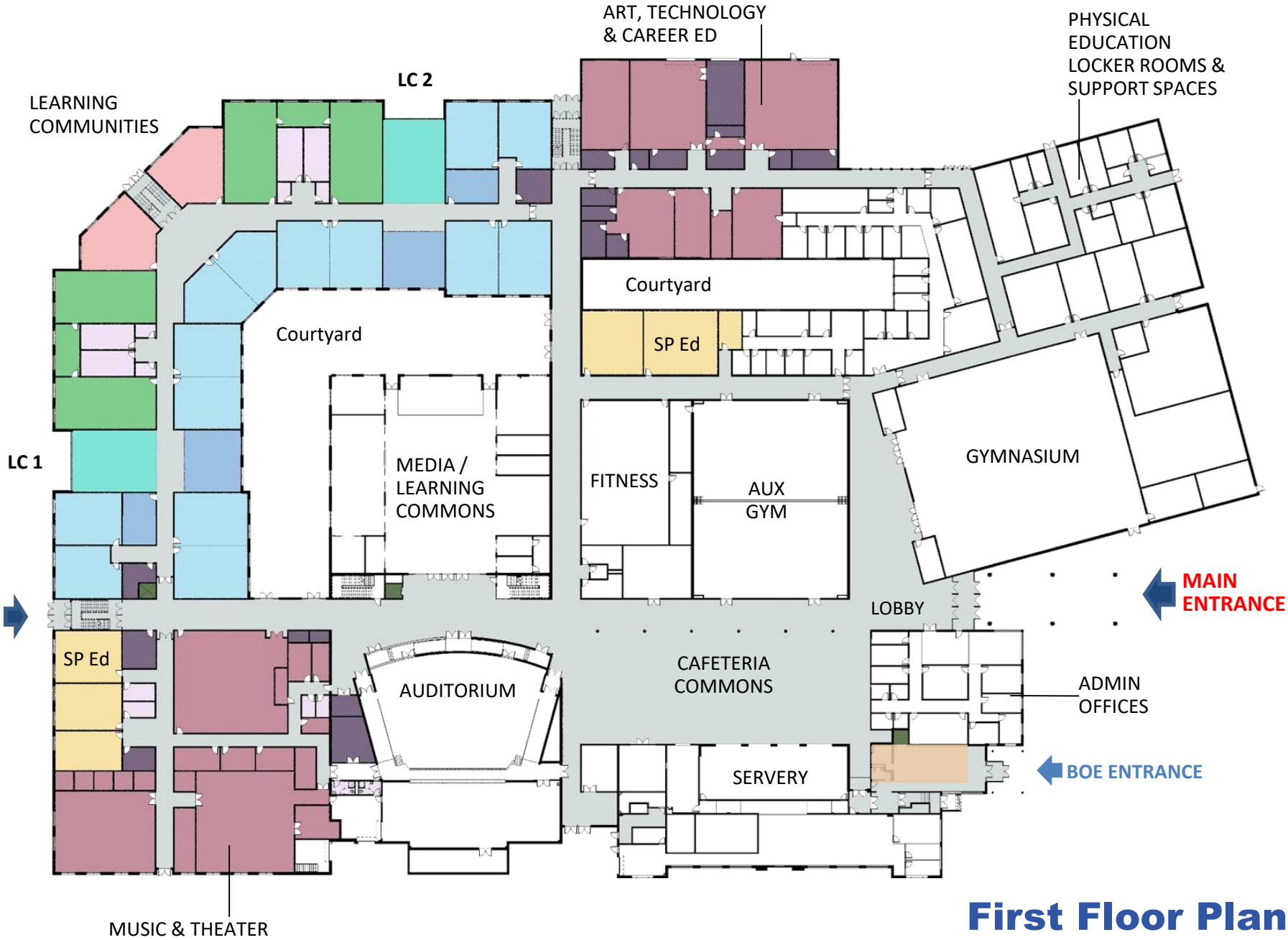
# Media / Learning Commons

QA+M architecture

# Auditorium

QA+M architecture

# Studio Theater

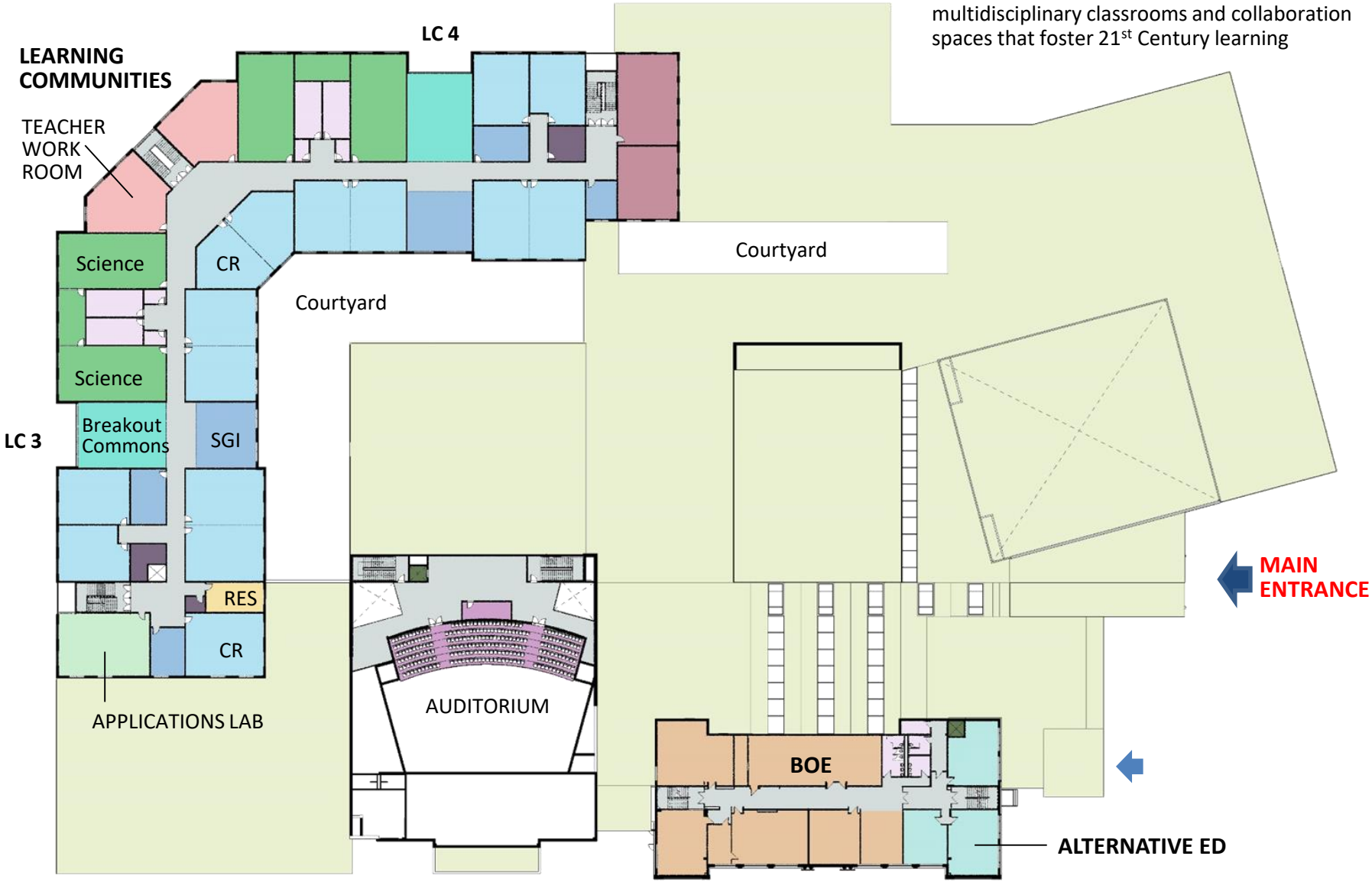



# First Floor Plan



QA+M architecture

LEARNING COMMUNITIES – A cluster of multidisciplinary classrooms and collaboration spaces that foster 21st Century learning




# Second Floor Plan



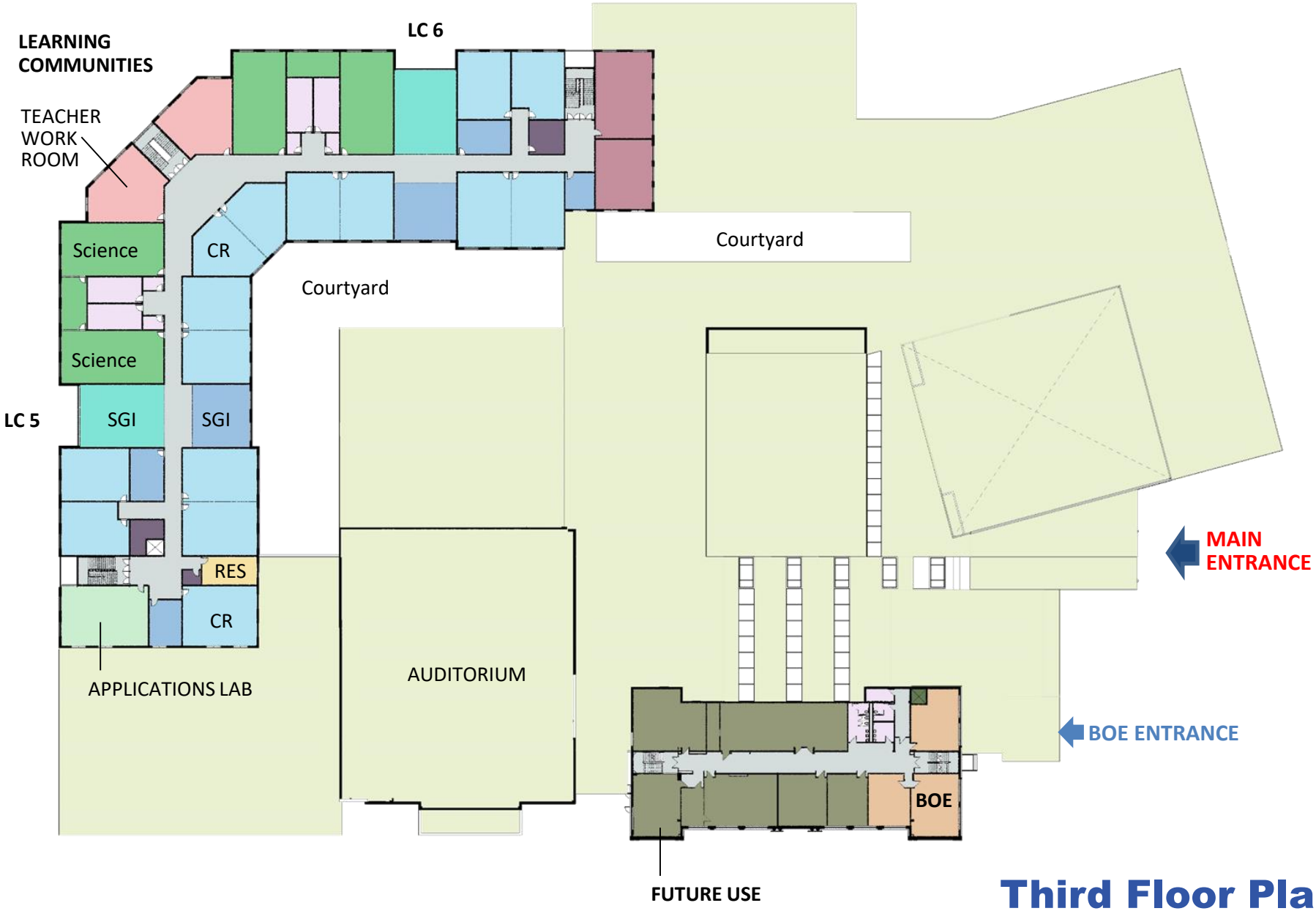
QA+M architecture

# Breakout

QA+M architecture

# Science Clabroom

QA+M architecture




# Third Floor Plan



QA+M architecture

# Project Summary

## PROJECT DATA

Projected Enrollment: 1,405 students

State OSCGR Allowable: 253,602 Net SF

1928 Building Bonus Area: 6,000 Net SF

Total Allowable Area: 259,602 Net SF

District Offices Area: 9,626 Net SF*

Total Area: 269,228 Net SF

*Total Area Gross: 278,651 GSF*

## RENOVATION OPTION DATA

FHS Renovated Area: 255,000 Net SF

District Office Area: 11,500 Net SF

Total Area: 266,500 Net SF

Unused 1928 Area: 8,000 Net SF

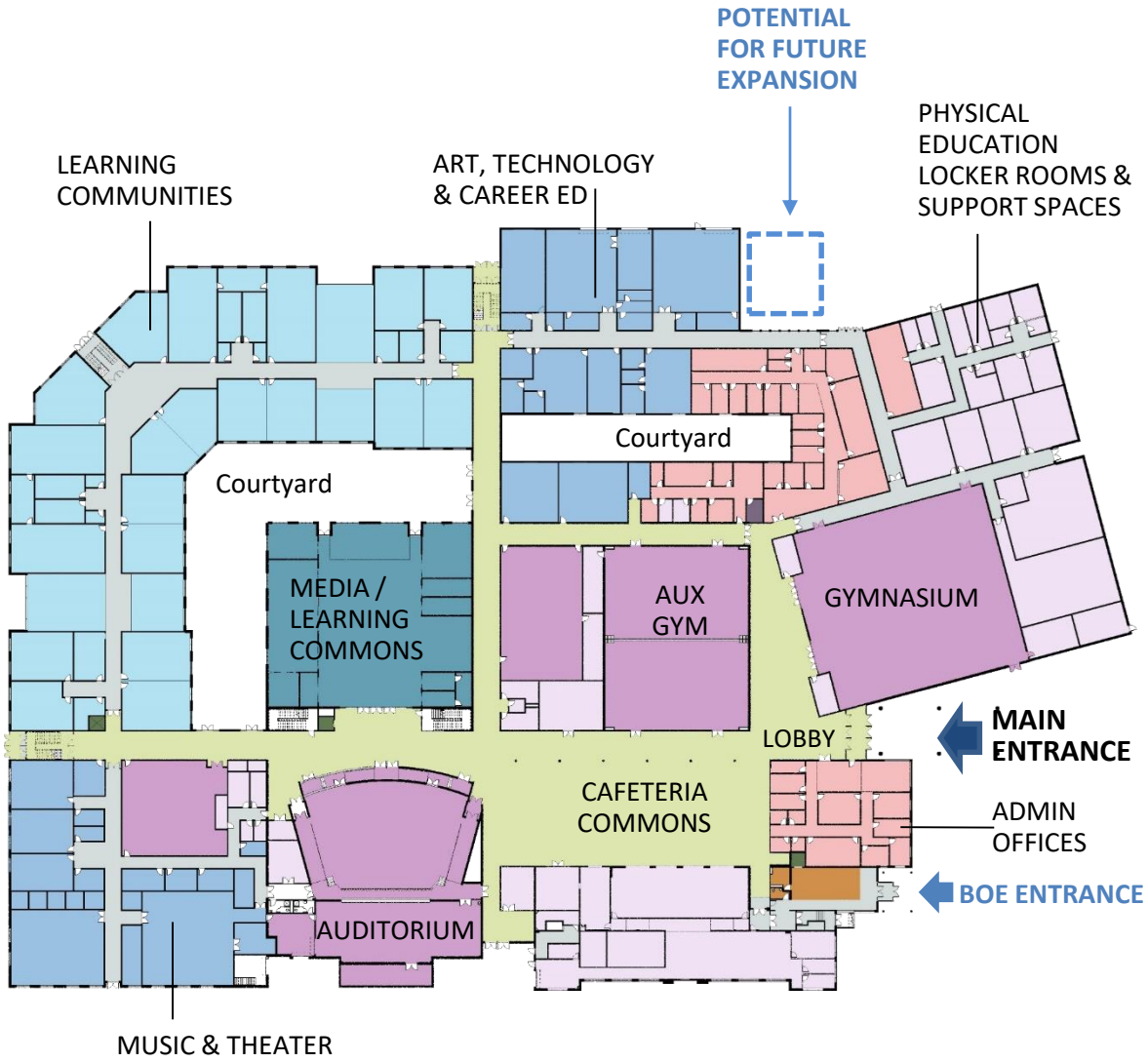
*Total Area: 274,500 Net SF*

Total Area Gross: 284,100 GSF

Original Building Footprint: 187,947 SF
Option One Footprint: 174,871 SF

58% OF THE ORIGINAL BUILDING STRUCTURE IS REMAINING

* No Space Standards for District Offices




# First Floor Plan

Farmington High School | Creating New Possibilities | Option 2

QA+M architecture

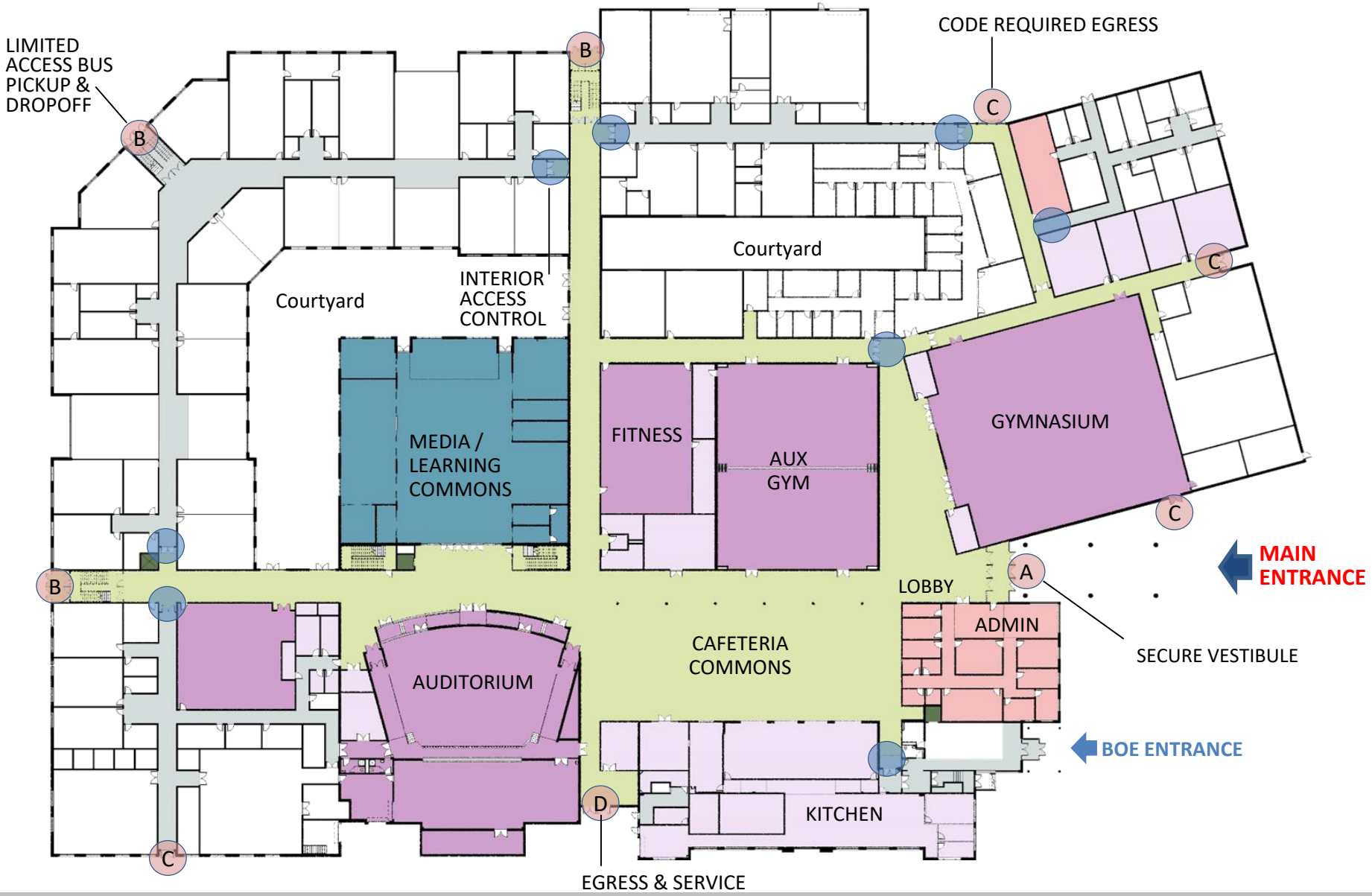
QA+M architecture

QA+M architecture

# Criteria

# 1 Local, State and Federal Requirements

+ ADA Compliance
+ Security Needs
+ Public / Private Separation
+ NEASC Requirements

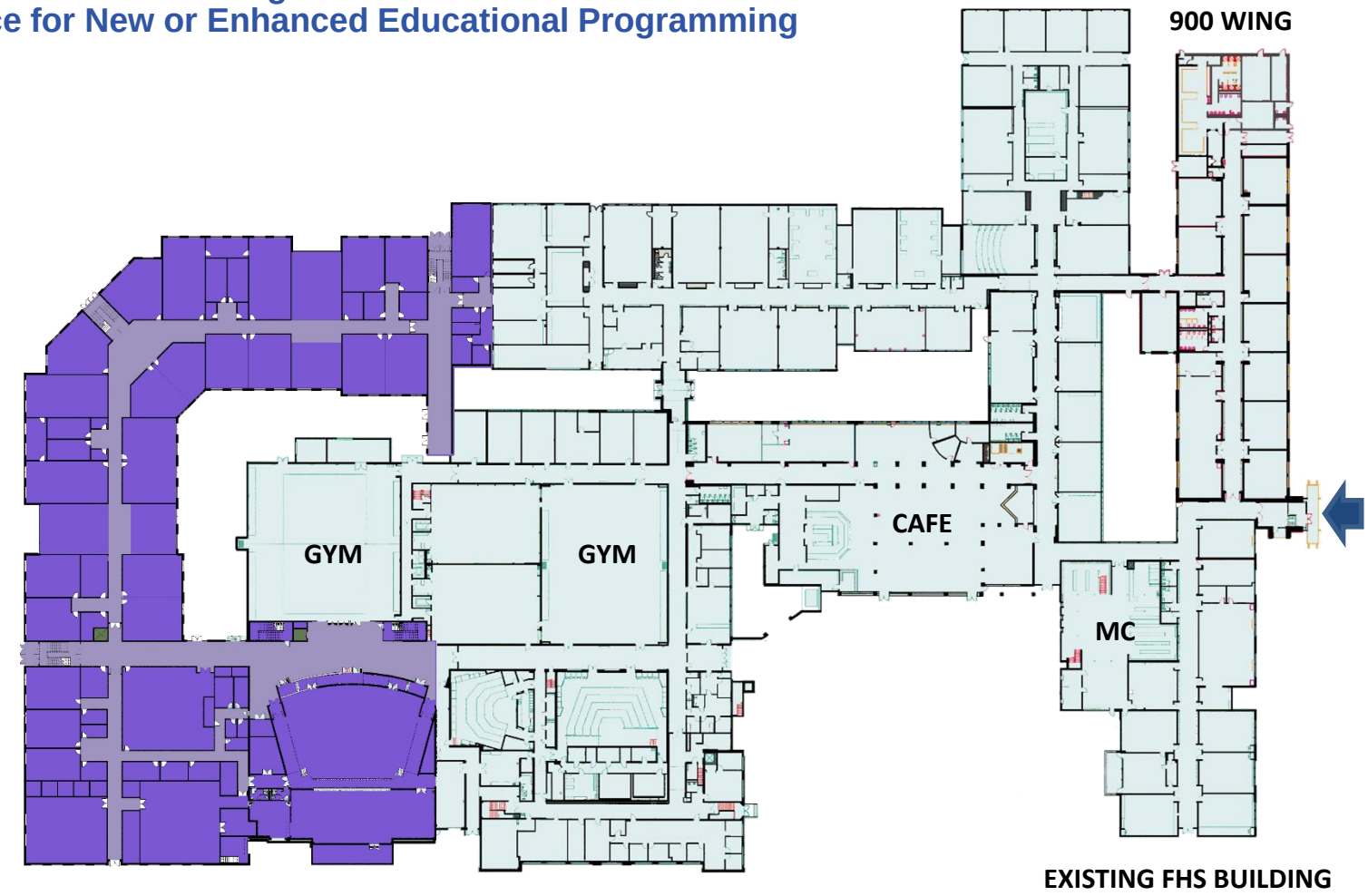





QA+M architecture

# 2 Programmatic Needs

- Education Disruption
- Satisfies Ed Specs
- Undersized Learning Spaces
- Collaborative Learning
- Space for New or Enhanced Educational Programming




**PHASE ONE 14 MONTHS**

# 2 Programmatic Needs

- + Education Disruption
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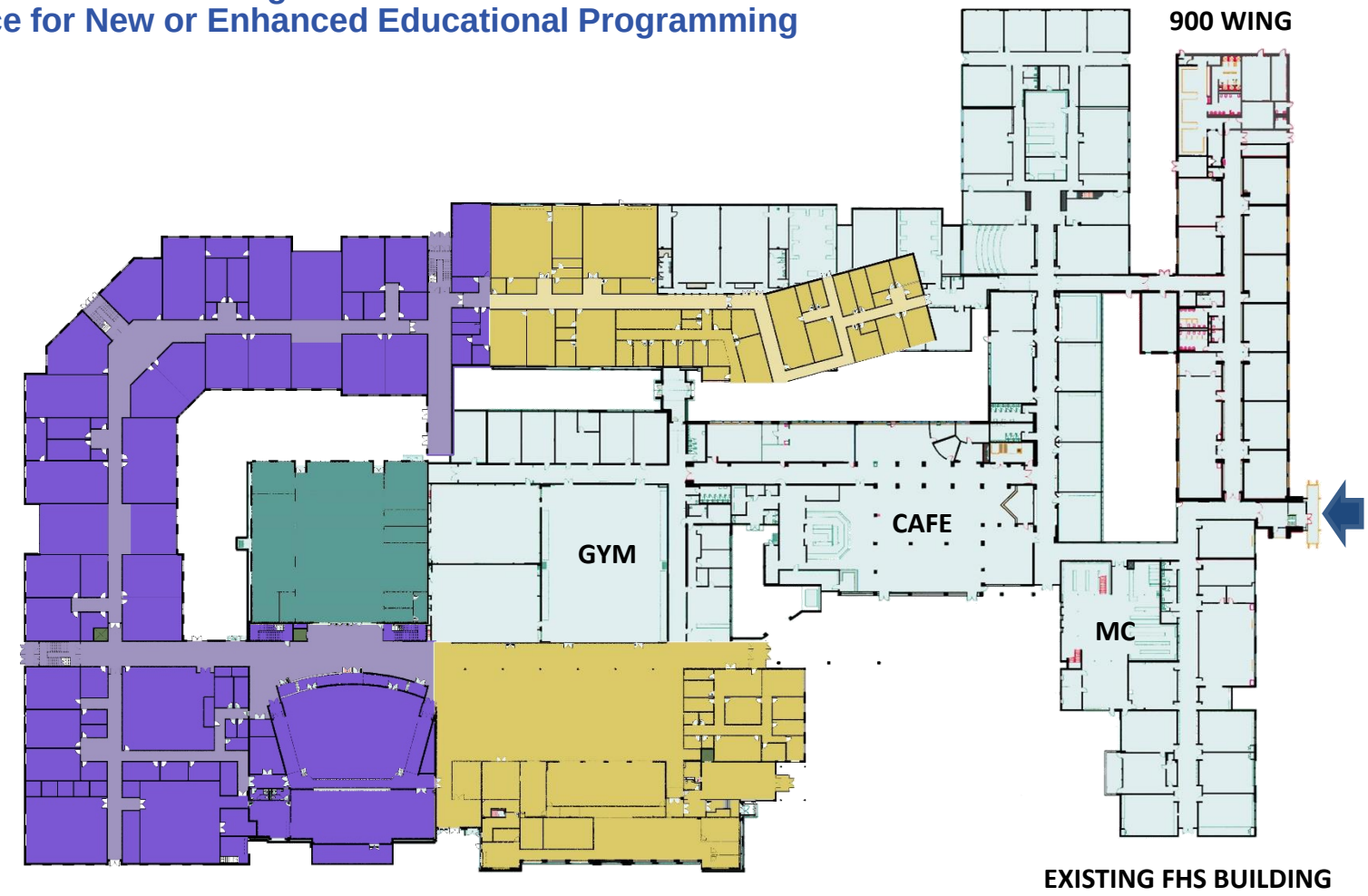
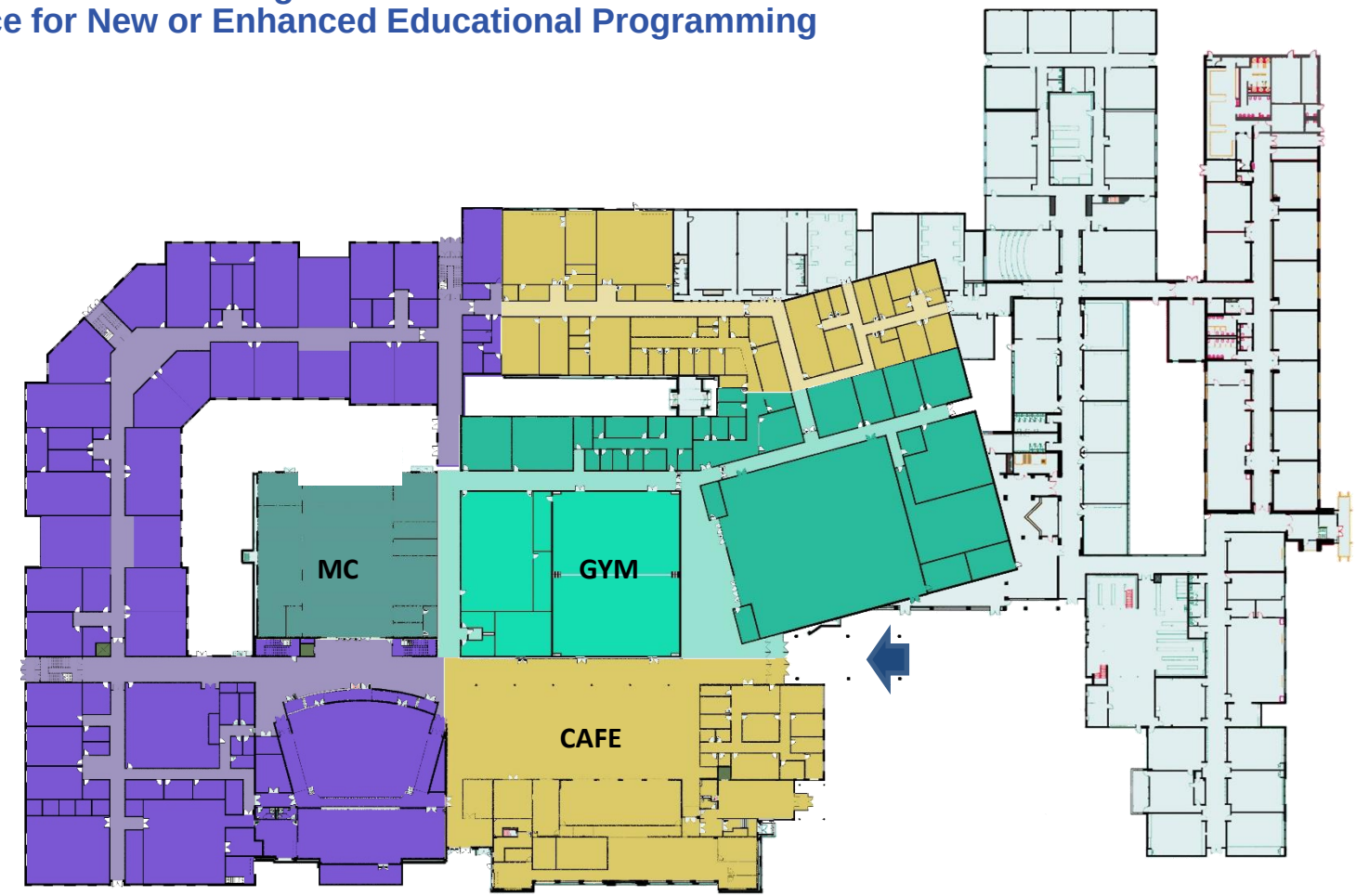



PHASE ONE 14 MONTHS PHASE TWO 8 MONTHS

# 2 Programmatic Needs

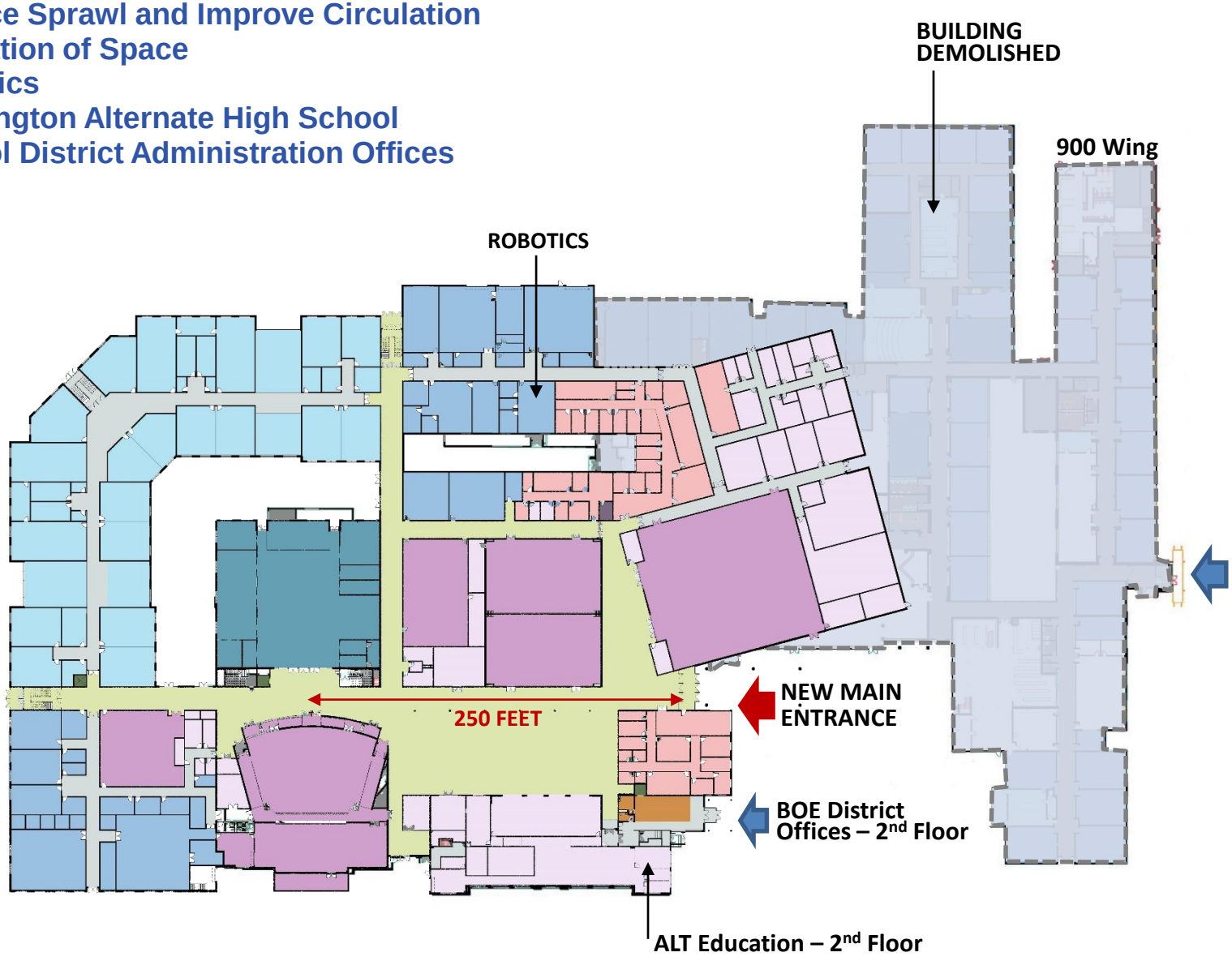
- + Education Disruption
- + Satisfies Ed Specs
- + Undersized Learning Spaces
- + Collaborative Learning
- + Space for New or Enhanced Educational Programming




**PHASE ONE 14 MONTHS** **PHASE TWO 8 MONTHS** **PHASE THREE 14 MONTHS**

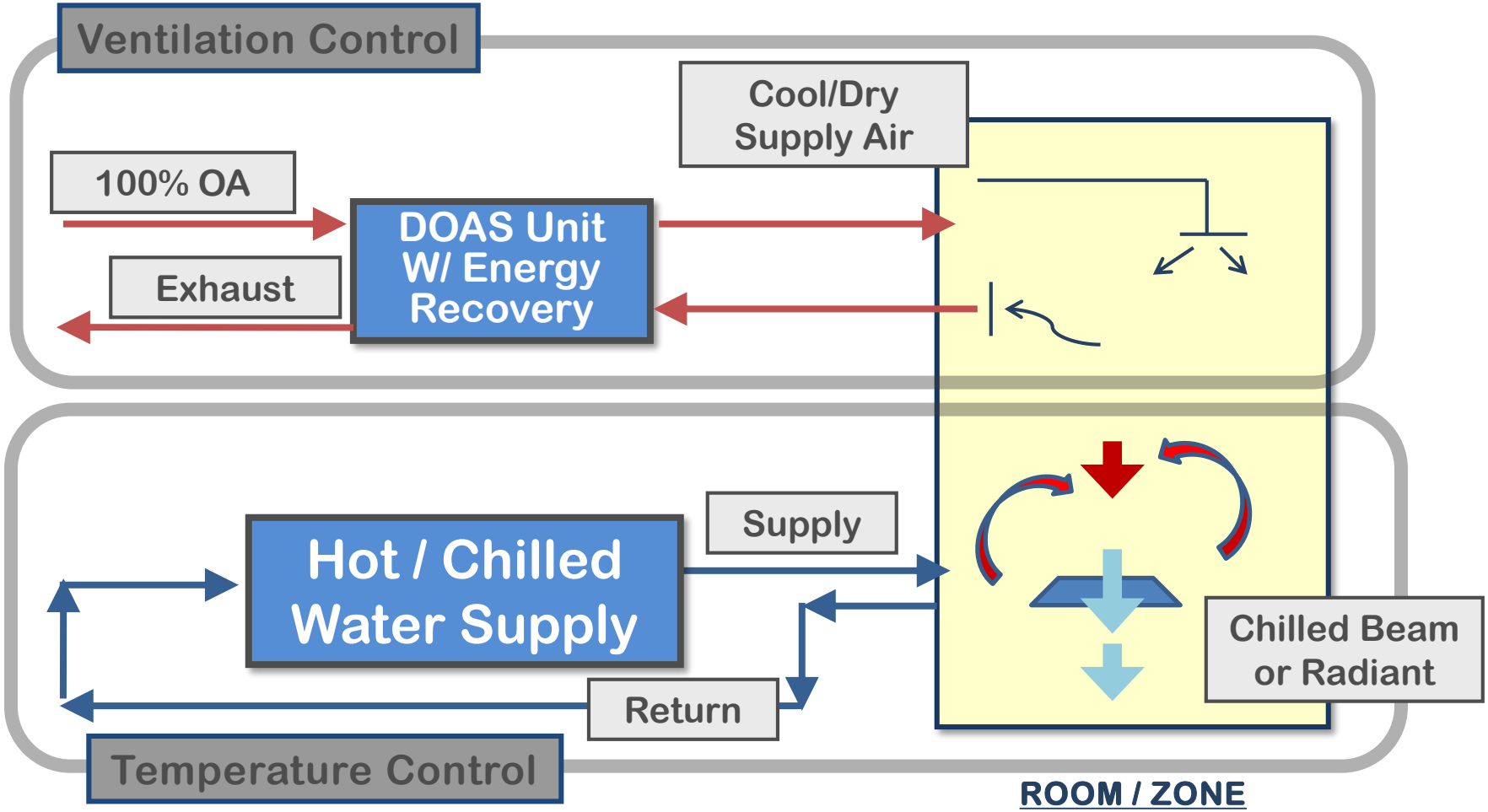
# 3 Consolidation of Space

+ Reduce Sprawl and Improve Circulation
+ Utilization of Space
+ Robotics
+ Farmington Alternate High School
+ School District Administration Offices



# 4 Building Systems – Low Energy HVAC Systems Approach

+ Energy Efficiency + Mechanical, Electrical, Plumbing + Building Envelope + Green Design




**MULTIPLE SYSTEMS EVALUATED – Microgrid – Photovoltaics – Geothermal – Ice storage**
**ALL NEW MEP SYSTEMS**
**MEP SYSTEM INSTALLATION INCORPORATED IN PHASING PLAN**

# 4 Building Systems – Sustainable Design & Energy Efficiency Criteria Met

## MEP SYSTEMS

| | | ENERGY EFFICIENCY (EUI) | GREEN DESIGN | SUSTAINABILITY | CARBON REDUCTION | RESILIENCY | EASE OF MAINTENANCE | THERMAL COMFORT | RESPONSIVENESS TO THERMAL AND HUMIDITY CONDITIONS | INDOOR ENVIRONMENT QUALITY | CONSTRUCTION COST EFFECTIVENESS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MECHANICAL** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| CONDENSING BOILERS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| AIR CONDITIONING | | ✓ | ✓ | ✓ * | ✓ * | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| DISTRIBUTION METHODS | | | | | | | | | | | |
| DUCTS | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| PIPING | | ✓ | ✓ | ✓ | ✓* | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| TERMINAL DEVICES | | | | | | | | | | | |
| CHILLED BEAMS | | ✓ | ✓ | ✓ | ✓* | ✓* | ✓ | ✓ | ✓ | ✓ | ✓ |
| RADIANT CEILING PANELS | | ✓ | ✓ | ✓ | ✓ * | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| **ELECTRICAL** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| GENERATOR | | | | | | ✓ | ✓ | | | | ✓ |
| NEW 480V SERVICE | | ✓ | | ✓ | | ✓ | ✓ | | | | ✓ |
| DISTRIBUTION | | | | | | | | | | | |
| NEW PANELS | | | ✓ | | | ✓ | ✓ | | | | ✓ |
| TERMINAL DEVICES | | | | | | | | | | | |
| LED LIGHTING | | ✓ | ✓ | | | | ✓ | | | ✓ | ✓ |
| CONTROLS | | ✓ | ✓ | ✓ | | | | | | | ✓ |
| **PLUMBING** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| WATER HEATER | | ✓ | ✓ | | | | ✓ | | | | ✓ |
| DISTRIBUTION | | | | | | | | | | | |
| NEW PIPING IN '28 BLDG. | | | ✓ | | | ✓ | ✓ | | | | |
| TERMINALS | | | | | | | | | | | |
| REPLACE FIXTURES | | ✓ | ✓ | | | | | | | | ✓ |

INDOOR AIR QUALITY

EASE OF MAINTENANCE

GREEN / SUSTAINABLE DESIGN

ENERGY EFFICIENT DESIGN

RETURN ON INVESTMENT

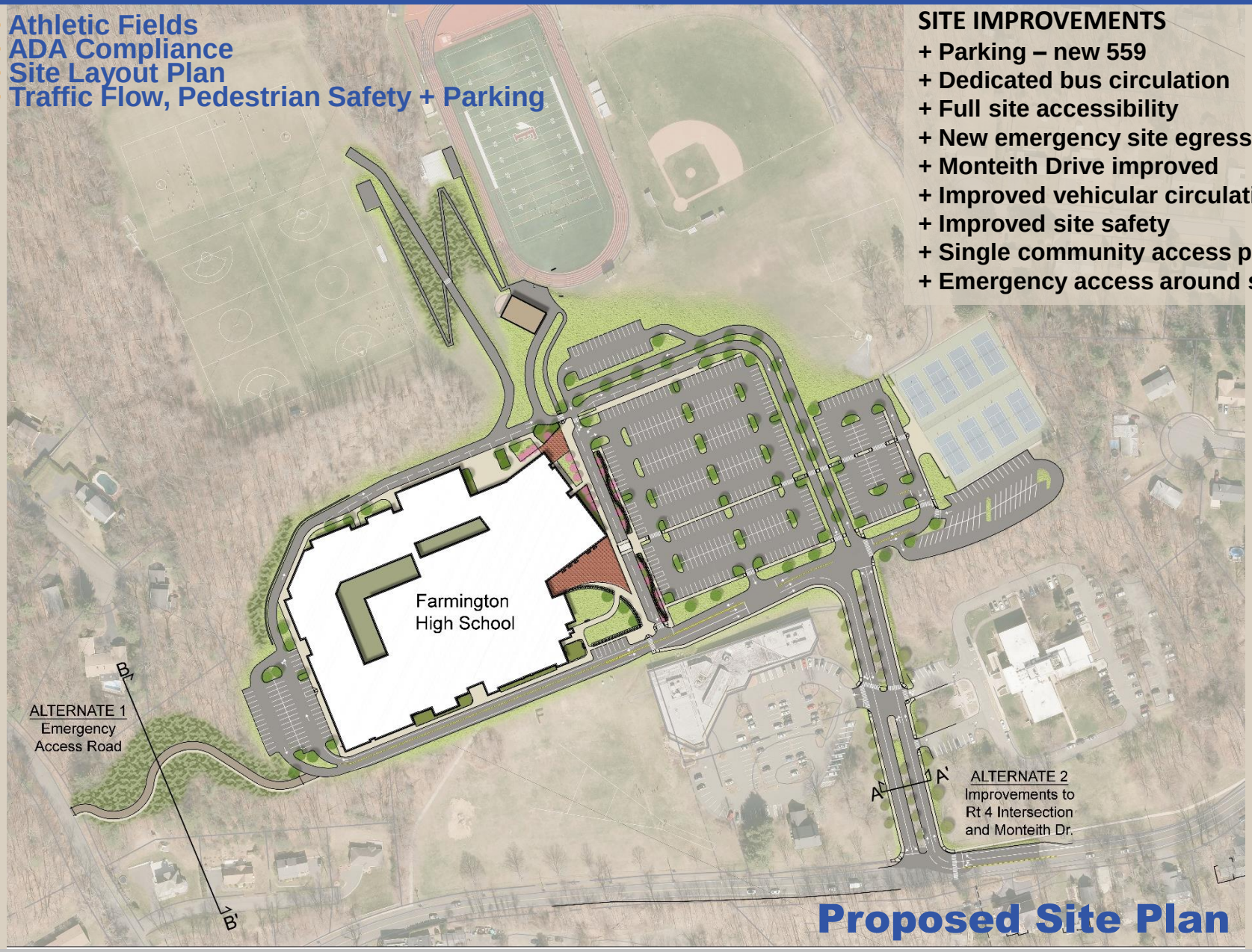
* IF HVAC OPTION # 2 (GEOTHERMAL) SELECTED

# 5 Site Improvements

+ Athletic Fields
+ ADA Compliance
+ Site Layout Plan
+ Traffic Flow, Pedestrian Safety + Parking

**SITE IMPROVEMENTS**

+ Parking – new 559
+ Dedicated bus circulation
+ Full site accessibility
+ New emergency site egress
+ Monteith Drive improved
+ Improved vehicular circulation
+ Improved site safety
+ Single community access point
+ Emergency access around school




## Proposed Site Plan

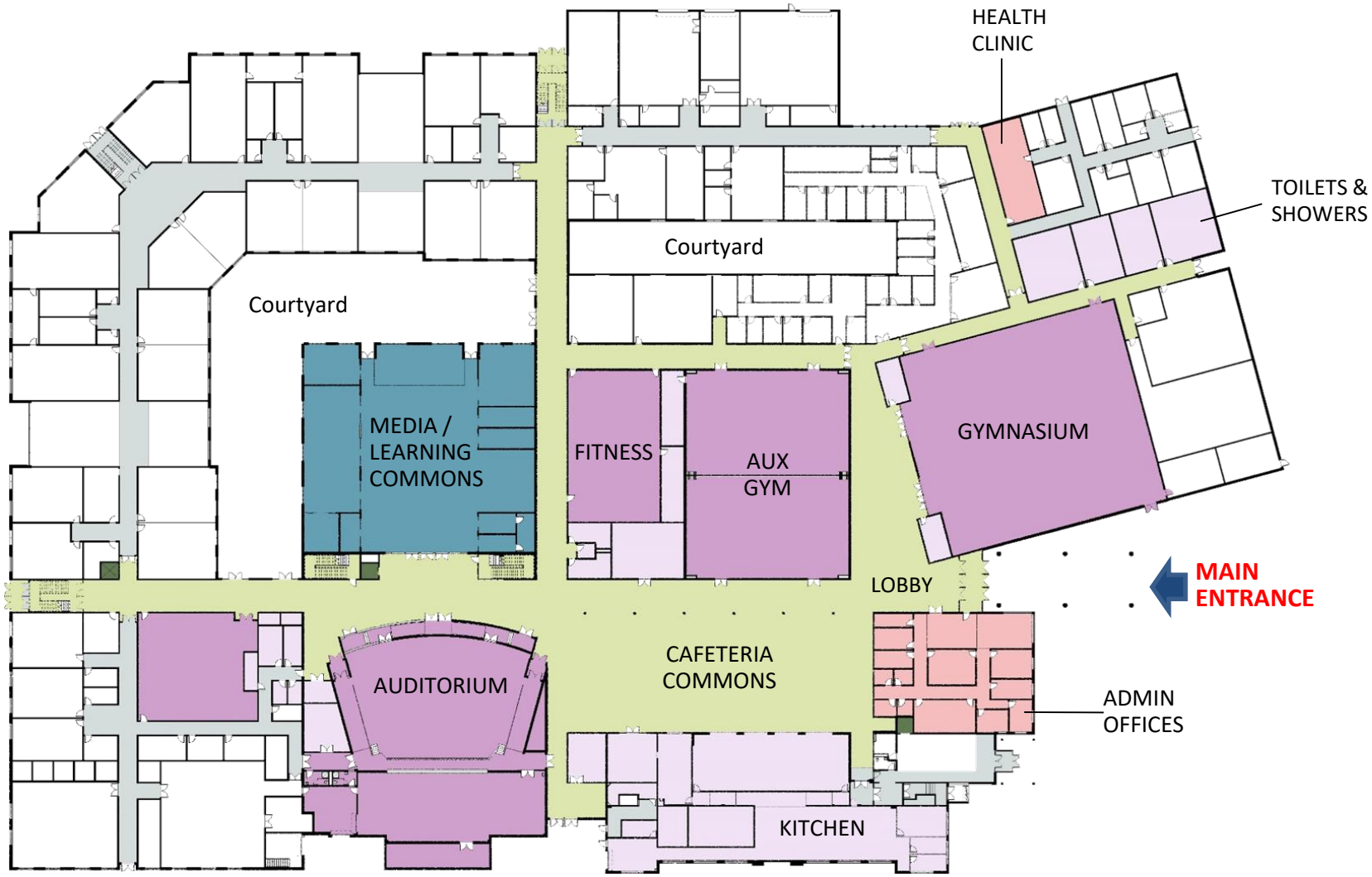


BSC GROUP

QA+M architecture

# 6 Benefits to the Community

+ Community Use of the Building
+ Shelter in Place



# 7 Fit and Feel For Farmington

+ Internal Design
+ External Design
+ Overall Fit + Feel

QA+M architecture

# 7 Fit and Feel For Farmington

+ Internal Design + External Design + Overall Fit + Feel

QA+M architecture

# 7 Fit and Feel For Farmington

+ Internal Design + External Design + Overall Fit + Feel

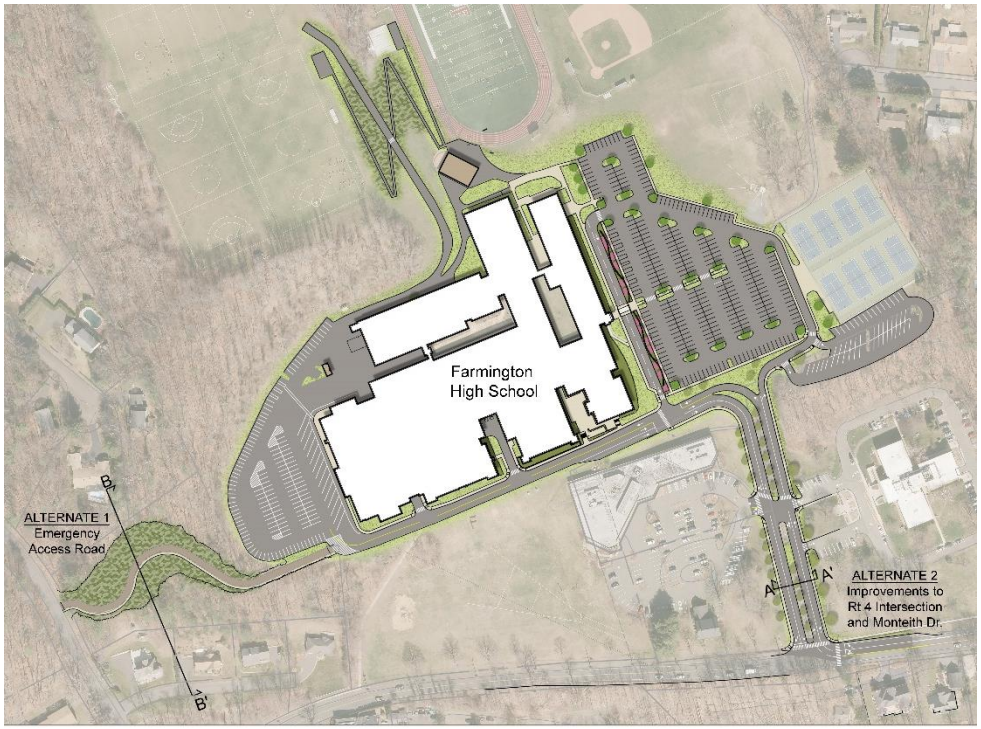
QA+M architecture

# 7 Fit and Feel For Farmington

+ Internal Design + External Design + Overall Fit + Feel

QA+M architecture

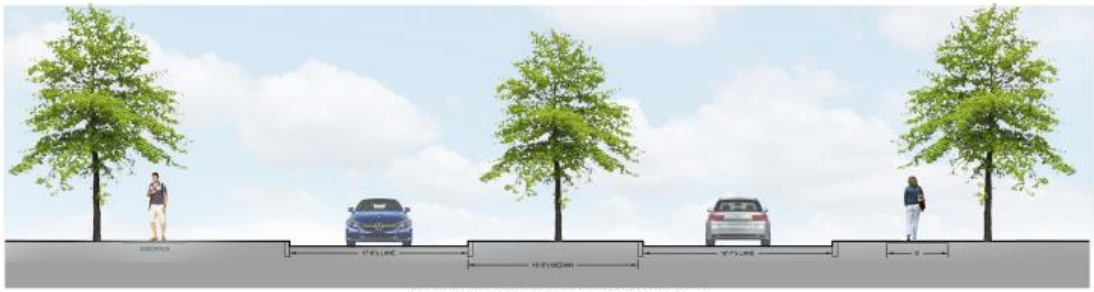
# Alternates



+ Emergency Access
+ Improvements to Monteith Drive

# Alternates

+ Emergency Access
+ Improvements to Monteith Drive



EXISTING MONTEITH DRIVE SECTION A - A'
SCALE : 1" = 5'

PROPOSED MONTEITH DRIVE SECTION A - A'
SCALE : 1" = 5'

EMERGENCY ACCESS ROAD
SECTION B - B'
SCALE : 1" = 20'

# Summary | Option 2

+ **Minimizes disruption to education**

+ **Dramatically reduces sprawl and improves circulation**

+ **Meets all educational specifications and recommendations of NEASC**

**“Dedicated to the needs and best interests of the community.”**

QA+M architecture

# Farmington High School- RAN Option

## Mechanical and Electrical Systems

January 15, 2020

# FHS- RAN MEP SYSTEMS

- **MAJOR COMPONENTS OF MEP SYSTEMS**
  - **<u>GENERATION</u>**
    - **Boilers**
    - **Chillers**
    - **Cooling System**
    - **Electric Service**
    - **Water Heaters**
  - **<u>DISTRIBUTION</u>**
    - **Air Handling Units**
    - **Piping**
    - **Ductwork**
    - **Electric Wiring and Panels**
    - **Plumbing Piping: Sanitary, Storm, Hot and Cold Water**
  - **<u>Terminal Devices</u>**
    - **Chilled Beams**
    - **Radiant Panels**
    - **Plumbing Fixtures**
    - **Light Fixtures**

VANZELM ENGINEERS

# FHS – RAN - HVAC Systems

## Central Heating Systems Upgrades

**GENERATION**

- New High Efficiency Condensing Boilers and variable speed pumping

**DISTRIBUTION**

- Plant Hot Water Piping and Distribution
- Lower Temperature Hot Water (120°F) operation

**TERMINAL DEVICES**

- Chilled Beams
- Radiant Ceiling Panels

VANZELM ENGINEERS

# FHS – RAN - HVAC Systems

## Central Cooling Systems Upgrades

**GENERATION**

- Air Condition Entire Building
- High Efficiency Water Cooled Chillers/Heat Pump Chiller Option
- Adiabatic Condensers in lieu of Cooling Towers for water savings/Geothermal Option

**DISTRIBUTION**

- Air Handling Units with DOAS and Air to Air Heat Recovery
- Minimize Ductwork to Just Serve Ventilation Requirements
- Maximize Use of Piping for Energy Transport Efficiency

**TERMINAL DEVICES**

- Chilled Beams
- Radiant Ceiling Panels

VANZELM ENGINEERS

# FHS – RAN - MEP Systems

| MEP SYSTEMS | | ENERGY EFFICIENCY (EUI) | GREEN DESIGN | SUSTAINABILITY | CARBON REDUCTION | RESILIENCY | EASE OF MAINTENANCE | THERMAL COMFORT | RESPONSIVENESS TO THERMAL AND HUMIDITY CONDITIONS | INDOOR ENVIRONMENT QUALITY | CONSTRUCTION COST EFFECTIVENESS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MECHANICAL** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| CONDENSING BOILERS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| AIR CONDITIONING | | ✓ | ✓ | ✓ * | ✓ * | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| DISTRIBUTION METHODS | | | | | | | | | | | |
| DUCTS | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| PIPING | | ✓ | ✓ | ✓ | ✓* | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| TERMINAL DEVICES | | | | | | | | | | | |
| CHILLED BEAMS | | ✓ | ✓ | ✓ | ✓* | ✓* | ✓ | ✓ | ✓ | ✓ | ✓ |
| RADIANT CEILING PANELS | | ✓ | ✓ | ✓ | ✓ * | ✓ * | ✓ | ✓ | ✓ | ✓ | ✓ |
| **ELECTRICAL** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| GENERATOR | | | | | | ✓ | ✓ | | | | ✓ |
| NEW 480V SERVICE | | ✓ | | ✓ | | ✓ | ✓ | | | | ✓ |
| DISTRIBUTION | | | | | | | | | | | |
| NEW PANELS | | | ✓ | | | ✓ | ✓ | | | | ✓ |
| TERMINAL DEVICES | | | | | | | | | | | |
| LED LIGHTING | | ✓ | ✓ | | | | ✓ | | | ✓ | ✓ |
| CONTROLS | | ✓ | ✓ | ✓ | | | | | | | ✓ |
| **PLUMBING** | | | | | | | | | | | |
| GENERATION | | | | | | | | | | | |
| WATER HEATER | | ✓ | ✓ | | | | ✓ | | | | ✓ |
| DISTRIBUTION | | | | | | | | | | | |
| NEW PIPING IN '28 BLDG. | | | ✓ | | | ✓ | ✓ | | | | |
| TERMINALS | | | | | | | | | | | |
| REPLACE FIXTURES | | ✓ | ✓ | | | | | | | | ✓ |

* IF HVAC OPTION # 2 (GEOTHERMAL) SELECTED

VAN ZELM ENGINEERS



QA+M architecture

# FHS – RAN - Electrical Systems

## Proposed System Upgrades – Power Distribution

**GENERATION**

- Main Electrical Service, Switchboards & Distribution
  - Provide New Service From New Utility Substation To Building – 3000A, 480V 3-Phase
  - Provide New Main Switchboard
  - Update Power Distribution
  - New Feeders / Panelboards
- Emergency Power
  - To Serve Emergency Power Loads And Increase Generator / Distribution Capacity
  - Include Cooling Systems
  - Provisions For Solar PV Input

**DISTRIBUTION**

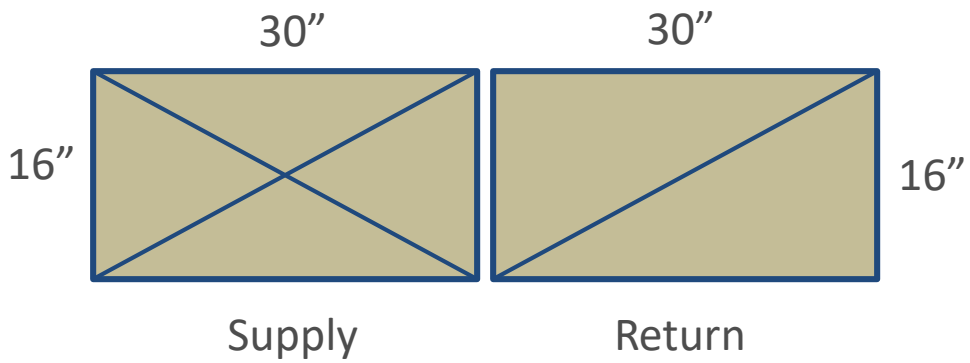
- Update Power Distribution
- New Feeders / Panelboards

VANZELM ENGINEERS

# BASICS OF ENERGY DISTRIBUTION

## To transport 100,000 Btu / hr:

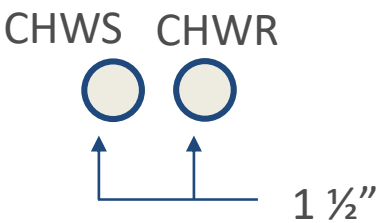
### Air Based




Fan Horsepower: 4.2 hp

Annual Electric Cost $2711

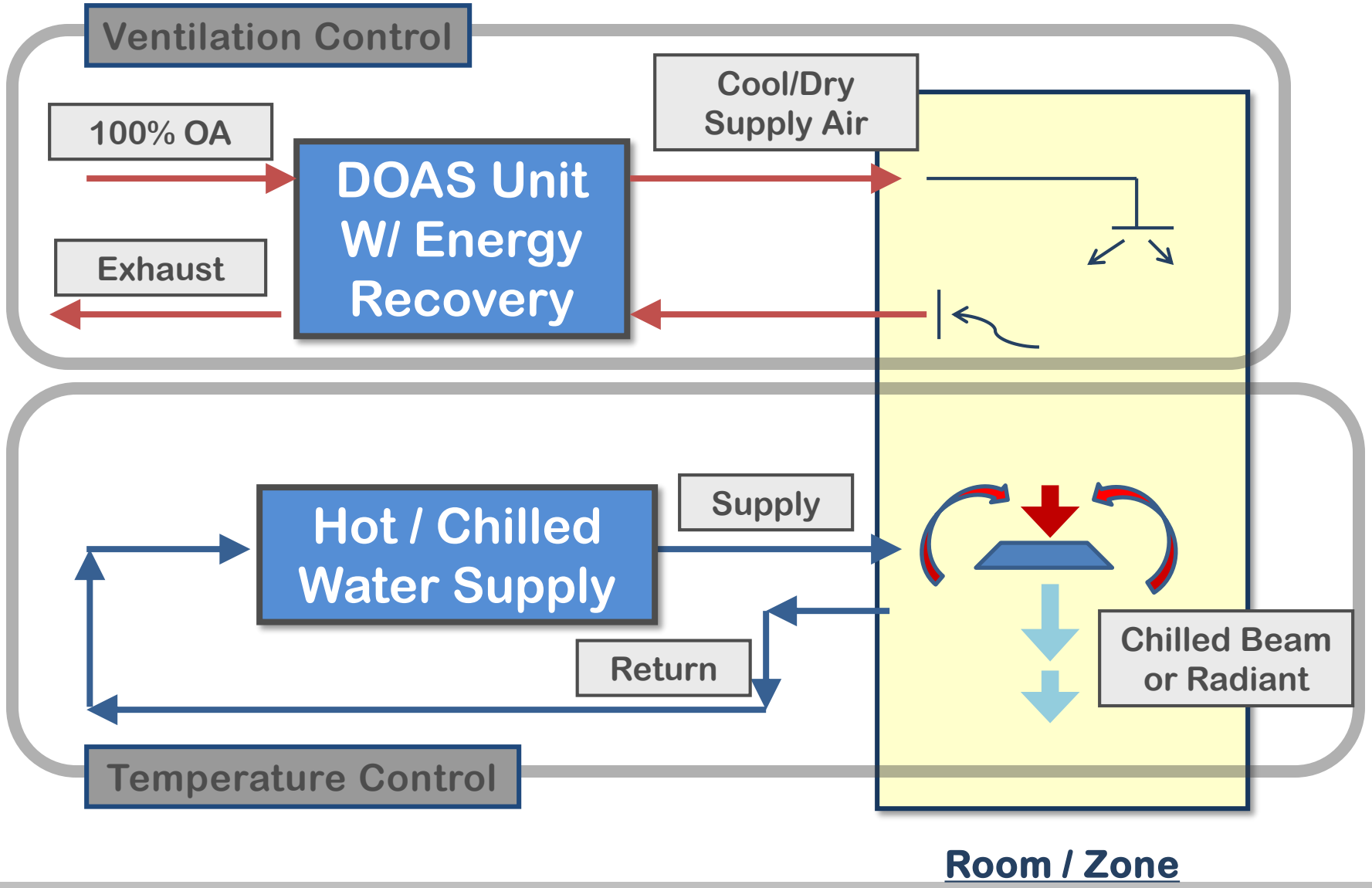
### Hydronic Based




Pump Horsepower: 0.3 hp

Annual Electric Cost $193

# LOW ENERGY HVAC SYSTEM APPROACH



# QA&M Option 2 Cost Estimate

| QA&M Option 2 Renovate as New with Additions | |
|---|---|
| **Item** | **Cost Estimate** |
| Architectural Design Fee | $ 5,042,000.00 |
| *reduced to match projected duration* | |
| | |
| Professional Fees | $ 3,355,384.00 |
| | |
| Construction Costs | $ 118,115,613.00 |
| | |
| Alternates | $ 1,493,860.00 |
| | |
| Furniture/Equipment/ Technology | $ 5,591,000.00 |
| | |
| 5% Owner Contingency | $ 7,000,000.00 |
| | |
| **Total Project Cost** | $ 140,597,857.00 |

| CRITERIA | RESENTATION 1 OF 3- JANUARY 8, 20 | | PRESENTATION 2 OF 3- JANUARY 15, 202 | | ESENTATION 3 OF 3- JANUARY 22, 20 | |
|---|---|---|---|---|---|---|
| | OPTION 1 | | OPTION 2 | | OPTION 3 | |
| | MAINTAIN EXISTING FHS | | ENOVATE EXISTING FHS AS NEW WITH ADDITION | | NEW FHS BUILDING | |
| | TSKP | QA&M | TSKP | QA&M | TSKP | QA&M |
| **TOTAL PROJECT COST:** Total Project Cost includes construction and soft costs. This is the number that would appear on the referendum ballot and interest is not included in the total project cost. | | $99,140,353 | | $140,597,857.00 | | |
| **LESS STATE REIMBURSEMENT OF ELIGIBLE COSTS( NOT ALL ITEMS ELIGIBLE):** Farmington's reimbursement rate depends on the type of building project that is proposed. A renovation is up to 30%, and a new building is up to 20%. However, the exact reimbursement is not known until the very end of a project (after | | $17,845,264 | | $41,579,357.00 | | |
| **NET PROJECT COST:** | | $81,295,089 | 0.0 | $99,018,500.00 | 0.0 | 0.0 |
| **ADDITIONAL CAPITAL EXPENDITURES OVER 20 YEARS** | | $0 | | $0 | | |
| **TOTAL PROJECTED COST OVER 20 YEARS--TOWN SHARE** | | $81,295,089 | | $99,018,500.00 | | |
| **Tax Impact Year 1*** | | $401.31 | | $488.70 | | |
| The Tax Impact is for the Farmington High School Building Project ONLY. The tax impact is calculated based on the Average Residental Assessment of $226,777. | | *Costs will decrease by approximately $7.60/year over 20 years | | *Costs will decrease by approximately $9.25/year over 20 years | | |
| **ANNUAL OPERATIONAL COST:** This cost is the best estimate of running the building compared to what it costs to run the building now. | | | | | | |
| **ENERGY COST** | | | | | | |
| **MAINTENANCE COST** | | | | | | |
| **TAX IMPACT** | | | | | | |