

Phased, Occupied K-12 School Modernizations





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- Principal, K-12 Education Studio
- Registered Architect
- 15 Year Focus on Educational Architecture
- Primarily Phased Occupied Construction



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- 35 Years of Practice with over 65 K-12 School Projects
- Primarily Phased Occupied Construction

HG

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ARCHITECTS
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- Sterling, VA
- 39 years



Over two dozen K-12 School Projects
totaling over 1.5 million SF in the
Washington DC Metro Area

98% of these projects =
Renovations and Additions



Agenda



- Drivers
- Process
- Key Considerations
- Case Studies

Drivers

Why Renovate?



- Growth in Student Population
- Address Existing Facility Deficiencies
 - Aging Infrastructure
 - Energy Performance
- Bring the School up current Standards
 - Current Ed Spec requirements
 - Technology
 - Security/Safety

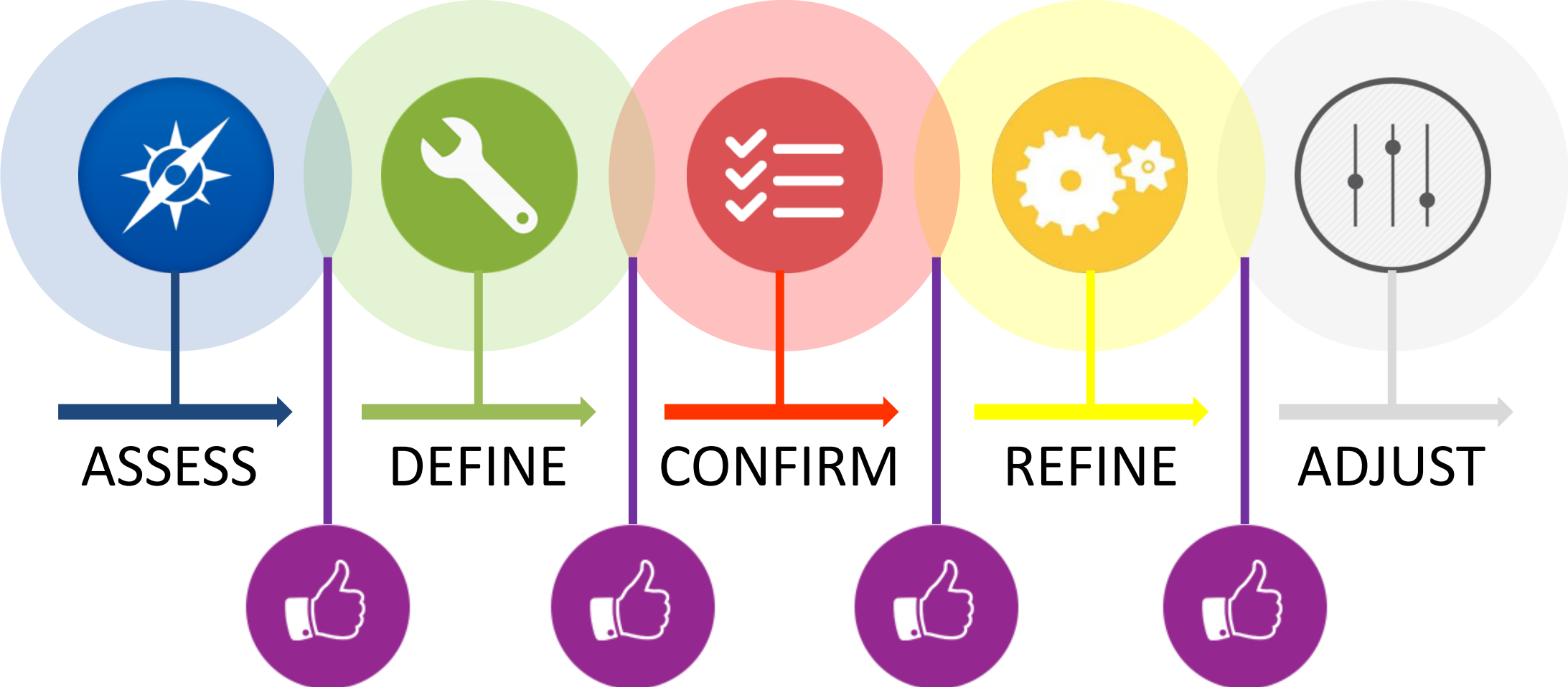
Drivers



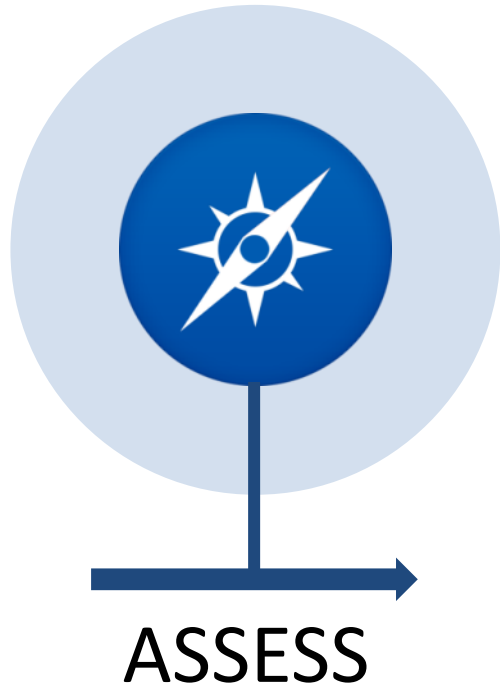
Typical Renovation and Addition Approaches

- **Summer Blitz**
 - 24/7 Construction, All Summer
 - Scope aligned with Schedule and Capacity of GC
- **Swing School**
 - Swing Offsite
 - Luxury of Spare School
- **Reassignment**
 - Students assigned and distributed to nearby schools
- **Occupied Renovation**
 - Swing Onsite
 - Phasing typically required based on project scale

Process



Process



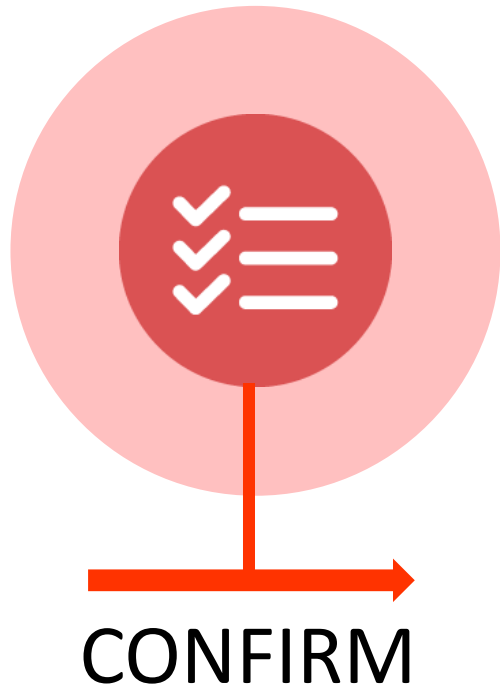
- **EXISTING FACILITY**
 - HISTORICAL ELEMENTS
- **NEEDS**
 - WHAT PROGRAMS CAN BE SUPPORTED BY EXISTING SPACE
 - WHAT PROGRAMS NEED NEW SPACE
- **OPPORTUNITIES**
 - INFILL AREAS
 - EXPANSION AREAS
- **EXPLORE MULTIPLE PRELIMINARY OPTIONS**
- **BUILD CONSENSUS**

Process



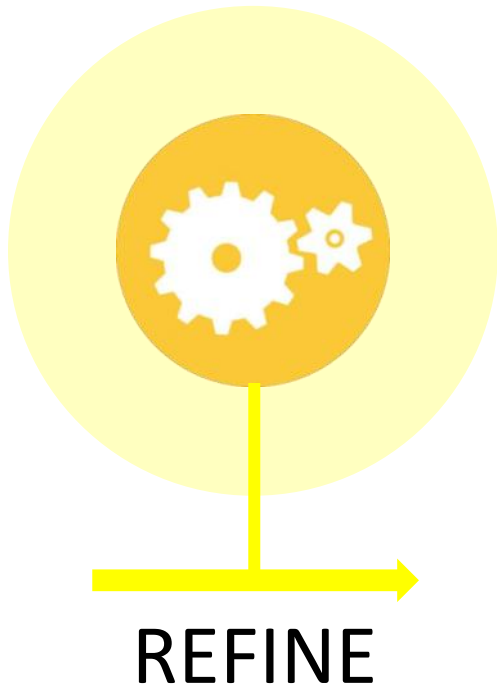
- ESTABLISH SCOPE EACH PHASE
 - TEMPORARY FACILITIES
- ALIGN PHASE WITH SCHEDULE
- IDENTIFY:
 - WHO MOVES
 - WHO MOVES WHERE
 - WHERE IS WHERE
- EXPLORE IMPACT ON OPERATIONS
- BUILD CONSENSUS

Process



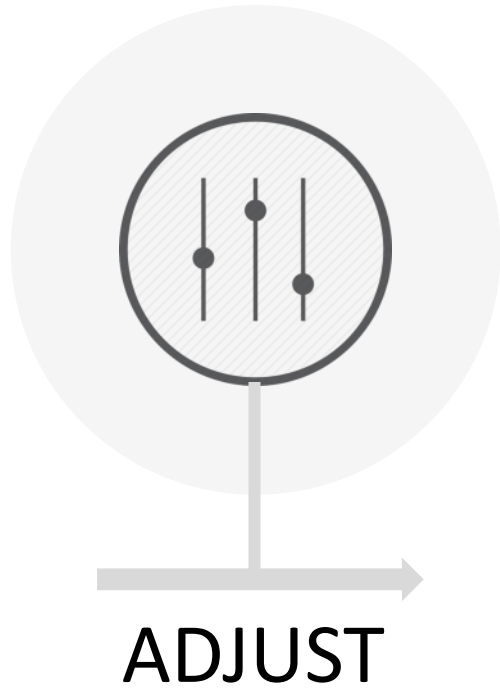
- SEQUENCING OF UTILITIES
- VERIFY AND ALIGN INFRASTRUCTURE
- VALIDATE PROGRAM LOCATIONS
- VALIDATE SWING SPACE REQUIREMENTS
- ENGAGE LOCAL BUILDING OFFICIALS
- BUILD CONSENSUS

Process



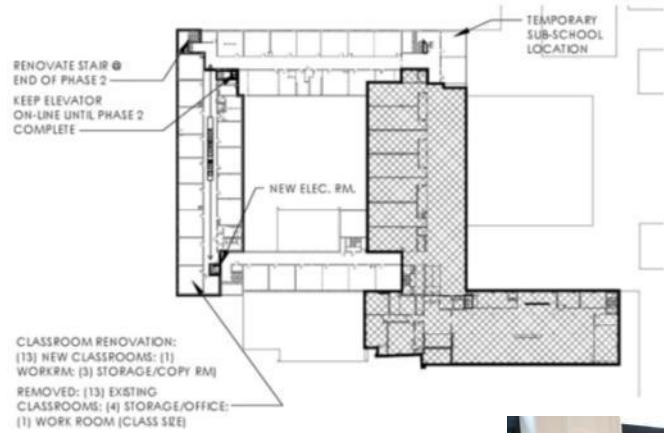
- ASSIGN SPACE TO SPECIFIC TEACHERS AND PERSONNEL
- VALIDATE SWING SPACE AND TEMPORARY FACILITIES REQUIREMENTS AND QUANTITIES
- COORDINATE WITH SCHOOL ADMINISTRATION OPERATIONAL IMPACTS
- BUILD CONSENSUS

Process



- BE FLEXIBLE
- CONSIDER CONTINGENCIES
- DETAILED COORDINATION WITH CONTRACTOR
- REVISE PLAN AS NECESSARY

Key Considerations



PLANNING



OPERATIONS



CONSTRUCTION

Key Considerations: **Planning**



- Student & Staff Safety
- Site Circulation and Access
- Phase Scope and Viability
- Code
- Sustainable Design
- Infill and/or Addition Strategy
- Temporary Facilities

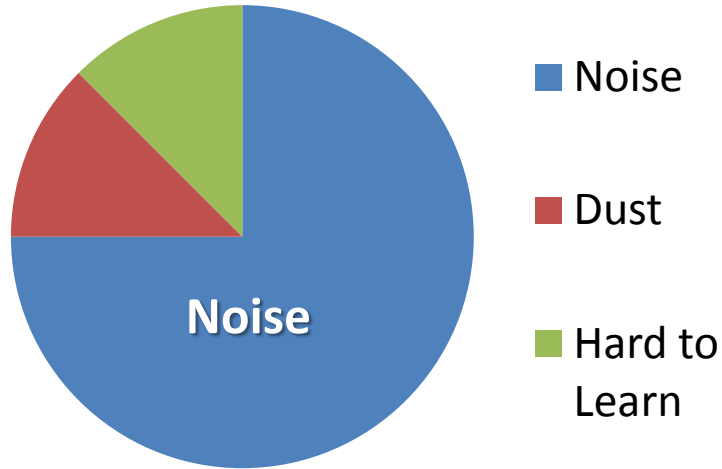
Key Considerations: **Operations**



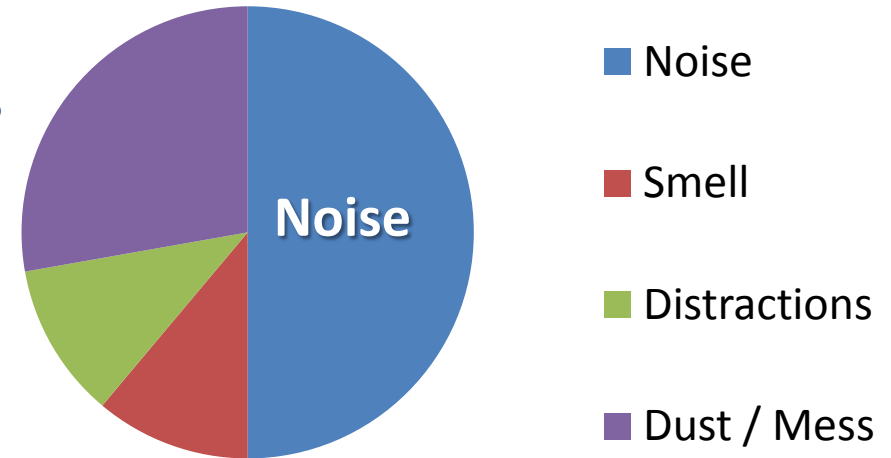
- Maintaining High Quality Educational Environment
- Athletics/Arts/Clubs/Community Schedules
- Clearly Identified Key Locations
- Student travel times/routes
- Environmental Impacts

Key Considerations: Operations

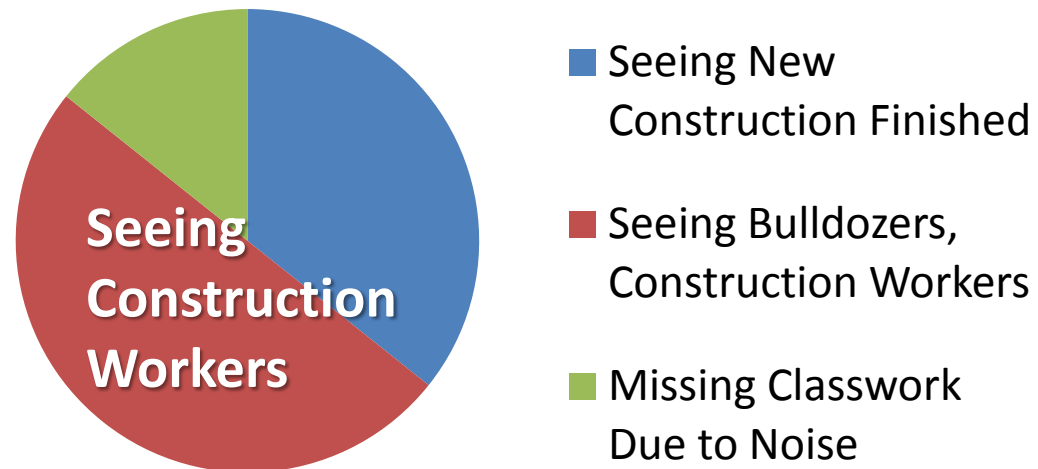
What Do You Remember Most About Construction At Your School?



What Was the Worst Part of Construction?



What Was Your Favorite Part of Construction?



Key Considerations: Construction



- Lay down area planning
- Separation
- Work periods
- Weekly Leadership Briefings
- Safety
- Security
- Access

Case Studies



Thomas Edison High School



Stuart Hobson Middle School



Herndon High School

Case Studies



Thomas Edison High School

STATS:

- **DELIVERY METHOD:** Design / Bid / Build
- **SIZE:** 305,000sf to 359,000SF
- **STUDENTS:** 1,700 to 2,100
- **COST:** \$49.2M
- **CONSTRUCTION:** 3 YR Phased, Occupied Construction

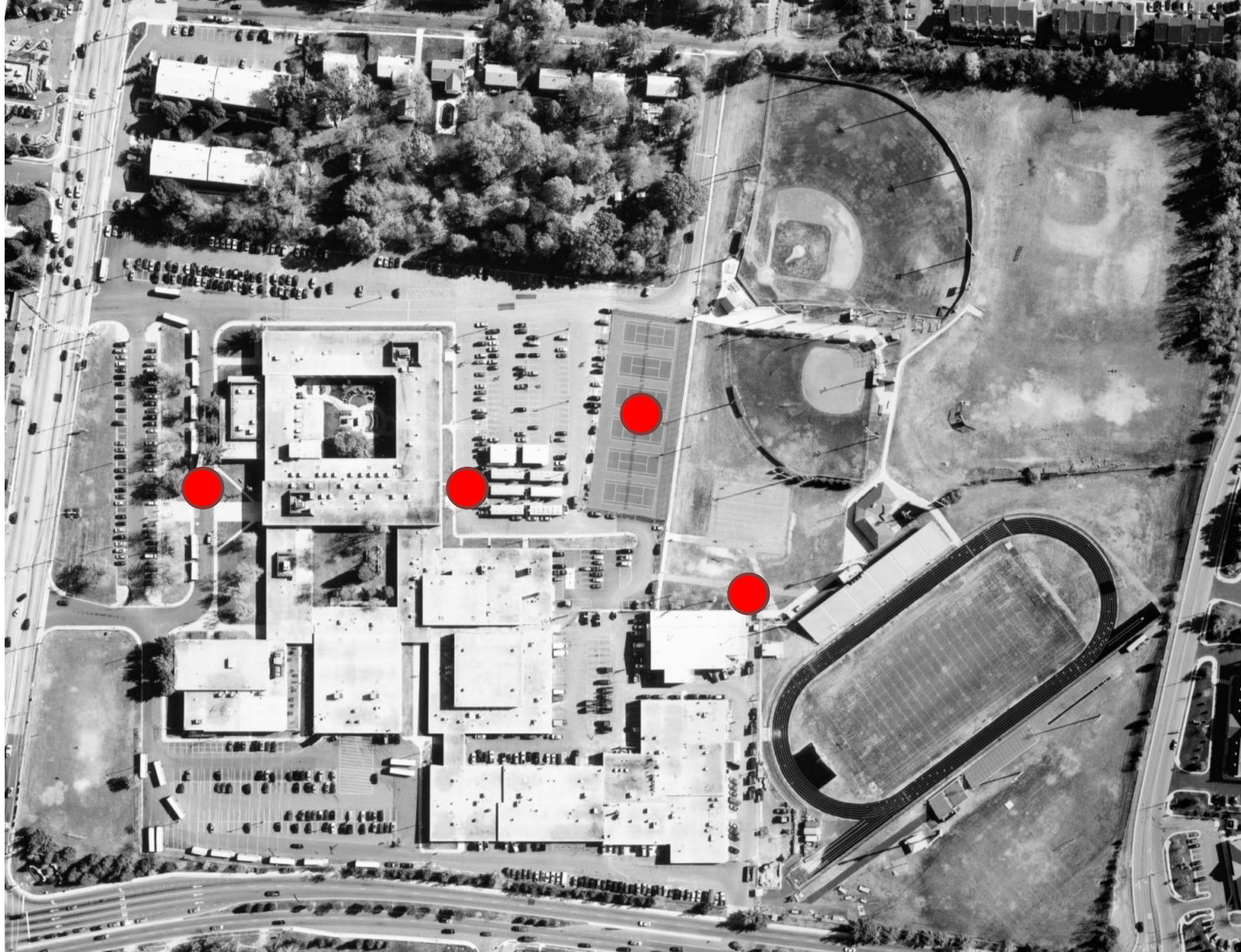
Thomas Edison High School: Project Needs and Goals



- Renew the Building Envelope and Systems for the Next 25 Years
- Make Existing HS Comparable to New FCPS High Schools
 - New Media Center
 - Expanded Administration Area
 - Upgraded Science Department
 - Upgraded Art Department
 - New Band Room and Blackbox Theater
- Upgrade Site Infrastructure including Vehicle Circulation and Parking
- Eliminate modular classrooms
- Incorporate Sustainable Design Elements
- Maintain School Activities Throughout Construction

Thomas Edison High School

- Identify Expansion Sites
- Maintain Bus Loop
- Maintain Kiss/Ride
- Identify Site For Temporary Facilities
- Add Traffic Circulation Loop
- Relocate Tennis



Thomas Edison High School

Main Entrance, Media
① Center, & Admin
Addition

② Central Plant Addition

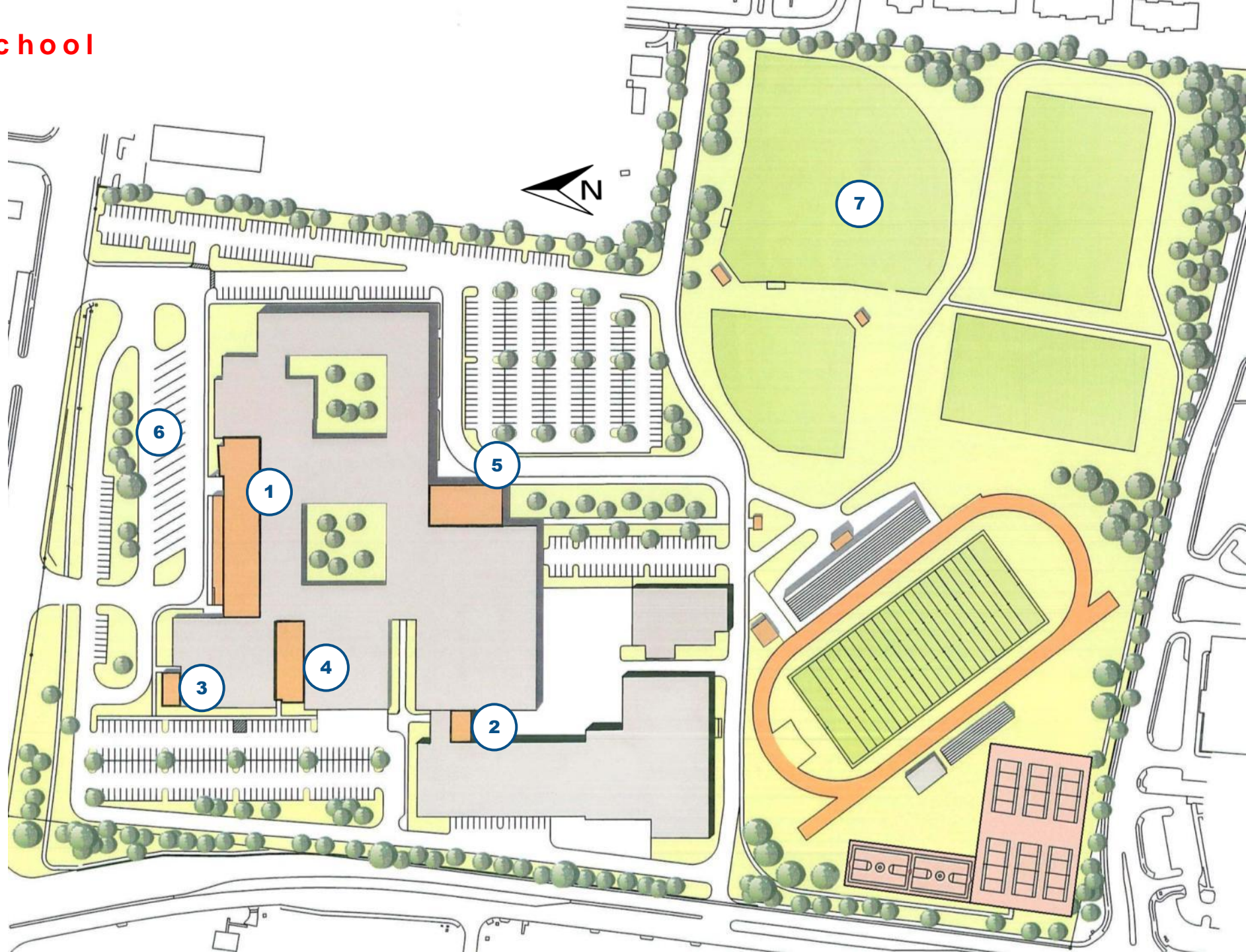
③ Scene Shop Addition

④ Black Box/Band Room
Infill Addition

⑤ Weight & Fitness
Addition

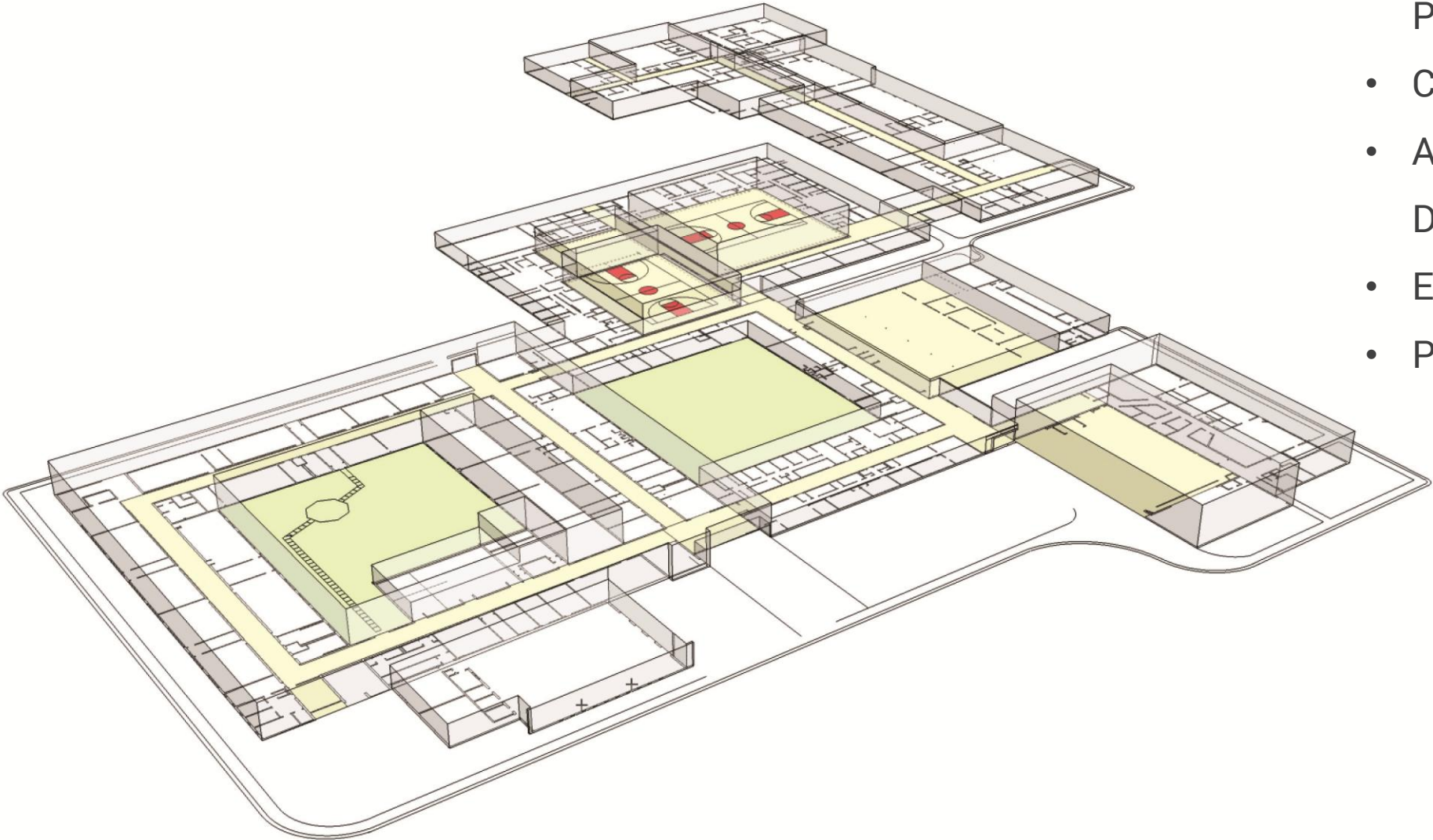
⑥ New Bus Loop

⑦ Renovated Athletics
Fields



Thomas Edison High School

 Existing Conditions



Phasing Approach

- Work Closely with the Principal and School Staff
- Communicate Frequently
- Allow the School to Make Decisions
- Explain Your Thinking
- Put the School First

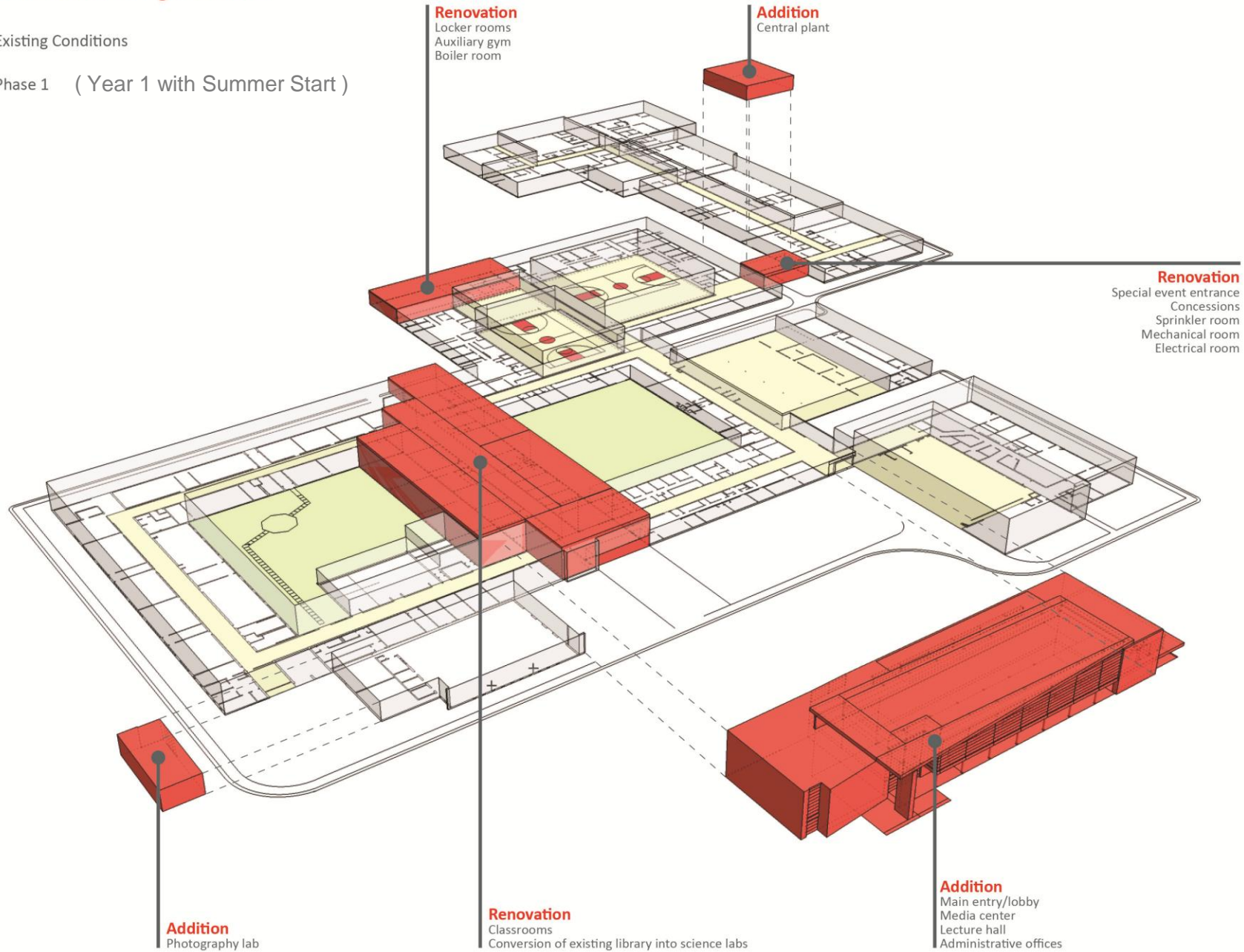
Thomas Edison High School



Existing Conditions



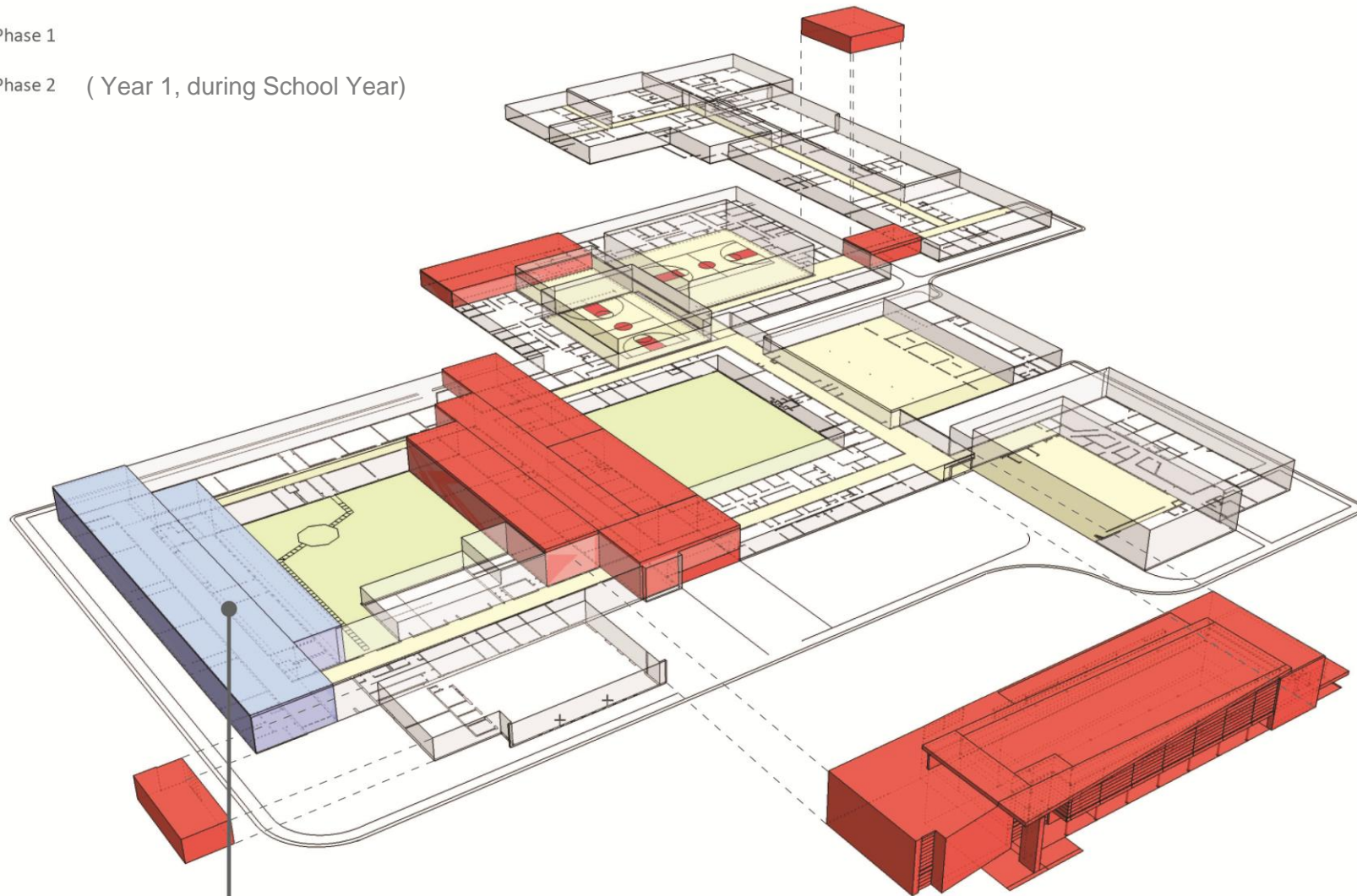
Phase 1 (Year 1 with Summer Start)





Thomas Edison High School

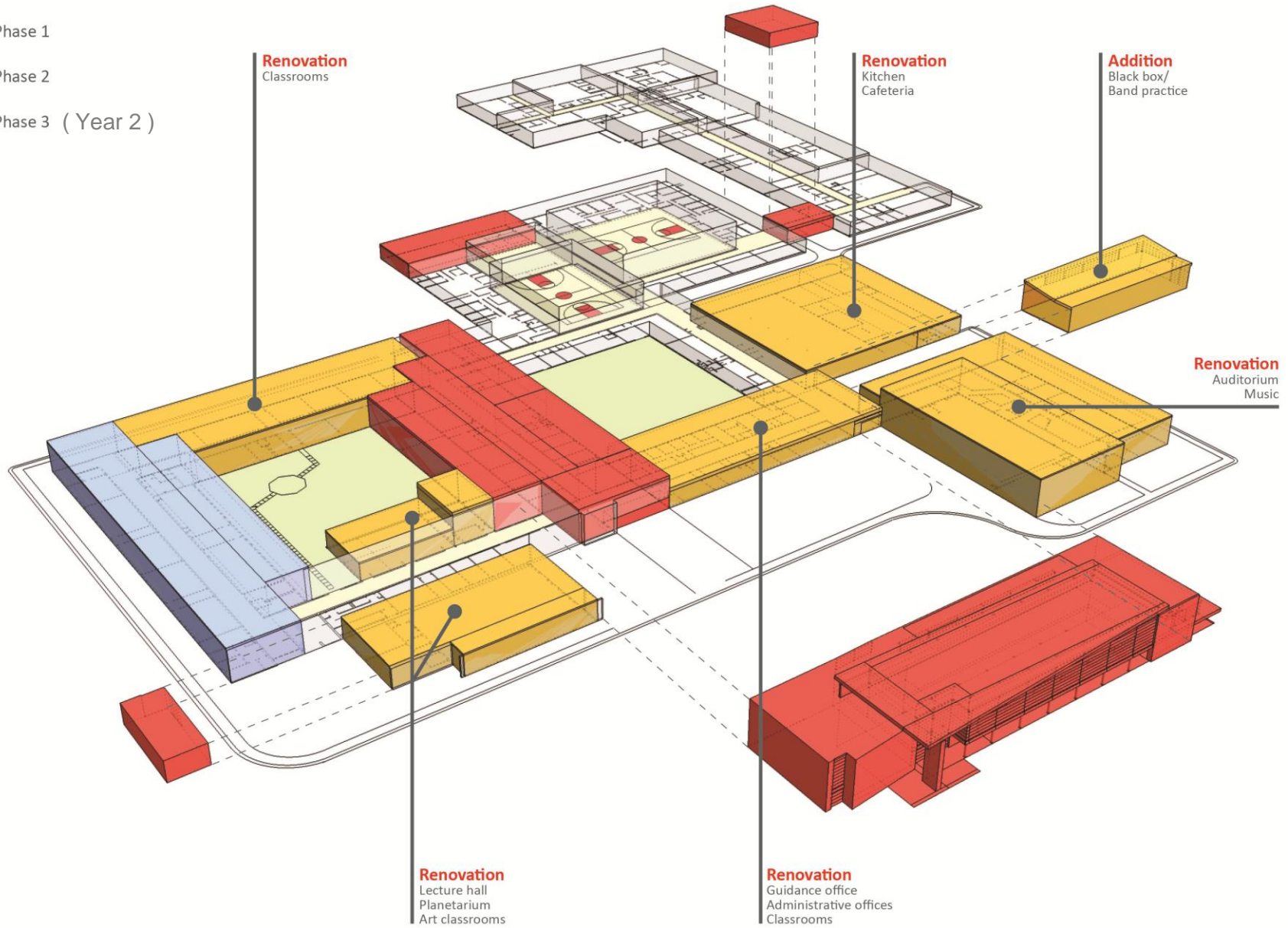
- Existing Conditions
- Phase 1
- Phase 2 (Year 1, during School Year)



Renovation
Classrooms

Thomas Edison High School

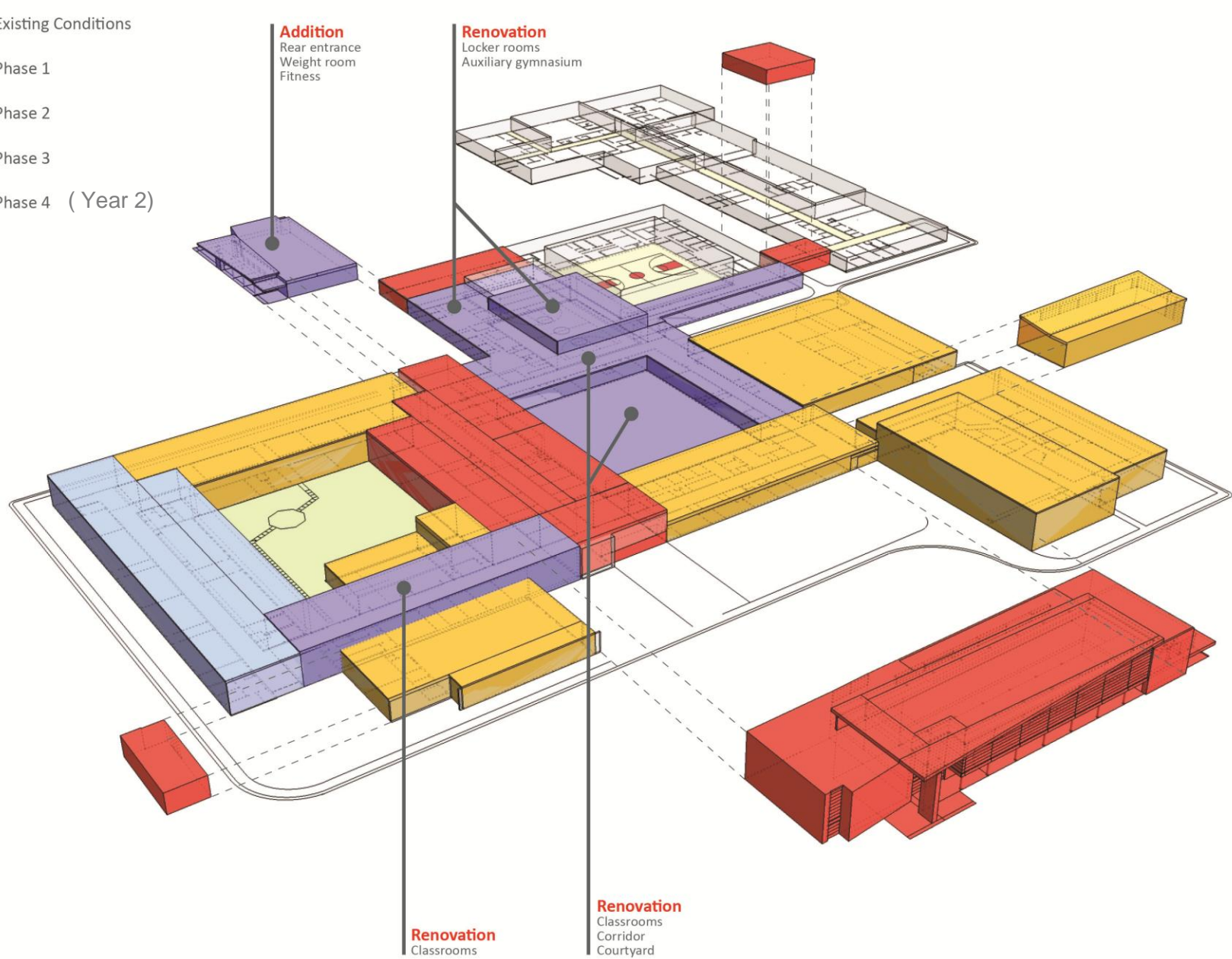
- Existing Conditions
- Phase 1
- Phase 2
- Phase 3 (Year 2)





Thomas Edison High School

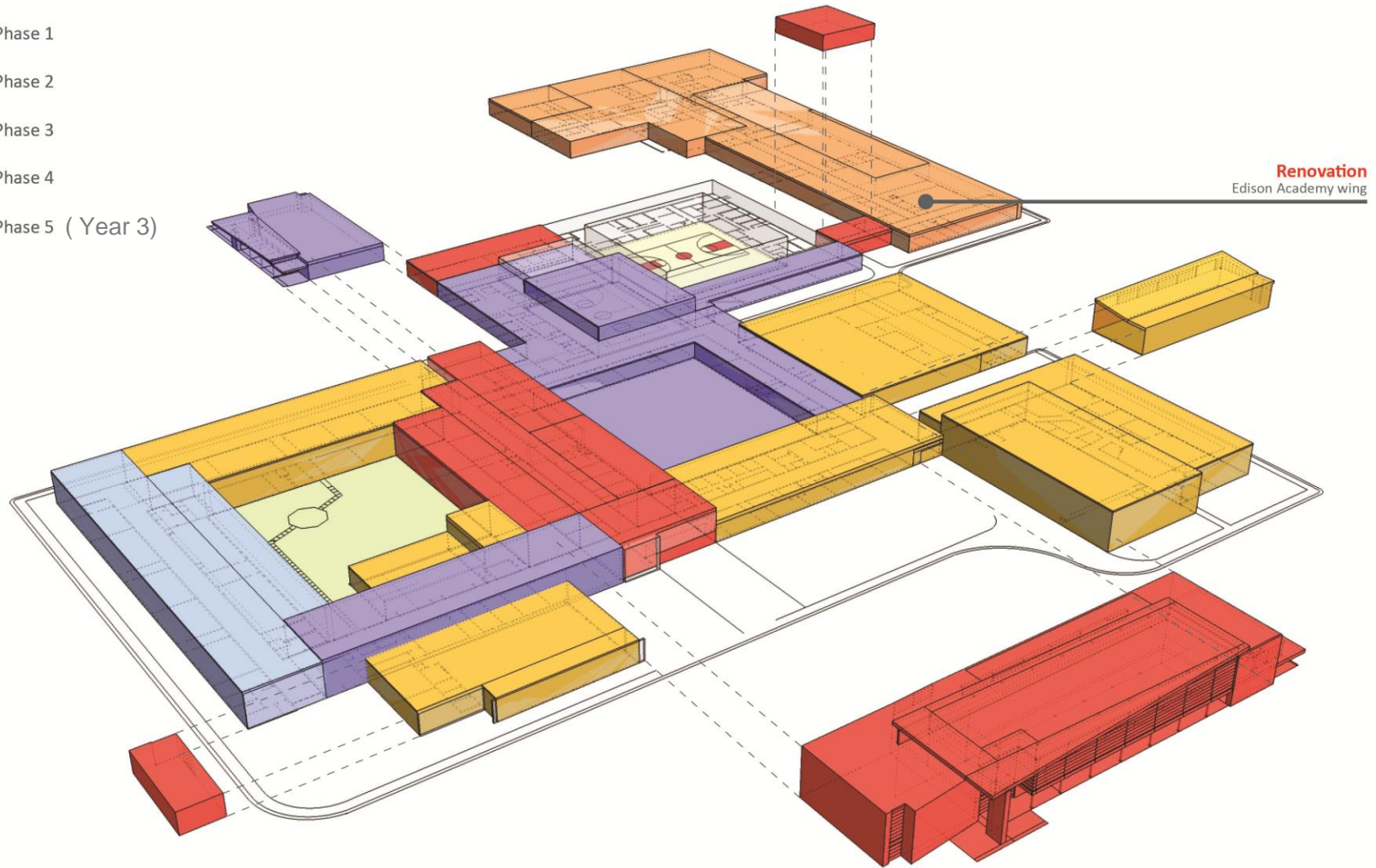
- Existing Conditions
- Phase 1
- Phase 2
- Phase 3
- Phase 4 (Year 2)





Thomas Edison High School

- Existing Conditions
- Phase 1
- Phase 2
- Phase 3
- Phase 4
- Phase 5 (Year 3)

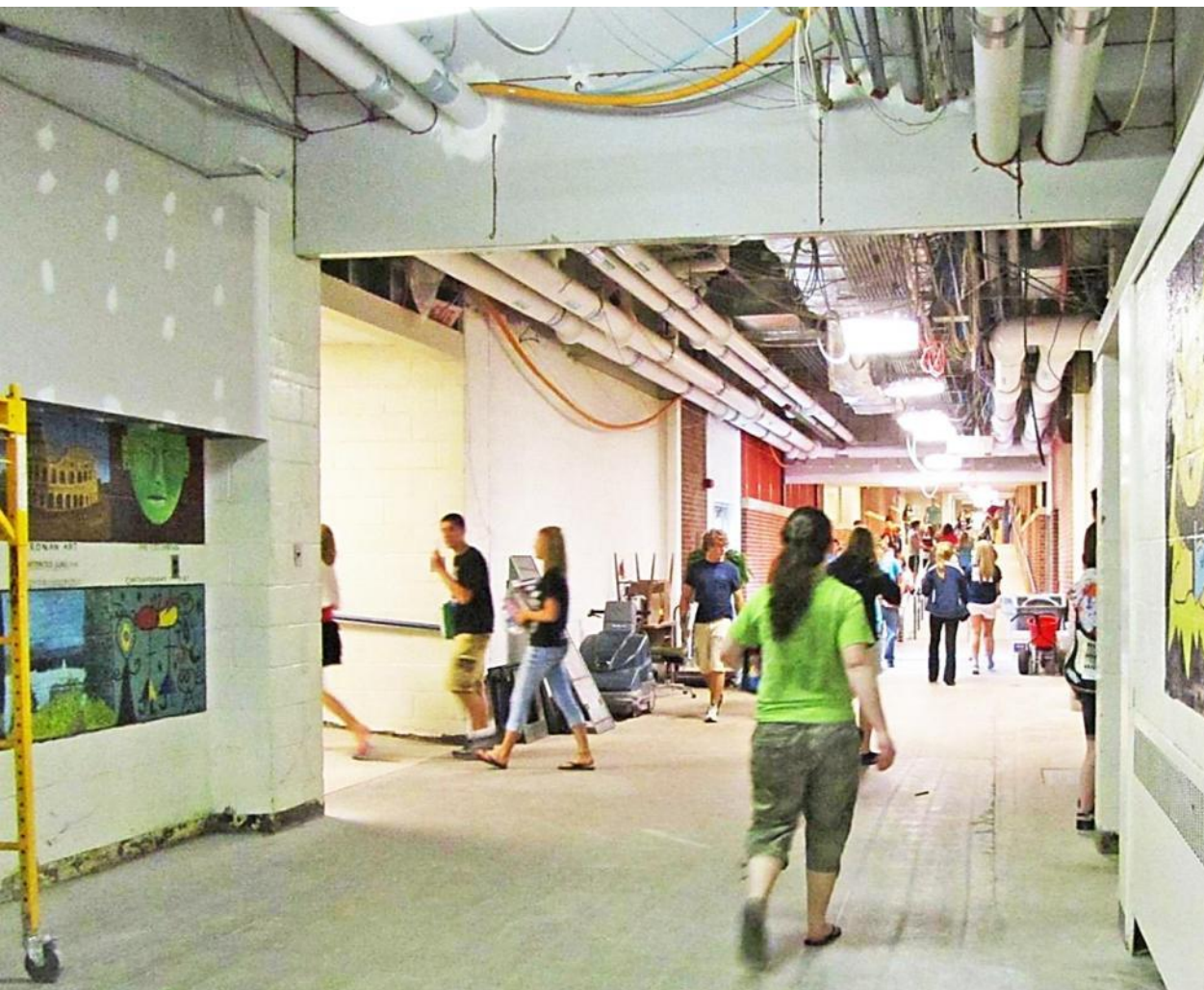


Thomas Edison High School: LESSONS LEARNED



- Provide Ample Time for Staff to Prepare
- Let the Students Know What is Next
- Maximize Off-hours Work
- Be Flexible to let the Contractor run
- Manage Consensus Building
- Involve Maintenance Staff Early in Process
- Sequence and Plan for MEP Systems Phasing
- Create Year-Round Plan for School Activities

Thomas Edison High School: LESSONS LEARNED



Case Studies



Stuart Hobson Middle School

STATS:

- **DELIVERY METHOD:** Design / Build
- **SIZE:** 98,200sf to 114,700SF
- **STUDENTS:** 325 to 465
- **COST:** \$44M
- **CONSTRUCTION:** 3 YR Phased, Occupied Construction

Stuart Hobson Middle School: Project Goals



- Bring a 1927 School into the 21st Century
- Achieve LEED Gold
- Support a Museum Curriculum
- Add Program Elements
 - Museum Sciences
 - Art
 - Choral/Drama
 - Gym
- Phase Construction with Budget Releases & Summer Blitzes
- Maximize after-hours work



F St NE

EXISTING
PLAYFIELD

EXISTING
PARKING

ADDITION

EXISTING BUILDING

E St NE

N

ARTS ADDITION AND INFILL
(MUSEUM/ART PROGRAM)

EXISTING HISTORIC BUILDING

SERVICE ADDITION

COURTYARD INFILLS



Stuart-Hobson M.S.

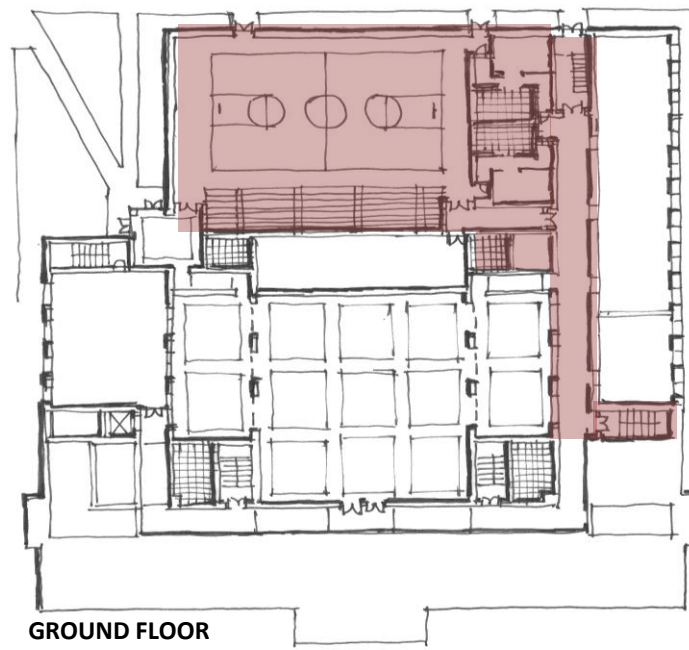
PHASE 1A: SUMMER 2012 (Summer Blitz)

1. FIRST FLOOR ADMIN & RESOURCE
2. FIRST FLOOR CLASSROOMS
3. FIRST FLOOR CORRIDORS & TOILETS

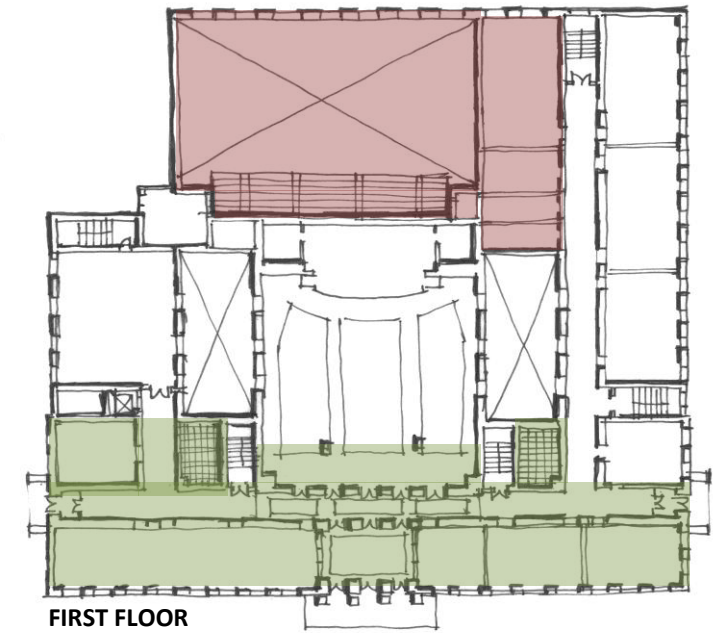


PHASE 1B: LATE SPRING- WINTER 2012

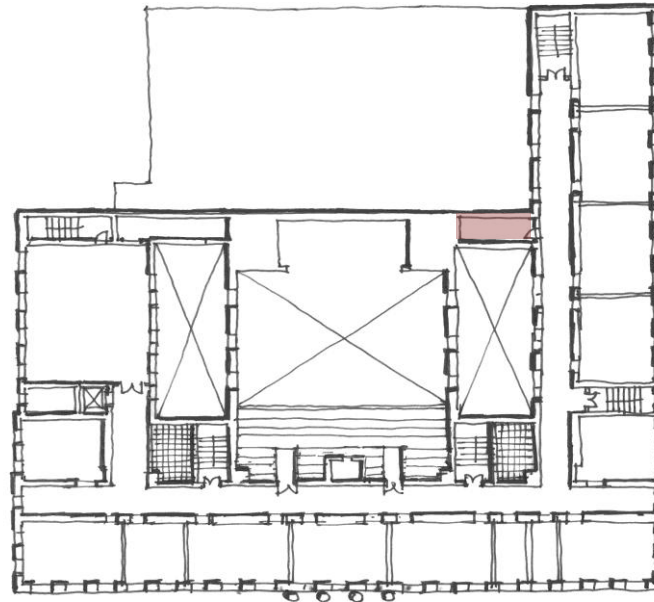
1. RENOVATE GYM, LOCKERS & STORAGE
2. UPGRADE MEP INFRASTRUCTURE



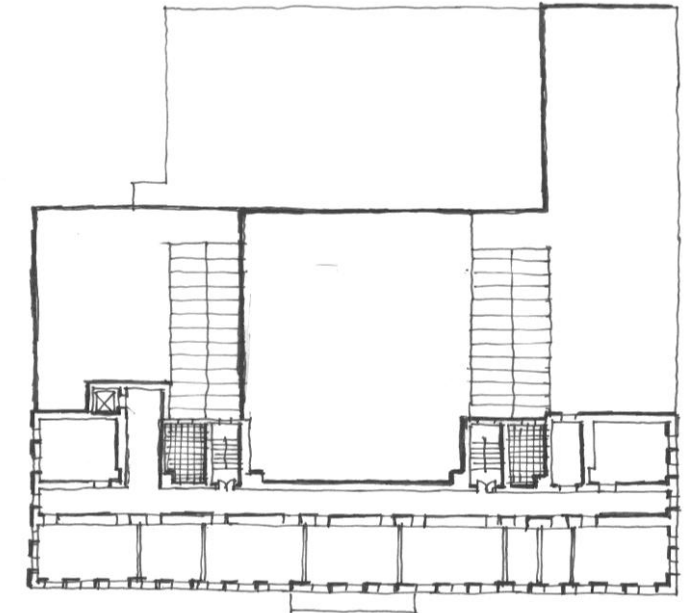
GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



Stuart-Hobson M.S.

PHASE 1A: SUMMER 2012 (Summer Blitz)

1. FIRST FLOOR ADMIN & RESOURCE
2. FIRST FLOOR CLASSROOMS
3. FIRST FLOOR CORRIDORS & TOILETS



PHASE 1B: LATE SPRING- WINTER 2012

1. RENOVATE GYM, LOCKERS & STORAGE
2. UPGRADE MEP INFRASTRUCTURE



PHASE 2A: SPRING 2013- SUMMER 2014

1. 3-STORY ADDITION, WEST ATRIUM & ELEVATOR



PHASE 2B: SUMMER 2013 (Summer Blitz)

1. CLASSROOMS & SUPPORT
2. CORRIDORS, TOILETS & STAIRS
3. COMPLETE MEP WORK



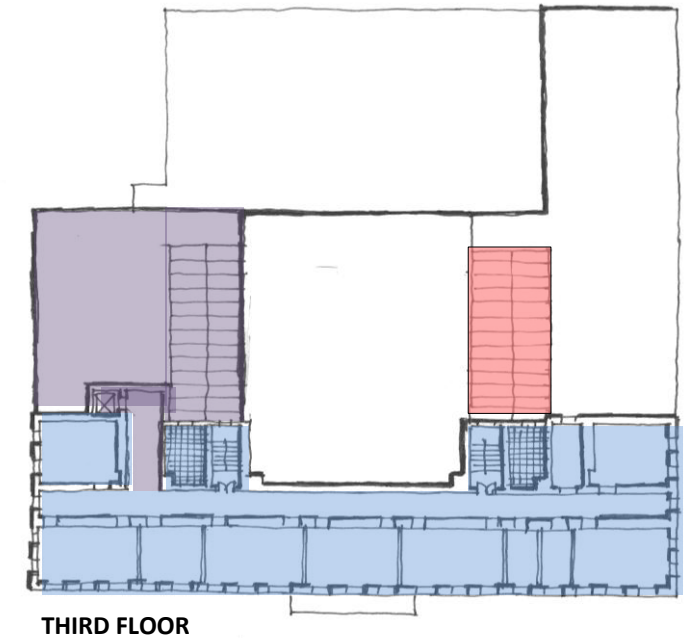
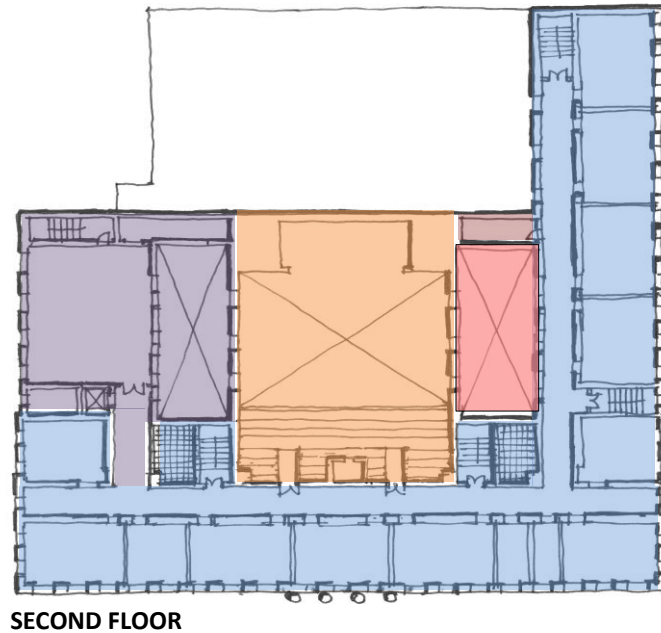
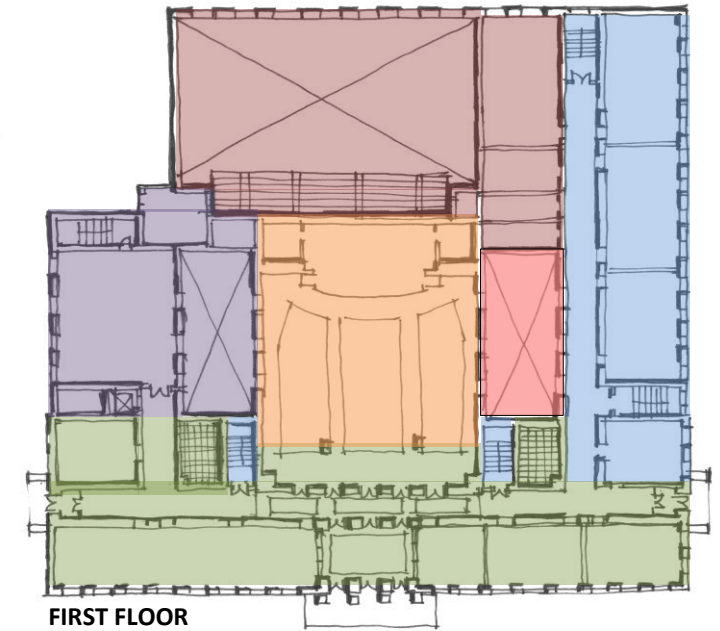
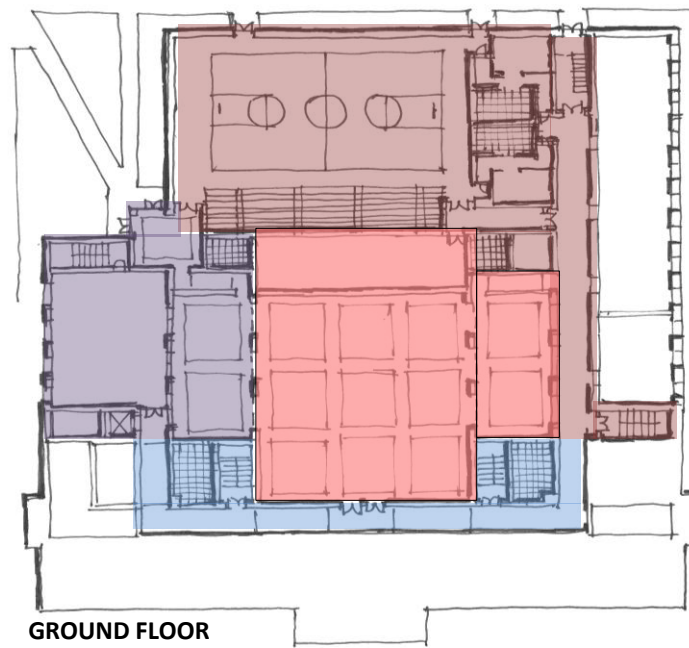
PHASE 3: SPRING 2013

1. AUDITORIUM



PHASE 4: SUMMER 2014

1. CAFETERIA & KITCHEN
2. EAST ARTS ATRIUM





Stuart-Hobson M.S.

PHASE 1A: SUMMER 2012 (Summer Blitz)

1. FIRST FLOOR ADMIN & RESOURCE
2. FIRST FLOOR CLASSROOMS
3. FIRST FLOOR CORRIDORS & TOILETS



PHASE 1B: LATE SPRING- WINTER 2012

1. RENOVATE GYM, LOCKERS & STORAGE
2. UPGRADE MEP INFRASTRUCTURE



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1. 3-STORY ADDITION, WEST ATRIUM & ELEVATOR



PHASE 2B: SUMMER 2013 (Summer Blitz)

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1. AUDITORIUM



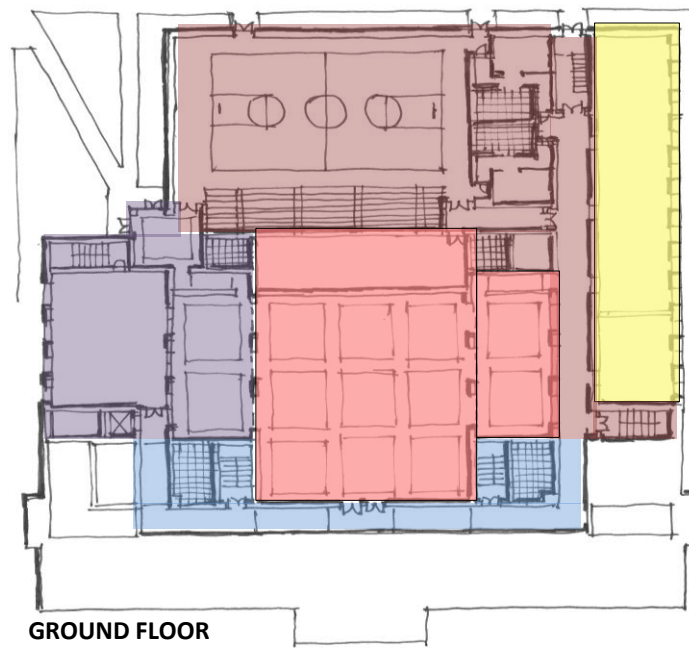
PHASE 4: SUMMER 2014

1. CAFETERIA & KITCHEN
2. EAST ARTS ATRIUM

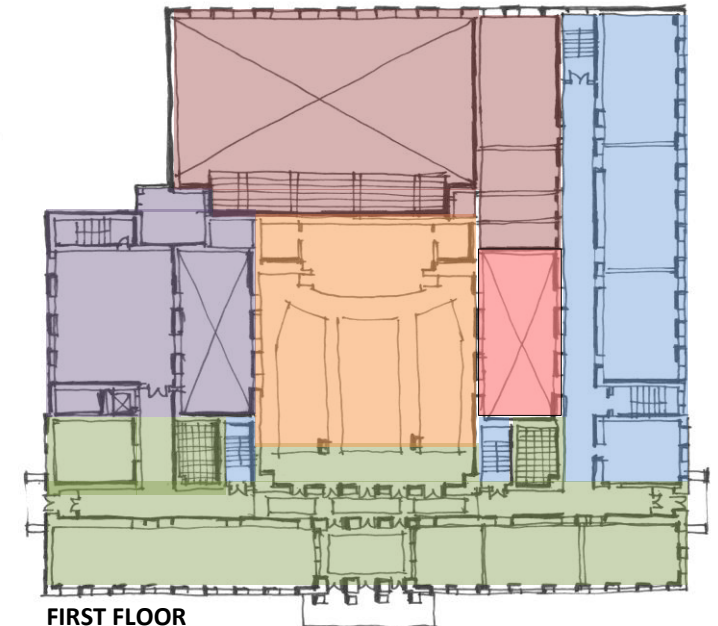


PHASE 5: FALL 2014

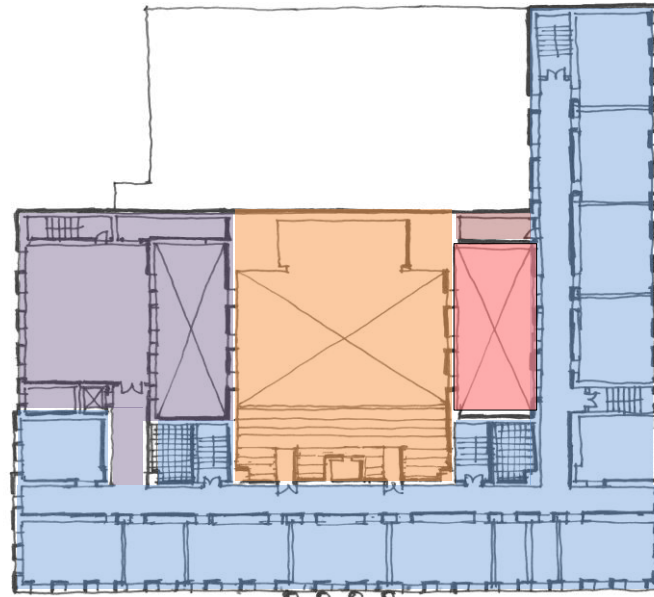
1. MEDIA CENTER



GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR



Stuart-Hobson M.S.

PHASE 1A: SUMMER 2012 (SUMMER BLITZ)

1. FIRST FLOOR ADMIN & RESOURCE
2. FIRST FLOOR CLASSROOMS
3. FIRST FLOOR CORRIDORS & TOILETS



PHASE 1B: LATE SPRING- WINTER 2012

1. RENOVATE GYM, LOCKERS & STORAGE
2. UPGRADE MEP INFRASTRUCTURE



PHASE 2A: SPRING 2013- SUMMER 2014

1. 3-STORY ADDITION, WEST ATRIUM & ELEVATOR



PHASE 2B: SUMMER 2013 (SUMMER BLITZ)

1. CLASSROOMS & SUPPORT
2. CORRIDORS, TOILETS & STAIRS
3. COMPLETE MEP WORK



PHASE 3: SPRING 2013

1. AUDITORIUM



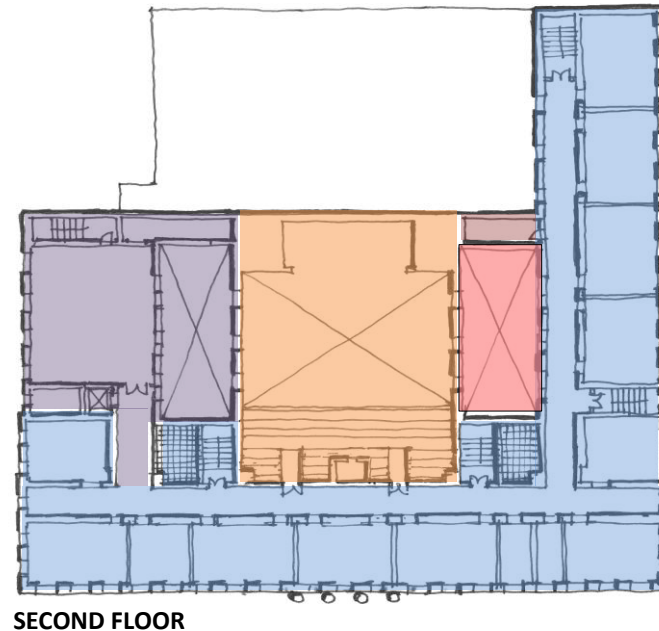
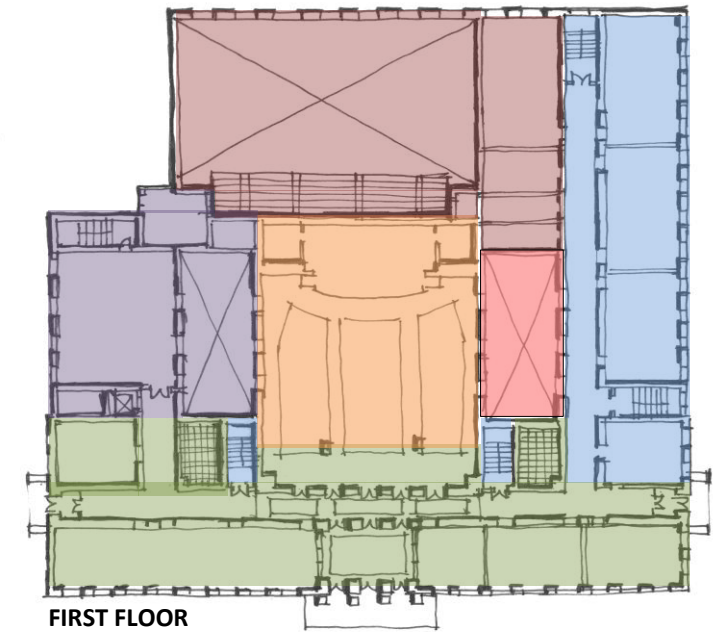
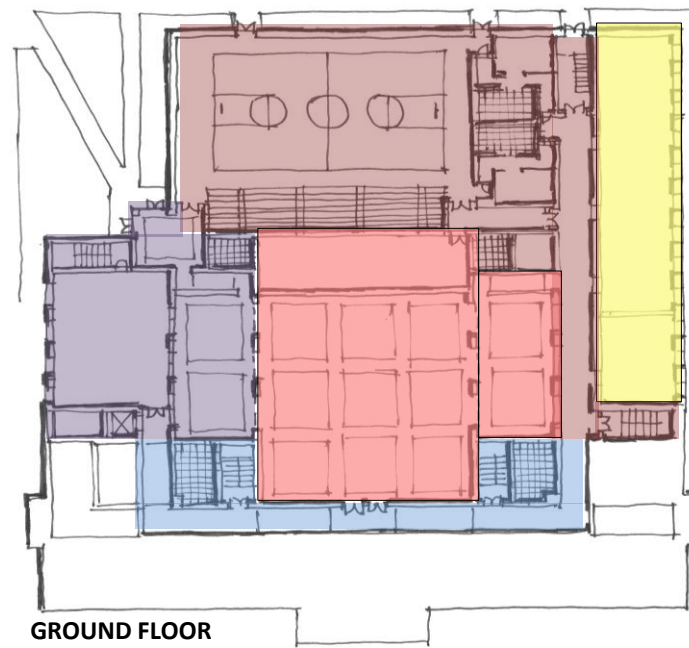
PHASE 4: SUMMER 2014

1. CAFETERIA & KITCHEN
2. EAST ARTS ATRIUM



PHASE 5: FALL 2014

1. MEDIA CENTER





Stuart Hobson Middle School: LESSONS LEARNED



- Support of the School Improvement Team and Community is Key to Success
- Carefully Assess the Physical Conditions
- Design/Build Approach offer opportunities
- Incremental LEED Approach

Case Studies



Herndon High School

KEY STATS:

- **DELIVERY METHOD:** Design / Bid / Build
- **SIZE:** 292,000sf to 424,000SF
- **STUDENTS:** 2,000 to 2,500
- **COST:** \$81M
- **CONSTRUCTION:** 3 YR Phased, Occupied Construction

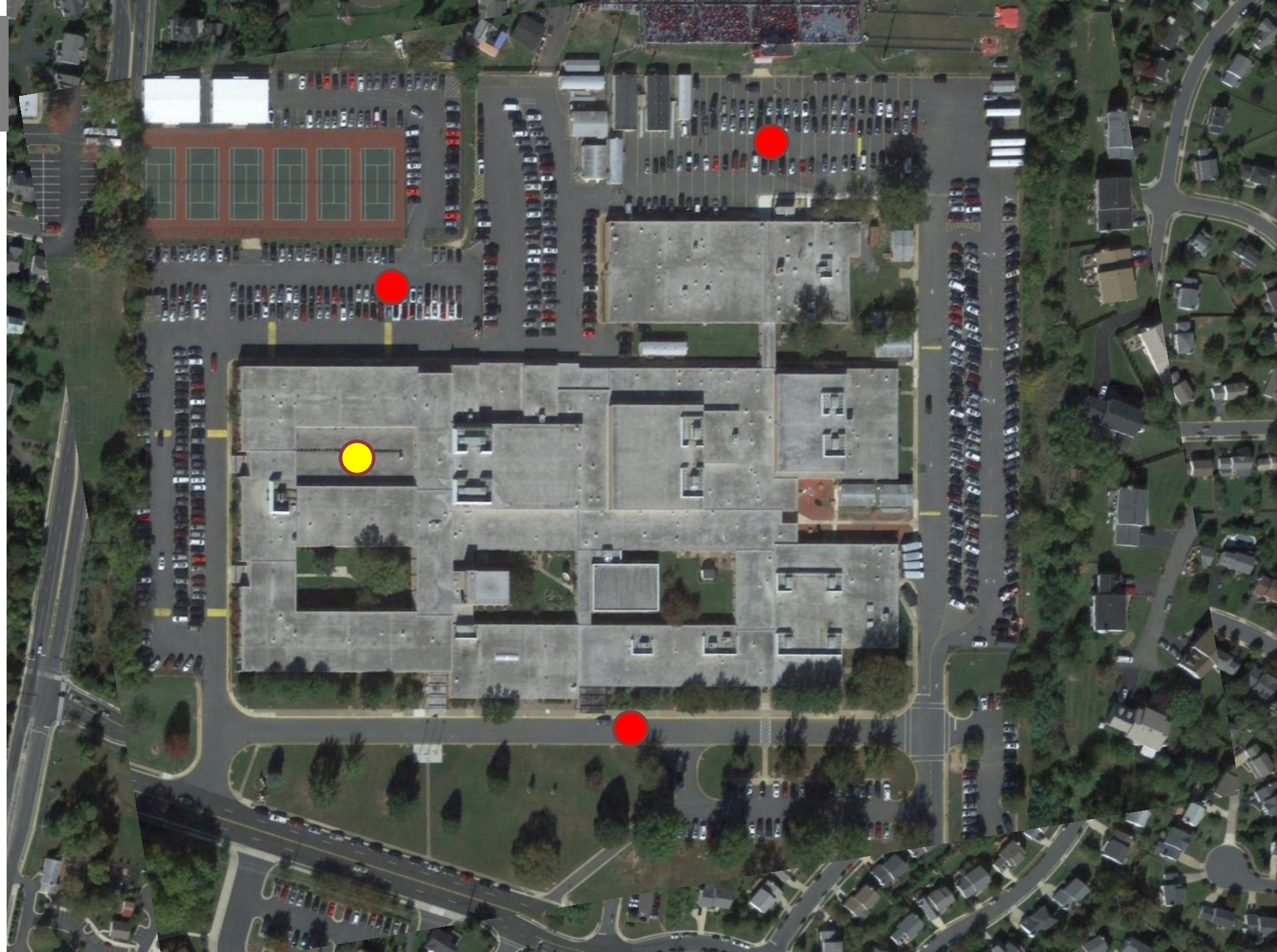
Herndon High School: Project Goals



- Modernized and extend the Building lifetime for the next 35 years
 - CHPS Designed
- Provide organization clarity
- Align space programming with Community
- Make Existing HS Equal to New FCPS High Schools
 - New Collaborative Learning Spaces
 - New Media Center
 - New Administration Area
 - New Science Department
 - New Performing Arts and Visual Arts Departments
- Eliminate modular classrooms
- Maintain School Activities Throughout Construction

Herndon High School

- Improve Bus loop and provide bus parking
- Increase parking capacity
- Provide designated drop off area
- Identify expansion site
- Reopen fourth courtyard



Herndon High School

PHASE 1 March 2017 - July 2018

- 1A 2-Story Sci/Classroom Addition
- 1B Courtyard Demolition
- 1C Classroom Renovation
- 1D S Reconfigure Existing Library
S Com/Elec Rooms
S South Main Street Demo / Structure
S Temp Bus Loop / Visitor Parking
S Classroom Transfers
- 1E Admin / Library / Addition
Complete Bus Loop / Visitor Parking
- Closed

Phase 1 Highlights

- New Two Story Addition
- Courtyard Demo
- Library / Admin Addition





HERNDON
HIGH SCHOOL

HERNDON
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HERNDON
HIGH SCHOOL

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Herndon High School

PHASE 2 June 2018 - August 2019

- 2A Classrooms / admin / Art Reno.
Tennis Courts
- 2B S Cafeteria / Kitchen
S Move Pole Vault / Long Jump
- 2C Concessions / FB Press / Support
- 2D S Baseball / Softball

Phase 2 Highlights

- Swing into New Addition and Renovated Space
- Renovate vacated space
- Kitchen/Cafeteria



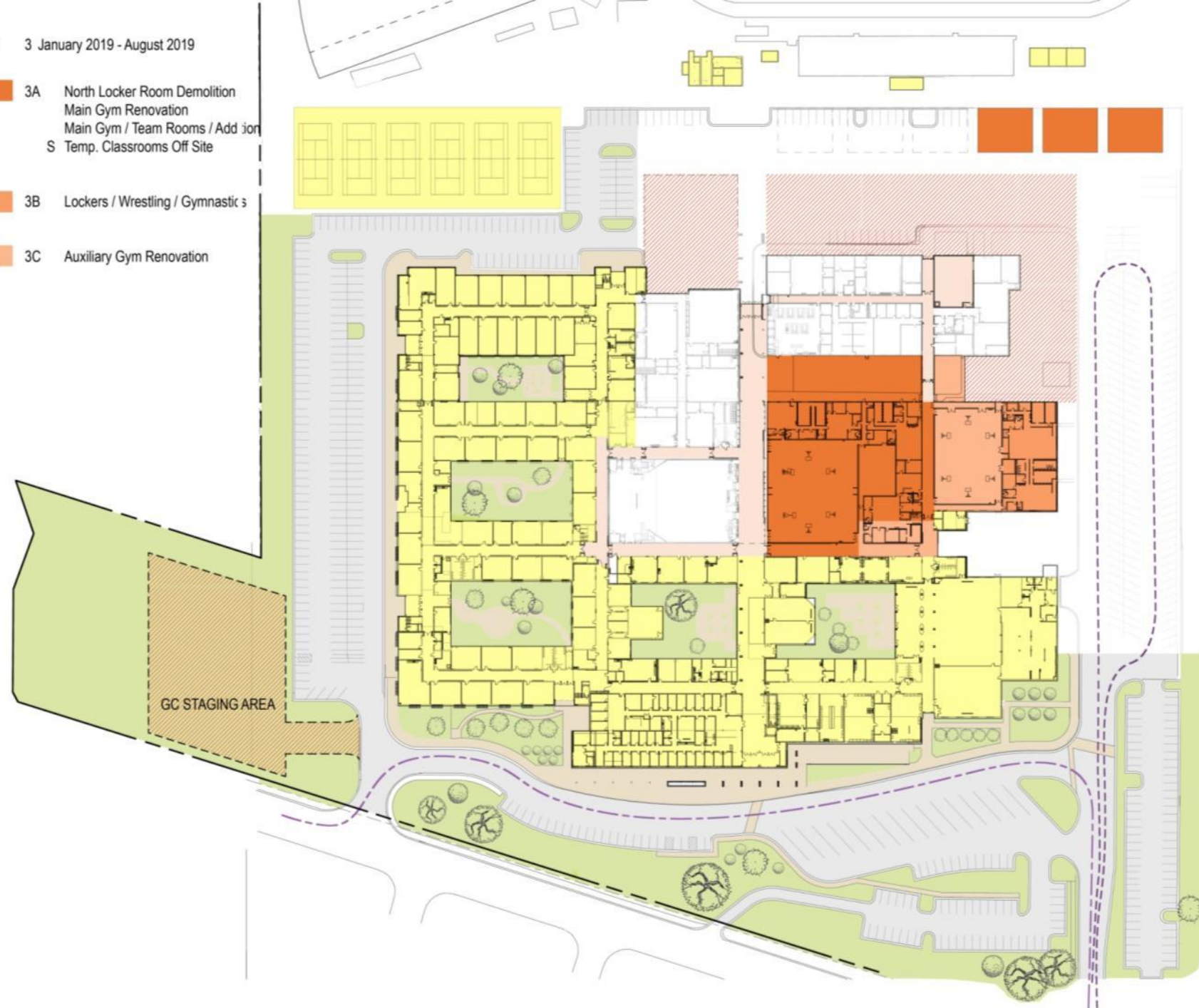
Herndon High School

Phase 3 Highlights

- Academic Core Complete
- Athletics Infill and Renovation
- Substantial reduction in temporary classrooms
- Lay down follows construction

PHASE 3 January 2019 - August 2019

- 3A North Locker Room Demolition
Main Gym Renovation
Main Gym / Team Rooms / Addition
S Temp. Classrooms Off Site
- 3B Lockers / Wrestling / Gymnastics
- 3C Auxiliary Gym Renovation



Herndon High School

Phase 4 Highlights

- Performing Arts Renovation and Addition
- Complete North Entrance and connection to Athletic fields
- Completion of Main Street

PHASE 4 May 2019 - July 2020

- 4A Audition Renovation
- 4B S Music Demolition
S Main Street Central
Music Addition
- 4C Canopy





HORNET PRIDE
HORNET PRIDE

HORNET PRIDE

HORNETS ARENA
HORNET PRIDE



HORNET PRIDE

HORNET PRIDE

HORNET PRIDE

HORNET PRIDE

LIBRARY

LIBRARY

Herndon High School

PHASE 5 February 2020 - August 2020

5A Athletic's Wing Renovation

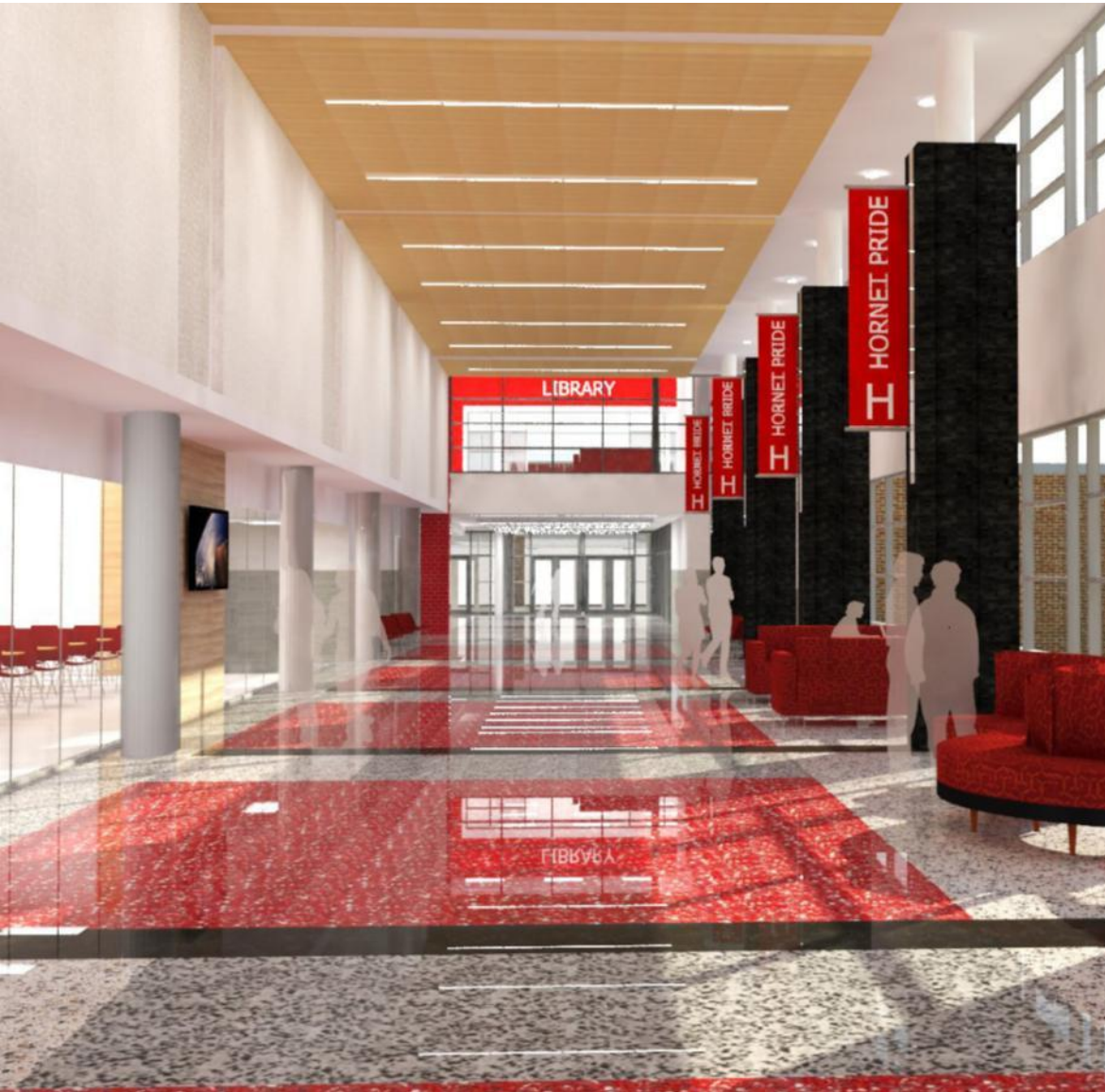
5B S Final Parking / Site Work

Phase 5 Highlights

- Renovate Vacated Space
- Complete sitework and project



Herndon High School: APPLIED LESSONS (to date)



- Multi-Level Staff and Administration Consensus
- Enhance Staff Input
- Site and Building Phasing Aligned
- Increased Community Engagement
- More to come.....

Drivers



Process



Considerations



PLANNING, OPERATIONS, CONSTRUCTION

Application





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