Phased, Occupied
K-12 School
Modernizations

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

- ASSESS
- DEFINE
- CONFIRM
- REFINE
- ADJUST
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

DEFINE
Process

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

CONFIRM
Process

REFINE

• ASSIGN SPACE TO SPECIFIC TEACHERS AND PERSONNEL
• VALIDATE SWING SPACE AND TEMPORARY FACILITIES REQUIREMENTS AND QUANTITIES
• COORDINATE WITH SCHOOL ADMINISTRATION OPERATIONAL IMPACTS
• BUILD CONSENSUS
• 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?**
- Noise
- Dust
- Hard to Learn

**What Was Your Favorite Part of Construction?**
- Seeing Construction Workers
- Seeing New Construction Finished
- Seeing Bulldozers, Construction Workers
- Missing Classwork Due to Noise

**What Was the Worst Part of Construction?**
- Noise
- Smell
- Distractions
- Dust / Mess
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

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
• 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
• 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 Center, & Admin Addition

Central Plant Addition

Scene Shop Addition

Black Box/Band Room Infill Addition

Weight & Fitness Addition

New Bus Loop

Renovated Athletics Fields
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)

Renovation
- Locker rooms
- Auxiliary gym
- Boiler room

Addition
- Central plant

Renovation
- Special event entrance
- Concessions
- Sprinkler room
- Mechanical room
- Electrical room

Addition
- Main entry/lobby
- Media center
- Lecture hall
- Administrative offices

Addition
- Photography lab

Renovation
- Classrooms
- Conversion of existing library into science labs
• 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

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
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 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 1A: SUMMER 2012 (Summer Blitz)
1. FIRST FLOOR ADMIN & RESOURCE
2. FIRST FLOOR CLASSROOMS
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PHASE 1B: LATE SPRING- WINTER 2012
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PHASE 4: SUMMER 2014
1. CAFETERIA & KITCHEN
2. EAST ARTS ATRIUM

PHASE 5: FALL 2014
1. MEDIA CENTER
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
Herndon High School

Case Studies

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
- Improve Bus loop and provide bus parking
- Increase parking capacity
- Provide designated drop off area
- Identify expansion site
- Reopen fourth courtyard
Phase 1 Highlights

- New Two Story Addition
- Courtyard Demo
- Library / Admin Addition
Phase 2 Highlights

- Swing into New Addition and Renovated Space
- Renovate vacated space
- Kitchen/Cafeteria
Phase 3 Highlights

- Academic Core Complete
- Athletics Infill and Renovation
- Substantial reduction in temporary classrooms
- Lay down follows construction
Phase 4 Highlights

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

Application

PLANNING, OPERATIONS, CONSTRUCTION
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