THE HIGH SCHOOL PROJECT

T.C. WILLIAMS, MINNIE HOWARD CAMPUS REDEVELOPMENT

FINAL COMPREHENSIVE SPACE AND SITE PROGRAM/EDUCATIONAL SPECIFICATION

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PERKINS EASTMAN

In Association With:
Maginniss + Del Ninno Architects
New Vista Design
School Scheduling Associates
DP Consultants
Downey & Scott
Aquatic Design Group
Nyikos-Garcia Associates

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EXECUTIVE SUMMARY

PURSUING EQUITY FOR ALL

The design and redevelopment of the new Minnie Howard Campus, as part of the T.C. Williams Connected High School Network (CHSN), will play a vital and exciting role in the realization of the innovative vision that has been created for the ACPS High School Project. With the combined goals of rethinking the way that ACPS delivers its high school education, solving space issues that come with its growing student body, and supporting the core values of “Welcome, Empowerment, Equity, Innovation and Results’’ articulated within ACPS’s Equity for All 2025 Strategic Plan, the Connected High School Network promises to help transform Alexandria City Public Schools into a better, more equitable and richer learning environment for all of its students.

BUILDING ON A SOLID FOUNDATION

ACPS has been actively working on a number of fronts to prepare for and envision the design of the Minnie Howard Campus as part of its Connected High School Network (CHSN). In 2017, a High School Educational Specifications document laid out the educational and architectural requirements for a generic 1,600 student comprehensive high school. Since the summer of 2019, an Educational Design Team (EDT) comprised of ACPS and T.C. Williams leadership, administrators, teachers, and students has met regularly to research and develop educational programming concepts and recommendations for the new high school experience. From 2018-19, the firms of Stantec and Fielding Nair International (FNI) were commissioned as an integrated design team of architects, planners and educators to work with a diverse group of ACPS stakeholders to help define and inspire the future high school experience for ACPS. ACPS also launched Industry Advisory Boards made up of local business, government and organizations representing major industries and the 17 career clusters. The findings and recommendations from each of these stakeholder groups have provided a solid foundation upon which the design team of Perkins Eastman Architects has based the site-specific specifications and recommendations found in this report.

Roosevelt Senior High School
Washington, DC

BRINGING MINNIE HOWARD TO LIFE

Based on recommendations from the Educational Design Team, the redesigned Minnie Howard facility and campus must provide a dynamic and agile learning environment that fully supports: 1.) Learners’ future success in post-secondary educational options; 2.) Meaningful and experience-based preparation for the rapidly changing world of work and career pathways; and 3.) Instructional delivery that is personalized, engaging, and culturally responsive. In order to achieve these goals, a series of overarching “Design Patterns” and features have been identified by the Perkins Eastman design team and the EDT as essential to the organization and design of the Minnie Howard Campus. They have been grouped within the following categories, and can be found described in more depth in Tab 2 of this document:

A CONNECTED NETWORK

The Minnie Howard Campus is an essential part of ACPS’s CHSN, that also includes King Street, Satellite, and Chance for Change. ACPS is committed to promoting equity in the CHSN and that means ensuring that all T.C. Williams students, teachers and families have access to all educational programs. The new Minnie Howard facility will be designed to accommodate at least 1,600 students and will continue to complement the King Street campus. Community use of, and access to the building will be supported through the creation of community access zones that will allow portions of it to be safely used during

and outside of school hours. These resources may include an Aquatics Center, the gyms, the “Forum,” the Library/Learning Commons, an expanded Teen Wellness Center, and other services provided by the Alexandria Department of Community and Human Services.

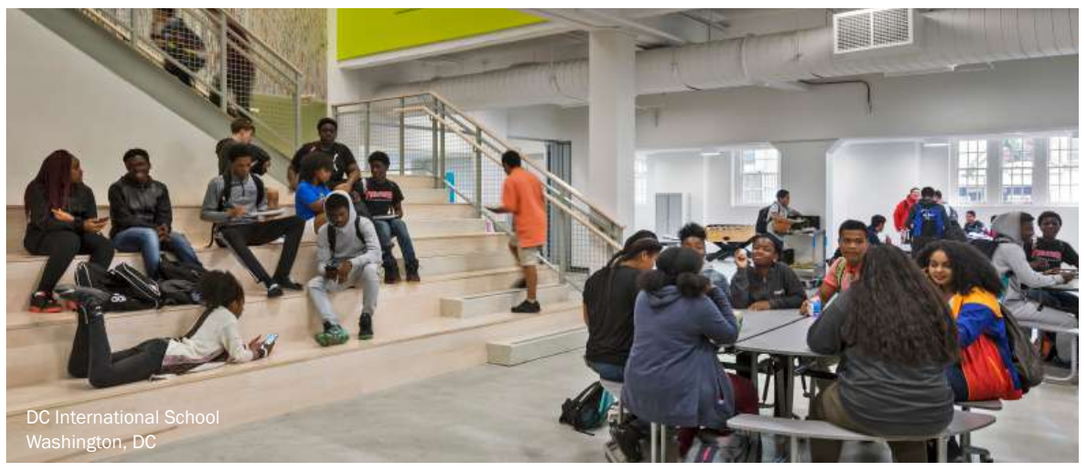
STEAM CAMPUS

ACPS is leveraging the development of the Minnie Howard Campus as a catalyst for rethinking students’ entire high school experience, and for creating a campus that supports innovation and engagement in the subjects of Science, Technology, Engineering, Art and Math (STEAM).A multi-purpose and centrally located library learning commons will serve as the hub of the school and provide dynamic connections to a series of highly flexible Career Technical Education (CTE) and prototyping labs, as well as varied venues for performance and the arts. Though still in the planning stages, STEAM and CTE labs that may potentially take shape within the building include fabrication, art, prototyping and health sciences.

FLEXIBLE AND ADAPTABLE SPACES

Like all 21st century learning environments, the Minnie Howard Campus will need to adapt to a wide range of new and evolving programs and technology over the decades to come. As such, flexibility and adaptability are key to its design. Agile and interchangeable classrooms must be large enough to support traditional, small group, independent and project-based teaching and learning. Flexible furniture and robust technology must also support these practices, while permitting learning to happen anywhere and anytime within the building and campus. Extended learning areas and breakout rooms, with immediate adjacencies to classrooms, will serve to add additional flexibility and adaptability.

Princeton Day School
Princeton, NJ



DC International School
Washington, DC

INTERDISCIPLINARY COMMUNITY APPROACHES

The Educational Design Team and ACPS leadership are considering the best approach to create Interdisciplinary Communities throughout the Connected High School Network. While ACPS is committed to organizing Interdisciplinary Communities. The EDT is still exploring the way they would function. This approach is best facilitated spatially through the creation of Interdisciplinary Communities that contain a flexible and synergistic collection of general classrooms, extended learning areas, breakout rooms, and distributed science labs. Additionally, distributed dining venues help to build school community and can serve as multi-purpose gathering and learning spaces for each Interdisciplinary Community.

EXECUTIVE SUMMARY

Distributed administrative spaces must be located within each Interdisciplinary Community to ensure that student support services and the adults connected to them are located in close proximity to the students they serve. Shared teacher offices and collaboration areas could provide areas for teachers to work and collaborate when they are not teaching. Because the Educational Design Team is still in the process of completing the educational redesign(i.e. by grade level, cross-discipline teams, thematic foci, career pathways, and/or informal and changing groupings of teachers), Interdisciplinary Communities across the Connected High School Network must remain flexible enough to accommodate each of these organizational and educational strategies.

A HEALTHY AND HIGH-PERFORMANCE BUILDING

The design of the Minnie Howard Campus aims to create a new kind of 21st Century learning environment that reduces environmental degradation, engages and fosters life-long learning, promotes community resiliency, and enhances health and wellness for every student, family, and members of the community. We know that the redesign of this Connected High School Network campus will help to redefine opportunities offered to the children families and community of Alexandria. With this design we have the opportunity to synthesize sustainable design, Net Zero Energy, public health and materials, and building systems to foster an idea of “Holistic Wellness.” This idea is a commitment to create a healthy, high performance place to learn that sets students on a life-long path to healthier, happier, more productive lives.

SCHOOL SCHEDULE

Providing the most flexible access to all parts of the connected campus requires a re-thinking of the T.C.Williams master schedule. The proposed plan offers students the opportunity to take 8 courses within the regular school day (approx. 400 students already take a class scheduled before or after school). The schedule has four instructional blocks; 15-minute transitions separate Blocks 1 from 2 and Blocks 3 from 4 to facilitate movement between campuses. The vast majority of classes would be offered every day for 85 minutes for one semester, as they have been this school year. Some courses, that by their nature or testing schedule may go all year (Band, Orchestra, AP classes, JROTC, etc.) would be offered every other day for the entire year. Teachers would teach 6 of the 8 blocks, with most teachers instructing three classes per semester. A prominent feature of the schedule is a “Lunch and Learn,” which separates the morning and afternoon blocks. During this time the whole school stops for lunch and other activities. There is 30-minutes of duty-free lunch reserved for all teachers; during the other 30-minute period teachers are available to provide extra help, run clubs, engage students in enrichment activities, provide supervision, and meet with their Professional Learning Community. Students, within clear boundaries, are able to decide how to use their time, though they may be required to attend extra help sessions, if asked by a teacher. Obviously, the manner in which food is provided for students and staff must be totally rethought.

Mount Greylock Regional School
Williamstown, MA

COST CONTROL

ACPS has established an all inclusive construction budget of $150 million for the project. While there are many opportunities to control the cost of the project, one of the first is to create an educational specification that fully meets the needs of the program and the school's vision of the environment, while at the same time doing so in as efficient a manner as possible.

To do so, the design team has been actively working with the EDT and school leadership to leverage the resources of the Connected High School Network, enhance space utilization across the King Street and Minnie Howard campuses through revised class scheduling, locating programs on the campus where they can be most effectively delivered, and evaluating the space projected against comparable facilities. Our initial analysis indicates that the budget can support the construction of approximately 285,000 gross square feet for the school building and that amount of school building is sufficient to accommodate the level of educational programming that is envisioned.

The preliminary space projection included in this report is a first step toward a project long effort to deliver the new building and its site on budget while meeting the needs of the school and the community. As the design develops, revisions to this projection, and additional opportunities to steer the project to an on-time and on-budget delivery will be leveraged.

USING THIS GUIDE

Tabs 1 and 2 of this document describe the varied elements of the Connected High School Network as they connect to priority design patterns and features for the new Minnie Howard Campus. Tabs 3 and 4 explore an overall approach to building organization and school scheduling, and Tab 5 lays out the space program in greater detail and outlines assumptions and outstanding questions with regard to spaces found in the architectural program.

Ron Brown High School
Washington, DC

1

TAB 1: OVERVIEW AND INTRODUCTION

1.1 PROJECT RATIONALE

PROJECT OVERVIEW AND RATIONALE

The design of the new Minnie Howard Campus, as part of the T.C. Williams Connected High School Network (CHSN), will play a vital and exciting role in the realization of the innovative vision that has been created for the ACPS High School Project. The High School Project has had dual goals since its inception, rethinking the way that ACPS delivers high school education while finding the best way to address the City of Alexandria's future capacity issues.

Today, T.C. Williams offers 400 courses and has space for approximately 3,800 students between its two major campuses, King Street and Minnie Howard's ninth grade center campus. Currently there are 4,125 students enrolled and based on the FY22 student enrollment projections, ACPS anticipates there will be over 5,000 high school students by 2029.

On September 26, 2019, the School Board empowered the Superintendent to proceed with development of a Connected High School Network site concept that includes construction of a high school building (and associated site amenities) on the Minnie Howard campus. The decisions to educate ninth-twelfth grade students together and to expand the T.C. Williams, connected network as opposed to building a second high school at the Minnie Howard Campus, were made with the goal of shaping Alexandria City Public Schools into a better, more equitable and richer learning environment for all of its students.

ACPS has been actively working on a number of fronts to prepare for and envision the design of its forward-thinking Connected High School Network. An Educational Design Team (EDT) was formed to develop educational programming concepts and recommendations for the new high school experience. The EDT, made up of ACPS teachers, staff, and students began meeting during the summer of 2019, first to provide recommendations to the School Board prior to it's September decision and then to begin to imagine and envision a new high school experience.

The Educational Design Team is responsible for recommending educational program design options to address the future needs of ACPS learners, including recommendations for a high school educational program that emphasizes: (1) learners' future success in post-secondary educational options; (2) meaningful and experience-based preparation for the rapidly changing world of work and career pathways; and (3) instructional delivery that is personalized, engaging, and culturally responsive. In support of the School Board's directive and in the spirit of authentic engagement, the Educational Design Team (EDT) was charged with developing a vision for the future of high school learning and determining the new high school program, including what is to be housed at the new building on the Minnie Howard Campus.

Additionally, Industry Advisory Boards made up representatives from local business, government and organizations representing major industries and career clusters have begun work to provide input to ensure courses of study reflect real world current and future needs.

DC International School
Washington, DC

Alexandria City Public Schools continues to work with Northern Virginia Community College on an Early College program, and with Virginia Tech on a potential program at Potomac Yards Innovation campus. In doing so, the district aspires to redefine the high school experience for ACPS, to deliver a direction for the City of Alexandria, whose students will have access to experiences and skills that will define its future.

In December of 2021, ACPS hired Perkins Eastman to further define the future high school experience in the Connected High School Network, and to advance the vision through the new building on the Minnie Howard site. With New Vista Design, School Scheduling Associates, and Maginniss + del Ninno Architects, this team is working with ACPS and the EDT to synthesize and build upon prior work, creating a Comprehensive Space and Site Program that includes a Site Specific Educational Specification for the Minnie Howard site, and developing options for a new master schedule for the Connected High School Network.

School Without Walls Senior High School
Washington, DC

1.2 EDUCATIONAL PROGRAM

EDUCATIONAL PROGRAM

The Educational Design Team (EDT) and ACPS leadership have been charged with, developing and recommending, an Educational Programming vision for the Connected High School Network model. Some of the decisions about educational programming will have an impact on the design of the Minnie Howard expansion campus, and will also have implications for the King Street campus.

The future high school educational program will emphasize:

- Learners' future success in post-secondary educational options;
- Meaningful and experience-based preparation for the rapidly changing world of work and career pathways;
- Instructional delivery that is personalized, engaging, and culturally responsive.

The core values adopted by the EDT at the start of their work are: Equity, Relationship and Community, Achievement, Student Choice and Multiple Pathway Offerings.

In its explorations, the EDT has been guided by the school board's stated priorities and the recommendations of a brain trust made up of national experts with first-hand knowledge of the best ways to redesign high school programs. Both of these priorities and recommendations establish an undergirding, as well as, guardrails that will guide the development of the new educational program.

The school board asked ACPS to ensure the new model is based on academic research, the potential impact on academic achievement, and on interpersonal, social, and emotional skills.

Furthermore, the school board would like: multiple programs to be available at the King and Minnie Howard campuses to maximize flexibility, accessibility, enhance cross-program interactions and reduce logistical obstacles. All students are to be able to access support services, counseling, social work, nurses, psychological help and nutrition at both major campuses.

All programs within the proposed high-school model (including currently existing programs) administered equitably, such that all students have a fair opportunity to participate in the full range of programmatic options available; the flexibility to allow students to change their academic path even after one has been selected; ensure new program offerings are data-driven; and have an intentional focus on the delivery of special education services and on English Learner services.

In October 2019, the school board emphasized the importance of preparation for postsecondary education and career pathways and highlighted Career and Technical Education, workforce training and project-based learning as important program design drivers. A primary educational programming goal they advocated for, was to make sure students had equal access to more experiential, hands-on learning that engages all learners in their education and helps them to understand its connection to the world beyond the classroom.

In January 2020, national experts weighed in on ACPS high school redesign, and offered several recommendations. Since then, the EDT has been working on ways to:

- Create Interdisciplinary Communities that are connected and ensure students feel a sense of connection to the school;
- Increase project-based learning and work experiences to advance student learning;
- Develop an approach to STEAM that is appropriate to ACPS;
- Promote equity across the connected network.

In February 2020, the EDT visited The Academies of Loudoun in Virginia to see how a specialized learning center for students from 17 area high schools supported STEM-focused programs. After the visit, EDT members shared their major takeaways, including:

- Every decision made about the new building should be student-centered;
- Every part of the new building should be able to be used as a classroom;
- Create space that allows for collaboration and instruction time to be maximized;
- Invest in flexible rooms and furniture;
- The building itself should support differentiation;
- Create and maintain an innovators space/prototyping labs for creating, inventing, and to support other studies;
- Provide more laboratory spaces for multiple subjects;
- Include plenty of natural light, common areas and spaces for students to congregate.

These observations from the national experts on high school redesign, and the visit to the Academies of Loudoun, validated research commissioned by ACPS when the project was initiated in 2018.

Efforts are being made to ensure that the expansion of the campus at Minnie Howard compliments the King Street campus and all of T.C. Williams educational programming.

The EDT identified five areas of need for T.C. Williams: content-specific labs and studios, additional and enhanced non-traditional offerings, appropriate Art facilities, additional fitness facilities; collaborative and interactive spaces (both indoor and outdoor), and in general, more flexible spaces.

Since December 2020 when Perkins-Eastman and their team of experts in architecture, school scheduling, and educational programming started working with the EDT; certain recommendations that will support the future academic program, student organization, and career and technical education have emerged. These all fall in line with the core values of the EDT, the advice from national experts and the priorities established by the school board during this process. However, these are high-level decisions, and they do not indicate how the student body will be organized, nor how students will be taught in the future. For example, the EDT will be recommending that the CHSN be organized around Interdisciplinary Communities, and this will have an impact on the way the building is designed. However, the EDT has not determined how these Interdisciplinary Communities will be configured, nor if multidisciplinary teams of teachers will support individual Interdisciplinary Communities. The EDT is beginning a process to involve T.C. Williams staff in envisioning the best way to set up and operate these Interdisciplinary Communities. Developing a new approach to high school will happen over the

Capitol Hill Day School
Washington, DC

1.2 EDUCATIONAL PROGRAM

EDUCATIONAL AND DESIGN ELEMENTS

The Educational Design Team (EDT) has developed recommendations for some aspects of the future program and what will be featured on the expansion campus. The final decisions will have an impact on the design of the new building.

The following provides details about what subjects and pathways the new building will support.

ACADEMIC SUBJECTS

- Science
  - Wet and dry labs
- Math
  - Fabrication labs
- Engineering
  - Fabrication Labs
- Arts
  - Art labs/studios

CAREER-TECHNICAL EDUCATION PATHWAYS (CTE)

STEM CLUSTER

1. Engineering Pathway

- Aerospace Path
  - Classroom (1) & Prototyping Space(1) - Need their own spaced. Needs dust collectors and spray booth ventilation system. There are OSHA requirements.
- Robotics path
  - Classroom (2) & Prototyping Space (2)- Needs their own space. Needs dust collectors and spray booth ventilation system. These are OSHA requirements.

2. Cyber Security Pathway

- Cloud Computing within Aerospace Path
  - Space - Classroom/Computer lab (3)
- Computer Network Hardware Path
  - Space - Classroom/Computer lab (4)

3. Game Design and Development Pathway

- Game Design Development/ Computer Science
  - Space - Classroom/Computer Lab (5)

NOTE: Cloud Computing, Computer Network Hardware, and Game Design can share a Prototyping Space (3) with Dust collectors and spray booth ventilation system.

ENERGY CLUSTER

4. Energy Efficiency Pathway

- Sustainable and Renewable Energies
  - Classroom (6) & Prototyping Space (4) - Need their own space. Needs dust collectors and spray booth ventilation system. These are OSHA requirements.

The spaces that are needed to complement these CTE pathways include:

- 4 prototyping labs
- 6 Classrooms (3 w/computer lab specifications)

These choices support the Board's directive to ensure multiple programs are available, at both, major campuses to maximize flexibility, accessibility, enhance cross-program interactions, and reduce logistical obstacles. The new program offerings are data-driven, prepare students for postsecondary education and career pathways, highlight CTE and workforce training, and provide equal access for experiential and hands-on learning.

The architects' scheduling consultant has reviewed various approaches to the high school's master schedule and has presented multiple models to the EDT and the T.C. Williams staff. From these sessions, several important decisions have emerged:

- T.C. Williams is exploring scheduling options that may use eight scheduling slots lengthening the school day and providing longer transitions between blocks;
- T.C. Williams will eventually implement community lunch periods also known as "lunch and learn," during which all students and all faculty have the opportunity to eat lunch and engage in community building activities, extra support, and/or enrichment.

The school board has consistently emphasized concern for student's social and emotional well being. T.C. Williams and the EDT have chosen to employ the same strategy that is at the King Street Campus, and spread administration and school counselors throughout the new facility. In addition, a counseling services wing for the Scholarship Fund of Alexandria, and an Assistant Director of School Counseling will be featured. An additional Teen Wellness Center will also be a part of the expansion campus.

These decisions support the Board's directive to make sure all students will be able to access support services, counseling, social work, nurses, psychological help, and nutrition at both major campuses.

Perkins Eastman collaborated with Dr. Theresa Werner, Executive Director of the Office of Specialized Instruction, and the EDT leadership to ensure equitable special education services are included in the educational specifications. Special Education services will be provided at the new facility in a variety of settings, including co-teaching within general classrooms. Students with Intellectual and Emotional Disabilities and Autism Spectrum Disorder will attend both the expansion campus at Minnie Howard and the King Street Campus.

1.2 EDUCATIONAL PROGRAM

The team anticipates English and Math classes for approximately 15 students in Resource Classrooms. Some pull-out activities including Occupational Therapy that occurs in small group rooms, and resource classrooms in the proposed academic neighborhoods.

The team is planning for dedicated classrooms for students with specific conditions involving Intellectual (ID), Emotional (ED), or Autism (ASD) diagnosis. The team has proposed dedicating two classrooms for students with ID/ASD- accommodating five-to-six students- and two classrooms that can accommodate four-to-five students with ED. These include dedicated bathrooms, each classroom will be staffed by a teacher and a paraprofessional.

Administrative and support spaces include: a director's office, a space for an administrative assistant and records, an office large enough for speech language services to be provided and for small groups to meet, office space for a lead accountability officer space, and a larger IEP conference room.

Students with Multiple Disabilities (MD) will attend only the King Street Campus to ensure that resources are convenient and available for their needs, including rooms with life skills equipment.

These decisions are consistent with the school board's directive to be, intentional in our focus on the delivery of special education services, and on English Learner services. This is achieved by promoting structures and practices, that allow for the equitable and seamless access to the general education curricular offerings, alongside all special education and EL service levels.

INTERDISCIPLINARY COMMUNITIES

Based on input from national experts and the school board, the EDT has recommended organizing all students into Interdisciplinary Communities, as a feature of the CHSN and the Perkins Eastman team has provided design options that will support this decision.

The EDT is in the process of considering possible configurations for organizing Interdisciplinary Communities across the CHSN and will continue to develop ideas. These discussions focus on how to provide a more personalized connection to a smaller segment of the school for students, while also continuing to provide student choice, flexibility, and equity.

Organizing T.C. Williams into Interdisciplinary Communities was a recommendation by national experts working with ACPS and the Educational Design Team, to better connect students and teachers and establish a community across the CHSN.

PROJECT BASED LEARNING

The school board and our panel of experts have directed ACPS to bring Project Based Learning (PBL) and deeper learning methods to the new high school experience. The EDT has also embraced PBL as an instructional approach. In order to bring more PBL experiences to students in the CHSN, staff capacity will need to be developed through professional development and curriculum development. Successful PBL implementation will also require collaboration with Industry Advisory Boards and ACPS partners, to identify opportunities for real world learning experiences. This work will be done in conjunction with the development of Interdisciplinary Community structures that will enhance and support PBL.

This choice is supported by the school board's emphasis on workforce training and project-based learning. A primary educational programming goal is to make sure students have equal access to more experiential, hands-on learning that engages all learners in their education and helps them to understand its connection to the world beyond the classroom. This also represents recommendations from the national experts to move toward instruction steeped in PBL and deeper learning opportunities.

NEXT STEPS

The EDT and T.C. Williams leadership is committed to involving the teaching staff in the development of Interdisciplinary Communities, and instructional choices around multidisciplinary teaching and project based instruction. While the EDT has determined a direction in coordination with the school board's stated priorities and a significant body of supporting evidence-based research, it is now time to involve the teaching community in creating the organization and key tenets of the future educational program.

In order to do this:

- Two committees are being established that include EDT members and Department representatives from 9-12;
- A working timeline is being established for both groups that will lead to the opening of the new Connected High School Network. The products will be implemented at all campus locations giving every student access to the full T.C. Williams experience;
- Using that timeline, staff on each committee will work on the logistics of how to establish Interdisciplinary Communities and Project Based Learning, including the need for Professional Learning and teacher pilot use in the interim periods (2021-22 and 2022-23 school years);
- One of the directives for each committee is to show how the current initiatives around student engagement can be utilized within the new structures.

T.C. Williams High School
Alexandria, VA

1.3 THE CONNECTED HIGH SCHOOL NETWORK VISION

THE CONNECTED HIGH SCHOOL NETWORK VISION

At this time, the Educational Design Team is continuing to develop educational programming concepts for ACPS's new high school experience. Their emerging ideas on curriculum and instruction for the Connected High School Network Model are meant to be comprehensive and to enhance educational programming at every T.C. Williams location. Because many of EDT's ideas are still in their formative stages, programming for the Minnie Howard Expansion Campus must remain flexible enough to accommodate a wide variety of possible educational scenarios and programmatic developments. While it could seem that inserting unknowns into the initial programming of the building might present some challenges, this does not need to be the case. Programming for the flexible use of learning environments and their adaptation to continuously evolving educational needs and approaches is something that all 21st century school facilities must adopt.

The concept behind the T.C. Williams Connected High School Network ensures that enhanced educational programming - or courses of study - will be delivered across all campuses. All students will graduate from T.C. Williams and be a part of the T.C. Williams community but, much like college students, they could take classes at more than one building. The EDT confirmed the educational programming vision established during the Summer of 2019 and has based their subsequent work on priorities set forth by the School Board. As a part of the process to refine the educational programming, it reviewed existing educational programming at all of its high school campuses. In addition, the EDT considered T.C. Williams' prototypical Educational Specifications for a 1,600-student high school, current space usage and examples of cutting-edge design.

As a result, the EDT has articulated a refined high level academic and space programming framework for T.C. Williams High School that includes educational programming, methods of instruction, the relationship between the multiple campuses, and a broad understanding of the types of educational spaces that would likely be required across the campuses. High level EDT recommendations include:

- Flexible spaces, collaborative and interactive spaces, appropriate arts and fitness facilities;
- An increased number of Science Labs and more STEAM courses/rooms;
- Career and Technical Education (CTE) courses/rooms, music technology labs, and high-tech research capacity.

STEAM Center: Brooklyn Navy Yard
Brooklyn, NY

The EDT also determined that the educational programming will continue to be distributed across the connected network. Subsequent conversations between the Perkins Eastman design team and EDT leadership have clarified and confirmed the nature of the relationship between the new Minnie Howard Campus and the King Street Campus has follows:

- Two primary campuses with students taking courses at both campuses. Educational programming will be distributed across the connected network;
- ACPS is not looking to duplicate already developed and well-resourced programs such as Theater and Physical Education programs presently located at King Street, but rather to take a thoughtful approach to the creation of shared and complementary resources between the King Street and Minnie Howard Campuses;
- Each campus may offer a range of Humanities and STEM/STEAM programming, while the Minnie Howard Campus will supplement King Street resources by providing more advanced laboratory and technology options related to Science, Technology, Engineering, Arts and Mathematics (STEAM) and new CTE programming;
- Established CTE programs will stay at King Street and the new campus will accommodate the new STEAM focused CTE programs;
- Options for alternative education at new locations will be considered as well. The buildings can be set up to provide a more personalized, integrated learning experience;
- Except for obvious elements like the current auto shop or International Academy, all courses will be available to all students, subject to student interest, room/teacher availability and scheduling.

Additional directives from the EDT include all students being assigned to T.C. Williams and school attendance being based on class schedule and course subject matter. With regard to the specific vision for the educational programming of ACPS's Connected High School Network and its implications for the design of the new Minnie Howard Expansion Campus and school facility, there are still a number of big picture questions and issues that are presently being reviewed by the Educational Design Team.

These include, but are not limited to:

- Likely changes to the high school schedule;
- Decisions about the size, function, and location of the Interdisciplinary Communities at both the Minnie Howard (MH) and King Street (KS) campuses;
- Decisions about the arrangement and co-location of classrooms by discipline or across disciplines;
- Clarification of which specific CTE Pathways, programs, and/or Academies may take root at the MH campus.

Essex Technical High School
Hathorne, MA

2

TAB 2: DESIGN PATTERNS

DESIGN PATTERNS FOR THE MINNIE HOWARD CAMPUS

The Perkins Eastman (PE) design team has highlighted a set of “Design Patterns” for the new Minnie Howard Campus and facility that build off of the recommendations and directives articulated within the 2017 ACPS Prototype High School Educational Specifications, the ACPS Strategic Plan 2020-2025, the Discovery Visioning process facilitated by Stantec/FNI in 2019, accumulated notes from the ACPS Educational Design Team (EDT), and recent conversations that the PE design team has had with ACPS focus group participants, district leadership, and the EDT. These Design Patterns translate the district’s recommendations into a set of clearly articulated design features and approaches that will best support the emerging vision for the ACPS Connected High School Network in general, and the Minnie Howard Campus and facility more specifically.

As outlined in the 2017 ACPS Prototype High School Ed Spec, learning environments must be planned and designed to support all learners by supporting varied teaching and learning modalities that address the auditory, tactual, kinesthetic, and visual needs of students as connected to their individual learning styles. The planning and design of the Minnie Howard Campus should help maximize student learning by considering differentiated instruction and recognizing that one size does not fit all when it comes to learning environments.

It should be noted that, while there is strong alignment between the educational and architectural recommendations from each of the varied ACPS documents and stakeholder groups mentioned above, key details with regard to the district’s aspirational vision for the Connected High School Network and Minnie Howard Campus remain to be more clearly defined.

Dunbar Senior High School
Washington, DC

The EDT has made high-level decisions but is still defining how students will be organized into Interdisciplinary Communities and the specifics of the CTE programs that will be located on the Minnie Howard Expansion Campus. For this reason, the Perkins Eastman design team has taken a modular approach to the articulation of Interdisciplinary Communities that consist of general classrooms, distributed science labs, extended learning spaces, and student support spaces that will allow them to change in size and focus as needed.

The Design Patterns below are meant to serve as guideposts for the design of the Minnie Howard Campus and facility, and have been organized under the categories of:

- Connected Campus Network;
- STEAM Campus;
- Flexibility and Adaptability;
- Interdisciplinary Communities;
- Healthy and High Performance Building.

These patterns connect to ACPS recommendations, as well as to best practices in Next Generation school design that communities throughout the U.S. and abroad are to create agile, dynamic, and future-forward learning environments.

Martin Luther King Jr. School
Cambridge, MA

2.1 A CONNECTED NETWORK

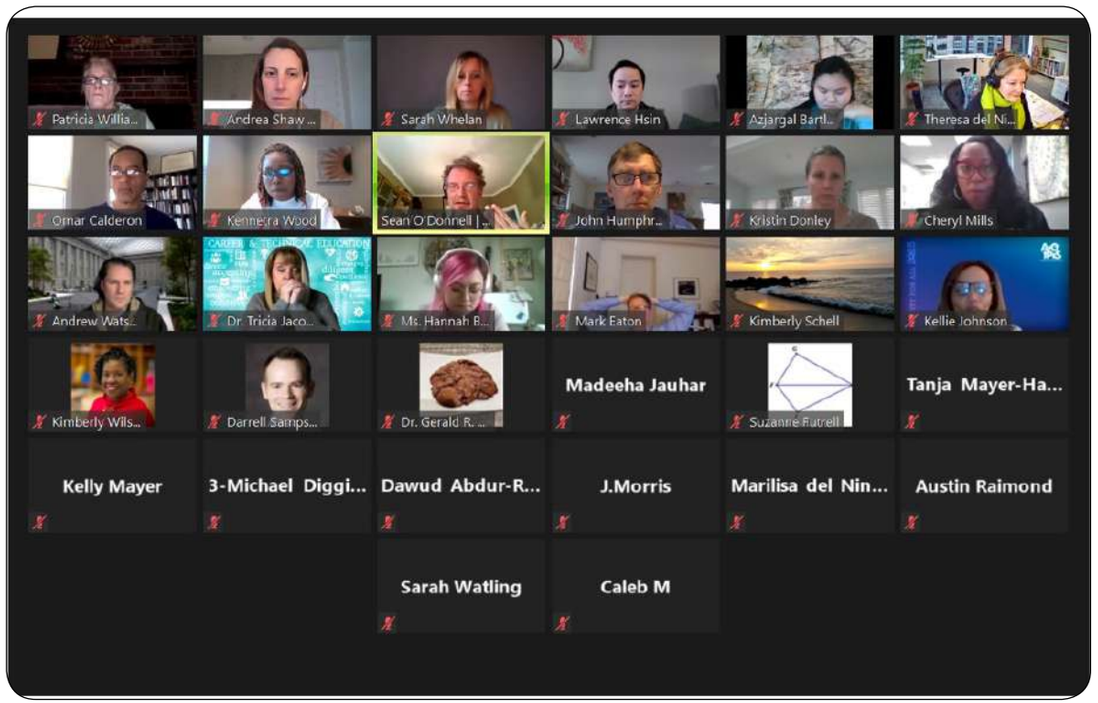
A CONNECTED HIGH SCHOOL NETWORK

The Minnie Howard Campus will be part of a Connected High School Network (CHSN) located at four connected campuses that also include King Street, Satellite, and Chance for Change. Additionally, students will have the opportunity to take part in the NOVA (Northern Virginia Community College) Early College Program. The ACPS CHSN aims to provide a variety of scales for the high school experience through Pathways, Academies, Interdisciplinary Communities, and Specialty High School Centers.

ACPS is not looking to duplicate already developed and well-resourced programs such as theater and physical education programs presently located at King Street, but rather to take a thoughtful approach to the creation of shared complimentary resources between the King Street and Minnie Howard Campuses. Each campus may offer a range of humanities and STEM/STEAM offerings, while the Minnie Howard Campus will supplement King Street resources by providing more advanced laboratory and technology options related to Science, Technology, Engineering, Arts and Mathematics

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Consider deficits of the King Street Campus and facility when programming that of Minnie Howard;
- Balance out the two campuses and supplement, rather than repeat, programs and spaces such as the King Street auditorium, library, gymnasium, and CTE programming;
- Build off of programming at King Street to provide a variety of new and complementary learning opportunities, programs, and spaces;
- Provide a balance of Humanities and STEAM spaces.



VIRTUAL EDT MEETING DURING PRE-DESIGN PHASE

EQUITY AND ACCESS

If all students are to reach their potential, the entire building must be accessible to students with special needs and enable teachers and administrators to use universal design for learning strategies that provide access to the curriculum for all students. Additionally, the building will employ an “Access for All” strategy for restroom facilities, allowing privacy for gender sensitivity. The interest and well-being of the students should be at the center of every design decision, with careful thought given to ensuring that shared spaces throughout the building—such as dining areas, library learning commons, and CTE labs—are easily accessible, as well as foster a sense of connection to the larger school community.

It is essential that, as the new campus is developed, it does not create inherent inequity between campuses. Unless enrolled at the Satellite or Chance for Change campuses, all T.C. Williams students will attend classes in both the King Street and Minnie Howard Campuses and, except for specialized programs, all courses will be available to all students within the Connected High School Network.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Employ principles of Universal Design that ensure physical accessibility to all students, teachers, and community members;
- Support Universal Design for Learning strategies that allow teachers to meet the varied needs and learning styles of all students;
- Distribute Special Education support services and well-outfitted resource rooms and breakout rooms throughout the facility to promote ease of push-in enrichment and intervention;
- Provide extended learning areas (ELAs) for small group, independent and pull-over activities.

Yorktown High School
Arlington, VA

2.1 A CONNECTED NETWORK

HEART OF THE SCHOOL/LIBRARY LEARNING COMMONS

The library has long been the academic hub of most high schools, but just as education is changing, so too is the library. This transformation underscores the need for new, multi-use library spaces that support a wide variety of teaching, learning, and study practices. ACPS leadership and EDT members envision this space as the centrally located cultural “heart” of the school, supporting social connections, collaborative work, classroom groups (up to three at once), independent and small group work, technology access, campus events, and community activities. Because of its central location, the library commons will also play an important role in orienting building occupants as to where they are within the building and assisting with way-finding throughout.

With reference information now available online virtually anytime, the collections of volumes can be closely curated to the curriculum served, reducing the quantity of books. The library will be a broader and deeper resource than ever, a place where traditional and new knowledge, resources, instructors and students converge in an ongoing process of learning, teaching, and discovery. Just as the classroom needs to support varied learning and teaching styles across different class periods and courses, the Minnie Howard library commons must be equally adaptable to the changing needs of students and instructors.

The library commons should remain a key resource for learning how to find and use information efficiently, but it’s also a place for peer-to-peer mentoring, small group projects, access to hardware and software, and areas to record and present their work. A palette of varied spaces, some of which can be closed off for acoustic privacy, should be thoughtfully located throughout the Minnie Howard library commons, allowing students and teachers to choose the space appropriate to different kinds of learning. Having the choice empowers students and teachers and makes them more productive.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Leverage library commons as centrally located “heart” of the school;
- Provide venues for large group and community gathering;
- Provide varied venues for collaborative and active work, as well as quiet areas for small group and independent work;
- Provide capacity to close off areas for up to three classes at a time;
- Provide small group rooms of 4-6 students;
- Leverage capacity of library commons to orient building occupants and assist with place-making and way-finding within the building.

Shanghai Community International School
Shanghai, China

Shanghai Community International School
Shanghai, China

Salem Technical School
Courtesy New Vista Design

2.1 A CONNECTED NETWORK

COMMUNITY USE AND ACCESS

Alexandria's schools serve not only school-age children, but they serve as centers for the entire intergenerational community. Offering recreation and lifelong learning opportunities, providing places for civic engagement, and enhancing the health and wellness of Alexandria's residents—as illustrated in the King Street campus' use as a COVID-19 vaccination clinic—the new Minnie Howard campus should be designed for active community use. This range of offerings and opportunities is often supported through collaboration with, and in some instances co-location of programs offered by, other city agencies and service providers. At Minnie Howard, these collaborators include the Department of Recreation Parks and Cultural Activities (RPCA); the Department of Health (AHD), and the Alexandria City Department of Human Services (ACHS).

Hosting active community use in a safe and welcoming environment before, during, and after school hours requires careful consideration of factors, including access to the site, access to the resources offered in the site and the building, and the ability to offer these expanded services without adverse impact on the operations and maintenance of the essential school program.

Access to the site considers the safe arrival by pedestrians, cyclists, cars and mass transit, and considering the pathways and lighting as appropriate to enhance the experience of the users of these resources whether they are provided on site or in the building. Safe and accessible parking, proximate to the resources being used, needs to be considered, for example.

Access to varied programs needs to consider several aspects, including the hours of operation, who is using the facilities and, in some instances, particular needs for confidentiality and privacy. Extended hours of operation require the partnership programs and community activity area to have an entrance that can be separated from the main school. This allows partnership programs to operate independently of the school's staffing requirements and provides the necessary security to protect the main school.

The Aquatics Center, for example, may require its own entrance to allow for use before and after school without providing patrons access into the larger school facility. Likewise, users of co-located programs operated by other city agencies may require their own entrance. These include the Teen Wellness Center and the Early Childhood program. To enhance access for parents picking up and dropping off children, the early childhood program entrances should be located away from the school's main entrance. The Teen Wellness Center may benefit from a distinct entrance that enhances the confidentiality of its services.

Other program elements that are actively used by the school during the day, including the gyms and the Library/Learning Commons, may also be used by the community after hours. Implementing a secure separation between the academic core and the shared use spaces, along with the careful application of active and passive design strategies, will create safe and secure learning environments available for use by the community.

Dunbar Senior High School
Washington, DC

PROGRAM OFFERINGS ARE LOCATION DEPENDENT AND INCLUDE, BUT ARE NOT LIMITED TO:

- Recreation, Parks & Cultural Activities
- Teen Wellness
- Early Childhood Education
- Tutoring
- Family and Community Education Centers
- Medicaid Therapy
- Campagna Center

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Separate access for the Aquatics Center, and co-located City partners;
- Anchor zone with access to amenities such as Gym, “Forum” and the Library/ Learning Commons.

Roosevelt Senior High School
Washington, DC

2.2 A STEAM CAMPUS

STEAM ADJACENCIES FOR COLLABORATION

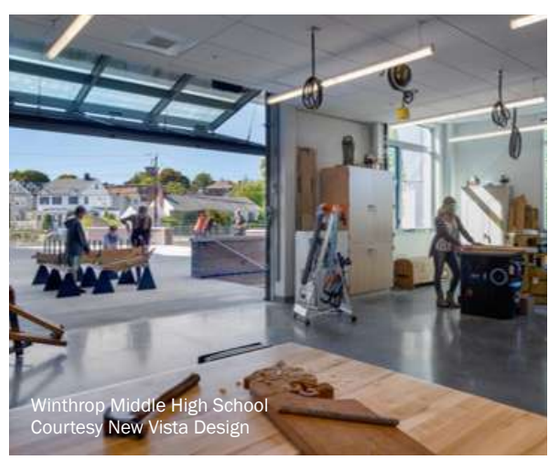
While both the King Street and Minnie Howard Campuses of the Connected High School Network can offer a range of Humanities and STEM/STEAM programming, the Minnie Howard Campus will supplement King Street resources by providing more advanced laboratory and technology options related to Science, Technology, Engineering, Arts and Mathematics (STEAM) and new CTE programming. ACPS's intention to provide more project-based and student-centered learning opportunities aligns with its focus on STEAM practices that advocate for the integration of artistic and design thinking approaches in the learning of STEAM (Science, Technology, Engineering, Art and Math) subjects.

An integrated STEAM approach suggests a cross-discipline and non-departmental organization of adjacent spaces that allow for teaching and teaming across disciplines. While this is a departure from the current departmental organization of classrooms within the King Street facility, the new Minnie Howard facility should collocate its classrooms in such a way so as to provide the option for cross discipline groupings of grade level or thematic Interdisciplinary Communities. Since all general classrooms are slated to be "interchangeable," this implies that consideration should be given to the grouping and dispersal of science and CTE labs to create adjacencies that make it easy for them to interact with general classroom neighborhoods.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Adjacencies between general classrooms, science labs and CTE labs that facilitate cross-discipline teaching and learning;
- Flexible "maker classrooms," fabrication labs, and extended learning areas that support project-based and hands on learning;
- Good storage for classroom materials and projects;
- Modular and flexible furniture;
- Strong technology infrastructure.

High Tech High
Courtesy New Vista Design



Winthrop Middle High School
Courtesy New Vista Design

INNOVATION AND INSPIRATION

ACPS is leveraging the development of its Minnie Howard Campus as a catalyst for rethinking students' entire high school experience, and for creating innovative and inspirational programs and facilities that inspire students to become fully engaged and productive members of the school community. The school setting needs to be motivational to students, offering an environment that entices them to find joy and satisfaction in the growth of their own abilities. As part of this effort, the EDT and ACPS leadership are considering moving all campuses within the Connected High School Network toward more non-traditional course offerings and a project-based learning pedagogy that engages students in active, hands-on and authentic learning experiences. Additionally, the EDT is contemplating more integrated approaches, collaboration and interdisciplinary teaming to increase faculty collaboration and student achievement.

Within this context, learning should be made palpable and visible, with views into and visual connections between classrooms, extended learning areas, and hands-on (CTE) learning labs. The school building itself should have elements of flexible and high-performance workplaces, including: varied sized spaces that work synergistically to support a wide variety of independent, small group and large group learning modalities; ubiquitous technology that allows learning to take place anywhere and anytime; flexible furniture that can be easily reconfigured; and multiple venues for the display and exhibition of student work. Transparency of spaces helps to showcase learning, as well as foster an internal sense of community and excitement about the learning activities that are occurring within the building. Visual connections also make it possible for teachers to informally observe and supervise their students as they engage in more self-directed learning, both in and beyond the walls of their classrooms.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- School as high-performance workplace;
- Support for hands-on and project-based learning;
- Visible learning and transparency;
- Varied venues for the exhibition, display and celebration of student work;
- Opportunities for students and teachers to personalize their Interdisciplinary Communities;
- Showcasing of key spaces such as project rooms and Prototyping Labs;
- Ubiquitous technology to support anywhere and anytime blended learning.

Da Vinci Wiseburn High School
Courtesy New Vista Design

2.2 A STEAM CAMPUS

CTE, FABRICATION AND ART LABS

ACPS has committed to provide more experiential learning and career exploration opportunities to students. The Minnie Howard Campus offers a chance to due away with the conventional silos that encase CTE, the sciences, the arts and humanities by creating an environment that supports STEAM, by integrating these spaces into the Interdisciplinary Communities.

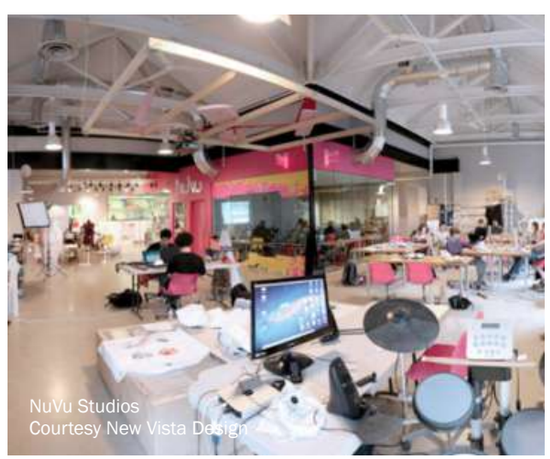
As the EDT and the Industry Advisory Board continue to explore the opportunities that the CTE programming presents, the conversation has focused on creating large, flexible prototyping and fabrication labs that can accommodate a variety of curricula when the building opens, and allow for change in these programs over time. Four prototyping labs that can encourage varied activities ranging from robotics, pre-engineering and other hands-on, “making” activities are currently projected to be distributed to each Interdisciplinary Community. For projects and classes requiring more advanced equipment, one larger “fabrication” lab will be more centrally located in the heart of the school. This will also facilitate use of this lab by students traveling from other campuses and Interdisciplinary Communities.

CTE will also be enhanced at the King Street campus through the expansion of the culinary arts, and JROTC programs proximate to their current locations. This expansion may be accommodated by relocating the Health Sciences program to the Minnie Howard Campus, freeing up the labs that program currently occupies for these uses. Relocated Health Sciences classes would also accommodate the Governor’s School program.

Building upon the STEAM initiative, fine art studios and science labs would similarly be distributed across the Interdisciplinary Communities. With art studios, science labs, and CTE prototyping labs co-located and adjacent to general classrooms in each Interdisciplinary Community, more students and faculty will be exposed to the activity and excitement occurring within these spaces. If organized around the distributed dining, these spaces might be re-imagined to be part of a “creative commons” where activities can “spill out” to use the dining area as a STEAM focused extended learning space before and after the proposed community lunch and learn block.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Flexible CTE labs that can accommodate a range of activities including robotics, and pre-engineering activities;
- CTE, Science and Art spaces distributed across the Interdisciplinary Communities to promote STEAM;
- Organized around distributed dining space, this interdisciplinary mix of STEAM programs can become a “creative commons” between the two classroom neighborhoods comprising each Interdisciplinary Community.



NuVu Studios
Courtesy New Vista Design

Da Vinci Wiseburn High School
Courtesy New Vista Design

PERFORMANCE AND THE ARTS

The Arts are central to the idea of creating a STEAM focused learning environment. The Minnie Howard campus will join the King Street campus to provide a robust array of resources for exploring these disciplines, and to infuse and enhance design thinking, creativity and critical thinking throughout interdisciplinary STEAM endeavors.

Fostering these exciting new interdisciplinary ideas at the new Minnie Howard campus may challenge some of conventional school planning wisdom to create adjacencies that allow for cross-pollination, collaboration, and a flow of activity between individual spaces focused on CTE, science, and the humanities. Interdisciplinary adjacencies between the two and three dimensional design studios and the graphic design lab projected for the fine arts, and the STEM and humanities programs will reinforce project based learning opportunities across the curriculum, and allow for settings where students can create and share their work with faculty, peers, family, and even community and industry partners. These settings may include re-imagined dining space that could become a creative commons available for use before and after a community lunch and learn block.

Larger settings for students, faculty and community gatherings will be provided in a large “forum” at the Minnie Howard campus. Inspired by the active use of the Rotunda Room at the King Street campus, this multi-purpose, flexible, flat-floor setting will be able to host a variety of events and meetings ranging from faculty meetings, and student gatherings, to community meetings. It can also provide another testing venue for SOLs.

In addition to the resources provided at Minnie Howard, students across the Connected High School Network interested in drama and music will have access to the 900-seat professional quality theatre, black box, and three music rehearsal rooms and the keyboard lab (currently used for other programming) provided at the King Street campus.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- An interdisciplinary mix of Fine Art, CTE, Science and Humanities within each Interdisciplinary Community;
- An opportunity to re-imagine the dining spaces and activate it throughout the day as a “creative commons.” Learning in adjacent labs can “spill out” and leverage this flexible space for collaboration, experimentation and presentation;
- A “forum” in the heart of the school will help build community at Minnie Howard and complement the assembly spaces provided at King Street.

Roosevelt Senior High School
Washington, DC

2.3 FLEXIBILITY AND ADAPTABLE SPACES

FLEXIBILITY AND ADAPTABILITY

Flexibility and adaptability are key to the design of any new school facility that is intended to serve its students and teachers for decades to come. With new technologies and blended learning platforms being developed at exponential speed, school facilities must adapt to ongoing changes in teaching and learning practices–many of which cannot yet be imagined. Additionally, because the Minnie Howard facility aims to support a variety of STEAM and CTE programs that have not yet been fully developed, it is essential that the spaces within it promote flexible use.

The Minnie Howard facility should focus on creating collaborative and adaptable learning spaces supported by a robust and seamless integration of technology and flexible and ergonomic furniture. ACPS desires to increase inter-student collaboration and group learning and activities. To support this, flexible and adaptable informal and formal teaching spaces are required. Emphasis will be on spaces and configurations that support critical thinking, project-based learning, small group collaboration, and independent and informal learning. Utilizing a push-in and team-teaching approach, special education students will learn in the same collaborative learning environment as their peers.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Ubiquitous technology, flexible furniture and varied spaces that support anywhere, anytime learning;
- Well-sized and interchangeable general classrooms with robust technology, modular and flexible furniture, and good storage for classrooms materials and projects;
- Multi-purpose use of flexible dining venues, library and commons areas, performance venues and health and fitness facilities;
- Large and small areas for formal and informal gathering;
- Breakout rooms that offer opportunity for student support and small group learning;
- Outdoor learning and gathering options with Internet access.

Da Vinci Wiseburn High School
Courtesy New Vista Design

AGILE AND INTERCHANGEABLE CLASSROOMS

While classrooms are still the basic building block of any school facility, they are now required to be agile and flexible enough to support a much wider range of teaching and learning practices. As the focus of education moves away from the transmitting of information to the development of creative problem solving and communication skills, the classroom setting is morphing into a beehive of activity – a learning studio. Classrooms should not be one- directional with rows of desks facing the front of the room, but rather provide a variety of focal points with mobile resources to support learning. In 21st century school environments, learning often extends beyond the walls of the classroom as well.

To facilitate inclusive instruction, each classroom must support traditional lecture-style delivery and adapt to small-group, independent, virtual, and one-on-one delivery. Classrooms should be large enough to accommodate the reorganization of modular furniture that can be easily moved to alter seating and working arrangements. A diversity of furniture should accommodate students' differences in their need to move or stand or fidget. All classrooms should offer a variety of vertical and horizontal erasable surfaces (walls, desks, glass surfaces or white boards) on which students can work on problems or display their work, whether they prefer to stand or sit. Movable walls with good sound-proofing may be installed between selected classrooms to promote team teaching and interdisciplinary connections.

A robust and consistent technology infrastructure is essential to permit easy access to current and future technology and ensure ease of use from classroom to classroom. Adaptive technology must be accessible to anyone who needs it, and technology tools in general must be accessible to everyone in the classroom. With regard to the support of project-based learning practices, good storage for materials and projects will be needed. Consideration should also be given to the provision of counters and sinks in all general classrooms.

Finally, in order to promote maximum flexibility and increased utilization, it is anticipated that classrooms on the Minnie Howard Campus will be shared among two or more teachers. During their planning periods, teachers may work and collaborate in nearby shared teacher professional work and collaboration areas. All "general classrooms" should be interchangeable in their ability to adapt to the teaching of any core academic subject area, except for science.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Agile and interchangeable general classrooms;
- Support for lecture, small group and independent work;
- PBL (Project-Based Learning)-friendly, with good storage for materials and projects;
- Flexible, modular and varied sized furniture;
- Seamless, consistent, and robust technology;
- Co-taught Special Education;
- Good Storage;
- Sinks to support PBL;
- Movable walls for team teaching.

Oracle d. Tech High School
Courtesy New Vista Design

2.3 FLEXIBILITY AND ADAPTABLE SPACES

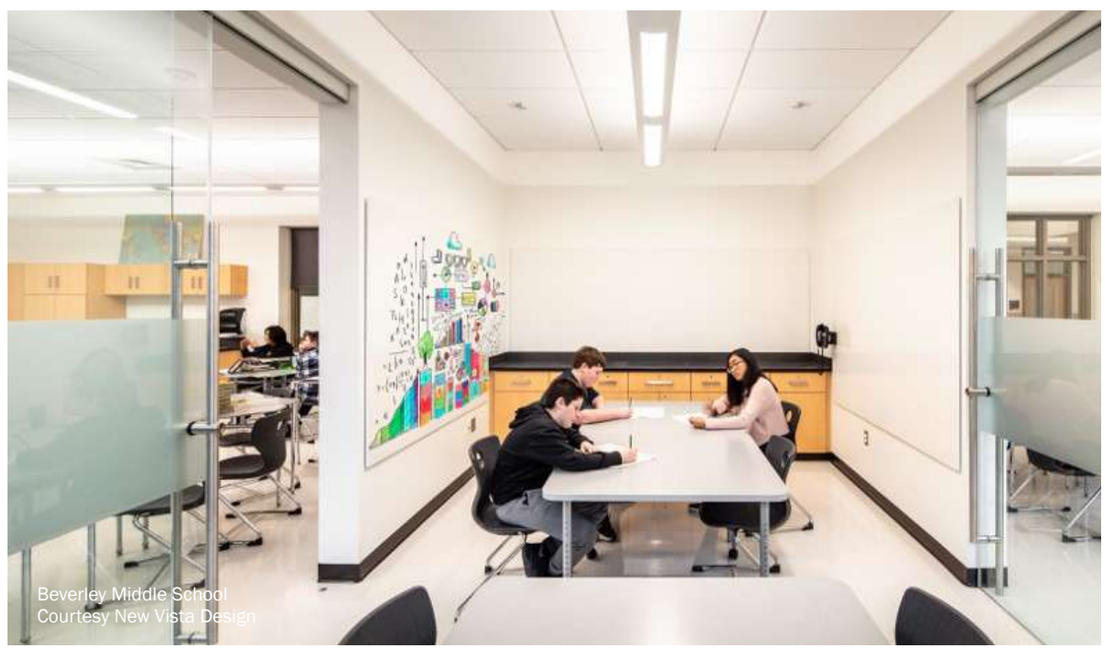
EXTENDED LEARNING AREAS AND BREAKOUT ROOMS

ACPS desires to increase inter-student collaboration and group learning and activities. To support this, flexible and adaptable informal and formal teaching spaces are required. Extended learning areas (ELAs) provide collaborative and adaptable learning spaces supported by a robust and seamless integration of technology and flexible and ergonomic furniture. They should be incorporated into design for the Minnie Howard facility as unprogrammed teaching spaces that occur as part of each Interdisciplinary Community as well as within the community access "anchor" space. ELAs are typically open spaces off the corridor that have immediate adjacencies to groupings of classrooms and labs that form an Interdisciplinary Community. They are meant to facilitate break-out instruction, small group, and project-based work, in addition to multi-class collaboration and joint teaching initiatives. ELAs can also play an important role in serving as a "town square" for classroom neighborhoods, thus imbuing them with a heightened sense of place and identity. ELAs are typically the size of a classroom, but may be larger when combined with distributed dining areas or located within community access zones.

Breakout rooms are generally the size of a small conference or seminar room and fit up to 8 students. They provide flexible venues for pull-over and small group instruction, active PBL, testing, quiet study, and de-escalation. Ideally, both ELAs and breakout rooms should be located immediately adjacent to or off of classrooms and labs, so as to allow students to expand beyond the walls of the classroom when appropriate for their learning. Visual access should be provided to and from classrooms, breakout rooms and extended learning areas to allow for increased interconnectivity, as well as the informal supervision of students as they navigate between these varied learning environments. If students are to engage in a rigorous curriculum and authentic learning experiences, they need flexible spaces where they can work on long-term, hands-on projects that don't have to be taken apart at the end of a class period. Storage for material and projects is essential. It is also assumed that multiple adults, such as teachers and specialists, may be working together within any given classroom and its adjacent breakout and extended learning areas.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Adaptable and technology-rich extended learning areas at part of all Interdisciplinary Communities and community access zones;
- Venues for group collaboration and possible distributed dining venues to support Lunch and Learn;
- Flexible and ergonomic furniture;
- Storage for PBL materials;
- Flexible breakout rooms connected to classrooms and Interdisciplinary Communities.



Beverley Middle School
Courtesy New Vista Design

Da Vinci Wiseburn High School
Courtesy New Vista Design

High Tech International
Courtesy New Vista Design

2.4 INTERDISCIPLINARY COMMUNITIES

INTERDISCIPLINARY COMMUNITIES

One approach that the EDT and ACPS is considering would enhance faculty collaboration, the overall learning experience and student achievement by establishing interdisciplinary team teaching and learning. Interdisciplinary Communities can be set up to support such an approach. To maintain these options in the design, it has been recommended to be flexible by grouping general classrooms, extended learning areas, breakout rooms and nearby science and CTE labs.

A modular organization of Interdisciplinary Communities that each contain 16 classrooms and support 400 students will provide this flexibility. Interdisciplinary Communities might also be subdivided into small groupings of 8 or 4 classrooms, as needed. With breakout and extended learning areas in hallways, collaborative spaces in classrooms, and spaces that facilitate chance interactions throughout the school, teachers will be able to collaborate across disciplines and tailor learning objectives and lessons to students' individual needs.

Interdisciplinary Communities will also support the building of caring Interdisciplinary Communities within classrooms and across the school, through the creation of clusters of learning that group teachers and students within dynamic learning neighborhoods that begin to take on their own identity and sense of place. This will increase opportunities for students to be known well by a number of adults who work closely with them, provide comfortable spaces for them to engage in collaborative and small group activities, help them feel connected to their peers and the adults who support them, and enable them to develop a strong sense of ownership and belonging to a Interdisciplinary Community within the larger Connected High School Network.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Modular organization of "Interdisciplinary Communities" that provide collections of general classrooms, science labs, extended learning areas, breakout rooms, teacher collaboration space, storage rooms, and nearby CTE and STEAM labs
- Flexible and synergistic connections between varied spaces;
- Interdisciplinary Community modules that enable colocation of spaces with Interdisciplinary Communities that can range in size and focus;
- Learning neighborhoods that develop a sense of place and identity for student and teachers.

Denver School of Science and Tech
Courtesy New Vista Design

DISTRIBUTED SCIENCE LABS

As mentioned previously, an integrated STEAM approach suggests a cross-discipline and non-departmental organization of adjacent spaces that allow for teaching and teaming across disciplines. The creation of Interdisciplinary Communities that support an increasingly project-based and integrated approach to curriculum delivery, therefore, require that science labs are located with nearby adjacencies to general education classrooms. Because it is also economical and advantageous to locate science classrooms in proximity to each other for the purpose of sharing systems, materials, and planning, science labs within the new Minnie Howard facility should be distributed in such a way so as to create clusters of 2-4 labs that also have immediate adjacencies to general education neighborhoods.

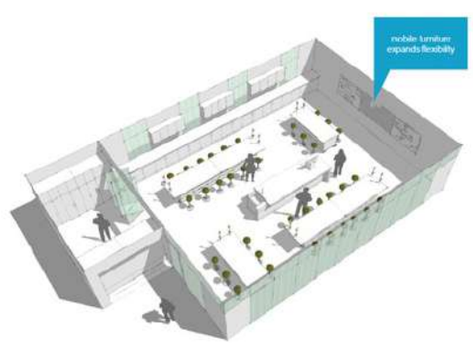
Minnie Howard science labs are intended as flexible, adaptable spaces designed to support a variety of learning modalities, and they can become specialized as needed within the evolving program. Perimeter areas will be fully programmed, with the interior 'open area' of the lab designed for movement, with furniture including lab desks, seating, and portable instruction walls to be on casters or easily movable so that they can be reconfigured for individual, small group, and all class instruction.

The EDT has recommended a Low Intensity Lab/High Intensity Lab approach. Low-Intensity Labs are typically "dry" laboratory classroom spaces adapted for a variety of physics, engineering and life science curricula and configured for a variety of projects and experiments. These rooms provide projection capability, white boards, and on-demand access to power and data. They should also have access to water, which will allow them to be used for natural sciences. High-Intensity Labs are typically "wet" labs that are well equipped for project-based work and experimentation with materials and media that can be messy. These spaces can support a wide variety of curriculum, but are often most associated chemistry and biology instruction. They require access to utilities and specialized tools and equipment like fume hoods, and are supported by safety features, adjacent storage and prep space.

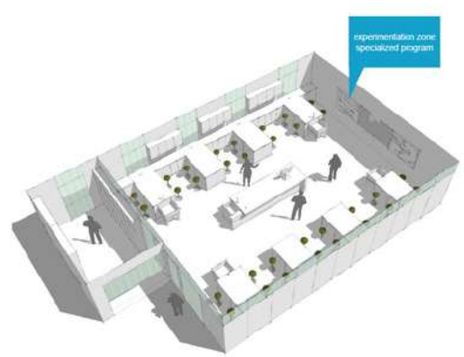
IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Clusters of science labs should be distributed in close proximity general education classrooms /Interdisciplinary Communities to facilitate integrated STEAM delivery;
- Provide generalized Low Intensity/Dry Labs and High Intensity/Wet Labs that can be used flexibly;
- Provide perimeter stations, utilities, and storage and leave interior areas of classrooms open for flexible use;
- Easy to move and rearrange tables and chairs.

LO-INTENSITY LAB



HI-INTENSITY LAB



2.4 INTERDISCIPLINARY COMMUNITIES

DISTRIBUTED DINING VENUES

Large school cafeterias are often noisy, cacophonous, and institutional spaces that take up a considerable amount of square footage and are only used for a portion of the day. For that reason, many districts have been re-envisioning their dining venues as multi-purpose gathering, performance and work spaces that can be flexibly used throughout the school day. Administrators also recognize that school community is built through the dining experience, and that providing multiple smaller venues for students to eat and gather can go a long way to help foster the cultivation of Interdisciplinary Communities. An added benefit of smaller dining venues is that they can also serve as extended learning areas and Interdisciplinary Community hubs for nearby classrooms.

ACPS leadership and EDT members envision the cafeteria space at the Minnie Howard Campus as being divided into a series of distributed dining areas and satellite servers that aim to personalize the dining experience for students, give them options for where they can eat, and potentially connect them to the Interdisciplinary Communities that come to be defined within the school. This approach aligns with the goals of the Lunch and Learn program that is being explored as part of a new school schedule for the CHSN. In this schedule, students would have a full hour for lunch, during which time they would be able to eat, socialize, collaborate on projects, participate in clubs, study, do homework, meet with teachers for questions and help, and travel between CHSN campuses. Student schedules will reflect either the first half or the second half of the hour-long block for “lunch” and the other half for “learn.” Teachers will be available during half of that time block for consultation and help.

The Lunch and Learn program suggests that students might eat in classrooms, the library, or distributed dining venues that are in close proximity to the services, teachers and extracurricular activities that they are engaged with. Outdoor dining venues also play an important role in ensuring that students get fresh air and have opportunities for movement and relaxation during the school day, all things that have been shown to enhance student attention, performance and well-being.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Distribute cafeteria square footage to create a series of smaller dining areas and satellite servers that are in close proximity to each of Minnie Howard’s four Interdisciplinary Communities;
- Provide flexible furniture and a robust technology infrastructure to support a wide range of uses through the day;
- Provide outdoor dining venues with adjacencies to Interdisciplinary Communities;

Concordia International School Shanghai
Shanghai, China

CENTRALIZED AND DISTRIBUTED ADMIN AND SUPPORT

While central administrative services and offices at Minnie Howard should be located close to the school's main entry so as to promote ease of access to visiting families, ACPS leadership and EDT team members agree that additional support services such as counseling and Interdisciplinary Community leadership should be located in close proximity to the students that they serve within their particular Interdisciplinary Communities. This general approach of distributing administrative offices within their Interdisciplinary Communities and well as in the path of student travel, aims to increase opportunities for adults and students to connect in both formal and informal ways. Providing controlled transparency to and from distributed administrative offices supports the informal supervision of students, while also helping to promote student agency and independence by allowing them to "see and be seen" within the context of their Interdisciplinary Communities.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Locate central administrative functions close to the main school entry with good visibility to and control over school entry and access;
- Locate one administrator, one administrative assistant and two counselors in each satellite Interdisciplinary Community office;
- Provide controlled transparency to and from administrative offices to foster informal supervision and connections.

Yorktown High School
Arlington, VA

Concordia International School Shanghai
Shanghai, China

2.4 INTERDISCIPLINARY COMMUNITIES

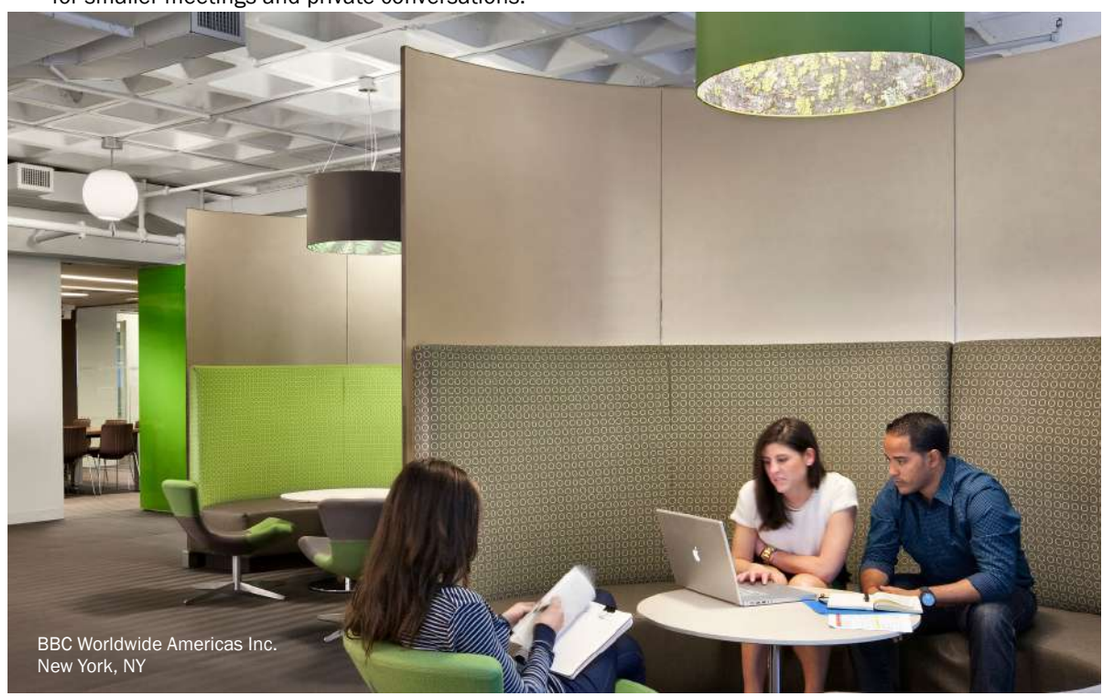
SHARED TEACHER OFFICE AND COLLABORATION AREAS

ACPS would like to increase opportunities for teacher collaboration, as well as promote improved classroom and lab utilization. For these reasons, shared teacher offices will be provided within each Interdisciplinary Community to serve as teacher work, planning, and collaboration zones. With 8 classrooms connected to each Interdisciplinary Community module, each shared teacher office should provide good technology access, perimeter work stations for up to 8 teachers, and one or more centrally located conference table(s) for group collaboration.

Depending on the composition of Interdisciplinary Communities within Minnie Howard at any given time, these shared teacher offices and collaboration areas might be organized by departments, grade levels, or career pathways. Giving teachers a space to work, collaborate, and plan when they are not teaching means that their classrooms are then free to be used by other teachers at that time, which can substantially increase classroom utilization rates.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Provide one shared teacher office per Interdisciplinary Community that fits up to 8 teachers at a time;
- Support departmental and/or interdepartmental collaboration;
- Provide individual workstations and a locked storage area for 8 teachers;
- Provide group collaboration areas;
- Consider provision of an additional small breakout room that fits up to four people for smaller meetings and private conversations.



BBC Worldwide Americas Inc.
New York, NY

BBC Worldwide Americas Inc.
New York, NY

2.5 HEALTHY AND HIGH PERFORMANCE BUILDING

NET POSITIVE

Now more than ever, as we continue to weather and learn from the conjoined public health, economic, social justice and environmental crises, we need to create a new kind of 21st Century learning environment that reduces environmental degradation, engages and fosters life-long learning, promotes community resiliency, and enhances health and wellness for every student, family, and members of the community. We know that the design of the Connected High School Network campus will redefine opportunities offered to the children families and community of Alexandria. With this design we have the opportunity to synthesize sustainable design, Net Zero Energy, public health and materials, and building systems to foster an idea of “Holistic Wellness.” This idea is a commitment to create a healthy, high performance place to learn that sets students on a life-long path to healthier, happier, more productive lives.

In this pursuit, the rigorous Net Zero Energy process used to design this building can help ACPS to not only conserve resources and reduce operating costs, but to also enhance the quality of the learning environment. Enhanced daylighting, acoustics, thermal comfort, indoor air quality, each of these factors can be carefully studied, modeled, and designed as part of the pursuit of Net Zero Energy, and each has had a proven positive impact on learning.

For example, the architectural and engineering team has analyzed the daylighting in some of the country’s most sustainable classroom designs, and is ready to tap this information to design classrooms that dramatically reduce the need for electric lighting because of the abundance of diffuse and glare-free daylight. With this more expansive goal for the design, ACPS can achieve not only Net Zero Energy but, to also get to the core of ACPS’s mission, to aspire to an environment that achieves “Net Positive Education.”

In addition to resources conservation and creating a healthier, high performance place to learn the new campus can also help inspire the next generation of environmental stewards. For example, considering the CTE and STEAM focus of this campus, the building’s energy performance and the contributing systems including photo-voltaics, can be actively monitored and evaluated by students and classes throughout the year. These and other opportunities to activate the building as a “teaching tool” will be explored as design develops.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Enhanced daylight and views with minimal glare;
- Enhanced Indoor air quality through enhances ventilation and Healthier materials;
- Enhanced thermal comfort through careful HVAC and building envelope design;
- Enhanced acoustics in the learning environment;
- Easy access to real-time building performance metrics and systems by students and faculty.

Martin Luther King Jr. School
Cambridge, MA

FITNESS AND WELLNESS

With the celebrated, and cinematic, heritage of the Titans, and an existing campus that is already an important part of the fitness and wellness resources within the school and the community, the renewed Minnie Howard campus should enhance and expand opportunities for recreation, physical education and athletics. In conjunction with the King Street campus, and the Chinquapin Park and Aquatics Center adjacent to it, the Minnie Howard campus will expand access to indoor and outdoor resources and programming offered by ACPS and the Department of Recreation, Parks, and Cultural Activities.

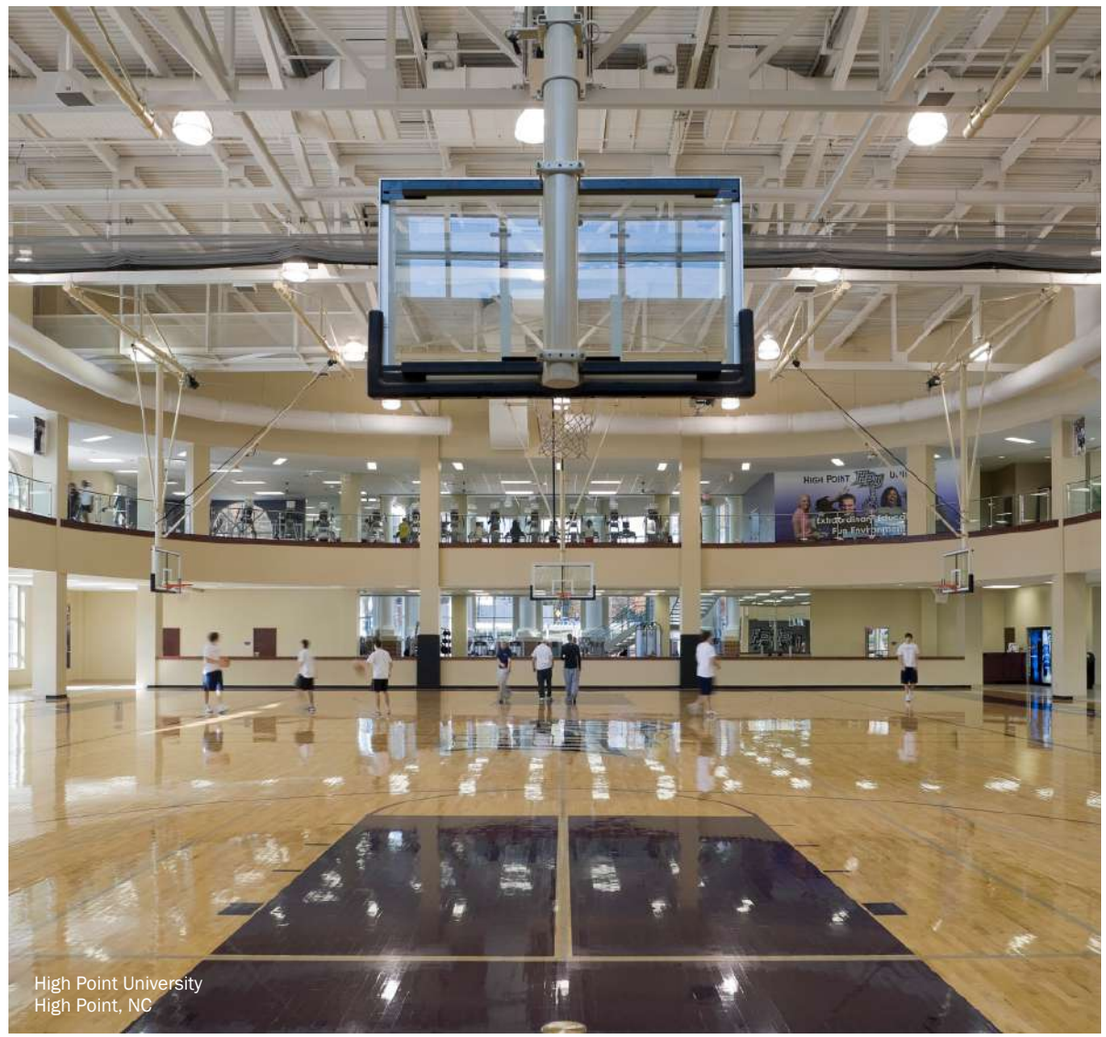
These expanded resources will include improved outdoor space available to both the school and the community including a multi-purpose field, basketball and tennis courts and a circuit for walking and jogging. Inside the building, fitness resources will include a main gym, an auxiliary gym, a fitness/weight room, and a wrestling room. Relocating the wrestling room from King Street to Minnie Howard will allow for the expansion of the fitness/weight room at King Street.

An aquatics center featuring an eight-lane, 25-yard competition pool is also currently being planned. Each of these resources will be zoned within the building to allow for active use by the school during the day, and the community after hours. The pool will likely have its own entrance to allow it to operate entirely independently of the rest of the school building.

In addition to the formal settings, the building and the campus should promote movement through “active design” principles. An environment designed in accord with these principles encourages people, as much as they are able, to walk, bike, and use the stairs throughout the day to enhance their general fitness and sense of well-being.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Optimize the available space for outdoor recreation, physical education and athletics to complement the resources at King Street and Chinquapin Park;
- Organize the building for active school and community use of the gyms, and fitness facilities;
- Provide separate access to the aquatic center to allow for its independent operation outside of school hours.



High Point University
High Point, NC

2.5 HEALTHY AND HIGH PERFORMANCE BUILDING

INDOOR/OUTDOOR CONNECTIONS

The marks of a 21st-century education—creativity, critical thinking, communication, and character –the means to acquire these skills - more active, student-centered and collaborative learning - and the “flattening” of the world on issues ranging from the economic and political to the environmental, have changed our expectation for the learning environment. For example, we know that learning occurs not only in the traditional, formal settings of a school—classrooms and labs—but also that much is learned outside of the classroom, in “informal” settings and from one’s peers.

Whereas the near exclusive focus of school design in the 19th and 20th Centuries had been on the classroom and the lab, we now look to design the entire campus as a system of settings to learn. This point of view transforms circulation into “extended learning spaces,” media centers and cafeterias into “learning commons” and the outdoors from the sole domain of recess and physical education to places where the humanities, sciences and physical activity intermingle and converge with social and emotional learning to help educate the whole person.

Plazas, outdoor classrooms, gardens, gathering places like amphitheaters can all complement and enhance a sense of community, expand active and experiential learning, while also providing areas of respite and refuge for students and faculty that may simply need to step out of a stressful day’s activities inside for a few moments, to catch “a breath of fresh air” in the landscape. As the design develops, we will continue to explore opportunities to ensure that every square foot of the campus enhances learning.

IMPLICATIONS FOR THE DESIGN OF THE MINNIE HOWARD CAMPUS

- Explore the creation of a diversity of outdoor settings for gathering, active hand-ons learning, and respite;
- Provide convenient indoor/outdoor connections to encourage active use of the outdoors.

Roosevelt Senior High School
Washington, DC

Dunbar Senior High School
Washington, DC

3 TAB 3: BUILDING ORGANIZATION

3.1 BUILDING ORGANIZATION

BUILDING ORGANIZATION

This section begins to explore how the visioning and the Design Patterns developed in prior sections could start to organize the program for the Minnie Howard campus into a cohesive and effective Interdisciplinary Community. This section first discusses the organization of the entire building, then some alternative ideas for the organization of the Interdisciplinary Communities. This discussion is intended to inspire discussion and exploration of how best to create dynamic synergies and adjacencies throughout the learning environment. These diagrams will evolve and others may be added as the conversation continues in concept design.

Let's consider the organization of the whole building first. While each of the design patterns will have an influence in the design of the building, as we begin to organize the entire school the following patterns have the most influence:

- Equity and Access;
- Heart of School / Library Learning Commons;
- Community Use and Access;
- STEAM Adjacencies;
- Interdisciplinary Communities;
- Centralized and Distributed Administration;
- Distributed Dining Venues.

To begin to organize these patterns to inform a design, we have created the diagram on the adjacent page to begin to establish the critical relationships between major elements of the space program. In seeking to first illustrate and explore these higher order relationships, note that not every room is shown. For example, the Interdisciplinary Communities are treated as a single entity, but they are in fact comprised of classrooms, labs, extended learning space, and offices. As Interdisciplinary Communities are a fundamental pattern for the design of the new building we will explore the organization of these areas in subsequent pages.

ACCESS: THE FRONT DOORS

Exploring the relationships proposed in the whole school diagram, let's begin with access to the building. While there may be entrances that are used during arrival, the diagram is showing one primary front door for the school. Featuring a secure entry vestibule that would allow arriving students to flow directly into the school, visitors would be directed straight to the main office. This will enhance way-finding and help to enhance the security of the Interdisciplinary Community. Some of the community oriented programing might also have adjacency to this entry vestibule to facilitate after hours access.

Other entries shown are for the co-located programs and the aquatics center. These entries would allow these programs to operate entirely independently. For example, the teen wellness center or the early childhood center could operate during all 12 months of the year without needing access to the rest of the building. This will enhance convenience, safety and security, and help to reduce operating costs. Likewise, the aquatics center could open early in the morning, after school, or on weekends to allow the public to swim without disruption to school operations.

There will, of course, be other egress points from the building, and doors that can be used during arrival and dismissal, but the intent of the diagram is to focus on the primary access points to help ensure that these public entrances are easy to find, conveniently located, and that the building can be supervised and secured.

ZONED FOR ACTIVE COMMUNITY & SCHOOL USE

Building off of these front doors, the diagram is organized into a community or "public" zone and a school-only or "private zone." This organization would allow the programs on the left of the dashed line to be used after school hours without providing access to the entire building. The gyms, the aquatic center, the learning commons, a large CTE lab, the co-located partners, and the other community facilities are all currently available for community use. Access to each will also be controlled through locking doors and other means. The Interdisciplinary Communities, being on the school-only "private" side, might be in sections of the building that can be entirely closed off after hours.

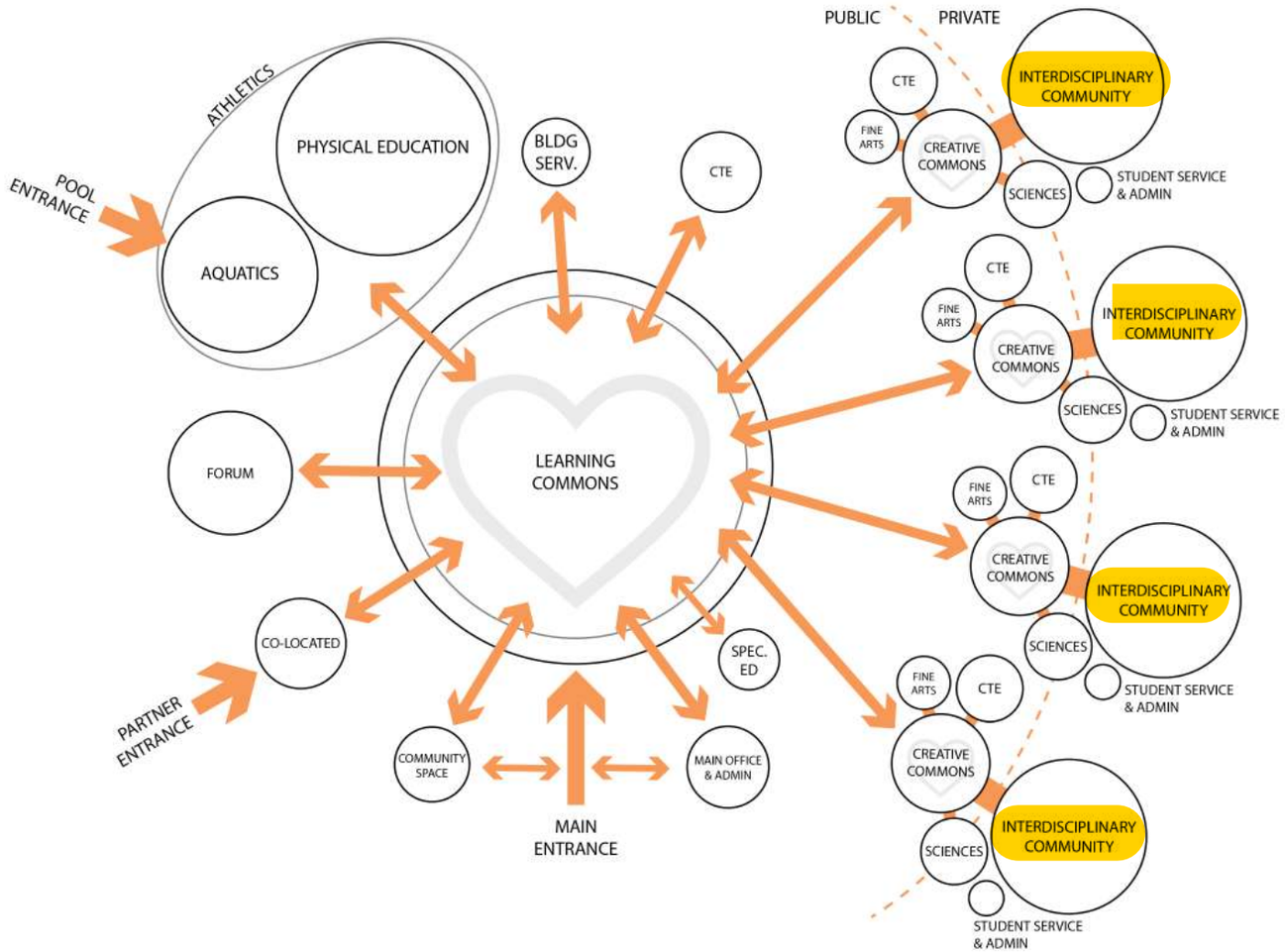
This will enhance the ability to monitor the use of the building, keep people from wandering the halls, and limit the areas of the building that need to be cleaned after a major community event.

THE HEART OF THE SCHOOL

While we are creating Interdisciplinary Communities to enhance the ability of everyone on campus to establish strong relationships within the Interdisciplinary Community, as discussed in the Design Patterns, the diagram is also suggesting that there be a “Heart of the School” that helps the entire Minnie Howard community feels like a single cohesive school. The diagram suggests that the Library/Learning Commons could be a foundational part of that experience. This idea could play out in many forms. As we re-imagine the programming of the learning commons, the design team will continue to explore ideas with ACPS to create a strong sense of place at the heart of the school.

INTERDISCIPLINARY COMMUNITIES

Following the EDT’s initiative to study and implement Interdisciplinary Communities across the Connected High School Network to enhance the students’ experience and educational outcomes, the diagram is showing four Interdisciplinary Communities. Each Interdisciplinary Community is being planned for 400 students. Within each Interdisciplinary Community, building upon the EDT’s STEAM and project-based learning initiatives, flexible classrooms, resource classrooms, faculty collaboration space, science labs, art studios, CTE labs, Interdisciplinary Community administration and counseling, and distributed dining will be co-located. Reducing the scale of the environment even more for the student, these resources will be further organized into two 200 student “neighborhoods.” Each neighborhood in turn will be organized into two 100 student groups. These ideas will be further explored in the next section.



OVERALL BUILDING ORGANIZATION

3.2 INTERDISCIPLINARY COMMUNITIES

INTERDISCIPLINARY COMMUNITIES

As discussed in the prior section, following on conversations with the EDT and the school leadership, the building is being organized into four Interdisciplinary Communities for 400 students each. In this section we explore some ideas for how the Interdisciplinary Communities can be organized to help foster a strong sense of community among the 400 students and their faculty.

It should be noted that the diagrams, drawings, & renderings used in this section to illustrate these ideas are conceptual in nature and their final form, location, and materiality will evolve relative to the needs of the Client, Overall Building, and Site Design.

In addition to the patterns used to inform the organization of the whole building on previous pages, the following design patterns also begin to help to inform the organization of the Interdisciplinary Communities:

- STEAM Adjacencies;
- Centralized and Distributed Administration;
- Distributed Dining Venues;
- CTE, Fabrication, and Art Labs;
- Distributed Science Labs;
- Agile and Interchangeable Classrooms;
- Extended Learning Areas and Breakout Rooms;
- Shared Teacher Office and Collaboration Areas.

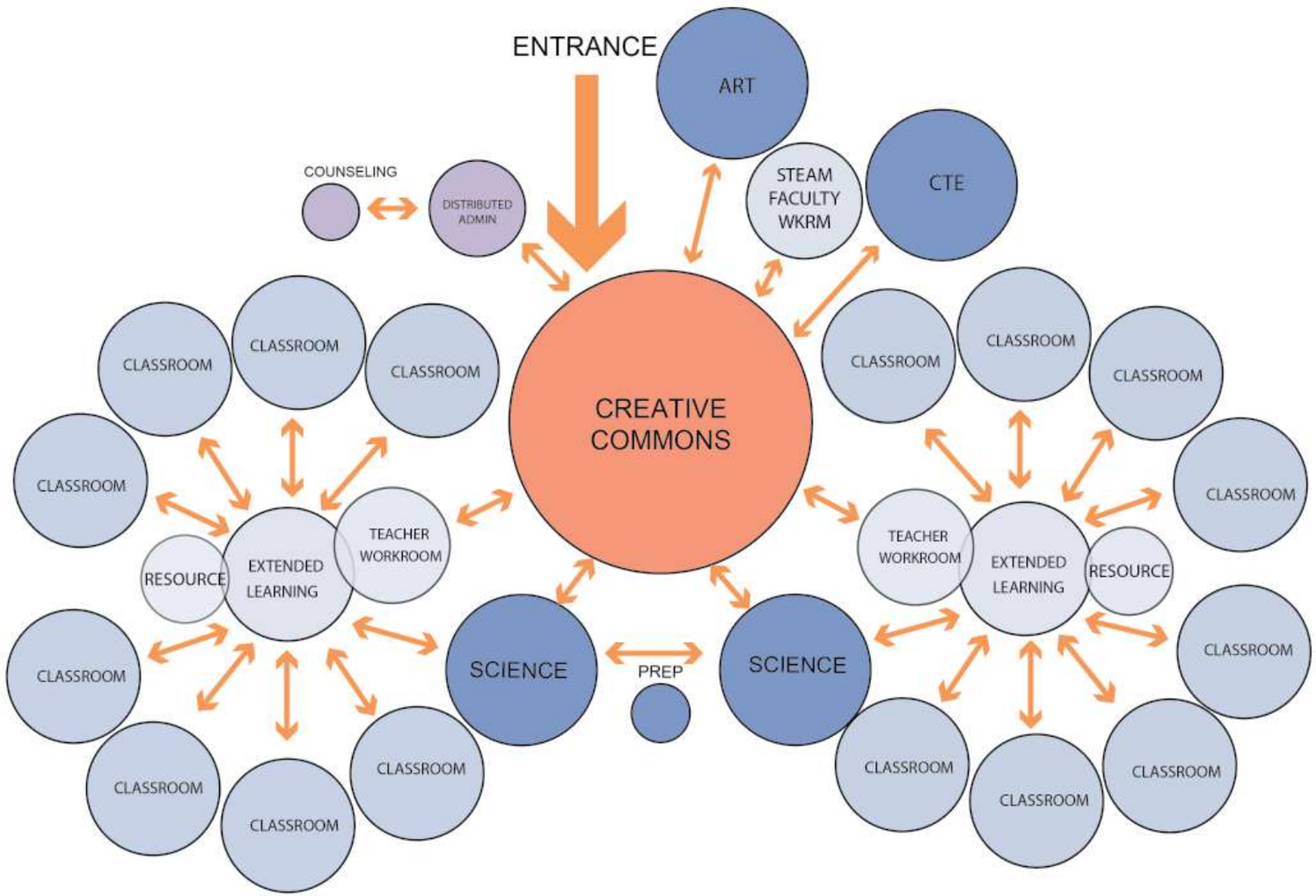
Inspired by these patterns and to further create a hierarchy of space and a collegial ambiance with the Interdisciplinary Communities, each of them will be comprised of the following components:

- A “Creative Commons” featuring:
  - Distributed Dining with Servery
  - A CTE lab
  - An Art Studio
  - Science Labs (2 or more) with a Shared Prep Room
  - Faculty Collaboration / Office Space
  - Interdisciplinary Community Administration & Distributed Counselor Offices
  - Conference Room
- Two 200 student classroom neighborhoods, featuring:
  - Flexible Classrooms
  - Resource Classrooms
  - Extended Learning Space
  - Faculty Collaboration / Office Space
  - Small Group Conference Room

The accompanying diagram illustrates the relationship between each of these elements. In the following pages we explore some preliminary ideas for how these components might create a great place to learn and teach.

INTERDISCIPLINARY COMMUNITY ORGANIZATION

The Creative Commons will become the "heart" of the Interdisciplinary Community and help to organize the resources of the two academic neighborhoods comprising each Interdisciplinary Community



THE “CREATIVE COMMONS”

THE “CREATIVE COMMONS”

Building on the goals of fostering STEAM and project-based learning within each Interdisciplinary Community, an idea is emerging to create a “Creative Commons” that will become the heart of each Interdisciplinary Community.

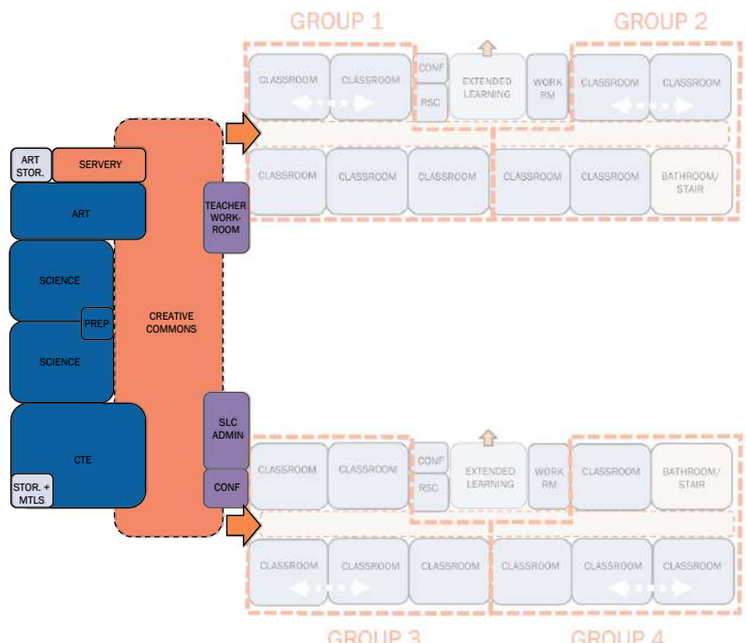
This Creative Commons transforms the dining area that has been distributed to each Interdisciplinary Community into a central extended learning area that organizes the following features:

- Distributed Dining with Servery;
- A CTE lab;
- An Art Studio;
- Science Labs (2 or more) with a Shared Prep Room;
- Faculty Collaboration / Office Space;
- Interdisciplinary Community Administration & Distributed Counselor Offices;
- Conference Room.

As the diagrams illustrate, the dining area can be situated to create a smaller scale, more collegiate ambiance for students to eat, socialize, and study during the community lunch and learn block being considered with the class schedule. Then during the other blocks of the day, the surrounding CTE, art and science labs can actively use the dining area as extended learning space. Small and large groups from the labs or classrooms can gather, collaborate, present, build, and experiment in their labs and this shared resource during the other blocks.

Interdisciplinary Community administrative space here will control the front door into the them from the larger school and help math teachers to supervise the commons, with the teacher collaboration space for the CTE, Art, and Science faculty.

As the heart of the Interdisciplinary Community, two adjacent classroom neighborhoods featuring flexible classrooms, additional extended learning space, and faculty collaboration space will connect directly to the creative commons. Preliminary ideas for these neighborhoods will be explored in the following pages.



CREATIVE COMMONS BUBBLE DIAGRAM

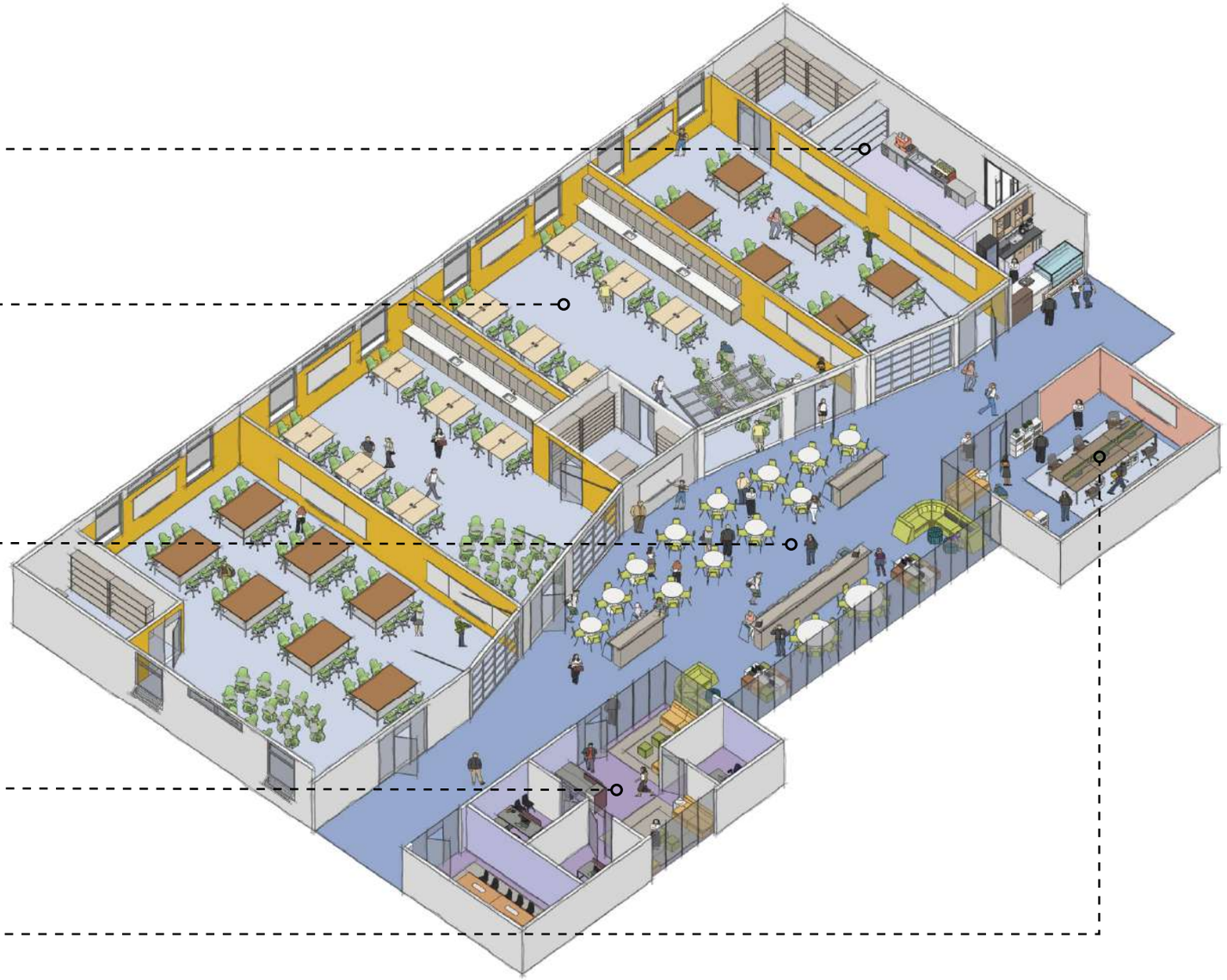
SERVERY & FOOD STORAGE
Fast access food services within the creative commons and a short distance from the adjacent neighborhoods.

ARTS, CTE, & SCIENCE CLASSROOMS
Classrooms would have fixed perimeter cabinetry including sinks and non-fixed desk furniture to allow for flexible room arrangements. Adjacent classrooms would share prep and storage rooms. Hallway facing walls would have operable thresholds to allow for overflow activities and events with the creative commons.

CREATIVE COMMONS
The Creative Commons includes a rich array of settings for activities as well as providing places for students and faculty to eat, study and socialize. A variety of furniture options will allow students to self select their preferred ergonomic scenario to best support different modes of individual and group interaction and study.

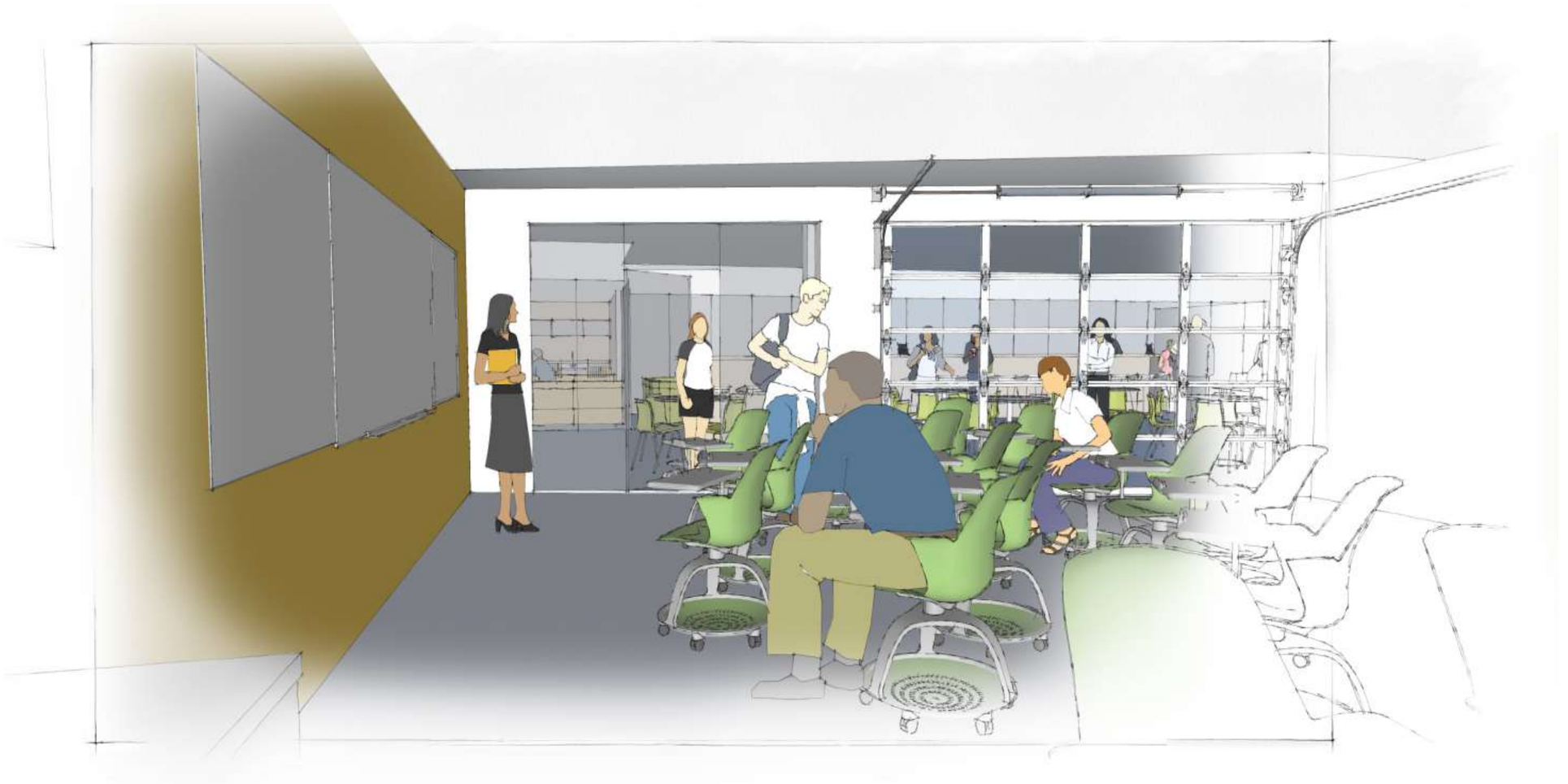
INTERDISCIPLINARY COMMUNITY ADMIN & CONFERENCE
Faculty administration spaces located adjacent to the heart of each Interdisciplinary Community.

TEACHER WORKROOM
Teacher Workroom containing “benched” workstations, discussion space, kitchenette, and filing/supply storage.



CREATIVE COMMONS AXON

PRESENTATION IN THE CREATIVE COMMONS



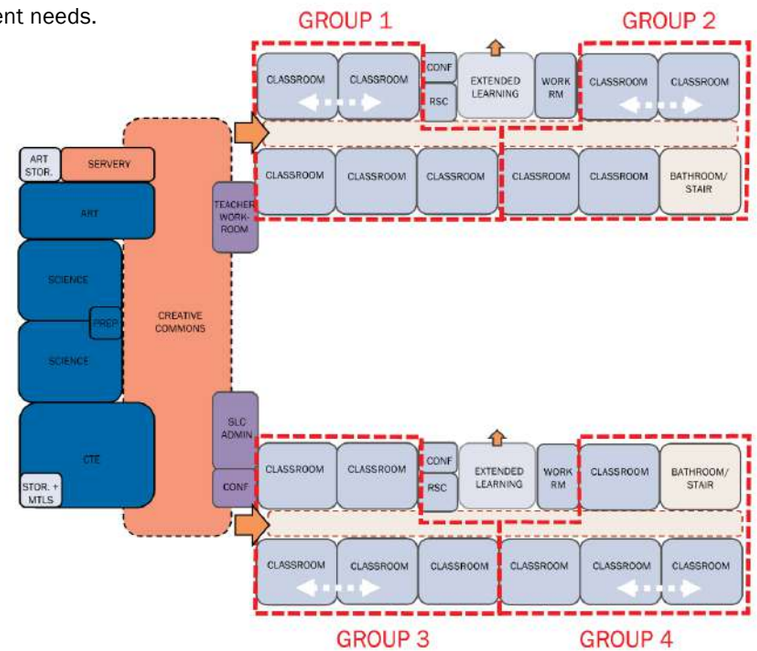
SCIENCE LAB OPEN TO THE CREATIVE COMMONS

CONCEPT 1 - OFFSET EXTENDED LEARNING

OFFSET EXTENDED LEARNING

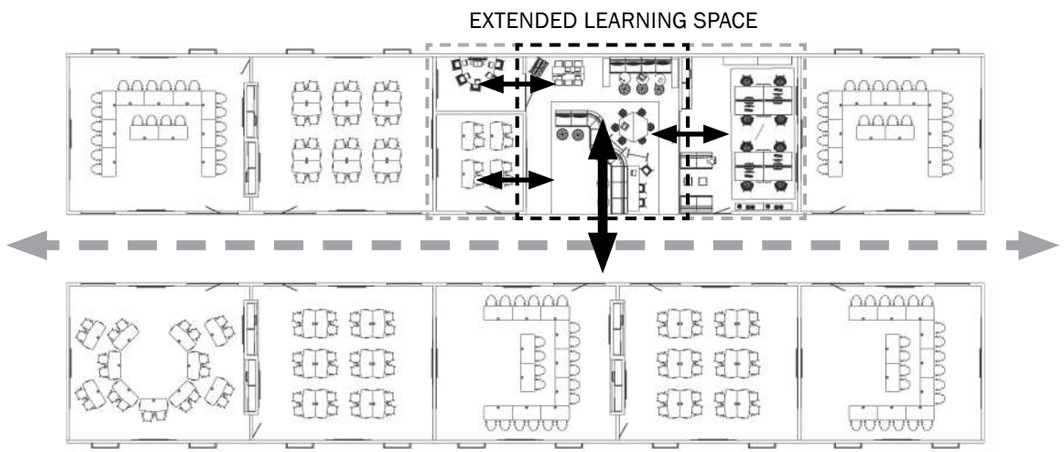
This 400 student Interdisciplinary Community concept organizes two linear 200 student "neighborhoods" as extensions off the adjacent Creative Commons described on the preceding pages.

Classrooms are organized down a double-loaded corridor with an offset extended learning zone in the center of the neighborhood. The extended learning zone would be supported by a resource classroom, small conference space, and a teacher workroom. The adjacent teacher's workroom would allow faculty direct access and visibility into these areas to meet any emergent student needs.



400 STUDENT INTERDISCIPLINARY COMMUNITY ORGANIZATION

DISCUSSION IN THE EXTENDED LEARNING SPACE



INTERDISCIPLINARY COMMUNITY NEIGHBORHOOD PLAN

RESOURCE CLASSROOM & CONFERENCE ROOMS

Resource Classroom & Conference Room spaces foster collaboration, small group work, and pull out activities. These spaces could be used as breakout rooms or for regularly scheduled smaller classes.

EXTENDED LEARNING SPACE

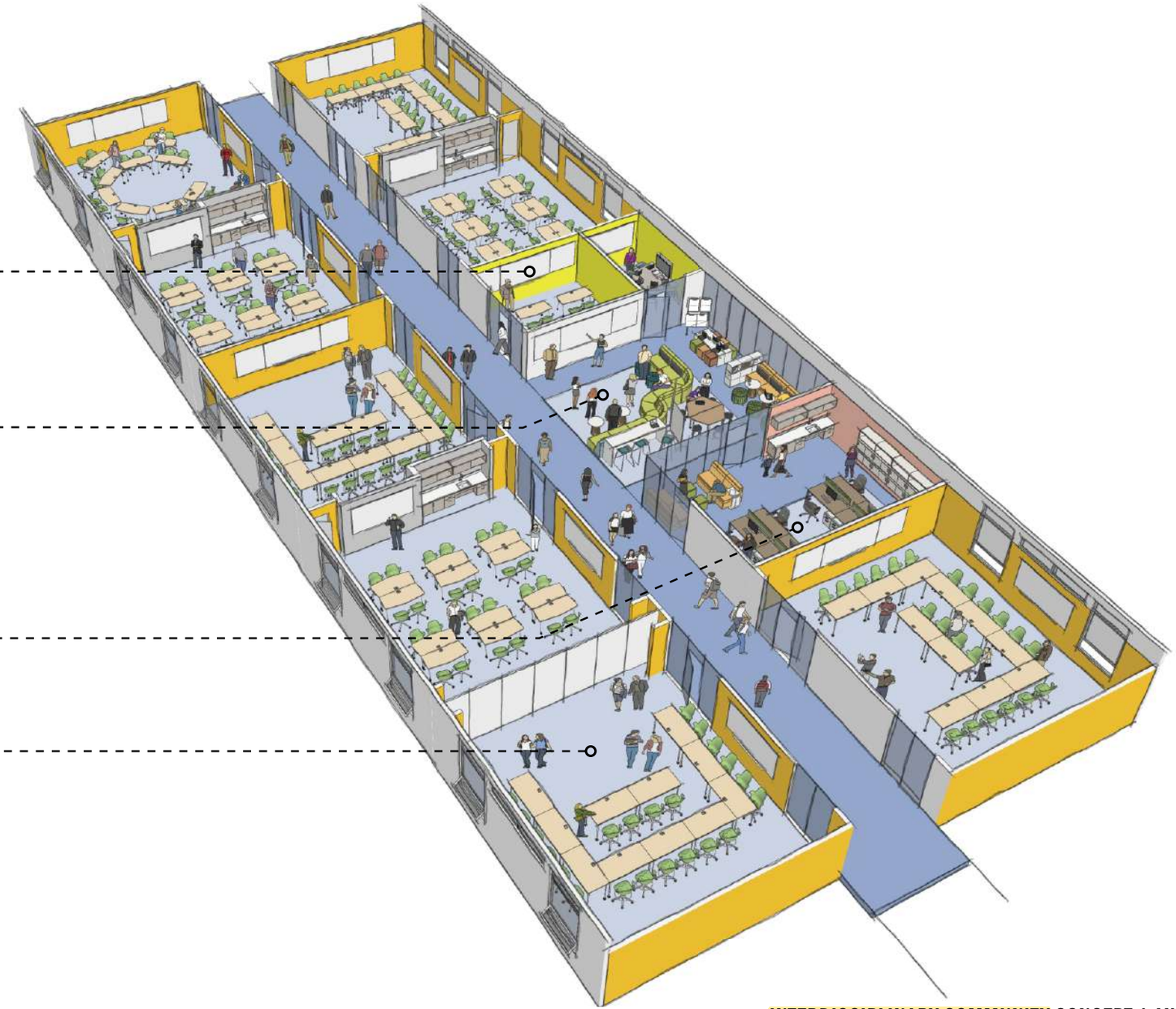
Extended Learning Spaces provide a rich array of settings for activities during class, as well as providing places for students and faculty to eat, study and socialize. A variety of furniture options will allow students to self select their preferred ergonomic scenario to best support different modes of individual and group study.

TEACHER WORKROOM

Teacher Workroom containing “benched” workstations, discussion space, kitchenette, and filing/supply storage.

CLASSROOM

Classrooms would use non-fixed furniture to allow for flexible room arrangements. Adjacent classrooms walls could share nested sink stations, adjoining doors and/or operable partitions to allow for cross-classroom interaction.



INTERDISCIPLINARY COMMUNITY CONCEPT 1 AXON

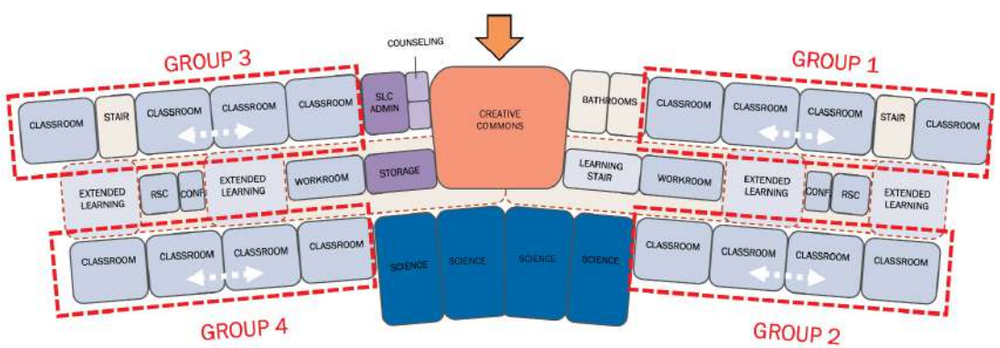
CONCEPT 2 - CENTRAL EXTENDED LEARNING

CENTRAL EXTENDED LEARNING

This 400 student Interdisciplinary Community concept organizes two linear 200 student "neighborhoods" as extensions off a centrally located Creative Commons described on the preceding pages.

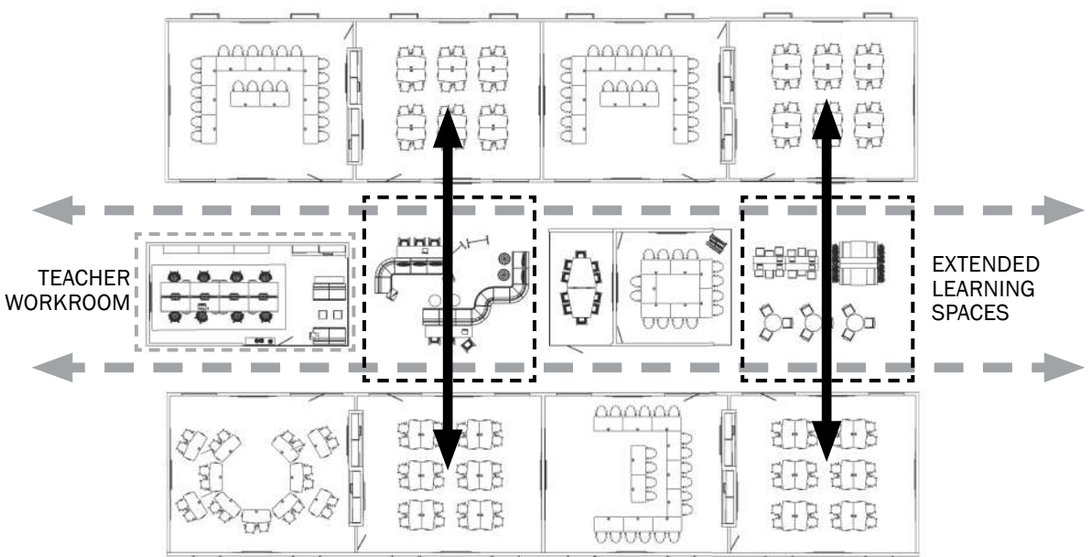
Classrooms flank a widened circulation spine organized along two parallel circulation paths. Students heading to and from formal classrooms will pass through a series of central extended learning zones to promote a continuous engagement with both formal and informal learning opportunities and settings.

Within the widened circulation spine the extended learning spaces would be supported by a resource classroom, small conference space, and a teacher workroom at the threshold to each neighborhood. The spatial organization and placement of glass partitions would give faculty a direct line of sight from the workrooms into many of the extended learning spaces.



400 STUDENT INTERDISCIPLINARY COMMUNITY ORGANIZATION

TEACHER WORKROOM



INTERDISCIPLINARY COMMUNITY NEIGHBORHOOD PLAN

TEACHER WORKROOM

Teacher Workroom containing “benched” workstations, discussion space, kitchenette, and filing/supply storage.

EXTENDED LEARNING SPACE

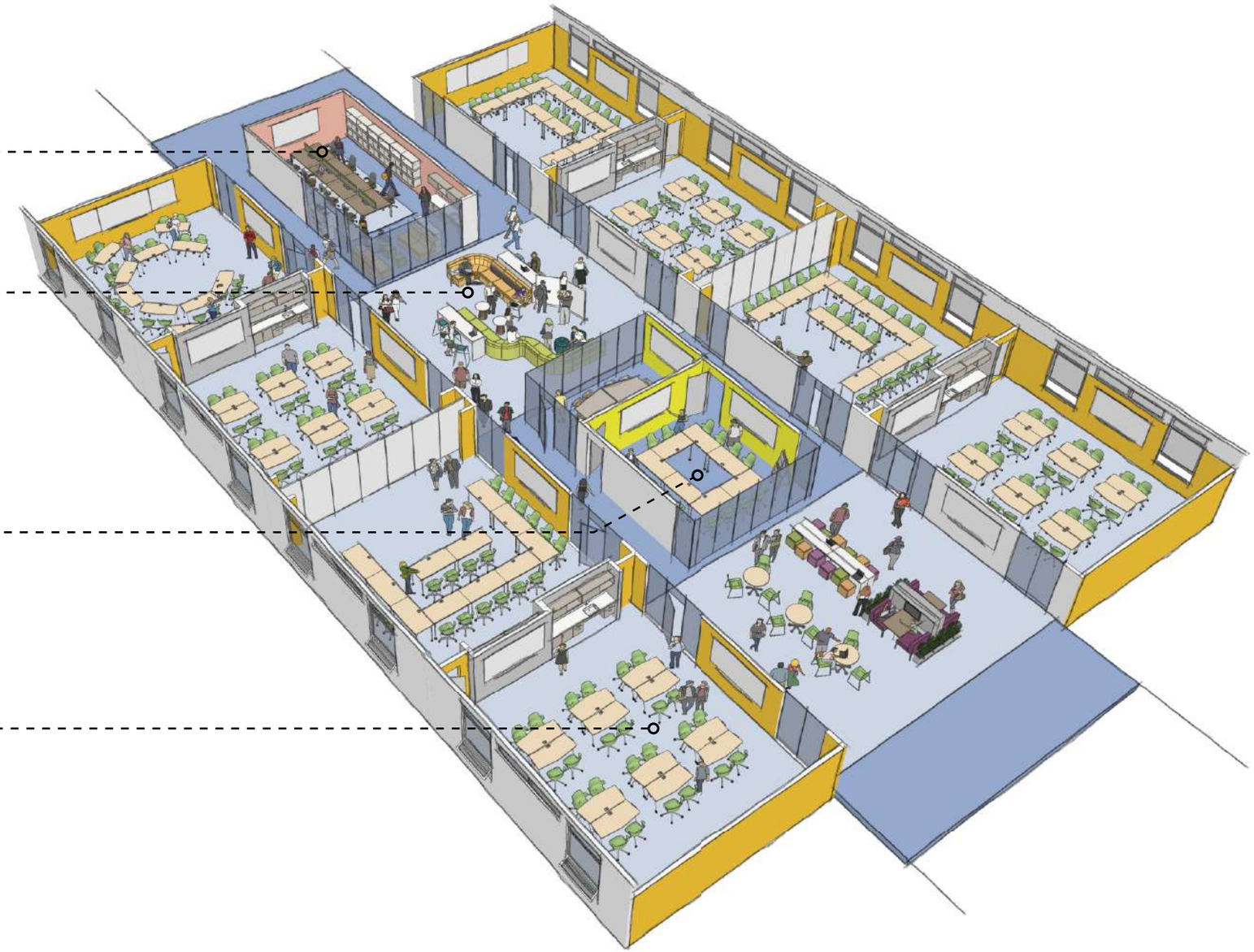
Extended Learning Spaces provide a rich array of settings for activities during class, as well as providing places for students and faculty to eat, study and socialize. A variety of furniture options will allow students to self select their preferred ergonomic scenario to best support different modes of individual and group study.

RESOURCE CLASSROOM & CONFERENCE ROOMS

Resource Classroom & Conference Room spaces foster collaboration, small group work, and pull out activities. These spaces could be used as breakout rooms or for regularly scheduled smaller classes.

CLASSROOM

Classrooms would use non-fixed furniture to allow for flexible room arrangements. Adjacent classrooms walls could share nested sink stations, adjoining doors and/or operable partitions to allow for cross-classroom interaction.



INTERDISCIPLINARY COMMUNITY CONCEPT 2 AXON

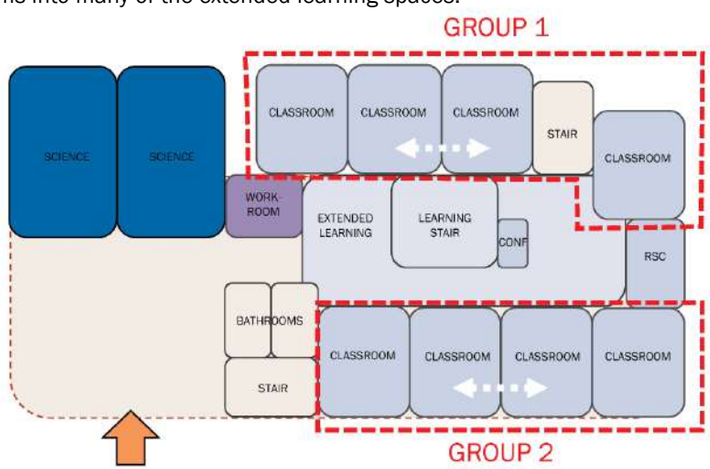
CONCEPT 3 - 2 STORY EXTENDED LEARNING

2 STORY EXTENDED LEARNING

This 400 student Interdisciplinary Community concept organizes two stacked 200 student "neighborhoods" as an extension off a centrally located Creative Commons described on the preceding pages.

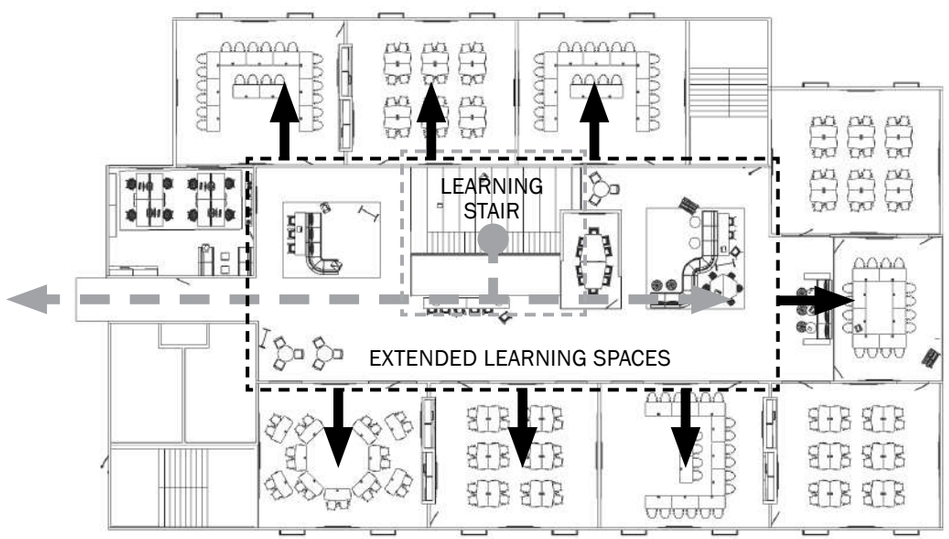
Stacked classrooms surround a 2 Story Extended Learning core connected vertically by a central learning stair. Instead of circulating down halls students would filter through a vertically organized extended learning environment before arriving at their destination. The stair, as a central element within this concept, would serve as an extension of the surrounding extended learning spaces, providing both formal and informal gathering and learning opportunities throughout the day.

The extended learning spaces would be supported by a resource classroom and small conference space with the teacher workroom located at the threshold of the neighborhood. The spacial organization and placement of glass partitions would give faculty a direct line of sight from the workrooms into many of the extended learning spaces.



400 STUDENT INTERDISCIPLINARY COMMUNITY

STUDENTS GATHER ON THE LEARNING STAIR



INTERDISCIPLINARY COMMUNITY NEIGHBORHOOD PLAN

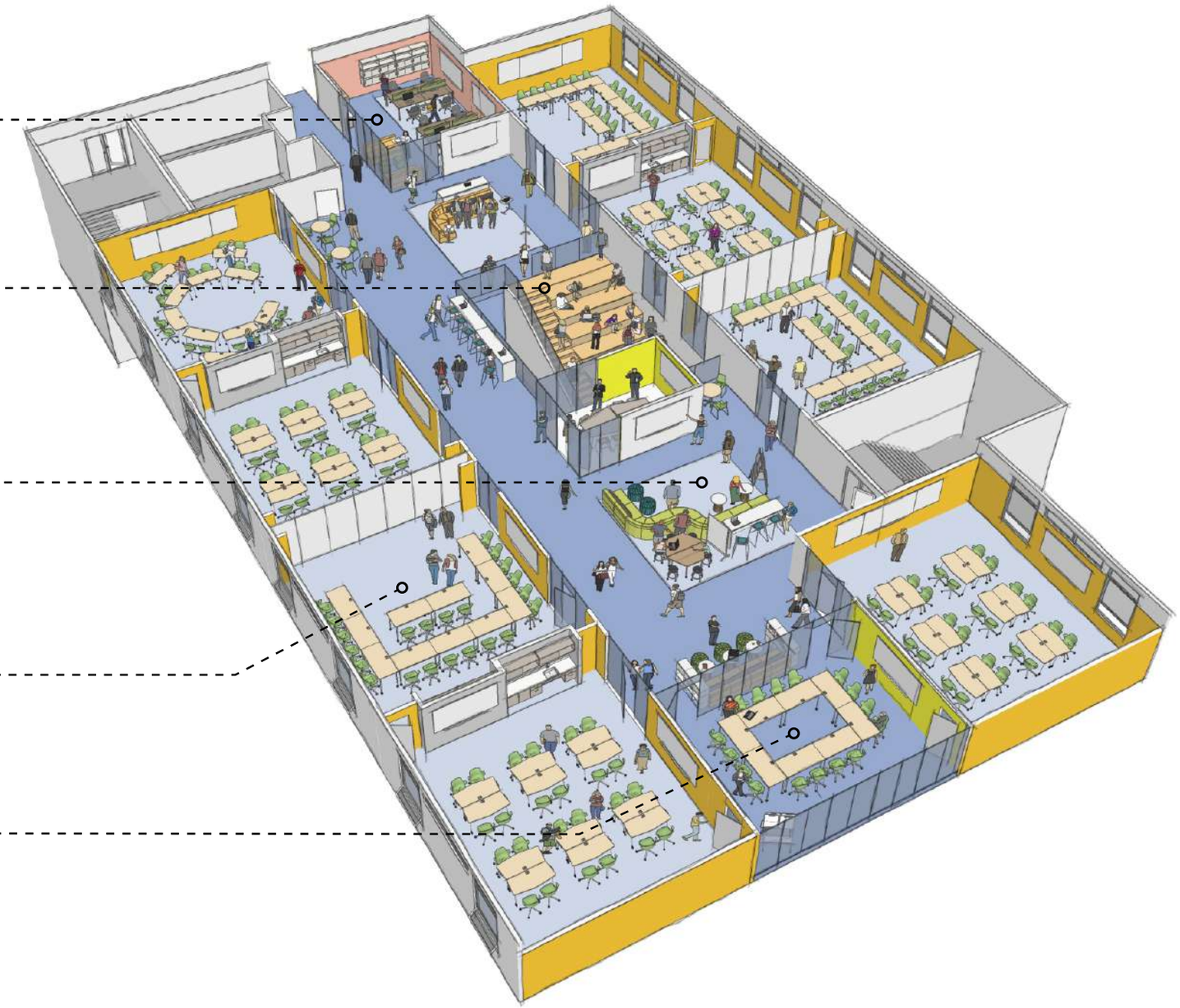
TEACHER WORKROOM
Teacher Workroom containing “benched” workstations, discussion space, kitchenette, and filing/supply storage.

LEARNING STAIRS
Learning stairs providing vertical circulation for the multi-level neighborhood. Centrally located, it would serve as an extension of the surrounding extended learning spaces along with providing both formal & informal gathering & learning opportunities throughout the day.

EXTENDED LEARNING SPACE
Extended Learning Spaces provide a rich array of settings for activities during class, as well as providing places for students and faculty to eat, study and socialize. A variety of furniture options will allow students to self select their preferred ergonomic scenario to best support different modes of individual and group study.

CLASSROOM
Classrooms would use movable furniture to allow for flexible room arrangements. Adjacent classrooms walls could share nested sink stations, adjoining doors and/or operable partitions to allow for cross-classroom interaction.

RESOURCE CLASSROOM & CONFERENCE ROOMS
Resource Classroom & Conference Room spaces foster collaboration, small group work, and pull out activities. These spaces could be used as breakout rooms or for regularly scheduled smaller classes.



INTERDISCIPLINARY COMMUNITY CONCEPT 3 AXON

4

TAB 4: SCHOOL SCHEDULE

4.1 SCHOOL SCHEDULE

This School Scheduling section explains the procedures and assumptions that were made to project space requirements for the King Street and Minnie Howard connected campus.

PROCEDURES AND ASSUMPTIONS

After conferring with Melissa Deak, Director of Counseling, School Scheduling Associates (SSA) decided to use the schedule from the 2020-21 academic year as the baseline. 3,162 student schedules from the King Street campus and 963 student schedules from the Minnie Howard campus were the basis of the analysis and projection.

With the assistance of Melissa Deak and Kathleen Brewster, Counselor at Minnie Howard, SSA calculated the number of room-periods for each course offering at both schools. Given the manner in which the schedule is presented through PowerSchool, this is not as straightforward as it may seem. Many co-taught special education and English Language Learner classes were listed multiple times in the schedule as there was more than one teacher assigned to that section. SSA had to ensure that each section was counted only once. In addition, there are many sections of "stacked" classes: two small sections scheduled into the same room with the same teacher, such as English 9 and English 10 together as a special education class. So, these classes might include two sections but needed to be counted as one for room utilization purposes. After the sections for each class were identified and counted for both the Minnie Howard and King Street schedules, these student numbers and section counts were melded together across both campuses to create a picture of the connected campus schedule. A preferred room type was assigned to each section.

From the total number of sections and the room type assigned to each class, the total number of room-periods by room type was calculated. In other words, if there are 600 sections of 1 credit classes requiring a Standard General Purpose classroom, 600 room-periods are required, which then is divided by the occupancy rate (i.e. 7, if the room is filled 7 of 8) to determine the number of rooms needed.

A list of current instructional spaces available at the KS campus was reviewed and revised with the help of Melissa Deak, Mark Eisenhour, and Michael Burch (for Phys Ed).

SEVERAL ASSUMPTIONS WERE MADE IN THESE COUNTS:

- Earth Science, Astrology, Environmental Sciences, Physics, Oceanography, and Ecology classes prefer to be assigned to "Dry Labs" (low intensity), while Chemistry, Anatomy/Physiology, and Biology prefer to be assigned to "Wet Labs" (high intensity). SSA conferred with Fredericka Smith regarding these preferences.
- After-school (25th hour) Phys Ed classes are included in the analysis.
- As enrollment increases students will take courses in the same proportion as they do now.
- If a 7-course schedule were maintained, projections are shown for occupancy rates of 6 of 7 and 5.75 of 7 (to allow space for class size reduction and/or enrollment growth).
- If an 8-course schedule were adopted, projections are shown for occupancy rates of 7 of 8 and 6.75 of 8 (to allow space for class size reduction and/or enrollment growth).
- If an 8-course schedule were adopted, classes would be elected by students in the same proportion as they are now. Note: this assumption is unlikely to be true. Students' 8th classes are more likely to be electives than core classes. Also, if the school were to mandate new courses, i.e. CTE related courses, this would change the mix. From a projection standpoint this means we might want to be a bit more generous in providing classrooms that generally house electives (art studios, CTE, music, culinary, computer labs, etc.).
- Regarding the room needs for Phys Ed, Health and Drivers' Education, space is needed for both the physical activities of a gym class and for the classroom activities of health and drivers' education. In the past approximately three classrooms have been reserved at the KS campus for health and driver's education pullouts, this amounts to about half the room periods required for PE/Health classes. The preferred space for these pullouts is a GP Large classroom as Phys Ed sections have been quite large, though currently they are scheduled into GP Standard classrooms. If class size were to be reduced, the recommendation for GP Large could be changed to GP Standard. At Minnie Howard the same practice exists, though it was not reflected in the schedule. Several rooms are utilized some periods for health pullouts.

Capitol Hill Day School
Washington, DC

4.2 SCHEDULE ANALYSIS

Again, the recommendation is for GP Large, though the PE classes have been smaller than at the KS campus. Again, about half the room-periods given for PE have been projected to be needed for health, or approximately 2 GP Large rooms.

- The number of calculated room-periods needed always was rounded up to the nearest whole number (you can't have part of a section);
- The number of calculated rooms needed was always rounded up to the nearest whole number (you can't have part of a room).

After the room-periods were calculated for each type of room, this number was divided by 6, the room usage goal of the current schedule (6 of 7 periods), to determine the number of each room type required by the current schedule (highlighted in blue in the summary chart). To estimate room needs for a school of 5,000 students (2029 projection), 500 was subtracted from the projected enrollment (NOVA and Satellite campuses), leaving 4,500 students. From 4,500 students, the number of schedules included in the analysis of the current schedule was subtracted leaving an enrollment increase of 375 students for the connected campus or 9.09%. The number of rooms-periods of each type was multiplied by 1.09 and rounded up (so there is not half a room) to predict the room needs at 4,500 students with a 7-course schedule (highlighted in tan in the summary chart). Room needs for an 8-course schedule were projected by increasing the number of room-periods needed for each room type in the 7-course schedule by 1/7 (highlighted in purple). Finally, the projected number of room-periods for each schedule was divided by two potential occupancy rates: 5.75/7 and 6/7 for the 7-course plan and 6.75/8 and 7/8 for the 8-course plan.

PROJECTIONS (HIGHLIGHTED IN YELLOW ON THE FOLLOWING PAGES)

Enrollment increases using either schedule and either occupancy rate indicate a need for 3 GP Large rooms, 3 additional 2-D art rooms, 1 drafting room, at least 3 new CTE labs (labeled "Robotics and Other Tech."), plus a new culinary arts lab/classroom and a new photo lab/classroom to allow for expansion of maxed-out programs, a fitness lab, and possibly another vocal music room. Moving the Medical Science program to the Minnie Howard campus requires three lab spaces and other classroom spaces, which are included in the GP Large and GP Standard room counts.

At the higher occupancy rates (6 of 7 and 7 of 8) at least 2 more PE teaching stations (and more if class size is to be reduced), and 1 additional ROTC classroom are needed in both schedules. At the lower occupancy rates (5.75 of 7 and 6.75 of 8) at least 3 more PE teaching stations (and more if class size is to be reduced), and 2 additional ROTC classroom are needed. At the lower occupancy rates we need 8 dry labs and 6 wet labs in both schedules.

At the higher occupancy rates we need 8 dry labs and 6 wet labs in the 7-course plan and 7 dry labs 5 wet labs in the 8-course plan.

Finally, for General Purpose Standard classrooms we need a minimum of 43 in the 7-course schedule and 40 in the 8-course schedule at the higher occupancy rate, and we need 50 rooms in the 7-course schedule and 46 in the 8-course schedule at the lower occupancy rate.

As this is an ongoing analysis and conversation with ACPS for the moment, this is a more conservative approach, taking a more conservative approach for the space projection that would allow for a lower classroom utilization and/or reduction in the largest of current section sizes. Refer to the following pages which show projections associated with a utilization of 5.75 of 7 periods and 6.75 of 8 periods, as well as 6 of 7 periods and 7 of 8 periods.

SCHOOL DAY SCHEDULE

Providing the most flexible access to all parts of the connected high school campus requires a re-thinking of the T.C. Williams master schedule.

8-BLOCK SCHEDULE

The proposed plan offers students the opportunity to take 8 courses within the regular school day (approximately 400 students already take a class scheduled before or after school). The proposed schedule has four instructional blocks, with 15-minute transitions separating Blocks 1 from 2 and 3 from 4 to facilitate movement between campuses. The vast majority of classes would be offered every day for 85 minutes for one semester, as they have been this year. Some courses, that by their nature or testing schedule must go all year (Band, Orchestra, AP classes, JROTC, etc.), would be offered every other day for the entire year. Teachers would teach 6 of the 8 blocks, with most teachers instructing 3 classes per semester.

LUNCH AND LEARN

A prominent feature of the schedule is “Lunch and Learn,” which separates the morning and afternoon blocks. During this time the entire school stops for lunch and other activities. There is a 30-minute period of duty free lunch reserved for all teachers, and during the other 30-minute period teachers are available to provide extra help, run clubs, engage students in enrichment activities, provide supervision, and meet with their professional Interdisciplinary community. Students, within clear boundaries, are able to decide how to use their time, though they may be required to attend extra help sessions, if asked by a teacher. The Lunch and Learn requires the manner in which food is provided for students and staff to be rethought.

The school day schedule to the right shows a proposed schedule for the opening of the new Minnie Howard campus in the 2024-25 school year.

TC Williams/Minnie Howard All-Campus Basic Format: Semester Blocks (1 Credit)

Sem. 1	Block 1 85 Sem. 1	Break /Travel 15	Block 3 85 Sem. 1	Lunch and Learn 1 30	Travel 15	Lunch and Learn 2 30	Block 5 85 Sem. 1	Break /Travel 15	Block 7 85 Sem. 1
Sem. 2	Block 2 85 Sem. 2	Break /Travel 15	Block 4 85 Sem. 2	Lunch and Learn 1 30	Travel 15	Lunch and Learn 2 30	Block 6 85 Sem. 2	Break /Travel 15	Block 8 85 Sem. 2

TC Williams/Minnie Howard All-Campus Parallel Format: A/B Blocks (1 credit)

Red Day	Block 1 85	Break /Travel 15	Block 3 85	Lunch and Learn 1 30	Travel 15	Lunch and Learn 2 30	Block 5 85	Break /Travel 15	Block 7 85
Blue Day	Block 2 85	Break /Travel 15	Block 4 85	Lunch and Learn 1 30	Travel 15	Lunch and Learn 2 30	Block 6 85	Break /Travel 15	Block 8 85

PROPOSED 2024-25 SCHOOL DAY SCHEDULE

ACPS is considering revising the schedule for the 2024-25 school year to include a community lunch and learn and longer break times between classes, which allow for transition between campuses. This schedule extends the length of the school day and requires further discussion.

Schedules Included in Analysis 20-21				Project Enrollment 2029						Projected Space Needs for 7 and 8-Course Schedules at 5000 Enrollment (4500 KS and MH)			
KS	MH	Total		7-Course Schedule; Rooms Used 5.75 of 7 Periods			8-Course Schedule; Rooms Used 6.75 of 8 Periods						
3162	963	4125		KS and MH	Increase from 20-21	Multiplier	8th Course Multiplier						
				4500	375	109.09%	1	7	0.143				
	Current Enrollment 7 Period; Schedule 6			4500 Enrollment; 7 Period; Schedule 5.75			4500 Enrollment; 8 Period; Schedule 6.75			Rooms and Need			
Room Type	Current Room Periods	Current Room Periods/6	Current Room Needs	Room Periods	Room Periods/ 5.75	Room Needs 5.75 of 7	Room Periods 8 Courses	Room Periods/ 6.75	Room Needs 6.75 of 8	KS Rooms Current	Over/under 5.75 of 7	Over/under 6.75 of 8	Notes
Art Studio -2D	23	3.83	4	26.00	4.52	5	29.00	4.30	5	2	-3	-3	Add
Art Studio - 3D	8	1.33	2	9.00	1.57	2	10.00	1.48	2	2	0	0	
Auto	15	2.50	3	17.00	2.96	3	19.00	2.81	3	4	1	1	Ignore; unclear how space is used.
Blackbox Theater	2	0.33	1	3.00	0.52	1	3.00	0.44	1	1	0	0	
Career Prep	33	5.50	6	36.00	6.26	7	42.00	6.22	7	6	-1	-1	Career prep needs are assumed to be similar to now; unclear how all space is used. SPED Porgram.
Computer Lab	12	2.00	2	14.00	2.43	3	15.00	2.22	3	3	0	0	
Cosmetology lab	4	0.67	1	5.00	0.87	1	5.00	0.74	1	1	0	0	
Culinary Classroom and Kitchen	5	0.83	1	6.00	1.04	2	7.00	1.04	2	1	-1	-1	Program at capacity; add space to expand.
Dance / Activity Room	1	0.17	1	2.00	0.35	1	2.00	0.30	1	1	0	0	
Draft	7	1.17	2	8.00	1.39	2	9.00	1.33	2	1	-1	-1	Program at capacity; add space to expand.
Dry lab	84	14.00	14	92.00	16.00	16	105.00	15.56	16	8	-8	-8	Add
Electronics	5	0.83	1	6.00	1.04	2	7.00	1.04	2	1	-1	-1	Electronics classes
GP large	30	5.00	5	33.00	5.74	6	38.00	5.63	6	3	-3	-3	Intro. To Med. SC, AVID, Health 9
GP Small	29.00	4.83	5	32.00	5.57	6	37.00	5.48	6	6	0	0	
GP Standard	780.50	130.08	131	852.00	148.17	149	973.00	144.15	145	99	-50	-46	May want to increase beyond this for more flexibility.
Graphics Media Studio	6	1.00	1	7.00	1.22	2	8.00	1.19	2	2	0	0	
Gym	60	10.00	10	66.00	11.48	12.00	75.00	11.11	12	9	-3	-3	Add more than 3 teaching stations to be able to reduce class size
Instrumental	10	1.67	2	11.00	1.91	2	13.00	1.93	2	2	0	0	
Med. Sci. Lab	12	2.00	2	14.00	2.43	3	15.00	2.22	3	0	-3	-3	Add
Photo	8	1.33	2	9.00	1.57	2	10.00	1.48	2	1	-1	-1	Program at capacity; add space to expand.
Robotics and Other Tech.	17	2.83	3	19.00	3.30	4	22.00	3.26	4	1	-3	-3	Add
ROTC	11	1.83	2	12.00	2.09	3	14.00	2.07	3	1	-2	-2	Add
Student Help Desk	1	0.17	1	2.00	0.35	1	2.00	0.30	1	1	0	0	
Theatre / Auditorium	2	0.33	1	3.00	0.52	1	3.00	0.44	1	3	2	2	Ignore: not fully scheduled, but used for other purposes.
TV Studio	7	1.17	2	8.00	1.39	2	9.00	1.33	2	3	1	1	
Vocal Music	6	1.00	1	7.00	1.22	2	8.00	1.19	2	1	-1	-1	Add? Music Theory scheduled in this room could go to GP Standard if Necessary. Convert space at KS?
Weight/Fitness	8	1.33	2	9.00	1.57	2	10.00	1.48	2	1	-1	-1	Add
Wet Lab	99.5	16.58	17	109.00	18.96	19	124.56	18.45	19	13	-6	-6	Add
Room Periods	1286.00		225.00	1417.00		261.00	1614.56		257.00	177.00	-84.00	-80.00	

PROJECTED SPACE NEEDS FOR 7 AND 8-COURSE SCHEDULES AT 5000 ENROLLMENT (4500 KS AND MH), WITH A UTILIZATION OF 5.75/7 AND 6.75/8 PERIODS

Schedules Included in Analysis 20-21				Project Enrollment 2029						Projected Space Needs for 7 and 8-Course Schedules at 5000 Enrollment (4500 KS and MH)			
KS	MH	Total		7-Course Schedule; Rooms Used 6 of 7 Periods			8-Course Schedule; Rooms Used 7 of 8 Periods						
3162	963	4125		KS and MH	Increase from 20-21	Multiplier	8th Course Multiplier						
				4500	375	109.09%	1	7	0.143				
	Current Enrollment 7 Period; Schedule 6			4500 Enrollment; 7 Period; Schedule 6			4500 Enrollment; 8 Period; Schedule 7			Rooms and Need			
Room Type	Current Room Periods	Current Room Periods/6	Current Room Needs	Room Periods	Room Periods/6	Room Needs 6 of 7	Room Periods 8 Courses	Room Periods/7	Room Needs 7 of 8	KS Rooms Current	Over/under 6 of 7	Over/under 7 of 8	Notes
Art Studio -2D	23	3.83	4	26.00	4.33	5	29.00	4.14	5	2	-3	-3	Add
Art Studio - 3D	8	1.33	2	9.00	1.50	2	10.00	1.43	2	2	0	0	
Auto	15	2.50	3	17.00	2.83	3	19.00	2.71	3	4	1	1	Ignore; unclear how space is used.
Blackbox Theater	2	0.33	1	3.00	0.50	1	3.00	0.43	1	1	0	0	
Career Prep	33	5.50	6	36.00	6.00	6	42.00	6.00	6	6	0	0	Career prep needs are assumed to be similar to now; unclear how all space is used. SPED Porgram.
Computer Lab	12	2.00	2	14.00	2.33	3	15.00	2.14	3	3	0	0	
Cosmetology lab	4	0.67	1	5.00	0.83	1	5.00	0.71	1	1	0	0	
Culinary Classroom and Kitchen	5	0.83	1	6.00	1.00	1	7.00	1.00	1	1	0	0	Program at capacity; add space to expand.
Dance / Activity Room	1	0.17	1	2.00	0.33	1	2.00	0.29	1	1	0	0	
Draft	7	1.17	2	8.00	1.33	2	9.00	1.29	2	1	-1	-1	Program at capacity; add space to expand.
Dry lab	84	14.00	14	92.00	15.33	16	105.00	15.00	15	8	-8	-7	
Electronics	5	0.83	1	6.00	1.00	1	7.00	1.00	1	1	0	0	Electronics classes
GP large	30	5.00	5	33.00	5.50	6	38.00	5.43	6	3	-3	-3	Intro. To Med. SC, AVID, Health 9
GP Small	29.00	4.83	5	32.00	5.33	6	37.00	5.29	6	6	0	0	
GP Standard	780.50	130.08	131	852.00	142.00	142	973.00	139.00	139	99	-43	-40	May want to increase beyond this for more flexibility.
Graphics Media Studio	6	1.00	1	7.00	1.17	2	8.00	1.14	2	2	0	0	
Gym	60	10.00	10	66.00	11.00	11.00	75.00	10.71	11	9	-2	-2	Add more than 2 teaching stations to be able to reduce class size
Instrumental	10	1.67	2	11.00	1.83	2	13.00	1.86	2	2	0	0	
Med/ Sci. Lab	12	2.00	2	14.00	2.33	3	15.00	2.14	3	0	-3	-3	Add
Photo	8	1.33	2	9.00	1.50	2	10.00	1.43	2	1	-1	-1	Program at capacity; add space to expand.
Robotics and Other Tech.	17	2.83	3	19.00	3.17	4	22.00	3.14	4	1	-3	-3	Add
ROTC	11	1.83	2	12.00	2.00	2	14.00	2.00	2	1	-1	-1	Add
Student Help Desk	1	0.17	1	2.00	0.33	1	2.00	0.29	1	1	0	0	
Theatre / Auditorium	2	0.33	1	3.00	0.50	1	3.00	0.43	1	3	2	2	Ignore: not fully scheduled, but used for other purposes.
TV Studio	7	1.17	2	8.00	1.33	2	9.00	1.29	2	3	1	1	
Vocal Music	6	1.00	1	7.00	1.17	2	8.00	1.14	2	1	-1	-1	Add? Music Theory scheduled in this room could go to GP Standard if Necessary. Convert space at KS?
Weight/Fitness	8	1.33	2	9.00	1.50	2	10.00	1.43	2	1	-1	-1	Add
Wet Lab	99.5	16.58	17	109.00	18.17	19	124.56	17.79	18	13	-6	-5	Add
Room Periods	1286.00		225.00	1417.00		249.00	1614.56		244.00	177.00	-72.00	-67.00	

PROJECTED SPACE NEEDS FOR 7 AND 8-COURSE SCHEDULES AT 5000 ENROLLMENT (4500 KS AND MH), WITH A UTILIZATION OF 6/7 AND 7/8 PERIODS

5

TAB 5: SPACE PROGRAM

PRELIMINARY SPACE PROGRAM

This section outlines a preliminary site specific space projection for the new building at the Minnie Howard campus. This space projection seeks to respond directly to the vision established by ACPS for the Connected High School Network, and the corresponding plan to educate 1,600 students at the Minnie Howard Campus within the network.

Key aspects of ACPS's vision influencing this space projection include: equity and access across the Connected High School Network, Career and Technical Education, STEAM, Project-Based Learning, and a revised class schedule for the King Street and Minnie Howard campuses. Accordingly, this projection reflects the conversations held to date with ACPS leadership and the Educational Design Team that have been codified in the Design Patterns, preliminary organizational strategies, and the school scheduling analysis discussed in previous sections of this report.

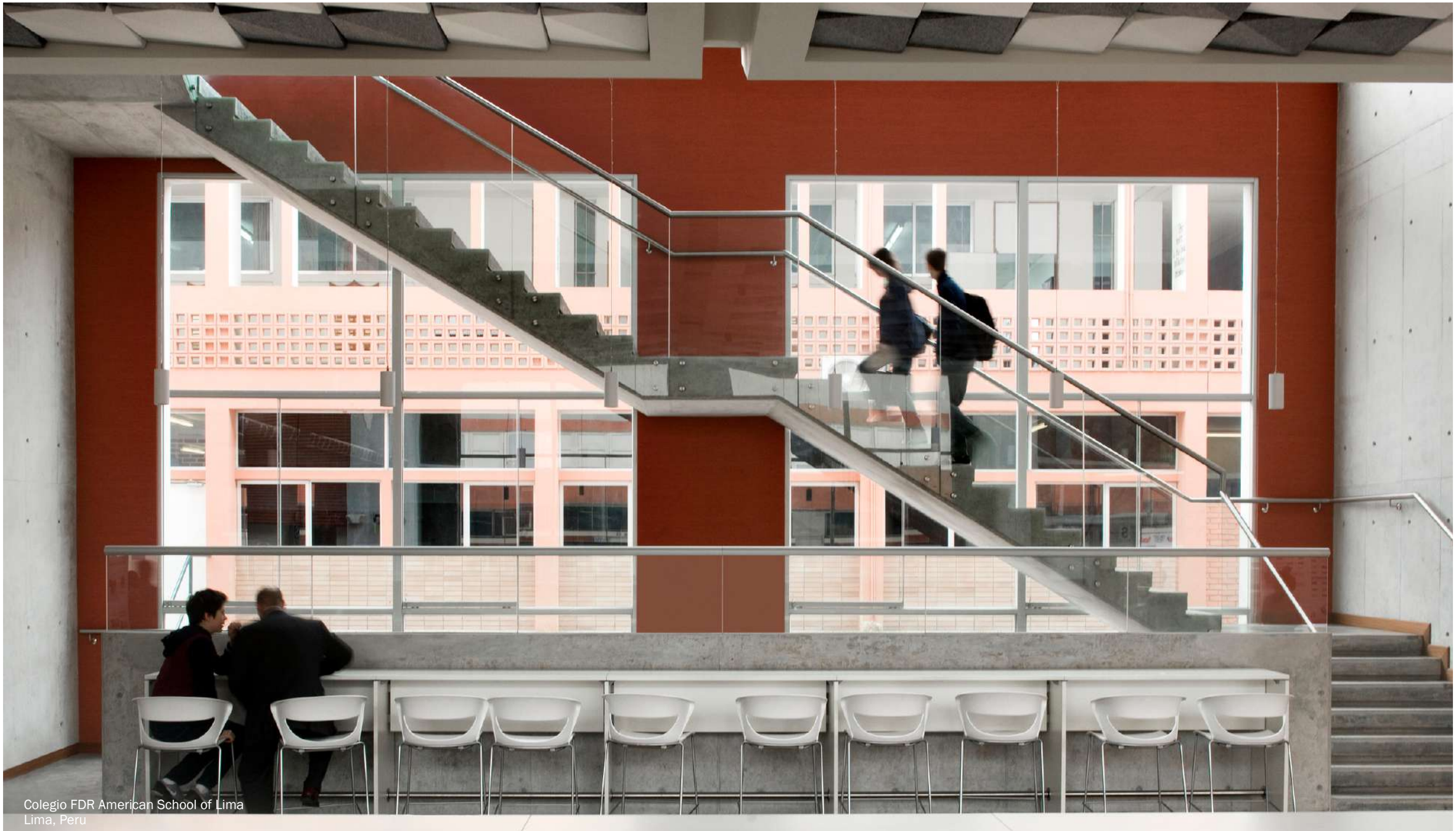
The goal of this preliminary projection is to develop an initial understanding of the likely space needs in achieving these goals. While we believe that this projection is an appropriate first draft, the projection will continue to evolve as the scheduling analysis is further advanced and the design team continues the conversation with the EDT, school leadership, and the school community.

Key assumptions underlying this projection include enrollment projections for 2029 where:

- Minnie Howard will accommodate 1,600 students;
- King Street campus will accommodate 2,900 students;
- NOVA will accommodate 400 students;
- The Satellite Center will accommodate 100 students.

Major assumptions underlying the space projection include:

- Students will move between King Street and Minnie Howard to use various resources offered at each campus;
- Each campus will be structured around Interdisciplinary Communities;
- The Interdisciplinary Communities at Minnie Howard will be organized to accommodate 400 students each;
- Interdisciplinary Communities at Minnie Howard will offer spaces for an interdisciplinary mix of:
  - CTE
  - Fine Art
  - Science
  - Humanities
  - Faculty Collaboration
  - Counseling
  - Interdisciplinary Community Administration
  - Extended Learning
  - Dining/Creative Commons
  - Physical Education



Colegio FDR American School of Lima
Lima, Peru

PRELIMINARY SPACE PROGRAM

To optimize faculty and facility resources to best serve students, some programs will not be duplicated at both the King Street and Minnie Howard campuses. Students will be able to travel between campuses to access specialized resources. For example, leveraging the existing resources, the following programs will only be offered at King Street:

- Performing Arts: Drama and Music;
- Culinary Arts;
- JROTC;
- Automotive Technology.

The 900-seat auditorium at King Street will be available and used for assemblies by students from both campuses. With access to this professional quality facility, Minnie Howard will not need to have an auditorium. Assemblies of 1,600 students can be held in the main gym at Minnie Howard.

Some programs/spaces will move from King Street to Minnie Howard to allow spaces needing additional space at King Street to expand. These include: Wrestling and Health Sciences.

Co-located programs to be housed at Minnie Howard offered by the City, are:

- Department of Health Services: Teen Wellness Center;
- Department of Community and Human Services:
  - Early Childhood Center
  - Workforce Development
  - Outreach for Benefit Program
  - Youth Development
  - Children and Youth Master Plan
  - Domestic Violence/Sexual Assault
  - Child and Family Behavioral Health Services

The next steps in refining these assumptions and projections into a final Site Specific Educational Specification will entail several activities. The first is that the design team should review the projections with each academic unit/department to be housed at Minnie Howard to confirm that their needs are addressed within the projection. A complementary online survey of the faculty will also inform a more detailed understanding of the needs for the fit-out of each space in the building.

As the current projection is likely to exceed the 285,000 gross square feet once organized on the site, meetings with ACPS school leadership team should also be held to prioritize the space projected. This will enable the project to remain on budget as concept design begins.

With these additional meetings and the survey occurring during the month of February, the design team will be able to refine the projection into a final draft of the Site Specific Educational Specifications to inform the work during the concept design phase.

The following pages detail the preliminary space projection by department/unit for the Minnie Howard campus.

Concordia International School
Shanghai, China

PRELIMINARY SPACE PROGRAM

Reinforcing the vision of a Connected High School Network, the development of the Site Specific Educational Specifications (SSES) has taken into account, not only the needs of the Minnie Howard campus, but also space needs at the King Street campus as well. The accompanying table quantifies the number of instructional spaces existing on both campuses and the number proposed after the new construction is complete at Minnie Howard. The table indicates that quantitatively, over 40 additional instructional spaces are currently being projected for the Minnie Howard campus.

Additionally, it is important to note that even where there is a one-to-one replacement in some of the spaces projected for the new building, qualitatively, the new spaces will be significantly better places for the high schools curriculum. Minnie Howard was designed for a 1970's elementary school program. The existing classrooms and other spaces that are ordinarily in use there, including the gym, will not compare to the modern, 21st Century, flexible, Project-Based Learning environments that the new building will provide.

As well, while the SSES projects space to be built at the Minnie Howard campus, it also lays the groundwork for strategic renovations at the King Street campus. Most notably, the SSES opens up the opportunity to expand the Culinary Arts, JROTC and Fitness programs at King Street.

T.C. Williams High School
Alexandria, VA

Campus Instructional Space Projections

1600 students at Minnie Howard; 2900 students at King Street; Rooms Used 5.75 of 7 Periods

			Projected		Net Change KS+MH	Existing		
SSA Order	Dept	Room Type	Minnie Howard	King Street	Projected - Existing	Minnie Howard	King Street	Notes
6		Computer Lab	1	3	1	0	3	Use Media Studio in MH Learning Commons
21		Student Help Desk	1	1	1	0	1	
15	Art	Graphic Design Studio	1	2	1	0	2	
18	Art	Photo Lab	1	1	1	0	1	MH shown as digital art studio
3	CTE	Auto	0	4	0	0	4	
5	CTE	Special Education/Career Prep	4	6	4	0	6	
7	CTE	Cosmetology	0	1	0	0	1	
8	CTE	Culinary Classroom/Lab	0	2	1	0	1	Expand at King Street into Health Sciences Lab (relocated to MH)
10	CTE	Drafting / Digital Design	1	1	1	0	1	
19	CTE	Robotics/Prototyping Lab	4	1	4	0	1	Prototyping Lab, 1 additional over projection shown at MH, plus one "fab lab"
-	CTE	CTE Class/Computer Labs	6	0	6	0	0	
1	Fine Art	Art Studio - 2D	2	2	2	0	2	Projection for three 2D at MH, see below
2	Fine Art	Art Studio - 3D	1	2	1	0	2	MH 3D could also be 2D, kiln added for flexibility
12	Gen Ed	Large Flex Class/Lab	4	3	4	0	3	
13	Gen Ed	Classroom - Standard	48	97	4	42	99	
14	Gen Ed	Classroom - Small	8	6	5	3	6	Projection calls for 0, added for flexibility
20	JROTC	JROTC	0	2	1	0	1	Expand at King Street into Health Sciences Lab (relocated to MH)
25	PE	Fitness/Weights	1	1	1	0	1	
16	PE	Gym	3	9	0	3	9	Shown as Teaching Stations: Confirming MH count. New MH Gyms are larger than existing.
4	Performing Art	Black Box Theater	0	1	0	0	1	
9	Performing Art	Dance	0	1	0	0	1	
17	Performing Art	Instrumental Rehearsal	0	2	0	0	2	
22	Performing Art	Auditorium	0	1	0	0	1	
23	Performing Art	TV Studio	0	1	0	0	1	
24	Performing Art	Vocal Music	0	1	0	0	1	Return KS Midi Lab back from Alternative Ed?
11	Science	Low Intensity Science Lab	10	5	0	6	9	
26	Science	High Intensity Science Lab	8	13	8	0	13	
		Sub-total Science labs	18	18		6	22	
		Total Additional Instruction Space at Minnie Howard			44			

Notes

1. Does not include co-located partner space including the Early Childhood Center
2. Does not include adminstrative, student support, or buildings & grounds space

5.1 ADMINISTRATION

As discussed in the Design Patterns, the building will feature both centralized administration and decentralized administration. The centralized administration–housing the Campus Administrator, Registrar, Attendance, Testing Coordinator, Director and Assistant Director of Counseling–will serve the entire campus and be situated in the Main Office at the front door.

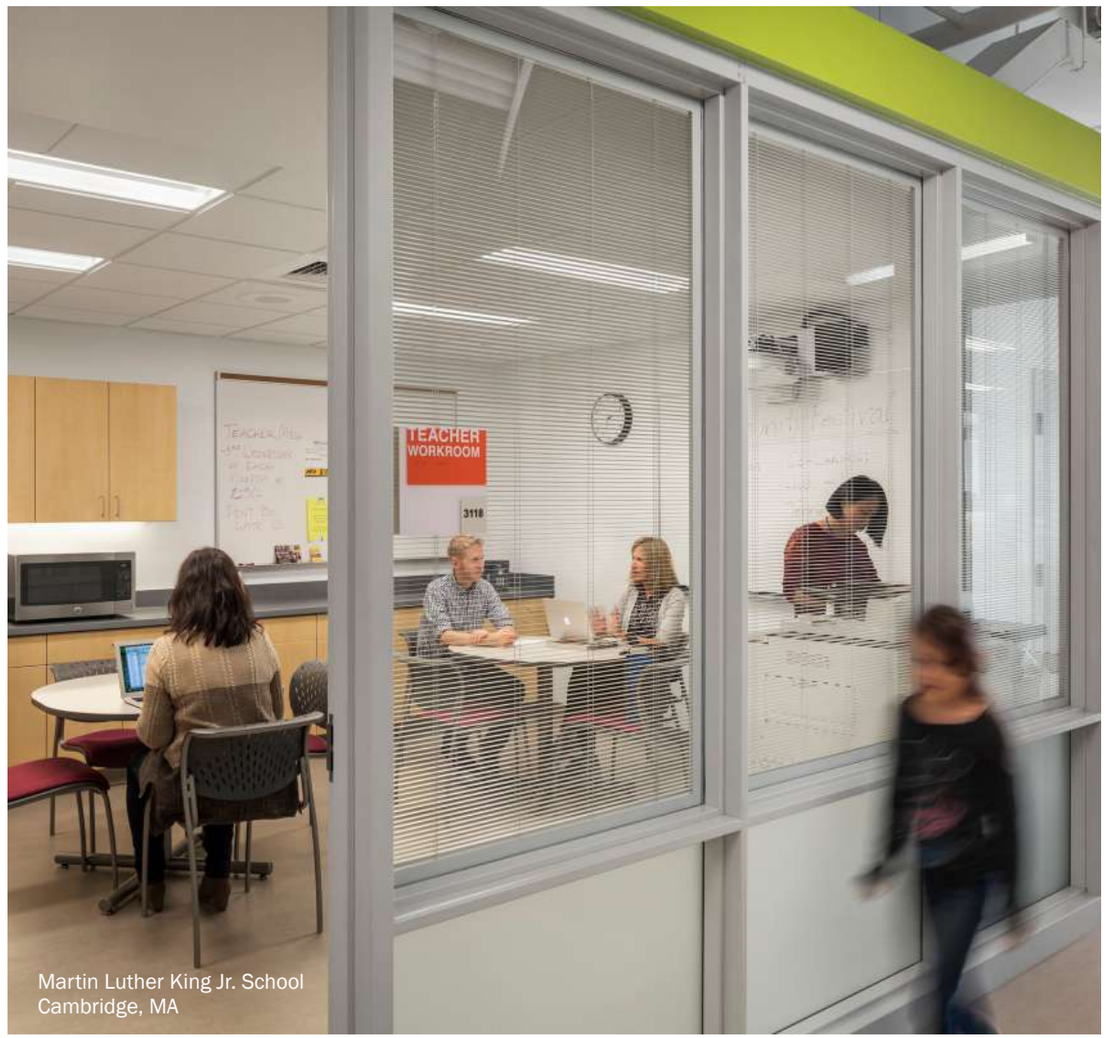
The distributed administration will be located within and serve each of the four Interdisciplinary Communities. An Assistant Principal or Interdisciplinary Community Administrator and an Administrative Assistant will be located in each of these offices. Two School Counselors will also be distributed to these offices to share resources like the conference room, and to provide convenient access for the students. See Student Services for those offices.

KEY ASSUMPTIONS:

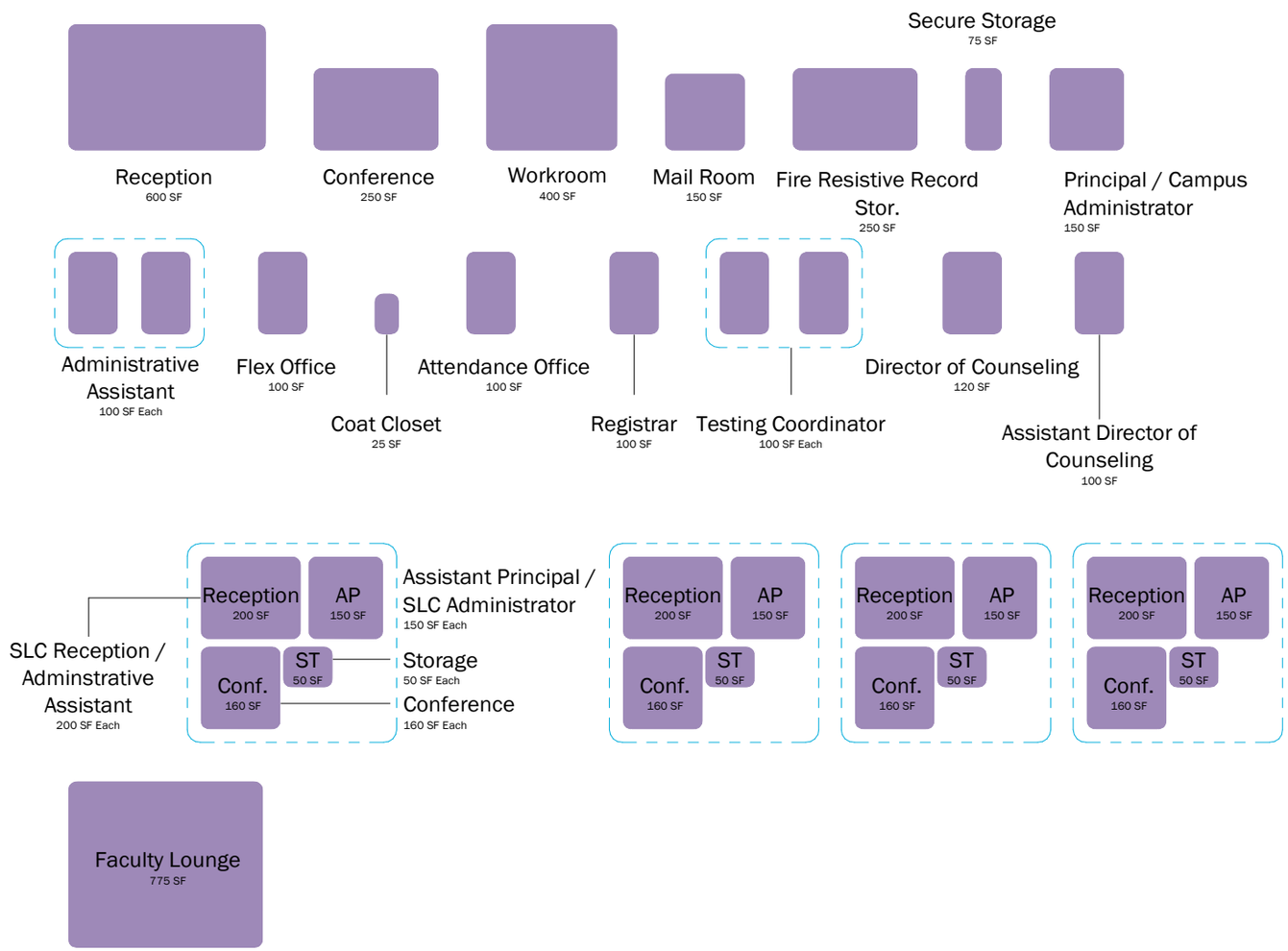
- Distributed Administration will be allocated across four Interdisciplinary Communities;
- Guidance Counselors will be co-located with Distributed Administration in the Interdisciplinary Communities;
- A Main Office will be located at the front door, including the non-distributed administration.

ADDITIONAL QUESTIONS:

- Are all administrators represented in the space projection?
- What about technology support services staff? Will they be located at Minnie Howard too?
- Is a faculty lounge required since faculty have their own distributed offices?



Martin Luther King Jr. School
Cambridge, MA



ADMIN_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m^2) EACH ROOM	NET AREA (m^2) SUB TOTAL
MAIN OFFICE						
1.1.1. Reception	0	1	0	0	600 SF	600 SF
1.1.2. Conference	0	1	0	0	250 SF	250 SF
1.1.3.1. Workroom	0	1	0	0	400 SF	400 SF
1.1.3.2. Mail Room	0	1	0	0	150 SF	150 SF
1.1.4. Fire Resistive Record Stor.	0	1	0	0	250 SF	250 SF
1.1.5. Secure Storage	0	1	0	0	75 SF	75 SF
1.1.7. Principal / Campus Administrator	0	1	0	0	150 SF	150 SF
1.1.8. Administrative Assistant	0	2	0	0	100 SF	200 SF
1.1.10. Flex Office	0	1	0	0	100 SF	100 SF
1.1.11. Coat Closet	0	1	0	0	25 SF	25 SF
1.1.12. Attendance Office	0	1	0	0	100 SF	100 SF
1.1.13. Registrar	0	1	0	0	100 SF	100 SF
1.1.14. Testing Coordinator	0	2	0	0	100 SF	200 SF
1.1.15. Director of Counseling	0	1	0	0	120 SF	120 SF
1.1.16. Assistant Director of Counseling	0	1	0	0	100 SF	100 SF
				0		2,820 SF
Distributed Administration						
1.2.1. Assistant Principal Administrator	0	4	0	0	150 SF	600 SF
1.2.2. Conference	0	4	0	0	160 SF	640 SF
1.2.3. Storage	0	4	0	0	50 SF	200 SF
1.2.4. SLC Reception / Adminstrative Assistant	0	4	0	0	200 SF	800 SF
				0		2,240 SF
Faculty Support						
1.3.1. Faculty Lounge	0	1	0	0	775 SF	775 SF
				0		775 SF
				0		5,835 SF
DIVISION TOTAL: 34				0		5,835 SF

5.2 STUDENT SERVICES

In contrast to the conventional high school, school counseling offices at Minnie Howard will be distributed to the four Interdisciplinary Communities to enhance access to guidance services by the students during the day. Two counselor's offices will be located within each Interdisciplinary Community administrative office.

The Career Center will be co-located with ACHS's Workforce Development offices to encourage shared resources and a synergy of services. Similarly, ACPS's Health Suite will be located proximate to the Department of Health's Teen Wellness Center. This will facilitate coordination of services for students between the two clinics. While the Health Suite should be near the front door, it will not require direct exterior access for public access like that of the Teen Wellness Center.

Space has also been allocated for the Scholarship Fund of Alexandria to have a presence on the Minnie Howard campus. This space can accommodate four workstations and a place for students to complete paperwork.

The psychologist and social worker offices location will be determined in the next version of this report. Four additional "flex" offices are projected to allow for itinerant staff and for currently unforeseen additional staff over time.

KEY ASSUMPTIONS:

- Guidance Counselors will be co-located with Distributed Administration in the Interdisciplinary Communities;
- The Health Clinic provides services to students at school but should be proximate to the "outward-facing" Teen Wellness Center to coordinate services.

ADDITIONAL QUESTIONS:

- What are the space requirements for meeting with students and families for counseling, psychologist, and the social worker?
- Is an SGA office required at Minnie Howard or should that be located only at King Street?
- Is a school store required at Minnie Howard or should that be located only at King Street?

Martin Luther King Jr. School
Cambridge, MA

STUDENT SERVICES_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m²) EACH ROOM	NET AREA (m²) SUB TOTAL
Guidance						
1. Office	0	8	0	0	120 SF	960 SF
4. Career Center	0	1	0	0	500 SF	500 SF
5. Storage	0	1	0	0	100 SF	100 SF
7. Scholarship Fund of Alexandria	0	1	0	0	500 SF	500 SF
				0		2,060 SF
Health Suite						
1. Reception/Waiting Area/ Admin Assistants	0	1	0	0	300 SF	300 SF
2. Exam Room	0	3	0	0	100 SF	300 SF
3. Student Rest Area	0	1	0	0	200 SF	200 SF
4. Office	0	1	0	0	100 SF	100 SF
5. Storage	0	1	0	0	100 SF	100 SF
6. Prep Area (Alcove)	0	1	0	0	100 SF	100 SF
7. Student Toilet	0	1	0	0	100 SF	100 SF
				0		1,200 SF
Support Services						
1. Psychologist	0	2	0	0	120 SF	240 SF
2. Social Worker	0	2	0	0	120 SF	240 SF
3. Flex Office	0	4	0	0	100 SF	400 SF
4. Records Storage	0	1	0	0	75 SF	75 SF
5. SGA Office	0	1	0	0	275 SF	275 SF
6. School Store	0	1	0	0	325 SF	325 SF
7. Technology Integration Specialists/PD Space	0	1	0	0	560 SF	560 SF
8. Technology Help Desk	0	1	0	0	100 SF	100 SF
9. Help Desk Storage/Work Area	0	1	0	0	300 SF	300 SF
				0		2,515 SF
				0		5,775 SF
DIVISION TOTAL: 34				0		5,775 SF

5.3 CORE ACADEMICS

This category includes flexible, general classrooms, resource classrooms, extended learning space, and faculty collaboration/office space.

Classroom space is being projected in accord with School Scheduling Associates development of a new master schedule for both the King Street and Minnie Howard campuses. As that schedule is still being developed, we have used the more conservative projections for classroom space needs. With further development of the schedule, this projection will be refined accordingly.

General classrooms are currently projected at 850 square feet. With a section size of 24, this size will provide flexibility and facilitate multiple modes of learning–lecture, small group discussion, project-based collaborative work, etc.–to easily take place. This allocation of space will also allow for differentiated groups working in the classroom within a co-teaching model.

These general classrooms will be complemented by Resource Classrooms sized for approximately 16 students and a smaller conference/small group room sized for approximately 6 people. These spaces can serve for faculty collaboration, pull-out work with students, testing, student group work, as well as providing space for classes with smaller section sizes. Each Interdisciplinary Communities will have two Resource Classrooms and two Conference/Small Group Rooms. Five larger classrooms are also currently projected for use by larger classes, such as Driver's Education.

Three Teacher Collaboration Suites will be located within each Interdisciplinary Community. Two will be located within the classroom neighborhoods comprising each Interdisciplinary Community, and the third (STEAM) will be located adjacent to the Science, Arts, and CTE labs distributed to each Interdisciplinary Community. Each of these offices is planned to house up to eight faculty.

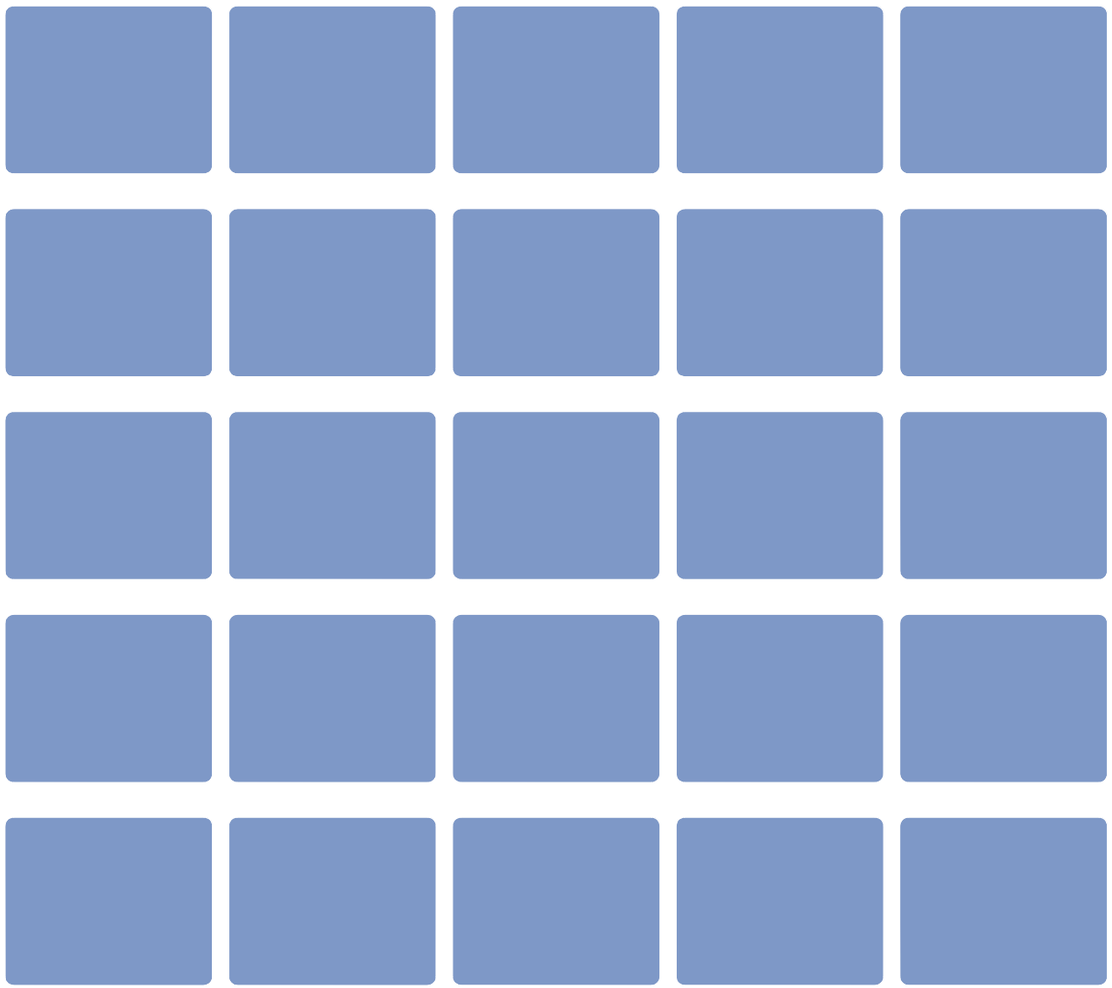
Teacher Collaboration Suites are co-located with either extended learning space or the "Creative Commons." This will allow for passive supervision of students using the extended learning spaces and enable teachers to use the extended learning spaces for tutoring and other student-teacher or teacher-teacher interaction.

KEY ASSUMPTIONS:

- Enrollment at Minnie Howard is projected to be 1,600 students;
- School Scheduling Associates most conservative space projection is currently being used for general and large classrooms. The number of classrooms required may be reduced as further analysis occurs;
- There will be four Interdisciplinary Communities serving 400 students each;
- Each Interdisciplinary Community will be further subdivided into "classroom neighborhoods" serving 200 students each;
- Small Classes <16 student, General +/- 24 student, and large <40 student classrooms are planned. Most are "general" classrooms;
- Classrooms are planned to be flexible and available for use by any discipline.

ADDITIONAL QUESTIONS:

- Can a faculty projection for Minnie Howard be provided to ensure that we have sufficient workstations for each teacher?
- Will teachers "own" their workstation or will the workstations be shared by teachers ("hoteling") if provided with their own storage?
- Are faculty offices interdisciplinary or departmental?

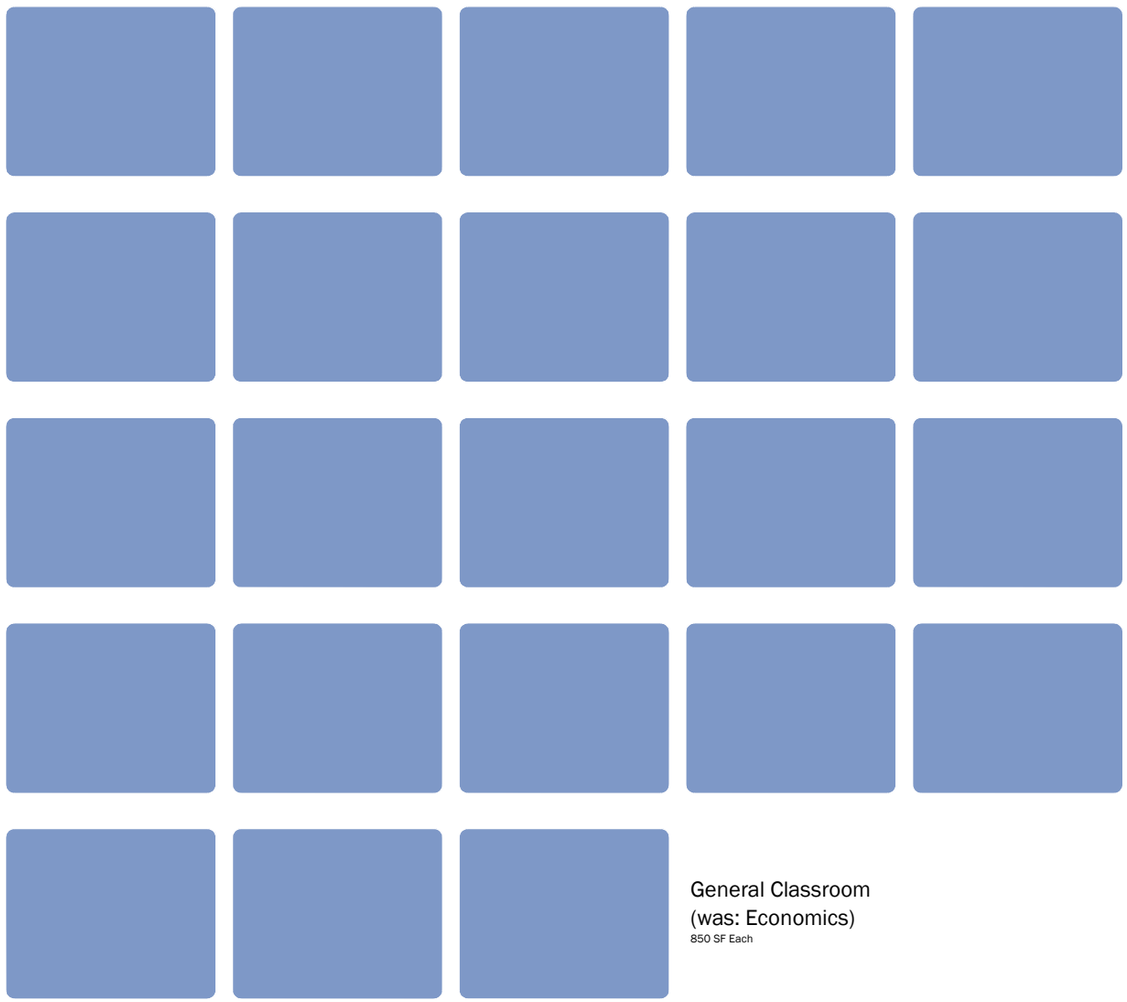


General Classroom
(was: Economics)
850 SF Each

CORE ACADEMICS_01

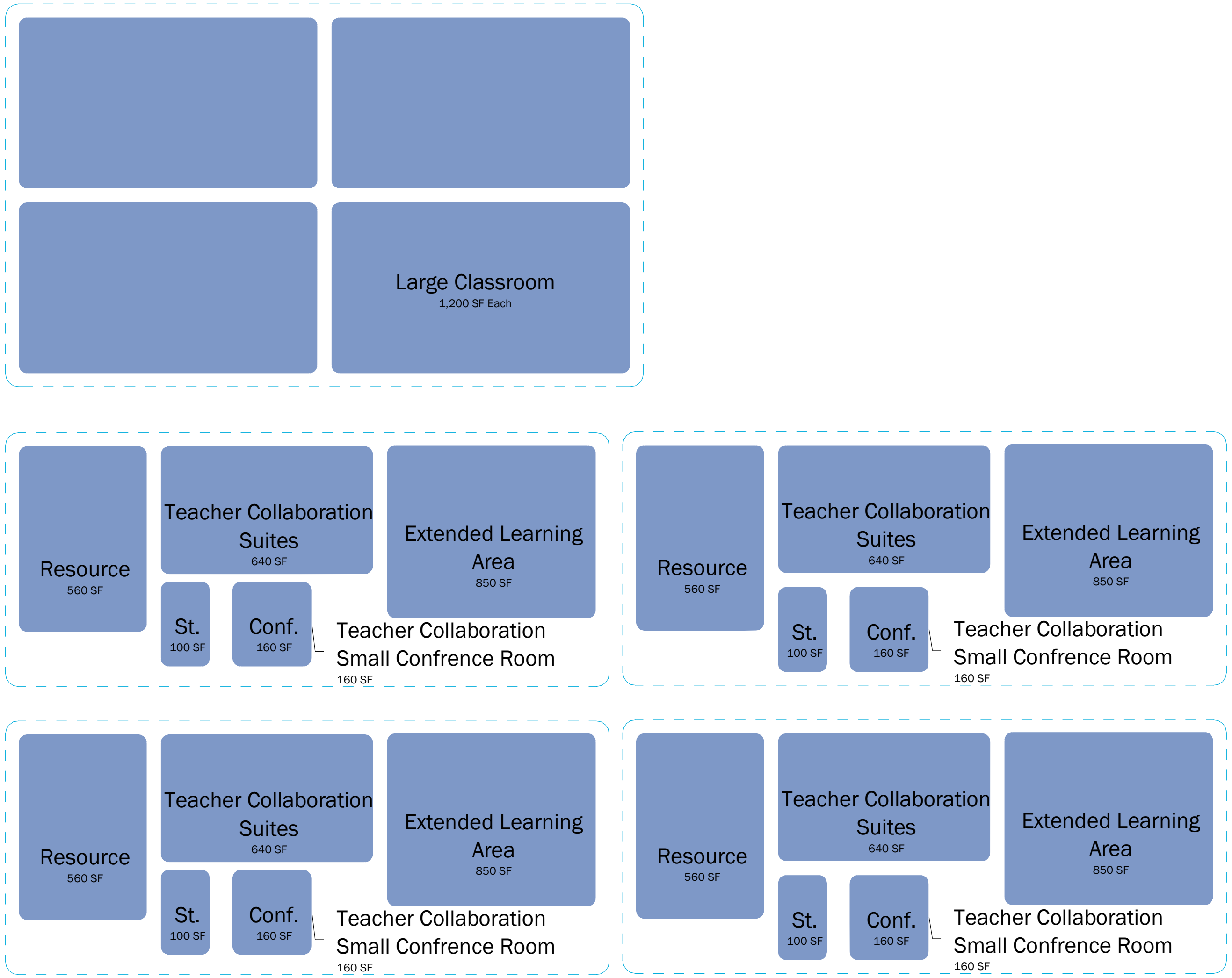
SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Classrooms						
1. General Classroom (was: Economics)	0	48	0	0	850 SF	40,800 SF
				0		40,800 SF
				0		40,800 SF
DIVISION TOTAL: 48				0		40,800 SF

5.3 CORE ACADEMICS



General Classroom
(was: Economics)
850 SF Each

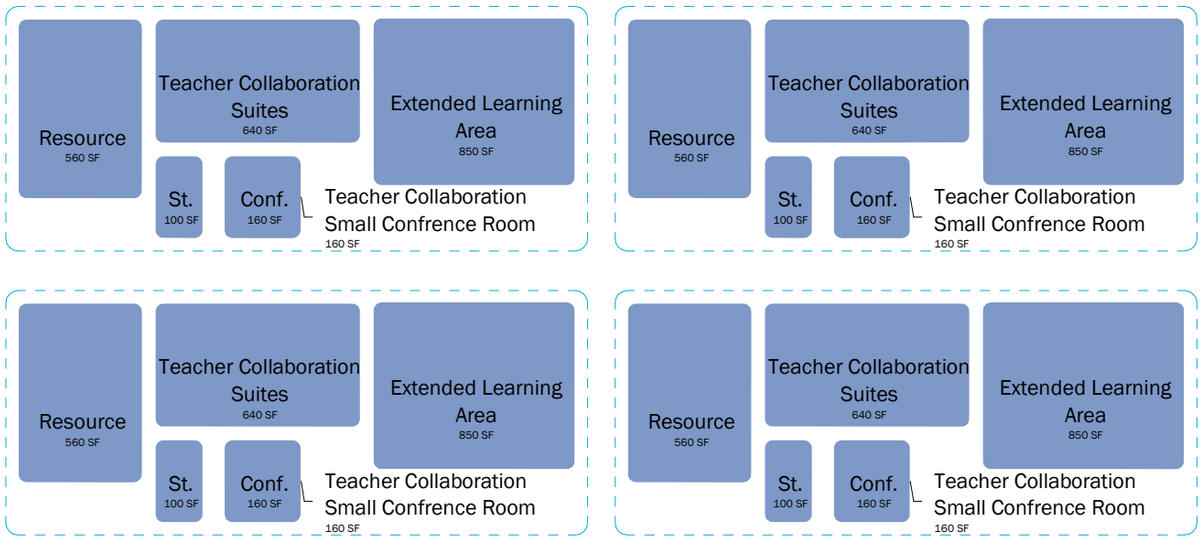
CORE ACADEMICS_02						
	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
SPACE DESCRIPTION	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Classrooms						
1. General Classroom (was: Economics)	0	48	0	0	850 SF	40,800 SF
				0		40,800 SF
				0		40,800 SF
DIVISION TOTAL: 48				0		40,800 SF



CORE ACADEMICS_03

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Classrooms						
5. Large Classroom	0	4	0	0	1,200 SF	4,800 SF
				0		4,800 SF
Shared Spaces						
2. Resource	0	8	0	0	560 SF	4,480 SF
3. Teacher Collaboration Suites	0	8	0	0	640 SF	5,120 SF
4. Teacher Collaboration Small Confrence Room	0	8	0	0	160 SF	1,280 SF
5. SLC Storage	0	8	0	0	100 SF	800 SF
6. Extended Learning Area	0	8	0	0	850 SF	6,800 SF
7. Teacher Collaboration Suites (STEAM)	0	4	0	0	640 SF	2,560 SF
				0		21,040 SF
				0		25,840 SF
DIVISION TOTAL: 48				0		25,840 SF

5.3 CORE ACADEMICS



CORE ACADEMICS_04						
	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
SPACE DESCRIPTION	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Shared Spaces						
2. Resource	0	8	0	0	560 SF	4,480 SF
3. Teacher Collaboration Suites	0	8	0	0	640 SF	5,120 SF
4. Teacher Collaboration Small Confrence Room	0	8	0	0	160 SF	1,280 SF
5. SLC Storage	0	8	0	0	100 SF	800 SF
6. Extended Learning Area	0	8	0	0	850 SF	6,800 SF
7. Teacher Collaboration Suites (STEAM)	0	4	0	0	640 SF	2,560 SF
				0		21,040 SF
				0		21,040 SF
DIVISION TOTAL: 44				0		21,040 SF

Ron Brown High School
Washington, DC

5.4 SPECIAL EDUCATION

Special Education services for students will be provided at Minnie Howard in a variety of settings, including co-teaching within general classrooms, English and Math classes of approximately 15 students in Resource Classrooms, some pull-out activities–including Occupational, Physical, Speech and Lanaguage Therapies occurring in small group rooms and resource classrooms in academic neighborhoods–and dedicated classrooms for children with specific conditions involving Intellectual (ID), Emotional (ED), or Autism (ASD) diagnoses.

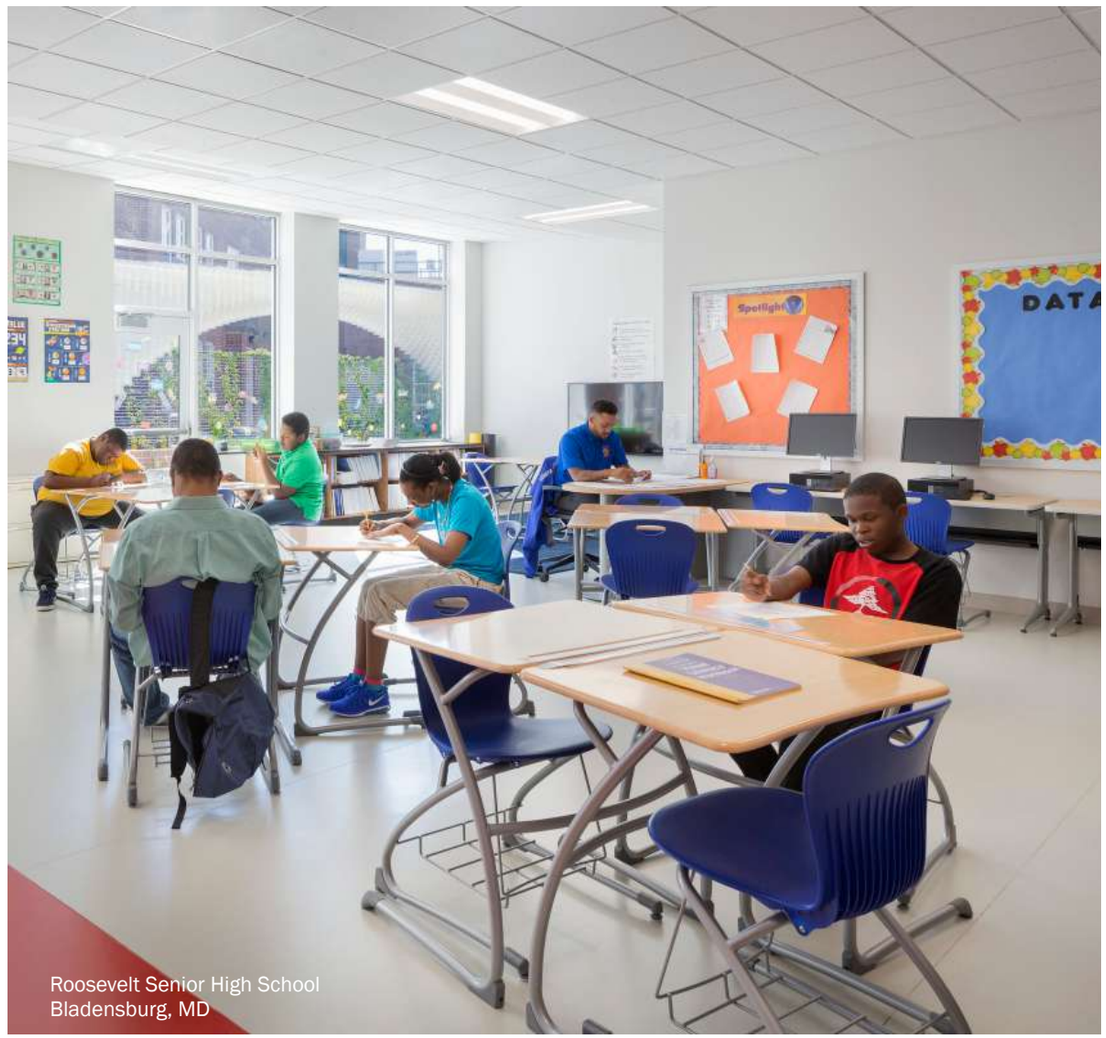
Children with Multiple Disabilities (MD) will attend the King Street campus to ensure that resources are convenient and available for their needs, including rooms with life skills equipment.

The co-teaching, English and Math classes, and pull-out activities will occur in the classroom inventory discussed in previous pages. Two dedicated classrooms are projected for children with ID/ASD and two dedicated classrooms are projected for children with ED. These classrooms will accommodate four to five students in ED and 5 to 6 in ID/ASD. Each classroom will be staffed by a teacher and a paraprofessional.

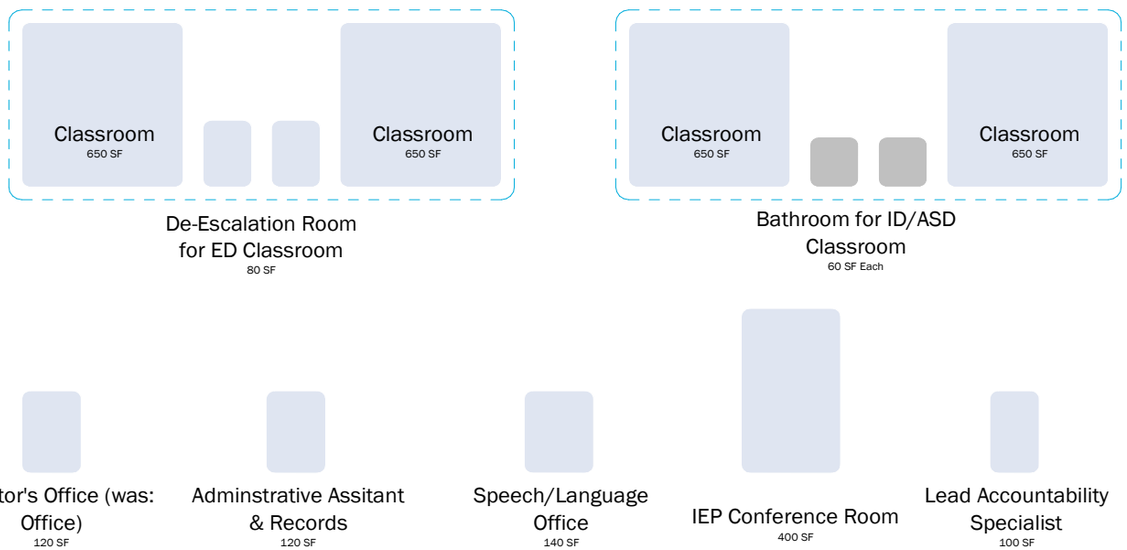
Speech and Language services will be provided in an office large enough for small groups to meet. IEP meetings will be held in a large conference room.

KEY ASSUMPTIONS:

- Students with Intellectual and Emotional Disabilities and Autism Spectrum Disorder will attend both Minnie Howard and King Street;
- Students with Multiple Disabilities (MD) will only attend King Street.



Roosevelt Senior High School
Bladensburg, MD



SPECIAL EDUCATION_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
General						
1. Classroom	0	4	0	0	650 SF	2,600 SF
2. Director's Office (was: Office)	0	1	0	0	120 SF	120 SF
3. Adminstrative Assitant & Records	0	1	0	0	120 SF	120 SF
4. De-Escalation Room for ED Classroom	0	2	0	0	80 SF	160 SF
5. Bathroom for ID/ASD Classroom	0	2	0	0	60 SF	120 SF
6. Speech/Language Office	0	1	0	0	140 SF	140 SF
7. IEP Conference Room	0	1	0	0	400 SF	400 SF
8. Lead Accountability Specialist	0	1	0	0	100 SF	100 SF
9. OT/PT	0	1	0	0	140 SF	140 SF
				0		3,900 SF
				0		3,900 SF
DIVISION TOTAL: 14				0		3,900 SF

5.5 SCIENCES

Like the classroom inventory being projected on the previous pages, the sciences are also being coordinated with School Scheduling Associates master class schedule for the King Street and Minnie Howard campuses. This projection assumes that the sciences will reside on both campuses, helping to ensure that the entire high school program can move toward a project-based, STEAM approach.

As discussed in the Design Patterns, two types of labs are projected: Low Intensity and High Intensity. Both labs are being sized for 24 students and to provide sufficient space for lab and class discussion activities. While further conversation will elaborate on the fit-out of the two types of labs, we currently understand that the Low Intensity Labs will provide access to water, power, and data for student use, and that the High Intensity Labs will also provide access to gas and potentially a fume hood. Each pair of labs will share a prep room. In support of the STEAM focus of the campus and the school, these labs will be distributed across the four Interdisciplinary Communities.

Science faculty are currently projected to have an office in the STEAM Teacher Collaboration Suite discussed in the prior pages.

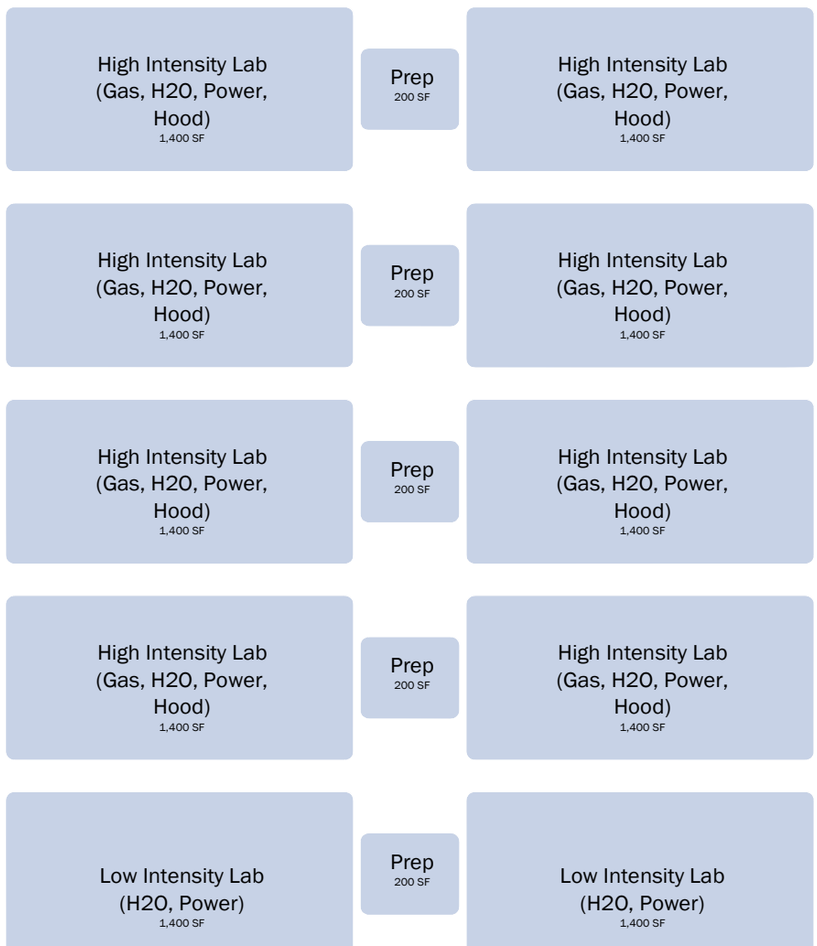
KEY ASSUMPTIONS:

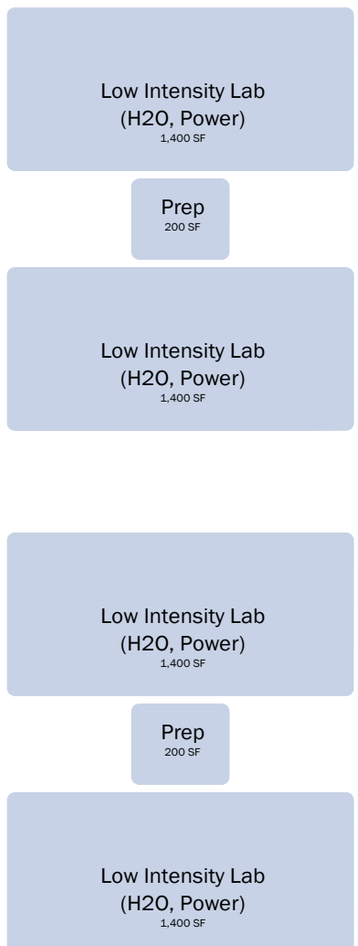
- Low Intensity Labs provide movable furniture, water, power, and data in the room's perimeter or ceiling;
- High Intensity Labs also provide gas and a fume hood, in addition to the resources of the Low Intensity Labs;
- There are no additional technicians and, accordingly, no additional space needs other than those required for the labs, prep room, and faculty collaborative space.

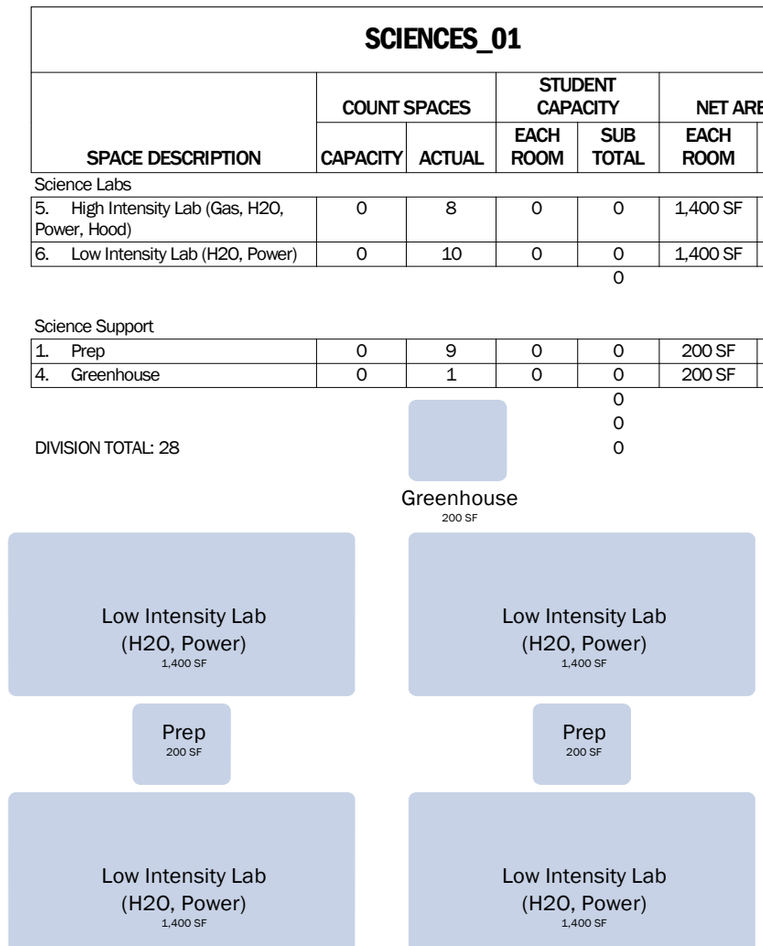
ADDITIONAL QUESTIONS:

- Is a small greenhouse required?

BASIS Independent McLean
McLean, VA







SCIENCES_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m^2) EACH ROOM	NET AREA (m^2) SUB TOTAL
Science Labs						
5. High Intensity Lab (Gas, H20, Power, Hood)	0	8	0	0	1,400 SF	11,200 SF
6. Low Intensity Lab (H20, Power)	0	10	0	0	1,400 SF	14,000 SF
				0		25,200 SF
Science Support						
1. Prep	0	9	0	0	200 SF	1,800 SF
4. Greenhouse	0	1	0	0	200 SF	200 SF
				0		2,000 SF
				0		27,200 SF
DIVISION TOTAL: 28				0		27,200 SF

5.6 FINE ARTS & ASSEMBLY

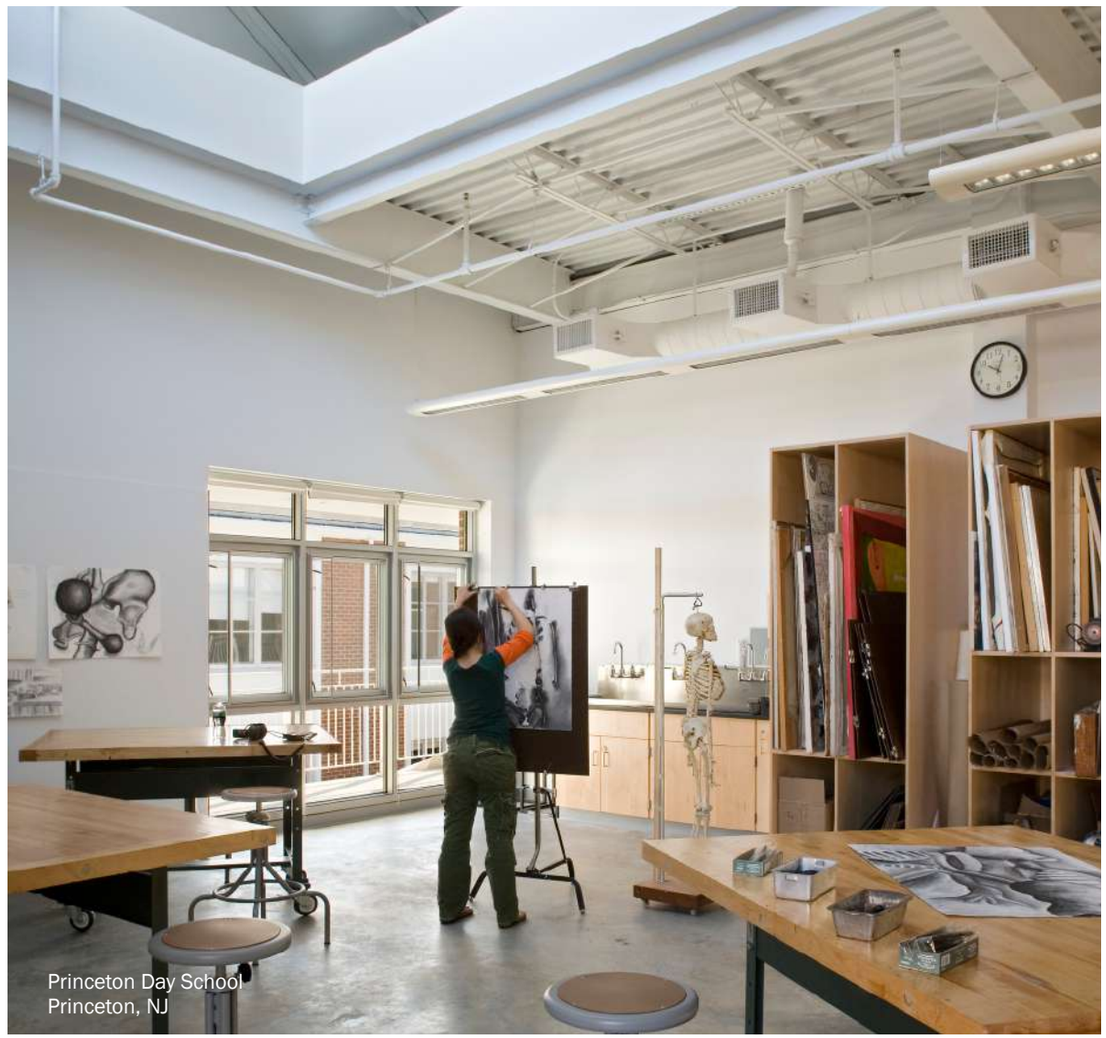
Like the sciences, the space projection assumes that the Fine Arts will also be present on both the King Street and Minnie Howard campuses. Building upon the existing fine arts studios at King Street, School Scheduling Associates is currently projecting a need for three more 2D Art Studios at Minnie Howard, plus a graphics/media lab that can be used to offer additional photography courses.

The projection currently included space for a kiln to supplement one or more of the studios, should ACPS want to offer 3D art at Minnie Howard in addition to classes offered at King Street.

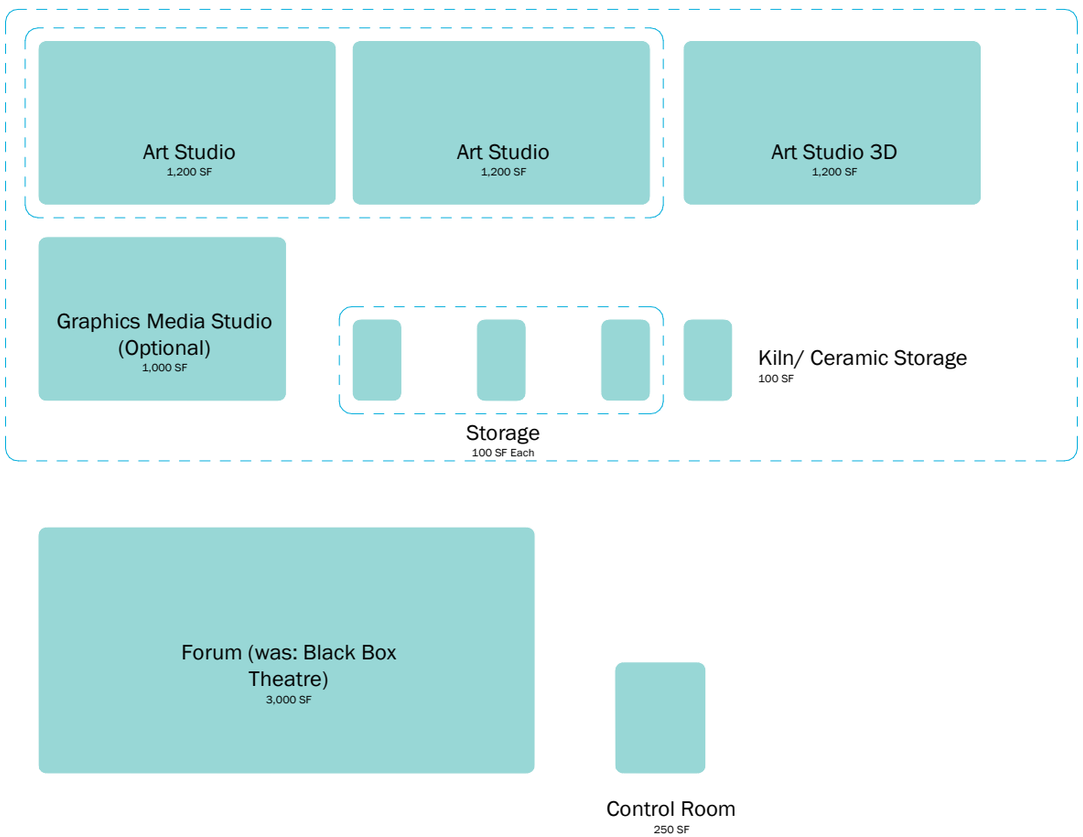
The Performing Arts are understood to be housed at King Street for the entire school and, accordingly, Minnie Howard is not projected to include an auditorium, black box, or other dedicated performance space. However, the projection includes a “Forum” intended to provide space for varied activities, ranging from meetings of teams of 100 to 200 students, faculty meetings, professional development, community meetings, testing, and other larger gatherings. This flat floor space is modeled after the use of the Rotunda Room at King Street, but is currently planned to be larger to offer a variety of size settings across the two campuses.

KEY ASSUMPTIONS:

- Performing Arts (Drama and Music) will be housed only at King Street;
- The King Street auditorium and black box will be used by both campuses;
- A large flat-floor “Forum” will provide large gathering space at Minnie Howard similar to the Rotunda Room at King Street.



Princeton Day School
Princeton, NJ



FINE ARTS_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Visual Arts						
1. Art Studio	0	2	0	0	1,200 SF	2,400 SF
2. Art Studio 3D	0	1	0	0	1,200 SF	1,200 SF
3. Graphics Media Studio (Optional)	0	1	0	0	1,000 SF	1,000 SF
4. Storage	0	3	0	0	100 SF	300 SF
5. Kiln/ Ceramic Storage	0	1	0	0	100 SF	100 SF
				0		5,000 SF
Assembly (was: Drama)						
2. Forum (was: Black Box Theatre)	0	1	0	0	3,000 SF	3,000 SF
3. Control Room	0	1	0	0	250 SF	250 SF
				0		3,250 SF
				0		8,250 SF
DIVISION TOTAL: 10				0		8,250 SF

5.7 PHYSICAL EDUCATION

Like several other programs, Physical Education will be offered at both the King Street and Minnie Howard campuses. The major spaces associated with this program are a Main Gym and an Auxiliary Gym. The Main Gym is sized to accommodate two full, side-by-side basketball courts for use by PE classes, Athletic practice, and after hour use by the community. The Main Gym is also sized to offer a competition basketball court centered in the space for use during events when the bleachers are open.

Bleachers will be further discussed in focus groups, but conversation to date has suggested that 200-seats would be appropriate for Athletic events. Other conversations about having a place to hold an all-school assembly at Minnie Howard might expand bleacher capacity, and possibly supplemental seating on the gym floor to be able to accommodate up to 1,600 students. The design team is working with bleacher manufacturers to explore the spatial implications of this scenario.

The auxiliary gym is sized similarly to the existing auxiliary gym at the King Street campus. It is assumed that this gym will serve PE/Athletics programming, as well as provide an additional large space for testing as needed.

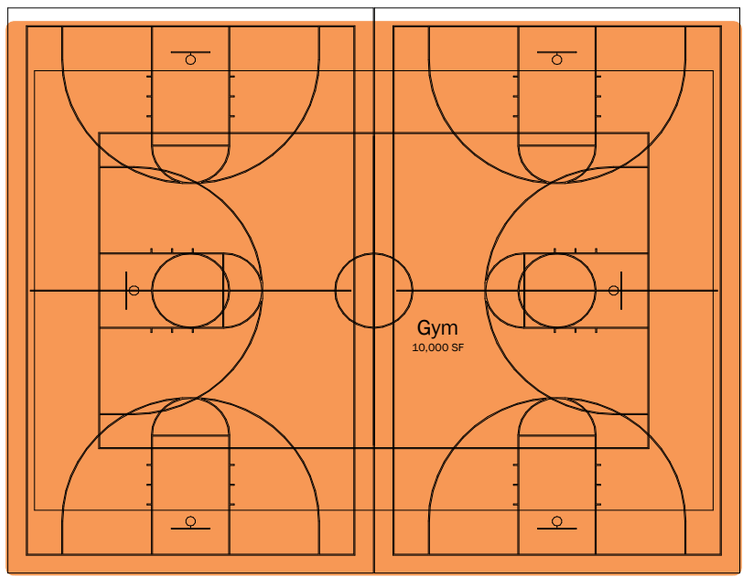
A wrestling room is projected for the Minnie Howard campus to replace the existing room at the King Street campus. This will provide space for the expansion of the existing fitness/weight room at King Street. While School Scheduling Associates' analysis only calls for three additional teaching stations at Minnie Howard that can be satisfied in the gyms, the campus may also offer a fitness/weight room sized comparably to the existing room at King Street.

KEY ASSUMPTIONS:

- The Main Gym may be used for PE, JV Sports, and by the Community;
- Bleachers will accommodate 200 for basketball games;
- Assemblies of 1,600 students will be housed in the Main Gym, using bleachers and loose seating as necessary;
- Wrestling will relocate from King Street to Minnie Howard to allow for expansion of the fitness room at King Street.

ADDITIONAL QUESTIONS:

- Should gender neutral lockers be considered?



Wrestling (Optional)
2,200 SF

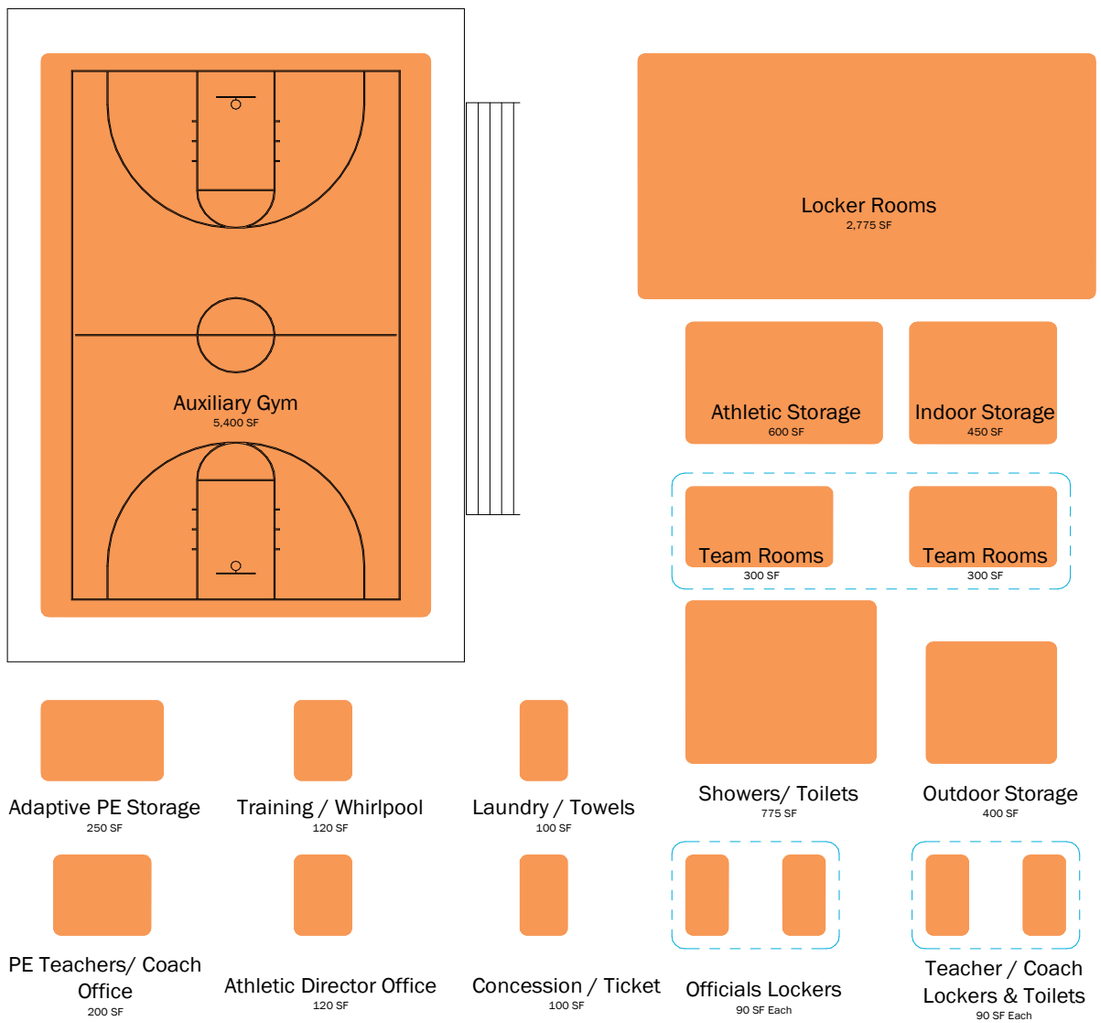
Fitness/ Weight Room
1,500 SF

Chair Storage
450 SF

PHYSICAL EDUCATION_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Physical Education						
1. Gym	0	1	0	0	10,000 SF	10,000 SF
3. Wrestling (Optional)	0	1	0	0	2,200 SF	2,200 SF
4. Fitness/ Weight Room	0	1	0	0	1,500 SF	1,500 SF
7. Chair Storage	0	1	0	0	450 SF	450 SF
				0		14,150 SF
				0		14,150 SF
DIVISION TOTAL: 4				0		14,150 SF

5.7 PHYSICAL EDUCATION



PHYSICAL EDUCATION_02						
	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
SPACE DESCRIPTION	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Physical Education						
2. Auxiliary Gym	0	1	0	0	5,400 SF	5,400 SF
				0		5,400 SF
Physical Education Support						
1. Locker Rooms	0	1	0	0	2,775 SF	2,775 SF
2. Showers/ Toilets	0	1	0	0	775 SF	775 SF
3. Team Rooms	0	2	0	0	300 SF	600 SF
4. PE Teachers/ Coach Office	0	1	0	0	200 SF	200 SF
5. Teacher / Coach Lockers & Toilets	0	2	0	0	90 SF	180 SF
6. Athletic Director Office	0	1	0	0	120 SF	120 SF
7. Training / Whirlpool	0	1	0	0	120 SF	120 SF
8. Laundry / Towels	0	1	0	0	100 SF	100 SF
9. Concession / Ticket	0	1	0	0	100 SF	100 SF
10. Outdoor Storage	0	1	0	0	400 SF	400 SF
11. Indoor Storage	0	1	0	0	450 SF	450 SF
12. Athletic Storage	0	1	0	0	600 SF	600 SF
13. Adaptive PE Storage	0	1	0	0	250 SF	250 SF
14. Officials Lockers	0	2	0	0	90 SF	180 SF
				0		6,850 SF
				0		12,250 SF
DIVISION TOTAL: 18				0		12,250 SF

Dunbar Senior High School
Washington, DC

5.8 CAREER & TECHNICAL EDUCATION (CTE)

CTE offerings will also be expanded at the Minnie Howard campus. An Industry Advisory Board has been developed to work with the EDT. As this work continues, the conversations around space have indicated a desire for flexibility through the creation of the following flexible CTE spaces:

- Four “Prototyping” Labs that can be used within the STEAM curriculum for robotics, 3D printing, and other similar pre-engineering activities;
- Six classrooms, three with computer lab specifications.

Areas projected for these labs are based on precedents for similar spaces. They may in fact be oversized, but will need to be refined through further focus groups. Likewise, School Scheduling Associates is currently projecting a need for three CTE spaces, therefore, use and utilization should be further reviewed.

Space is also projected for a Governor’s School/Health Sciences lab and a smaller classroom/lab. These projections are placeholders to allow this program to be relocated from King Street to Minnie Howard. This move could open Rooms B131, B132, and B134 at King Street for the expansion of the culinary arts and JROTC programs. This allocation also requires additional clarification.

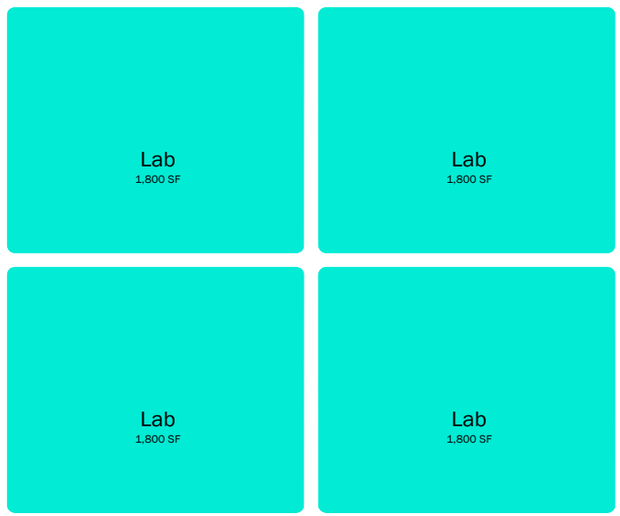
CTE programs like Automotive Technology and the Culinary Arts will remain and only be offered at King Street.

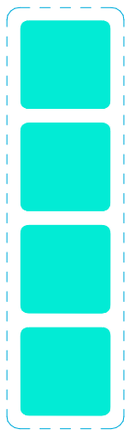
KEY ASSUMPTIONS:

- Four flexible Prototyping Labs are planned. One will be distributed to each Interdisciplinary Community;
- Six classrooms, three with computer lab specifications;
- A Health Science Pathway may move to Minnie Howard to enable JROTC and Culinary Arts to expand at King Street.

ADDITIONAL QUESTIONS:

- Further development of the requirements for these labs?
- What are the requirements of Health Sciences for space?

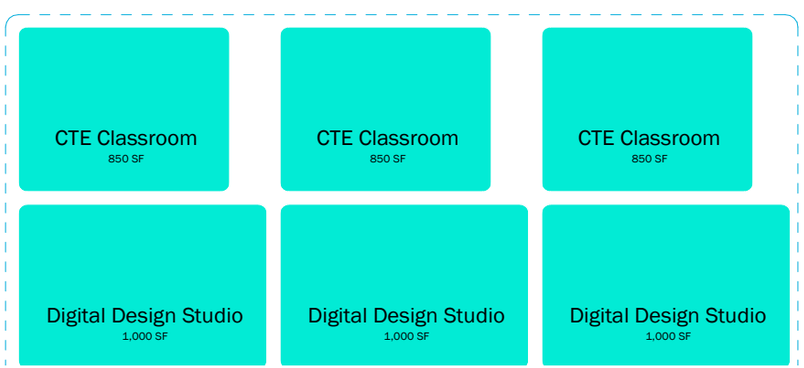


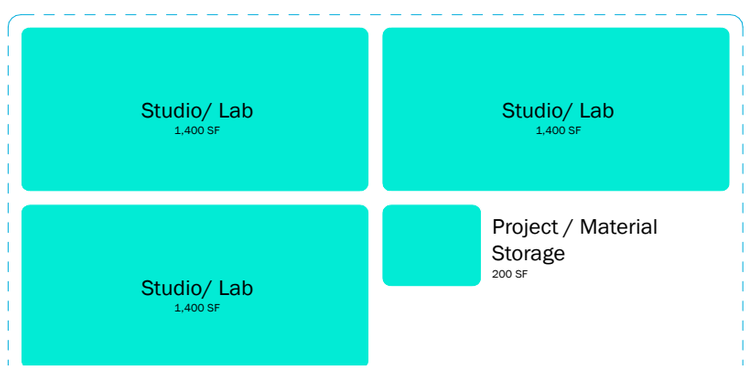


Project / Material Storage
200 SF Each

CTE_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m^2) EACH ROOM	NET AREA (m^2) SUB TOTAL
CTE 1: Fabrication/Construction Management Lab						
1. Lab	0	4	0	0	1,800 SF	7,200 SF
2. Project / Material Storage	0	4	0	0	200 SF	800 SF
				0		8,000 SF
CTE 2: Fabrication Lab						
3. Digital Design Studio	0	3	0	0	1,000 SF	3,000 SF
5. CTE Classroom	0	3	0	0	850 SF	2,550 SF
				0		5,550 SF
CTE 4: Governors School - Health & Medical Sciences						
2. Studio/ Lab	0	3	0	0	1,400 SF	4,200 SF
3. Project / Material Storage	0	1	0	0	200 SF	200 SF
				0		4,400 SF
				0		17,950 SF
DIVISION TOTAL: 18				0		17,950 SF





5.9 LIBRARY / LEARNING COMMONS

The Library / Learning Commons at Minnie Howard, like the library at King Street, will offer students a variety of places to study, collaborate, work on projects, research and socialize. While students have reportedly already been eating lunch in the King Street Library, with the proposed Community Lunch and Learn block within the schedule, increased use of the library during this block seems likely.

This variety of spaces includes a large reading room that can accommodate 40 to 50 students and also house the collection (number of volumes to be defined by ACPS), several spaces where classes can meet, and several smaller project rooms where small groups of students can collaborate without disrupting other activity in the library.

The collections to be housed in the reading room should be housed on moveable shelving on casters so the furniture and shelving can be quickly configured from small group settings to readily accommodate large presentations, readings, and events.

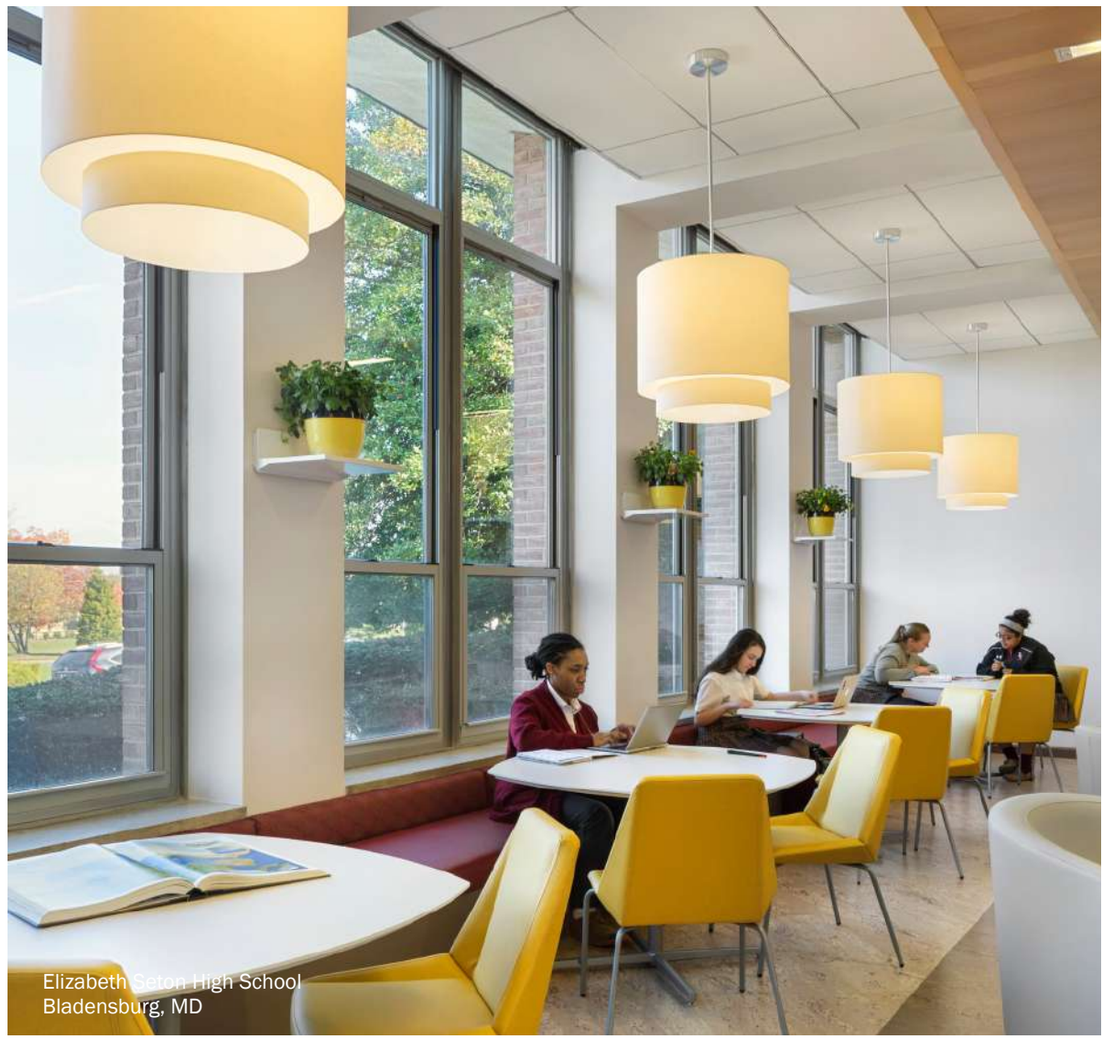
A Media Lab is projected that could accommodate computer courses and individual students' project work using a portable green screen, recording, and computer graphics stations.

KEY ASSUMPTIONS:

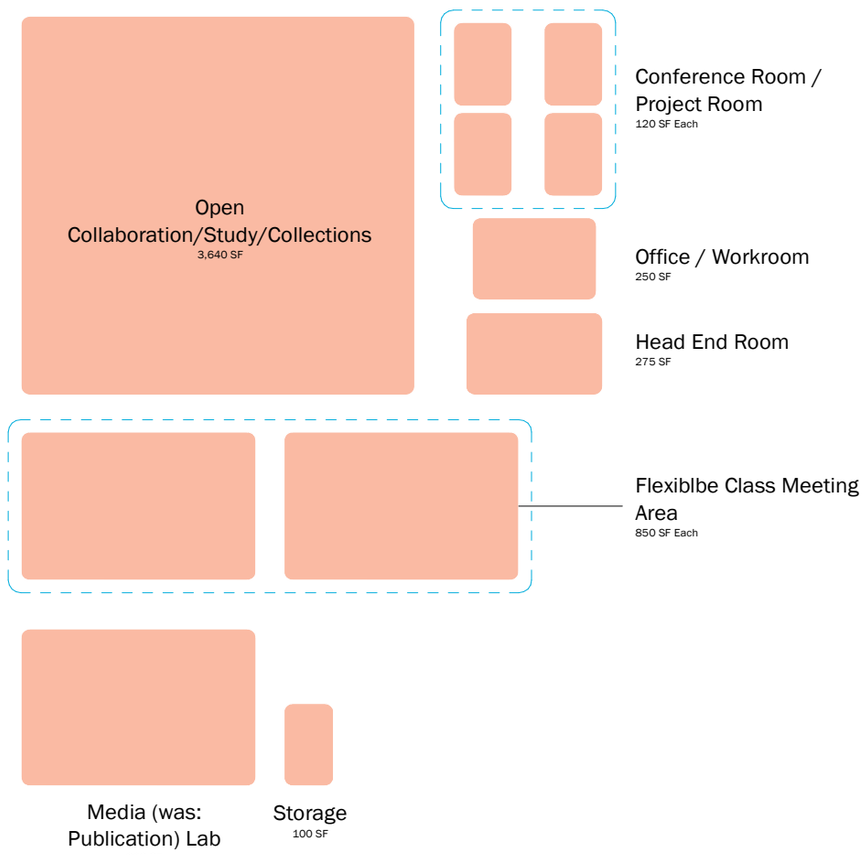
- The library will be similar to the King Street library in program/activity.

ADDITIONAL QUESTIONS:

- How large is the collection to be housed at Minnie Howard?



Elizabeth Seton High School
Bladensburg, MD



LIBRARY_01						
	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
SPACE DESCRIPTION	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Library / Learning Commons						
1. Open Collaboration/Study/Collections	0	1	0	0	3,640 SF	3,640 SF
2. Office / Workroom	0	1	0	0	250 SF	250 SF
4. Head End Room	0	1	0	0	275 SF	275 SF
8. Conference Room / Project Room	0	4	0	0	120 SF	480 SF
11. Flexiblbe Class Meeting Area	0	2	0	0	850 SF	1,700 SF
				0		6,345 SF
Communications						
3. Media (was: Publication) Lab	0	1	0	0	900 SF	900 SF
4. Storage	0	1	0	0	100 SF	100 SF
				0		1,000 SF
				0		7,345 SF
DIVISION TOTAL: 11				0		7,345 SF

5.10 FOOD SERVICES

In contrast to conventional large and institutional high school cafeterias, dining at Minnie Howard will be distributed to each of the Interdisciplinary Communities. Distributed serveries will be provisioned by a central kitchen. The dining is sized to accommodate one-third of the 1,600 students projected for the Minnie Howard campus. Since all students will be eating lunch at once during the proposed Community Lunch and Learn block, students are also assumed to be eating in the Library/Learning Commons, in extended learning spaces, classrooms and, weather permitting, outdoors.

In addition to providing space for students to eat during the Community Lunch and Learn block, the distribution of these spaces will allow these large spaces to be used as “Creative Commons” or extended learning spaces for the CTE, Sciences, and the Arts that will also be distributed to each Interdisciplinary Community. These spaces could become the “heart” of the Interdisciplinary Communities.

KEY ASSUMPTIONS:

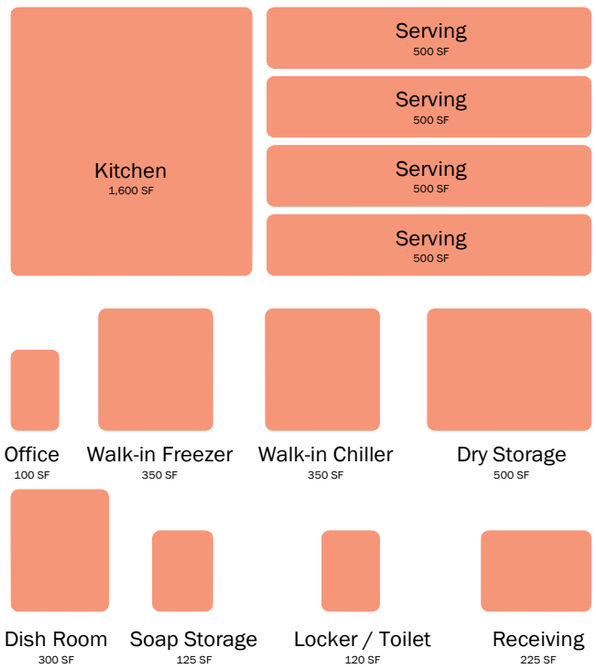
- Dining space will be distributed to the four Interdisciplinary Communities;
- Dining spaces in the Interdisciplinary Communities will be used as “creative commons” – extended learning spaces for the sciences, CTE, and Fine Arts also distributed to the Interdisciplinary Communities;
- In a Community Lunch and Learn model, students will be allowed to eat throughout the building .

St. John’s College High School
Washington, DC

FOOD SERVICES_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Dining						
1. Cafeteria	0	4	0	0	2,000 SF	8,000 SF
2. Furniture Storage	0	1	0	0	400 SF	400 SF
				0		8,400 SF
				0		8,400 SF
DIVISION TOTAL: 5				0		8,400 SF

5.10 FOOD SERVICES



FOOD SERVICES_02

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Food Services						
1. Kitchen	0	1	0	0	1,600 SF	1,600 SF
2. Serving	0	4	0	0	500 SF	2,000 SF
3. Office	0	1	0	0	100 SF	100 SF
4. Walk-in Freezer	0	1	0	0	350 SF	350 SF
5. Walk-in Chiller	0	1	0	0	350 SF	350 SF
6. Dry Storage	0	1	0	0	500 SF	500 SF
7. Dish Room	0	1	0	0	300 SF	300 SF
8. Soap Storage	0	1	0	0	125 SF	125 SF
10. Locker / Toilet	0	1	0	0	120 SF	120 SF
11. Receiving	0	1	0	0	225 SF	225 SF
				0		5,670 SF
				0		5,670 SF
DIVISION TOTAL: 13				0		5,670 SF

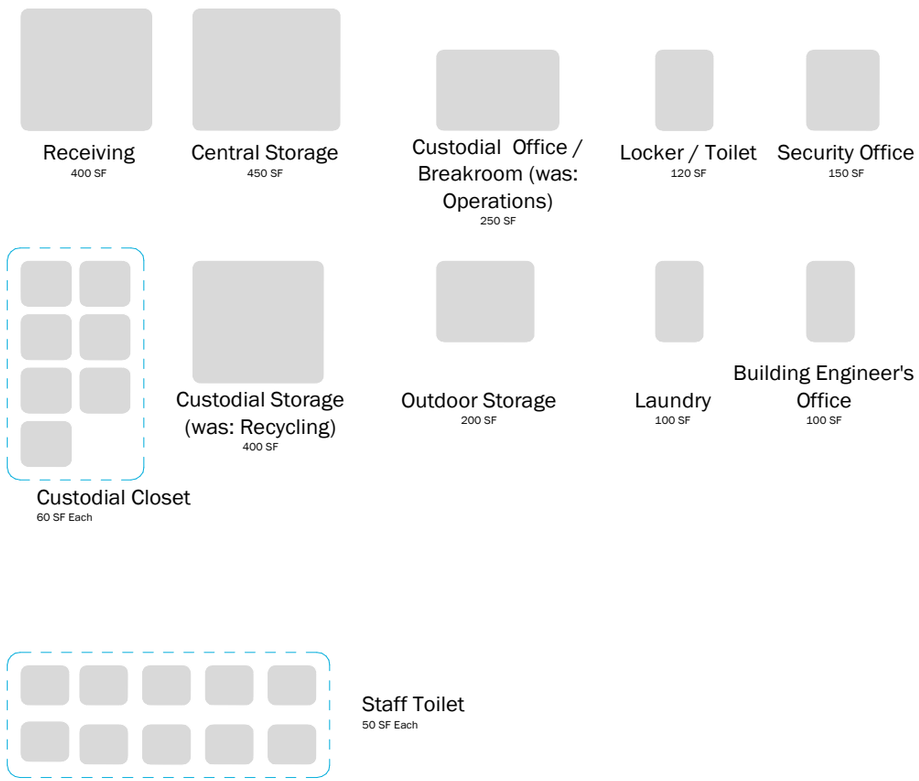
Chengdu International School
Chengdu Sichuan, China

5.11 BUILDING SERVICES

These spaces have been reviewed with Buildings and Grounds staff in a focus group and will be further developed with them in concept design.

Staff toilet and janitor closet counts will be coordinated with the building layout in Concept Design to facilitate maintenance.

Roosevelt Senior High School
Washington, DC



BUILDING SERVICES_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Maintenance/ Operations						
1. Receiving	0	1	0	0	400 SF	400 SF
2. Central Storage	0	1	0	0	450 SF	450 SF
3. Custodial Office / Breakroom (was: Operations)	0	1	0	0	250 SF	250 SF
4. Locker / Toilet	0	1	0	0	120 SF	120 SF
5. Security Office	0	1	0	0	150 SF	150 SF
6. Custodial Closet	0	7	0	0	60 SF	420 SF
7. Custodial Storage (was: Recycling)	0	1	0	0	400 SF	400 SF
8. Outdoor Storage	0	1	0	0	200 SF	200 SF
9. Laundry	0	1	0	0	100 SF	100 SF
10. Building Engineer's Office	0	1	0	0	100 SF	100 SF
				0		2,590 SF
Toilet						
1. Staff Toilet	0	10	0	0	50 SF	500 SF
				0		500 SF
				0		3,090 SF
DIVISION TOTAL: 26				0		3,090 SF

5.12 COMMUNITY SPACE

These spaces have also been carried over from the Prototypical Educational Specification. They will be confirmed and revised in subsequent focus groups as their use is clarified.

The Family Resource Room may be co-located with ACHS's Family Resource Suite to provide computer access for family members without other access. The Personal Care room may be programmed for use as a lactation room for teachers with young families.

KEY ASSUMPTIONS:

- These spaces need to be reviewed with ACPS.

Dunbar Senior High School
Washington, DC

Family Resource Room
150 SF

Personal Care /
Lactation Room
100 SF

COMMUNITY SPACE_01

SPACE DESCRIPTION	COUNT SPACES		STUDENT CAPACITY		NET AREA (m²)	
	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
Family Resource Room						
1. Family Resource Room	0	1	0	0	150 SF	150 SF
				0		150 SF
Services						
2. Personal Care / Lactation Room	0	1	0	0	100 SF	100 SF
				0		100 SF
				0		250 SF
DIVISION TOTAL: 2				0		250 SF

5.13 CO-LOCATED SPACES - OPTIONAL

As noted above, the following City run programs are projected to be co-located at Minnie Howard:

- Department of Health Services: Teen Wellness Center, also including space for:
  - DCHS's Child and Family Behavioral Health Services
- Department of Community and Human Services:
  - Early Childhood Center
  - Workforce Development
  - Family Resource Suite, housing space for:
    - Outreach for Benefit Program
    - Youth Development
    - Children and Youth Master Plan
    - Domestic Violence/Sexual Assault

The Teen Wellness Center has been developed in conversation with the Alexandria Department of Health Services, reviewed to accreditation criteria, and benchmarked against the existing facility at the King Street campus. As noted in previous pages, this facility will have its own public entrance and be located proximate to the school's health clinic to coordinate and enhance student services between the two programs.

The Workforce Development office will be located proximate to the College and Career Center to coordinate programming and use of resources.

Outreach for Benefit Program, Youth Development, Children and Youth Master Plan, and Domestic Violence/Sexual Assault office space is being projected as a suite of offices that share a reception area, a conference room, and a pantry. This will allow for flexibility in the use of the offices by the staff of these programs over time and, if located near a public access, this suite can serve families after hours without the need for access to the larger school facility.

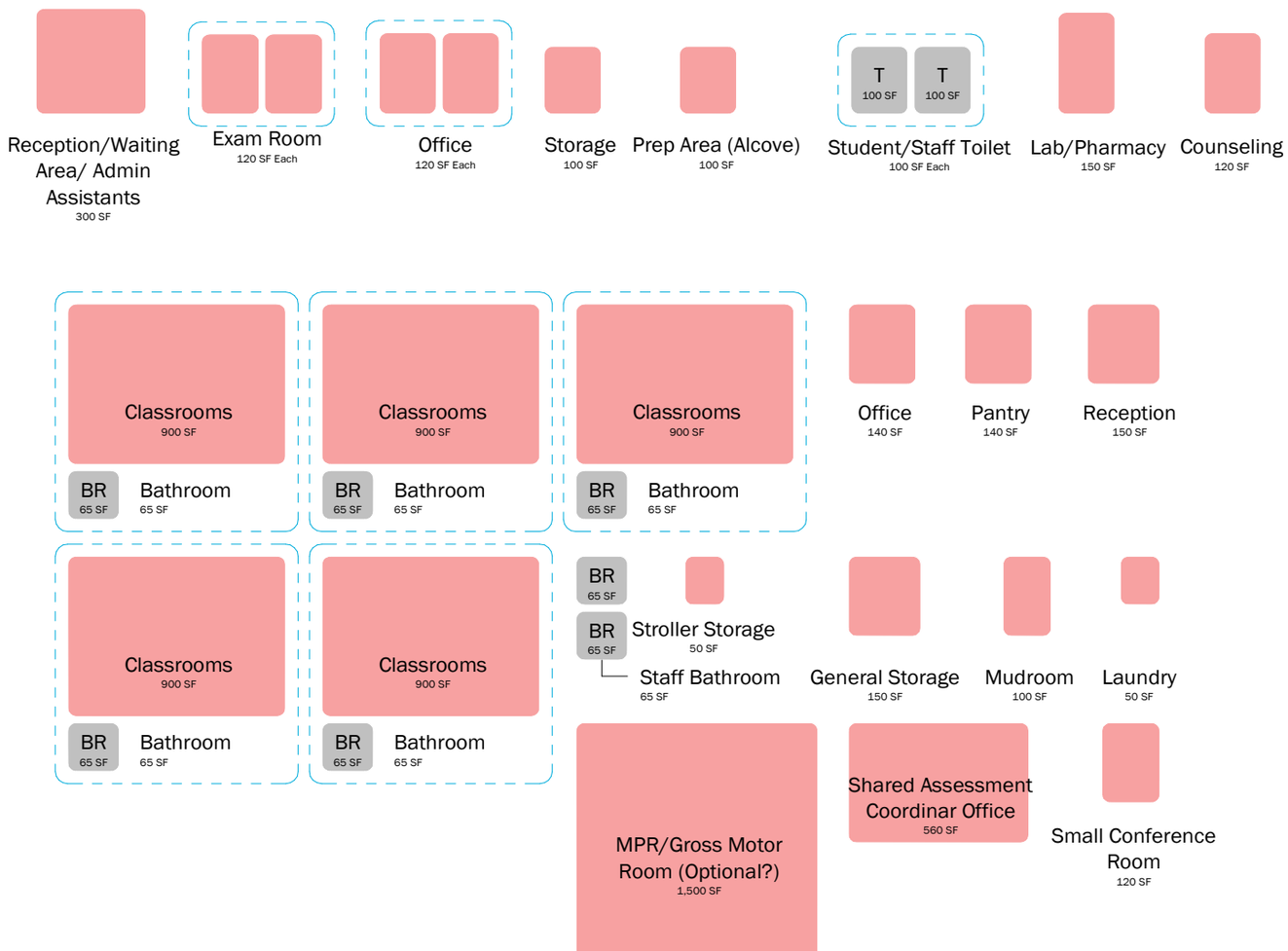
The Early Childhood Center is sized to accommodate 80 to 100 students between the years of 2½ to 5 years old. This center also needs direct access for the public and it may operate outside of school hours. A gross motor room has also been projected to allow for activity during inclement weather. Staffing includes: Director, Assistant Director, 5 Lead teachers, 5 Teacher Assistants, and 7 part-time, on-site Assessment Coordinators.

KEY ASSUMPTIONS:

- The Early Childhood program will serve between eighty to one hundred children 2½ to 5 years old;
- A Family Resource Suite will house offices for Outreach for Benefit Program, Youth Development, Children and Youth Master Plan, and Domestic Violence/Sexual Assault;
- The Teen Wellness Center needs direct public access.

ADDITIONAL QUESTIONS:

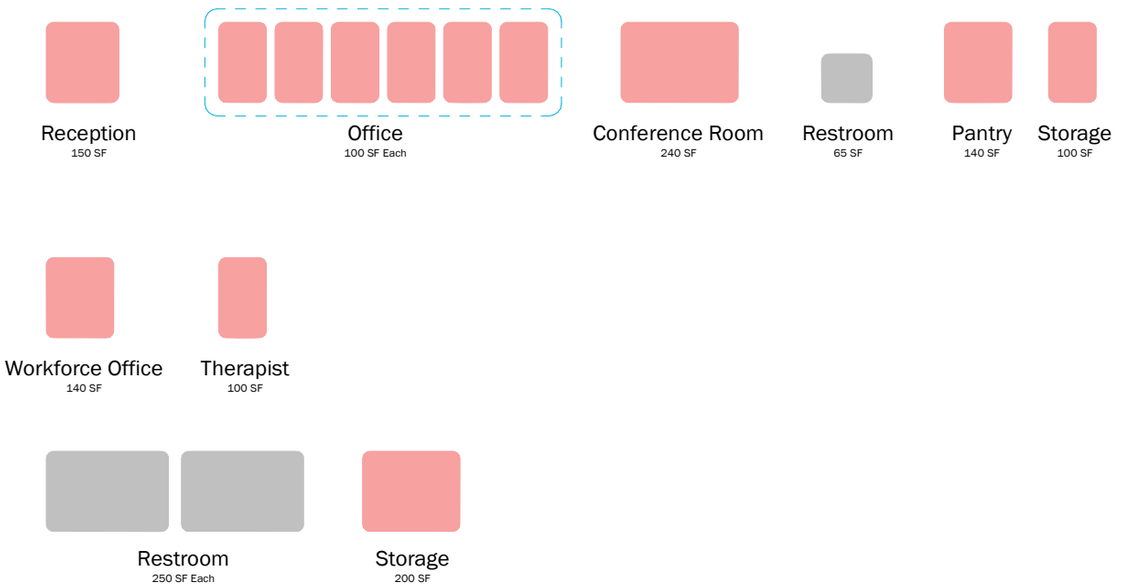
- The space allocation exceeds the projection included in the Prototypical Ed Spec. Should it be prioritized?



CO-LOCATED SPACES_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m^2) EACH ROOM	NET AREA (m^2) SUB TOTAL
Alexandria Health Department Teen Wellness Center						
1. Reception/Waiting Area/ Admin Assistants	0	1	0	0	300 SF	300 SF
2. Exam Room	0	2	0	0	120 SF	240 SF
4. Office	0	2	0	0	120 SF	240 SF
5. Storage	0	1	0	0	100 SF	100 SF
6. Prep Area (Alcove)	0	1	0	0	100 SF	100 SF
7. Student/Staff Toilet	0	2	0	0	100 SF	200 SF
8. Lab/Pharmacy	0	1	0	0	150 SF	150 SF
9. Counseling	0	1	0	0	120 SF	120 SF
				0		1,450 SF
PreSchool (40 students)						
1. Classrooms	0	5	0	0	900 SF	4,500 SF
2. Bathroom	0	5	0	0	65 SF	325 SF
3. Office	0	1	0	0	140 SF	140 SF
4. Pantry	0	1	0	0	140 SF	140 SF
5. Reception	0	1	0	0	150 SF	150 SF
6. Staff Bathroom	0	2	0	0	65 SF	130 SF
7. Stroller Storage	0	1	0	0	50 SF	50 SF
8. General Storage	0	1	0	0	150 SF	150 SF
9. Mudroom	0	1	0	0	100 SF	100 SF
10. Laundry	0	1	0	0	50 SF	50 SF
11. MPR/Gross Motor Room (Optional?)	0	1	0	0	1,500 SF	1,500 SF
12. Shared Assessment Coordinar Office	0	1	0	0	560 SF	560 SF
13. Small Conference Room	0	1	0	0	120 SF	120 SF
				0		7,915 SF
				0		9,365 SF
DIVISION TOTAL: 33				0		9,365 SF

5.13 CO-LOCATED SPACES - OPTIONAL



CO-LOCATED SPACES_02						
	COUNT SPACES		STUDENT CAPACITY		NET AREA (m^2)	
SPACE DESCRIPTION	CAPACITY	ACTUAL	EACH ROOM	SUB TOTAL	EACH ROOM	SUB TOTAL
DCHS Services						
1. Reception	0	1	0	0	150 SF	150 SF
2. Office	0	6	0	0	100 SF	600 SF
3. Conference Room	0	1	0	0	240 SF	240 SF
4. Restroom	0	1	0	0	65 SF	65 SF
5. Pantry	0	1	0	0	140 SF	140 SF
6. Storage	0	1	0	0	100 SF	100 SF
				0		1,295 SF
DCHS Services Distributed Offices						
1. Workforce Office	0	1	0	0	140 SF	140 SF
2. Therapist	0	1	0	0	100 SF	100 SF
				0		240 SF
RPCA Outdoor Support Space						
1. Restroom	0	2	0	0	250 SF	500 SF
6. Storage	0	1	0	0	200 SF	200 SF
				0		700 SF
				0		2,235 SF
DIVISION TOTAL: 16				0		2,235 SF

Yorktown High School
Arlington, VA

5.14 AQUATICS - OPTIONAL

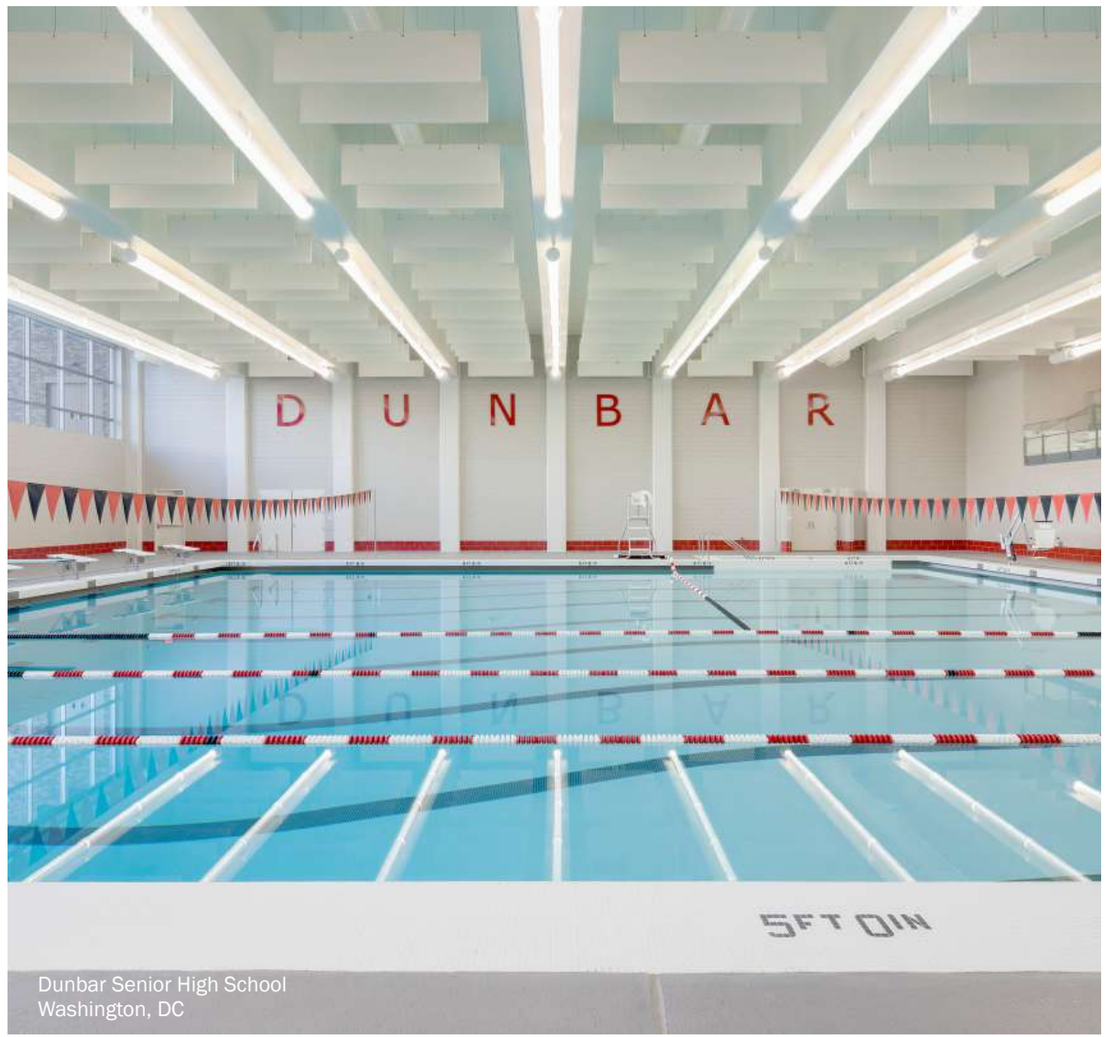
An eight lane, 25 yard competition pool is being projected for the Minnie Howard campus. This projection also includes a separate diving well, spectator seating for 300 people, pool locker/ shower room, and other ancillary support spaces. This facility will complement the pool facilities at Chinquapin Park, adjacent to the King Street campus. Like Chinquapin's pool, this facility is understood to also be used by the school and to be available for active community use. Accordingly, it will be located on campus to allow for a separate and secure public entrance.

KEY ASSUMPTIONS:

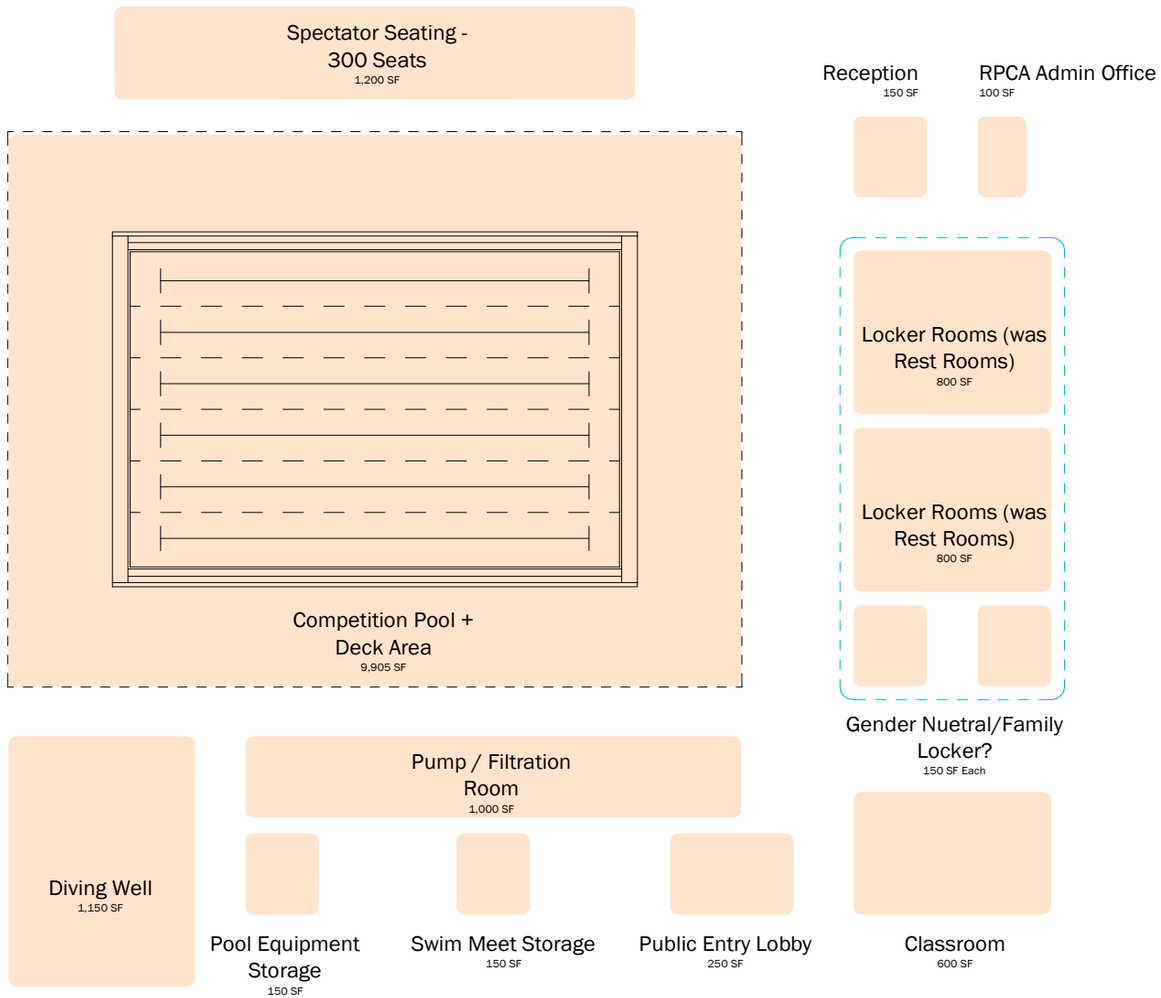
- The facility will feature an eight-lane, 25 yard competition pool;
- Pool lockers separate from the PE lockers are planned;
- 300 seats for spectators are planned.

ADDITIONAL QUESTIONS:

- Should gender neutral lockers be considered?
- Is a separate diving well needed or can it be incorporated within the pool to reduce the square footage?



Dunbar Senior High School
Washington, DC



AQUATICS_01

SPACE DESCRIPTION	COUNT SPACES CAPACITY	COUNT SPACES ACTUAL	STUDENT CAPACITY EACH ROOM	STUDENT CAPACITY SUB TOTAL	NET AREA (m²) EACH ROOM	NET AREA (m²) SUB TOTAL
Pool						
1. Competition Pool + Deck Area	0	1	0	0	9,905 SF	9,905 SF
2. Diving Well	0	1	0	0	1,150 SF	1,150 SF
4. Pool Equipment Storage	0	1	0	0	150 SF	150 SF
5. Swim Meet Storage	0	1	0	0	150 SF	150 SF
6. Spectator Seating - 300 Seats	0	1	0	0	1,200 SF	1,200 SF
7. Locker Rooms (was Rest Rooms)	0	2	0	0	800 SF	1,600 SF
9. Gender Nuetral/Family Locker?	0	2	0	0	150 SF	300 SF
10. Public Entry Lobby	0	1	0	0	250 SF	250 SF
11. Reception	0	1	0	0	150 SF	150 SF
12. Classroom	0	1	0	0	600 SF	600 SF
13. RPCA Admin Office	0	1	0	0	100 SF	100 SF
				0		15,555 SF
Support Spaces						
1. Pump / Filtration Room	0	1	0	0	1,000 SF	1,000 SF
2. Chemical Storage	0	1	0	0	180 SF	180 SF
3. Custodial Room	0	2	0	0	50 SF	100 SF
4. First Aid Storage	0	1	0	0	50 SF	50 SF
5. Office	0	1	0	0	100 SF	100 SF
6. Ticket Booth	0	1	0	0	50 SF	50 SF
				0		1,480 SF
				0		17,035 SF
DIVISION TOTAL: 20				0		17,035 SF

5.15 TESTING, VIRTUAL LEARNING, & OUTDOOR SPACES

TESTING

Testing disrupts the use of space on the King Street campus. The intermittent and space intensive demands of implementing the SOLs and other major testing events, temporarily and adversely impacts the operations of instructional spaces and other programs on campus. The King Street Auxiliary gym and 2nd floor E wing are used exclusively for testing starting late May. The periodic nature of these events however, makes it difficult to provide dedicated space for testing. As such, shared space must be used as testing venues. Currently, we understand that the Rotunda Room and the auxiliary gym at King Street are used for these events and are regularly unavailable to be used for their primary intended purposes.

Minnie Howard can provide additional resources with the goal of reducing the adverse impact on facilities and programs during these events. The preliminary space projection assumes that, like King Street, Minnie Howard's "Forum" and the auxiliary gym will provide additional large testing venues, and that the Resource Rooms and Conference/Small Group rooms in the academic neighborhoods will provide additional settings for students with testing accommodations.

VIRTUAL LEARNING

While the experience of remote learning during the pandemic has been challenging for some students, other students and teachers have succeeded in this new online environment. As the Connected High School Network develops post-pandemic, some aspects of virtual learning are likely to persist, be refined, and further develop to serve those students that can flourish in this alternative environment.

There are many models of blended, synchronous, and asynchronous learning that could be imagined and explored for the future of virtual learning at ACPS. Some may be fully virtual and, in others, students may be on campus for some classes or even on campus as they learn asynchronously. Student support services may also draw students enrolled in a fully virtual program to campus.

Professional Development opportunities and settings may also be necessary to implement a virtual program, and teachers may need places to develop curriculum and to engage with virtual learners online. With all of these questions to be explored, we look forward to continuing conversations with the EDT and ACPS leadership to refine enrollment projections, master class scheduling, and space requirements supporting Professional Development, curriculum development, student support, and teaching that may be required for this significant evolution in how we teach and learn.

OUTDOOR SPACES

Outdoor activity space requirements were articulated in a meeting with ACPS, TCW, and the Department of Recreation, Parks and Cultural Activities (RPCA). Outdoor activity spaces supporting physical education, athletic, and recreation on the Minnie Howard campus may include:

1. Large field (NFHS regulation size)
2. Two tennis courts (NFHS regulation size)
3. Basketball court (this could be located on tennis courts)
4. Practice field (non-regulation size)
5. Paved pathway with distance marking

These spaces are listed in priority order. Additional information defining each space is provided in the December 18, 2020 Pre-Design Progress 1 Submission.

As the concept design develops, the alternative site plans will explore the potential to integrate each of these spaces. These options will be shared with ACPS, RPCA, and the school to further advance outdoor opportunities at Minnie Howard.

Dunbar Senior High School
Washington, DC

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TAB 6: APPENDIX

6.1 SPACE PROGRAM TABLE

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
1	**ADMIN**								
1.1	**MAIN OFFICE**								
1.1.1	Reception		1	1125	1125	1	600	600	
1.1.2	Conference		1	250	250	1	250	250	
1.1.3	Workroom		1	400	400	1	400	400	No minimum sf per DOE
1.1.3.1	Faculty Mail Room					1	150	150	
1.1.4	Fire Resistive Record Storage		1	250	250	1	250	250	
1.1.5	Secure Storage		1	75	75	1	75	75	
1.1.6	See storage above				0	0	0	0	No minimum sf per DOE
1.1.7	Principal / Campus Administrator		1	150	150	1	150	150	
1.1.8	Administrative Assistant		1	100	100	2	100	200	
1.1.9	General Office with clerical workstations				0	0	0	0	No minimum sf per DOE
1.1.10	Flex Office		1	100	100	1	100	100	
1.1.11	Coat Closet		1	25	25	1	25	25	
1.1.12	Attendance Office		1	100	100	1	100	100	
1.1.13	Registrar		1	100	100	1	100	100	
1.1.14	Testing Coordinator					2	100	200	
1.1.15	Director of Counseling					1	120	120	
1.1.16	Assistant Director of Counseling					1	100	100	
1.2	**Distributed Administration**								
1.2.1	Assistant Principal / SLC Administrator		4	150	600	4	150	600	
1.2.2	Conference		1	150	150	4	160	640	
1.2.3	Storage		1	50	50	4	50	200	
1.2.4	SLC Reception / Adminstrative Assistant					4	200	800	
1.3	**Faculty Support**								
1.3.1	Faculty Lounge		1	775	775	1	775	775	
1.3.2	Staff Toilets				0	0	0	0	No minimum sf per DOE
	Subtotal		**18**		**4250**	**34**		**5835**	

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
2	**Student Services**								
2.1	**Guidance**								
2.1.1	Office		6	100	600	8	120	960	
2.1.2	Waiting		1	400	400	0	400	0	
2.1.3	Conference		1	350	350	0	350	0	
2.1.4	Career Center		1	500	500	1	500	500	
2.1.5	Storage		1	100	100	1	100	100	
2.1.6	Testing		1	75	75	0	75	0	
2.1.7	Scholarship Fund of Alexandria					1	500	500	
2.2	**Health Suite**								
2.2.1	Reception/Waiting Area/ Admin Assistants		1	300	300	1	300	300	
2.2.2	Exam Room		2	100	200	3	100	300	
2.2.3	Student Rest Area		1	575	575	1	200	200	
2.2.4	Office		1	100	100	1	100	100	
2.2.5	Storage		1	100	100	1	100	100	
2.2.6	Prep Area (Alcove)				0	1	100	100	
2.2.7	Student Toilet		1	100	100	1	100	100	
2.2.8	Lab/Pharmacy					0	0	0	
2.2.9	Counseling					0	120	0	
2.3	**Support Services**								
2.3.1	Psychologist		2	100	200	2	120	240	
2.3.2	Social Worker		3	100	300	2	120	240	
2.3.3	Flex Office		4	100	400	4	100	400	
2.3.4	Records Storage		1	75	75	1	75	75	
2.3.5	SGA Office		1	275	275	1	275	275	
2.3.6	School Store		1	325	325	1	325	325	
2.3.7	Technology Integration Specialists/PD Space					1	560	560	
2.3.8	Technology Help Desk					1	100	100	
2.3.9	Help Desk Storage/Work Area					1	300	300	

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
3	**Core Academics**								
3.1	**Classrooms**								Marker / White boards minimum lengths - Display 12 ft. Marker 16 ft. Mounting heights floor to marker/ Chalk rail 36" (minimum 42" in height). Length of classrooms no more than 1.5 X W unless otherwise stated. 9' minimum ceiling height.
3.1.1	General Classroom (was: Economics)		3	850	2550	48	850	40800	700 sf
3.1.2	English		11	850	9350			0	700 sf
3.1.3	Math		11	850	9350			0	700 sf
3.1.4	Social Studies		11	850	9350			0	700 sf
3.1.5	Large Flexible /Class Lab					4	1200	4800	
3.2	**Shared Spaces**								
3.2.1	ELA		6	900	5400				
3.2.2	Resource		6	250	1500	8	560	4480	
3.2.3	Teacher Collaboration Suites (Neighborhoods)		6	560	3360	8	640	5120	
3.2.4	Teacher Collaboration/Small Resource Room					8	160	1280	
3.2.5	SLC Storage		8	200	1600	8	100	800	
3.2.6	Extended Learning Area					8	850	6800	
3.2.7	Teacher Collaboration Suites (STEAM)					4	640	2560	
	Subtotal		**62**		**42460**	**96**		**66640**	
4	**Special Education**								
4.1	**General**								
4.1.1	Classroom (2 ED; 2 ID/ASD)		4	850	3400	4	650	2600	
4.1.2	Director's Office (was: Office)		1	120	120	1	120	120	
4.1.3	Adminstrative Assitant & Records		1	120	120	1	120	120	
4.1.4	De-Escalation Room for ED Classroom					2	80	160	
4.1.5	Bathroom for ID/ASD Classroom					2	60	120	
4.1.6	Speech/Language Office					1	140	140	
4.1.7	IEP Conference Room					1	400	400	
4.1.8	Lead Accountability Specialist					1	100	100	
4.1.9	OT/PT					1	140	140	
	Subtotal		**6**		**3640**	**14**		**3900**	

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
5	**Sciences**								
5.1	**Science Labs**								1,100 net sf minimum, 24 student workstations per lab
5.1.1	Biology		2	1400	2800			0	
5.1.2	Chemistry		3	1400	4200			0	
5.1.3	Physics		3	1400	4200			0	
5.1.4	Environmental Sciences		3	1400	4200			0	
5.1.5	High Intensity Lab (Gas, H2O, Power, Hood)					8	1400	11200	
5.1.6	Low Intensity Lab (H2O, Power)					10	1400	14000	
5.2	**Science Support**								
5.2.1	Prep		6	200	1200	9	200	1800	1 Lab 200sf, 2 Labs 300 sf
5.2.2	Storage		5	100	500	0	100	0	
5.2.3	Chemical Storage		1	250	250	0	250	0	
5.2.4	Greenhouse		1	200	200	1	200	200	
	Subtotal		**24**		**17550**	**28**		**27200**	
6	**Fine Arts**								
6.1	**Visual Arts**								
6.1.1	Art Studio		2	1200	2400	2	1200	2400	45 sf per student
6.1.2	Art Studio 3D		1	1200	1200	1	1200	1200	
6.1.3	Graphics / Media Studio			1000	0	1	1000	1000	
6.1.4	Storage		2	100	200	3	100	300	400 sf
6.1.5	Kiln/ Ceramic Storage		1	100	100	1	100	100	
6.2	**Music (or: Alternatively, centralized at King Street?)**								
6.2.1	Instrumental Music (Band)		1	3050	3050	0	2400	0	
6.2.2	Vocal Music		1	1675	1675	0	1400	0	15 sf per member, 10 ft. minimum ceiling height
6.2.3	Practice Room		1	700	700	0	700	0	
6.2.4	Instrument Storage		1	600	600	0	600	0	200 sf minimum
6.2.5	Uniform Storage		2	100	200	0	100	0	
6.2.6	Office		2	100	200	0	100	0	
6.2.7	Library/ Music Storage		1	150	150	0	150	0	
6.2.8	Orchestra?					0	1800	0	

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
6.3	**Assembly (was: Drama)**								
6.3.1	Classroom		1	900	900				
6.3.2	Forum (was: Black Box Theatre)		1	2000	2000	1	3000	3000	
6.3.3	Storage (was: Control Room)		1	100	100	1	250	250	
6.4	**Auditorium**								Located adjacent to band, chorus and drama classrooms.
6.4.1	Theatre / Auditorium		1	8525	8525	0	8525	0	1/3 to 1/2 ADM (8 sf per seat) 3,000-5,000 sf stage
6.4.2	Stage W/ Pit		1	3125	3125	0	3125	0	
6.4.3	Ticket Booth		1	100	100	0	100	0	
6.4.4	Control Room		1	150	150	0	150	0	
6.4.5	Costume / Prop Stage		1	525	525	0	525	0	
6.4.6	Dressing Rooms		1	525	525	0	525	0	
6.4.7	Student Toilet		2	50	100	0	50	0	
6.4.8	Set Construction		1	700	700	0	700	0	
	Subtotal		**27**		**27225**	**10**		**8250**	
7	**Specials**								
7.1	**Foreign Language**								
7.1.1	Classroom		6	900	5400			0	
7.1.2	Storage		1	100	100	0	100	0	
	Subtotal		**7**		**5500**	**0**		**0**	
8	**Physical Education**								
8.1	**Physical Education**								
8.1.1	Gym		1	10000	10000	1	10000	10000	62' X 100' X 22' (clear height) - not including bleachers. Safety space of 6' on each side and 8' on each end of a basketball court free of bleachers. A small office should be considered for use (by the partnering local parks and rec office) if outside community is planned to use the gym.
8.1.2	Auxiliary Gym		1	8475	8475	1	5400	5400	62' X 50' X 22' (clear height) - not including bleachers
8.1.3	Wrestling (Optional)			2500	0	1	2200	2200	

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8.1.4	Fitness/ Weight Room		1	1500	1500	1	1500	1500	
8.1.5	Dance/ Activity Room (Optional)			1500	0	0	1500	0	
8.1.6	Health Classroom & Human Growth and Development		6	850	5100	0	850	0	
8.1.7	Chair Storage					1	450	450	
8.2	**Physical Education Support**								
8.2.1	Locker Rooms		1	2775	2775	1	2775	2775	1 Locker per student. 15 sf per pupil based on the largest class.
8.2.2	Showers/ Toilets		1	775	775	1	775	775	6 per gender
8.2.3	Team Rooms		4	300	1200	2	300	600	
8.2.4	PE Teachers/ Coach Office		1	200	200	1	200	200	
8.2.5	Teacher / Coach Lockers & Toilets		2	90	180	2	90	180	
8.2.6	Athletic Director Office		1	120	120	1	120	120	
8.2.7	Training / Whirlpool		1	120	120	1	120	120	
8.2.8	Laundry / Towels		1	100	100	1	100	100	
8.2.9	Concession / Ticket		1	100	100	1	100	100	
8.2.10	Outdoor Storage		1	400	400	1	400	400	250 sf minimum
8.2.11	Indoor Storage		1	450	450	1	450	450	800 sf (minimum)
8.2.12	Athletic Storage		1	600	600	1	600	600	
8.2.13	Adaptive PE Storage		1	250	250	1	250	250	
8.2.14	Officials Lockers		2	90	180	2	90	180	
	Subtotal		**28**		**32525**	**22**		**26400**	
9	**Aquatics**								
9.1	**Pool**								
9.1.1	Competition Pool		1	4505	4505	1	4505	4505	
9.1.2	Diving Well		1	1150	1150	1	1150	1150	
9.1.3	Deck Area		1	5400	5400	1	5400	5400	
9.1.4	Pool Equipment Storage		1	150	150	1	150	150	
9.1.5	Swim Meet Storage		1	150	150	1	150	150	
9.1.6	Spectator Seating - 300 Seats		1	1200	1200	1	1200	1200	
9.1.7	Locker Rooms (was Rest Rooms)		2	800	1600	2	800	1600	
9.1.8	Dry-land Exercise Space		1	200	200	0	200	0	
9.1.9	Gender Nuetral/Family Locker?					2	150	300	
9.1.10	Public Entry Lobby					1	250	250	

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9.2	**Support Spaces**								
9.2.1	Pump / Filtration Room		1	300	300	1	1000	1000	
9.2.2	Chemical Storage		1	180	180	1	180	180	
9.2.3	Custodial Room		2	50	100	2	50	100	
9.2.4	First Aid Storage		1	50	50	1	50	50	
9.2.5	Life Guard Office		1	100	100	1	100	100	
9.2.6	Ticket Booth		1	50	50	1	50	50	
	Subtotal		**16**		**15135**	**21**		**17035**	
10	**CTE**								
10.1	**CTE 1: Prototyping/Robotics Lab**								
10.1.1	Lab		1	2000	2000	4	1800	7200	
10.1.2	Project / Material Storage		1	100	100	4	200	800	
10.2	**CTE 2: Classrooms & Computer Labs**								
10.2.1	Fabrication Lab		1	2000	2000	0	3500	0	
10.2.2	Project / Material Storage		1	100	100	0	200	0	
10.2.3	Digital Design Studio		1	1050	1050	3	1000	3000	
10.2.4	Storage		1	100	100	0	100	0	
10.02.5	CTE Classroom					3	850	2550	
10.3	**CTE 5: JROTC**								
10.3.1	Classroom		1	850	850	0	850	0	
10.3.2	Changing Room		2	150	300	0	150	0	
10.3.3	Uniform Storage		1	250	250	0	250	0	
10.3.4	Supplies		1	200	200	0	200	0	
10.3.5	Armory		1	100	100	0	100	0	
10.3.6	Office		1	200	200	0	120	0	
10.3.7	Book Storage		1	25	25	0	25	0	
10.3.8	Cadet Operations		1	150	150	0	150	0	
10.3.9	Indoor Practice		1	4500	4500	0	4500	0	
10.3.10	Outdoor Practice		TBD						
10.3.11	Culinary Arts Lab (moved below to CTE 3					0	0	0	

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			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
10.4	**CTE 3: Culinary Arts Lab**								
10.4.1	Culinary Arts Lab		1	1400	1400	0	0	0	
10.4.2	Project / Material Storage		1	100	100	0	100	0	
10.4.3	Project / Material Storage		1	200	200	0	200	0	
10.4.4	Classroom/Dining					0	850	0	
10.5	**CTE 3: Governors School - Health & Medical Sciences**								
10.5.1	Classroom		2	425	850	0	850	0	
10.5.2	Studio/ Lab		1	1000	1000	3	1200	3600	
10.5.3	Project / Material Storage		1	200	200	1	200	200	
	Subtotal		**23**		**15675**	**18**		**17350**	
11	**Library / Learning Commons**								
11.1	**Library / Learning Commons**								
11.1.1	Open Collaboration/Study/Collections		1	7800	7800	1	3640	3640	
11.1.2	Office / Workroom		1	450	450	1	250	250	150 sf minimum.
11.1.3	A/V and Magazine Storage		1	100	100	0	100	0	120 sf.
11.1.4	Head End Room		1	275	275	1	275	275	100 sf.
11.1.5	Historic Collections		1	100	100	0	100	0	
11.1.6	General Storage		1	100	100	0	100	0	
11.1.7	Makerspace		1	525	525	0	525	0	
11.1.8	Conference Room / Project Room				0	4	120	480	120 sf.
11.1.9	Distant Learning				0			0	120 sf.
11.1.10	Librarian Office				0			0	120 sf.
11.1.11	Flexiblbe Class Meeting Area					2	850	1700	
11.2	**Communications**								
11.2.1	TV / Video Studio		1	1600	1600	0	1600	0	
11.2.2	Control / Editing Lab		1	150	150	0	150	0	
11.2.3	Media (was: Publication) Lab		1	450	450	1	900	900	
11.2.4	Storage		1	100	100	1	100	100	Electronic/ Software storage 150 sf.
11.2.5	Graphics Lab		1	975	975	0	975	0	
11.2.6	Communicating Room				0	0	0	0	48 sf.
	Subtotal		**12**		**12625**	**11**		**7345**	

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			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
12	**Food Services**								
12.1	**Dining**								
12.1.1	Creative Commons/Dining (was: Cafeteria)		1	7700	7700	4	2000	8000	Dining = 3600 - 4500 sf. Formula = (Total Enrollment / lunch seatings (3) X sf per pupil = dining room floor area.) Rectangular tables with attached seats 11 sf per student, rectangular tables with stacking chairs 11-14 sf per student, round tables with stacking chairs 11-14 per student. Dining rooms under 3,000 sf ceiling height should be 12', rooms over 3,000 sf is 14'.
12.1.2	Furniture Storage		1	400	400	1	400	400	
12.2	**Food Services**								
12.2.1	Kitchen		1	1600	1600	1	1600	1600	Prep/ cooking = 1000 - 1250 sf. Formula = (1,000 sf + 1 sf X total enrollment)
12.2.2	Serving		1	1450	1450	4	500	2000	1400 - 1800 sf. 20-25% of dining room floor area.
12.2.3	Office		1	100	100	1	100	100	150 - 160 sf
12.2.4	Walk-in Freezer		1	350	350	1	350	350	
12.2.5	Walk-in Chiller		1	350	350	1	350	350	Refrigerated / Storage = 600 - 700 sf.
12.2.6	Dry Storage		1	500	500	1	500	500	600 - 700 sf
12.2.7	Dish Room		1	600	600	1	300	300	350 - 400 sf
12.2.8	Soap Storage		1	50	50	1	125	125	100 - 125 sf
12.2.9	Pan Wash		1	50	50	1	0	0	125 - 150 sf
12.2.10	Locker / Toilet		1	120	120	1	120	120	250 sf
12.2.11	Receiving		1	225	225	1	225	225	100 - 125 sf
12.2.12	Trash & Recycled Material Storage				0			0	
12.2.13	Mop Closet				0			0	
12.2.14	Can Wash/ Dry				0			0	150 - 160 sf.
	Subtotal		**13**		**13495**	**19**		**14070**	

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13	**Building Services**								
13.1	**Maintenance/ Operations**								
13.1.1	Receiving		1	400	400	1	400	400	
13.1.2	Central Storage		1	450	450	1	450	450	
13.1.3	Custodial Office / Breakroom (was: Operations)		1	250	250	1	250	250	
13.1.4	Locker / Toilet		1	120	120	1	120	120	
13.1.5	Security Office		1	150	150	1	150	150	
13.1.6	Custodial Closet		7	60	420	7	60	420	
13.1.7	Custodial Storage (was: Recycling)		1	400	400	1	400	400	
13.1.8	Outdoor Storage		1	200	200	1	200	200	
13.1.9	Laundry					1	100	100	
13.1.10	Building Engineer's Office					1	100	100	
13.2	**Toilet**								
13.2.1	Staff Toilet		10	50	500	10	50	500	
	Subtotal		**24**		**2890**	**26**		**3090**	
14	**Community Space**								
14.1	**Family Resource Room**								
14.1.1	Family Resource Room		1	150	150	1	150	150	
14.1.2	Office		1	80	80	0	80	0	
14.1.3	Toilet		1	50	50	0	50	0	
14.2	**After School Support**								
14.2.1	Storage		1	100	100	0	100	0	
14.2.2	Pantry		1	50	50	0	50	0	
14.2.3	Office		1	80	80	0	80	0	
14.3	**Services**								
14.3.1	Pantry		1	80	80	0	80	0	
14.3.2	Personal Care / Lactation Room		1	100	100	1	100	100	
14.3.3	Laundry		1	100	100	0	100	0	
14.3.4	Storage		1	25	25	0	25	0	
14.4	**Community Gathering / Testing Hall**								
14.4.1	Dividable Testing Hall / Professional Development		1	4500	4500	0	2400	0	
14.4.2	Chair Storage		1	350	350	0	350	0	

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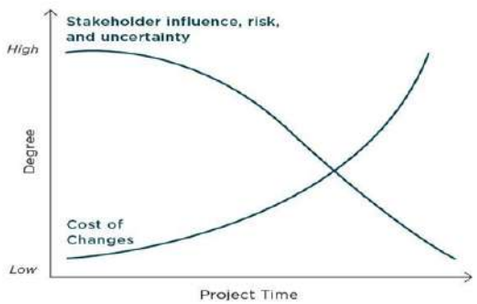
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
15	**Co-located Spaces**								
15.1	Alexandria Health Department Teen Wellness Center				2200	0	2200	0	
15.1.1	Reception/Waiting Area/ Admin Assistants		1	300	300	1	300	300	
15.1.2	Exam Room		2	100	200	2	120	240	
15.1.3	Student Rest Area		1	575	575	0	300	0	
15.1.4	Office		1	100	100	2	120	240	
15.1.5	Storage		1	100	100	1	100	100	
15.1.6	Prep Area (Alcove)				0	1	100	100	
15.1.7	Student/Staff Toilet		1	100	100	2	100	200	
15.1.8	Lab/Pharmacy					1	150	150	
15.1.9	Counseling					1	120	120	
15.2	Department of Community and Human Services				3465				
15.3	PreSchool (85-100 students)								
15.3.1	Classrooms					5	900	4500	
15.3.2	Children's Bathrooms					5	65	325	
15.3.3	Office (shared: Director and Assistant Director)					1	140	140	
15.3.4	Pantry					1	140	140	
15.3.5	Reception					1	150	150	
15.3.6	Staff / Visitor Bathroom					2	65	130	
15.3.7	Stroller Storage					1	50	50	
15.3.8	General Storage					1	150	150	
15.3.9	Mudroom					1	100	100	
15.3.10	Laundry					1	50	50	
15.3.11	MPR/Gross Motor Room (Optional?)					1	1,500	1500	
15.3.12	Shared Assessment Coordinar Office					1	560	560	
15.3.13	Small Confrence Room					1	120	120	
15.4	DCHS Services Family Resources Suite								
15.4.1	Reception					1	150	150	
15.4.2	Office					6	100	600	
15.4.3	Conference Room					1	240	240	
15.4.4	Restroom					1	65	65	
15.4.5	Pantry					1	140	140	
15.4.6	Storage					1	100	100	

2017 Ed Spec #	PROGRAM Room Description	ED SPEC Students or Staff Served	2017 ACPS ED SPEC 1600 Students			MH - SITE SPECIFIC ED SPEC 1600 Students			VA DOE GUIDELINES dated Sept 2013
			ACPS Quantity	ACPS Net SF	ACPS Total SF	MH Quantity	MH SF	MH Net SF	VA DOE GUIDELINES
15.5	DCHS Services Distributed Offices								
15.5.1	Workforce Office					1	140	140	
15.5.2	Therapist					1	100	100	
15.6	RPCA Outdoor Support Space					0		0	
15.6.1	Outdoor Bathrooms					2	250	500	
15.6.2	Outdoor Storage					1	200	200	
	Subtotal				**7040**			**11600**	
	TOTAL		**302**		**210650**	**334**		**214600**	
								107,300	50.0%
	Grossing Factor	1.5			315,975			321,900	
					66.7%			66.7%	
	Grossing Factor	1.45			305,443			311,170	
					69.0%			69.0%	
	Grossing Factor	1.4			294,910			300,440	
					71.4%			71.4%	

6.2 PROJECT BUDGET & ESTIMATING DECISION TOOL

MINNIE HOWARD COST MODEL

The cost model presented in this tab is an initial review and analysis of the construction costs associated with the High School Project at the Minnie Howard Campus as currently understood by the team.



A cost model at this phase of a project takes a conservative approach due to the number of unknowns, ongoing stakeholder input, and Owner decisions still to be made. As can be seen in the figure to the right, as the project time elapses, the cost of decisions, or lack thereof, come at a high risk of budget increase and schedule delays. Therefore, it is important to fully examine the levels of uncertainty and risk in the current project assumptions at this phase. It is for this reason that the cost model includes a comprehensive listing of the potential elements that might be incurred during the construction phase of the project. This includes a line item for City of Alexandria on and off site requirements that often arise during the DSUP process.

The cost model looks at distinct cost elements, as each of these elements have different cost drivers and underlying assumptions. As such, scope decisions and design considerations will impact project costs in different manners. By breaking down the costs into these elements, ACPS can more confidently understand the dynamic nature of better informing assumptions and their risks as scope decisions are formalized.

The cost model represents the best parametric probable construction estimate based on the assumptions at this phase of the project and is a dynamic tool designed to help advise during the decision-making process to confirm the project scope. Each major element has an associated 'confidence level', the objective of utilizing this tool will be to conduct informative discussions and activities that bring all elements to a "high" level of confidence.

This will allow ACPS and the design team to track progress related to the critical cost decisions, program and square footage assumptions, and unit costs until these can be informed by actual design documents. This process will continue through the design of the project.

The cost model in this tab compares the potential project cost to the following three ACPS budgets:

- Previous project budget included in the CHSN Alternative 02 study (see CHSN Alternative 02 Study later in section) lists a total budget of $178,853,863 including hard cost budget of $143,083,091; although the chart is outdated, it provides the history of the budget development. The current total budget request for the project is $194,000,000 which must fund costs such as furniture, technology, owner contingency, and possible costs associated with fields and parking that will not be available during the development of the Minnie Howard campus. ACPS' objective is to maximize the use of the anticipated funds;
- Total hard + soft construction budget of $128,000,000 included in the RFP and as estimated in ACPS's approved FY 2021-2030 CIP;
- Total hard + soft construction budget of $150,000,000 as estimated in ACPS's proposed FY 2022-2031 CIP.

The cost model studies both a "low" and "high" cost to aid in the decision making process. The total hard + soft construction cost for each is as follows:

- Cost Estimate Builder 1 includes a 285K gsf building (low end of building size range), surface parking, and leased photovoltaics, which totals approx. $153,241,388;
- Cost Estimate Builder 2 includes a 310K gsf building (high end of building size range), underground parking garage, and purchased photovoltaics, which totals approx. $176,585,149.

This does not by any means indicate that the design team views the project to be over budget, instead it highlights a number of areas where ACPS and the design team are to work collaboratively to clarify ACPS' original assumptions and reduce the number of unknowns in each cost factor, moving the overall Cost Model's confidence rating from "LOW" to "HIGH."

This cost model does NOT include:

- Costs for upgrades at T.C. Williams King Street Campus;
- Public space improvements between the campuses;
- Housing development – hard and soft costs beyond A/E optional service #3;
- ACPS Administrative space development (office space) - hard and soft costs;
- Typical Soft Costs
  - A/E Fee
  - FF&E
  - Security/AV/IT devices/equipment/panels
  - Moving Costs
  - Professional Services, Project Management, and Legal Fees
  - Other third party expenses not carried by A/E (commissioning, testing & inspections, plan review)
  - Owner contingency outside of Contractor/CMR Contract - Recommend 10%

ACPS has confirmed that the following construction soft costs are included in ACPS' budget and they are included in the cost model:

- Permit Fees
- Utility Fees
- Builder's Risk.

ACPS has confirmed that the following construction soft costs are included in ACPS' budget and they are included in the cost model within the hard cost unit prices:

- Contractor/CMR General Conditions, Fee, Overhead, and Profit
- Bonds and Insurance/ SDI
- Taxes

NET ZERO ENERGY PERFORMANCE:

The path forward to achieve Net Zero Energy Performance has two fundamental components. First, the campus will be designed as a High Performance Campus with all aspects meeting a drastic energy reduction goal within the proposed cost budget. Secondly, a Renewable Energy Solar Photovoltaic (PV) array will be provided and sized to produce more energy within a year than the campus consumes, fundamentally achieving the Net Zero Energy goal. The acquisition of the Solar PV Array has three potential paths. Purchasing and owning the PV Array with it being included in design and construction would presumably be an expensive approach and is included in the "high" cost model labeled "Cost Estimate Builder 2". The lowest cost approaches to ACPS would include leasing the Solar PV Array through a Power Purchase Agreement (PPA) or acquiring the PV System through a Guaranteed Energy Performance Contracting project and energy savings by an Energy Service Company (ESCO). Both the PPA and the ESCO approach would eliminate first costs and have similar financial models which will be studied by the team as part of this project moving forward. The "low" cost model labeled "Cost Estimate Builder 1" assumes leased PV.

6.2 PROJECT BUDGET & ESTIMATING DECISION TOOL

CONNECTED HIGH SCHOOL NETWORK ALTERNATIVE 02 - MAX MINNIE HOWARD						
Category	*Unit*	*Cost/Unit*	*Amount*	*Subtotal*	*Notes*	*Calculation Notes*
Demolition	sf	$10	166,500	$1,665,000		166.5 k of existing MH
New Construction	sf	$360	312,000	$112,320,000		312k new at MH
Site Development	acres	$770,000	12	$9,240,000	10% premium for sloped site	$700k baseline, 10% premium for sloped site,
Structured Parking	sf	$65	70,000	$4,550,000		1600 students at MH /1 space per 8 students = 200 spaces x 350 sf = 70000
Subtotal				$127,775,000		
Subtotal with Escalation				$141,666,426		
Design Contingency (10%)				$1,416,664.3		
TOTAL HARD COSTS				**$143,083,091**		
TOTAL SOFT COSTS				**$35,770,773**		25% of Total hard costs
TOTAL COSTS				**$178,853,863**		Approximately $21 Million already funded in FY 2019 and FY 2020
NOVA/ Tyler Building				$1,677,284		
Placeholder for possible amenties and parking during construction				$1,000,000		Placeholder for possible amenties and parking during construction
Total w/ Construction Phase Site Uses Allowance				**$181,531,147**		

ASSUMPTIONS
- structure parking size: 350 square feet per parking space planning
- minimum parking per zoning is 1 space per 10 students, which is insufficient. Use 1 space per 8 students
- site amenities at PY are included in costs of building/parking -- no separate site cost
- target square foot per student = 195 sq

INSPIRING A FUTURE FOR ALEXANDRIA 41

CHSN ALTERNATIVE 02 BUDGET

T.C. Williams High School
Alexandria, VA

Preliminary Cost Model - In progress.

ACPS: THE HIGH SCHOOL PROJECT: MINNIE HOWARD CAMPUS

Prelim Cost Model to Support Decision-Making

DRAFT FOR DISCUSSION: 3/1/2021

		COST ESTIMATE BUILDER 1: 285K SF BUILDING (LOW RANGE OF SIZE) + SURFACE PARKING + LEASED PV					COST ESTIMATE BUILDER 2: 310K SF BUILDING (HIGH RANGE OF SIZE) + UNDERGROUND PARKING GARAGE + PURCHASED PV					ACPS BUDGET			ASSUMPTION AND COST FACTORS CONFIDENCE		BUDGET ASSUMPTION NOTES
		A	B	C	D	E	A	B	C	D	E	Source: CHSN Alt 02 Max Minnie Howard	Budget $128M (RFP)	Budget $150M	Current Level	Action Item to Refine & Advance Confidence	
		Qty	Units	Unit Price	Proposed Budget in 2020 $'s	Escalation to midpoint of construction	Qty	Units	Unit Price	Proposed Budget in 2020 $'s	Escalation to midpoint of construction						
					Escalation Factor:	1.03				Escalation Factor:	1.03						
					Years to Mid-Point:	2.50				Years to Mid-Point:	2.50						
H1	**HARD COSTS**																
	Construction																
H1.1	Base School - High Performance Building, New School Construction	212,424	SF	$ 385	$ 81,783,240	$ 88,055,680	230,242	SF	$ 385	$ 88,643,170	$ 95,441,738	$ 112,320,000			MEDIUM	[1] SF: To be confirmed during pre-Design programming activities. Goal: February [2] $/SF: Continued research will occur on identifying an appropriate benchmark based on recent comparable projects. Goal:	**[1] Square footage:** • RFP states 312,000 SF and 195 GSF per Student, with 1,600 students. • Ed Spec program reflects 285,000 GSF and has been determined to be an adequate total square foot figure to accomodate the program. There is also a stated desire to potentially reduce the total GSF as a budget reconciling strategy while still meeting the program and maximizing student capacity. • Feb 2021 Site Specific Ed Spec notes range on building size due to efficiency factor, 290K to 310K GSF. • Cost Model include estimate at 285K GSF and 310K GSF • The Base Building total deducts Aquatics GSF, Co-Located Community Spaces, and Community Asset Spaces from Ed Spec. **[2] ROM Unit Price** Historical cost data used from recent regional projects: • ACPS was previously using $360/SF - Need to confirm that source & year as it appears low • Douglas MacArthur $396/SF (DD Estimate) - includes site work and most likely parking • Falls Church City Public Schools - George Mason High School, Net Zero Ready and LEED Gold / Geothermal --> $372 per GSF, $365 w/o site work (bid in 2018 - $385 in 2020 $'s). Durable design, limited use of high end finishes (no parking garage, does not include demo)
H1.2	School Common Areas and Shared Community Spaces - High Performance Building, New School Construction	42,056	SF	$ 385	$ 16,191,560	$ 17,433,386	42,056	SF	$ 385	$ 16,191,560	$ 17,433,386	Assume Included in Hard Costs			MEDIUM	[1] SF: To be confirmed during pre-Design programming activities. Goal: Mid-February	**[1] Square footage:** • Includes Library, Main Gym, Aux Gym, and Forum spaces (no associated support spaces e.g. locker rooms, offices, storage). • Comp Program/Ed Spec submitted 2/1/2021 includes 10,000 SF Main Gym, 5,400 SF Aux Gym, 3,640 SF Library, 8,000 SF Dining, and 3,000 SF Forum for spaces that are Community Assets. • Co-Located Community Spaces: 30,040 w/ 40% grossing factor = approx. 42,056 GSF
H1.3	Indoor Aquatics Facility - High Performance Building, New Construction	22,589	SF	$ 495	$ 11,181,555	$ 12,039,134	22,589	SF	$ 495	$ 11,181,555	$ 12,039,134	Assume Included in Hard Costs			LOW	[1] SF: To be confirmed during pre-Design programming activities. Goal: Mid-February [2] $/SF: Need to understand key assumptions that impact costs such as foundations & specialized storage of chemicals and equipment. Goal:	**[1] Square footage:** • Assumed 8 lane, 25 meter by 25 yard indoor pool, w/ diving well , 300 spectator seating. • Aquatics Facility listed as 15,285 GSF in RFP. • Comp Program/Ed Spec submitted 2/1/2021 includes 16,135 GSF for aquatics facility. • Aquatics Facility: 16,135 w/ 40% grossing factor = approx. 22,589 GSF **[2] ROM Unit Price** Historical cost data used from recent regional projects: • Similar to Dunbar High School program: 16,250 GSF at $422.03 GSF (2011 dollars escalation to 2020 @3% is $551), minus ~10% DC CBE/First Source Factor ~$495 • Other: Barry Farm Rec Center 15,500 GSF at $561.03 (2013 dollars escalation to 2020 @ 3% is $690), minus ~10% is $620/SF • These cost benchmarks include pool base building, locker rooms, pumps, chemical storage rooms • Both also did not need deep foundations which adds cost and cost factor modeled here assumes standard building foundations. • Assume high performance standards are included but still risk in understanding full scope required for NZE aquatics.
H1..4	Athletic Fields	132,000	SF	$ 15	$ 1,980,000	$ 2,131,858	132,000	SF	$ 15	$ 1,980,000	$ 2,131,858	Assume Included in Site Development			LOW	[1] Size / Program: To be confirmed during pre-Design programming activities. Goal: End of January? [2] $/SF: Need to confirm cost factors are adequate Goal: End of December?	• Based on RFP blocking and stacking which indicated two multi-purpose fields • About 3 acres of field space out of the 12 total acres • Clarity being provided by ACPS - in progress: NFHS Soccer Field w/ small bleacher area, small restrooms, fields lights, and TBD • Cost per square foot based on 2019 artificial turf field projects at Patrick Henry, Roosevelt HS (DC) & Wilson HS (DC). • Cost includes typical drainage associated with turf field and sub-grade preparation. • Cost to get field to base of sub-grade elevation carried in site costs.
H1.5A	Net Zero Renewable Energy Premium - School Building, Shared Community Spaces, Co-Located Spaces - Purchased PV	238,822	LS	$ -	$ -	$ -	264,822	LS	$ 2,850,000	$ 2,850,000	$ 3,068,583	Confirm Where Carried			LOW	This cost factor is intended to model the scenarios related to the costing and sourcing of renewable energy. [A] Zero Energy Performance (Purchased Solar) - ASSUMED [B] Zero Energy Performance (Leased Solar) [C] Zero Energy Performance (ESCO Provided)	The base building is assumed to be high performance and includes geothermal as well as the costs associated with enhancing the exterior. A potential additional premium for NZ pool is unknown at this time and a risk that should be tracked. Track that the base building cost factors are evaluated to include: • Mechanical, Electrical and Plumbing • Structure (minimum for PV) • Electrical switchgear and raceways (for PV connections) • Exterior / Envelope PV Cost if Purchased: • At EUI of 20 for the building, estimating 825kW roof mount and 300kW canopy mount
H1.5B	Net Zero Renewable Energy Premium - Indoor Aquatics Facility- Purchased PV	22,589	LS	$ -	$ -	$ -	22,589	LS	$ 1,100,000	$ 1,100,000	$ 1,184,365	Confirm Where Carried			LOW	This cost factor is intended to model the scenarios related to the costing and sourcing of renewable energy. [A] Zero Energy Performance (Purchased Solar) - ASSUMED [B] Zero Energy Performance (Leased Solar) [C] Zero Energy Performance (ESCO Provided)	The base building is assumed to be high performance and includes geothermal as well as the costs associated with enhancing the exterior. A potential additional premium for NZ pool is unknown at this time and a risk that should be tracked. Track that the base building cost factors are evaluated to include: • Mechanical, Electrical and Plumbing • Structure (minimum for PV) • Electrical switchgear and raceways (for PV connections) • Exterior / Envelope PV Cost if Purchased: • Estimating an additional +5 EUI (for pool) (total EUI of 25) = approx 25% more canopy mount PV • Additional 275kw x $4/watt for canopy mount = approx $1,100,000
H1.6	Net Zero Renewable Energy Premium - School Building - Leased PV	285,000	LS	$ -	$ -	$ -	310,000	LS	$ -	$ -	$ -	Confirm Where Carried			MEDIUM	This cost factor is intended to model the scenarios related to the costing and sourcing of renewable energy. [A] Zero Energy Performance (Purchased Solar) [B] Zero Energy Performance (Leased Solar) - ASSUMED [C] Zero Energy Performance (ESCO Provided)	The base building is assumed to be high performance and includes geothermal as well as the costs associated with enhancing the exterior. A potential additional premium for NZ pool is unknown at this time and a risk that should be tracked. Track that the base building cost factors are evaluated to include: • Mechanical, Electrical and Plumbing • Structure (minimum for PV) • Electrical switchgear and raceways (for PV connections)
H1.7	Underground Parking Garage	0	Spaces	$ 50,000	$ -	$ -	200	Spaces	$ 50,000	$ 10,000,000	$ 10,766,959	$ 4,550,000			LOW	[1] Space count: To be confirmed during pre-Design programming activities. Goal: End of January? [2] $/Space: Need to confirm one level underground or other major cost impacts. Goal: End of December?	**[1] Spaces** • Current P&Z conversation is 1 space per 10 students = 1,600 spaces • 200 spaces cited in the budget document shared by ACPS **[2] ROM Unit Price** • ACPS was previously modeling 'structured parking' as a cost per SF vs. space (a method more typical for surface parking): Assumed 350 SF per space = 70,000 SF, $65 per SF for a total assumption of $4.5M - these figures are also more applicable to above grade) • Industry typically models structured parking per space and costs range can range vastly depending on method. • Cost per space ($50,000) is based on 1-level of below grade parking and on pricing seen in surrounding area (need recently complete project for reference)
H1.8	Surface Parking	200	Spaces	$ 5,500	$ 1,100,000	$ 1,184,365	0	Spaces	$ 5,500	$ -	$ -	-			MEDIUM		**[1] Spaces** • Surface parking approx $5,500 per space • 200 parking spaces approx = $1,100,000
H1.9	Demolish Existing Building	166,500	SF	$ 15	$ 2,497,500	$ 2,689,048	166,500	SF	$ 15	$ 2,497,500	$ 2,689,048	$ 1,665,000			MEDIUM	[1] Confirm Haz Mat assumptions and confirm value with D&S [2] Confirm timing and potential need to apply additional escalation applied (to 2025)	**[1] ROM Unit Price** • ACPS was previously using $10/SF - confirm that source as it appears low to our team. • Existing Minnie Howard was renovated in the mid 1990's. Assume all Haz-Mat was mitigated during that renovation. • DC Public School demolition pricing has ranged between $19 per SF to $23 per SF, but does include Haz-Mat removal. • Confirm value w/ D&S: $11 (if there is still HazMat use $20) • Budget Model assumption uses $15 per SF based on demolition commencing on active site and no Haz-Mat. **[2] Timing of Escalation** • Construction starts March 2022 thus May 2023 is assumed mid-point (2.5 years) for base building. • Assume demolition would occur in 2025 thus this line is escalated to 2025.
H1.10	Additional Site Restoration/Improvements & Utilities	1	LS	$ 10,000,000	$ 10,000,000	$ 10,766,959	1	LS	$ 10,000,000	$ 10,000,000	$ 10,766,959	$ 9,240,000			LOW	[1] Size / Program: To be confirmed during pre-Design programming activities. Goal: End of January? [2] $/SF: Need to confirm cost factors are adequate Goal: End of December?	• Total 12 Acres of Development - potential range from $4M to $14M based on review of recent projects with 'urban' sites • Would include costs for site grading, on-site utilities and tie-ins to existing mains, site lighting, vehicular and pedestrian access and pathways • Excludes geo-thermal wells, unsuitable soils or contaminated soils, unknown archeological finds • Excludes public space improvements beyond Minnie Howard Campus • Key factors to consider: Topography will be a challenge plus vehicular, bus, and pedestrian access across a tight site
H1.11	Off-Site City Required Improvements	1	LS	$ 2,500,000	$ 2,500,000	$ 2,691,740	1	LS	$ 2,500,000	$ 2,500,000	$ 2,691,740	Not Included			LOW	Need to confirm what will be required from the City (P&Z, T&ES)	Need to figure out what may be required for off-site improvements (e.g. signaling, median changes).
H1.12	Pad Ready Site for Future Development (ACPS Offices?, School Expansion)	0	LS		$ -	$ -	0	LS		$ -	$ -	Not Included				Need to confirm that there is no pad ready site to be provided.	Need assumptions from ACPS on what will be required to support future development (i.e. ACPS Offices, expansion)
												Escalation amount incorrect at $141,666,426					ACPS Subtotal Hard Costs w/ Escalation (factor and timing assumption unknown)
H1.13	Sub-Total				$ 127,233,855	$ 136,993,171				$ 146,943,780	$ 158,213,372	$ 127,375,000				With escalation applied (except for ACPS CHSN Alt 02 Budget Column)	
H1.14	Design Contingency	10%			$ 12,723,386	$ 13,699,217	10%			$ 14,694,379	$ 15,821,377	$ 1,416,664			LOW	Design Contingency (assumed incorporated within benchmark)	Design contingency set at 10% to match ACPS's budget, industry standard for AACE at this Class 4 Level recommendation is 25%
H1.15	Contractor Contingency				Included in unit cost above					Included in unit cost above		Not Included				This is approx. 3-4% of construction cost. It is included within the Contractor's hard cost above (in unit prices and LS amounts)	
H1.16	TOTAL HARD COSTS				$ 139,957,241	$ 150,691,388				$ 161,638,160	$ 174,035,149	$ 143,083,091				Total Hard Costs w/ Escalation and Design Contingency	
	Gross Escalation:	$	10,734,147	Per SF:	$491.08	$528.74	$	12,396,985	Per SF:	$521.41	$561.40	$ 458.60	$ -	$ -			
S1	**CONSTRUCTION RELATED SOFT COSTS**																
S1.1	Permit Fees	1		$ 1,400,000	$ 1,400,000	$ 1,400,000	1		$ 1,400,000	$ 1,400,000	$ 1,400,000				LOW	Includes all permit fees (incl environmental, SWPPP, VDOT, etc)	
S1.2	Utility Fees	1		$ 750,000	$ 750,000	$ 750,000	1		$ 750,000	$ 750,000	$ 750,000				LOW	This pertains to water availability and electric may require water meter	
S1.3	Builder's Risk	1		$ 400,000	$ 400,000	$ 400,000	1		$ 400,000	$ 400,000	$ 400,000	Noted as 25% of hard cost			MEDIUM		
S1.4	Contractor/CMR General Conditions, Fee, Overhead, and Profit	0			Included in hard cost above	Included in hard cost above	0			Included in hard cost above	Included in hard cost above					This is approx. 10% of construction cost. It is included within the Contractor's hard cost above (in unit prices and LS amounts)	
S1.5	Bonds and Insurances/ SDI	0					0									This is approx. 10% of construction cost. It is included within the Contractor's hard cost above (in unit prices and LS amounts)	
S1.6	Taxes	0					0									This is approx. 10% of construction cost. It is included within the Contractor's hard cost above (in unit prices and LS amounts)	
S1.7	TOTAL CONSTRUCTION RELATED SOFT COSTS				$2,550,000	$2,550,000				$2,550,000	$2,550,000	$ 35,770,773					
HS1	TOTAL HARD + CONSTRUCTION RELATED SOFT COSTS				$142,507,241	$153,241,388				$164,188,160	$176,585,149	$ 178,853,864	$ 128,000,000	$ 150,000,000		ACPS "Design-To-Budget"	
H2	**HARD COSTS - CO-LOCATED COMMUNITY SPACES**																
	Construction																
H2.1	Co-Located Community Spaces - High Performance Building, New School Construction	7,931	SF	$ 385	$ 3,053,435	$ 3,287,621	15,113	SF	$ 385	$ 5,818,505	$ 6,264,761	Assume Included in Hard Costs			LOW	[1] SF: To be confirmed during pre-Design programming activities. Requested spaces by DCHS higher GSF than RFP listed, to be reviewed. Goal: Mid-February	**[1] Square footage:** • Includes Alexandria Health Dept and Dept of Community and Human Services (DCHS) program, including Teen Wellness Center and Early Childhood Center. • Co-located community spaces listed as 5,665 GSF in RFP; w/ 40% grossing factor = approx. 7,931 GSF. • Site Specific Ed Spec submitted Feb 1, 2021 includes 10,795 GSF for co-located community spaces; w/ 40% grossing factor = approx. 15,113 GSF
H2.2	Sub-Total				$ 3,053,435	$ 3,287,621				$ 5,818,505	$ 6,264,761	$ -	$ -	$ -		With escalation applied (except for ACPS CHSN Alt 02 Budget Column)	
H2.3	Design Contingency	10%			$ 305,344	$ 328,762	10%			$ 581,851	$ 626,476	$ -	$ -	$ -	LOW	Design Contingency (assumed incorporated within benchmark)	Design contingency set at 10% to match ACPS's budget, Industry standard for AACE at this Class 4 Level recommendation is 25%
H2.4	Contractor Contingency				Included in unit cost above					Included in unit cost above		Not Included				This is approx. 3-4% of construction cost. It is included within the Contractor's hard cost above (in unit prices and LS amounts)	
H2.5	TOTAL HARD COSTS - CO-LOCATED COMMUNITY SPACES				$ 3,358,779	$ 3,616,383				$ 6,400,356	$ 6,891,237	$ -	$ -	$ -		Total Hard Costs w/ Escalation and Design Contingency	

6.3 PROJECT SCHEDULE

The following project schedule captures the major activities and milestones required to complete the comprehensive redevelopment of the Minnie Howard campus. The goal is to provide a campus that is ready for instruction in the school year beginning September 2024. The athletic fields are planned for completion in Spring 2025.

The schedule is formatted to track the permitting process through the City of Alexandria (above in red text), and the design phases and associated reviews by ACPS and the School Board (below in black text). The critical path for the new school building runs through the City of Alexandria's approval process to breaking ground in Spring 2022 through construction completion and occupancy.

Noted in red text, the City's approval process has two distinct components, one is the public entitlement process for the Development Special Use Permit (DSUP), including concept and preliminary plans and the final site plan, and the other is the building permit review required for the building permit

The outline design schedule, below the City's approval process schedule, accounts for time associated with ACPS and School Board review, and cost estimating during each phase. Other submissions and updates by ACPS and the School Board are likely in each of the design phases. The first major milestone is the final selection and development of the concept plan, allowing for the initial submission meeting of Concept 1 and 2 requirements to the City's Planning and Zoning Department. The schedule plans for Concept 1 and 2 submission in the middle of May 2021 to allow for the input from public engagement and ACPS reviews.

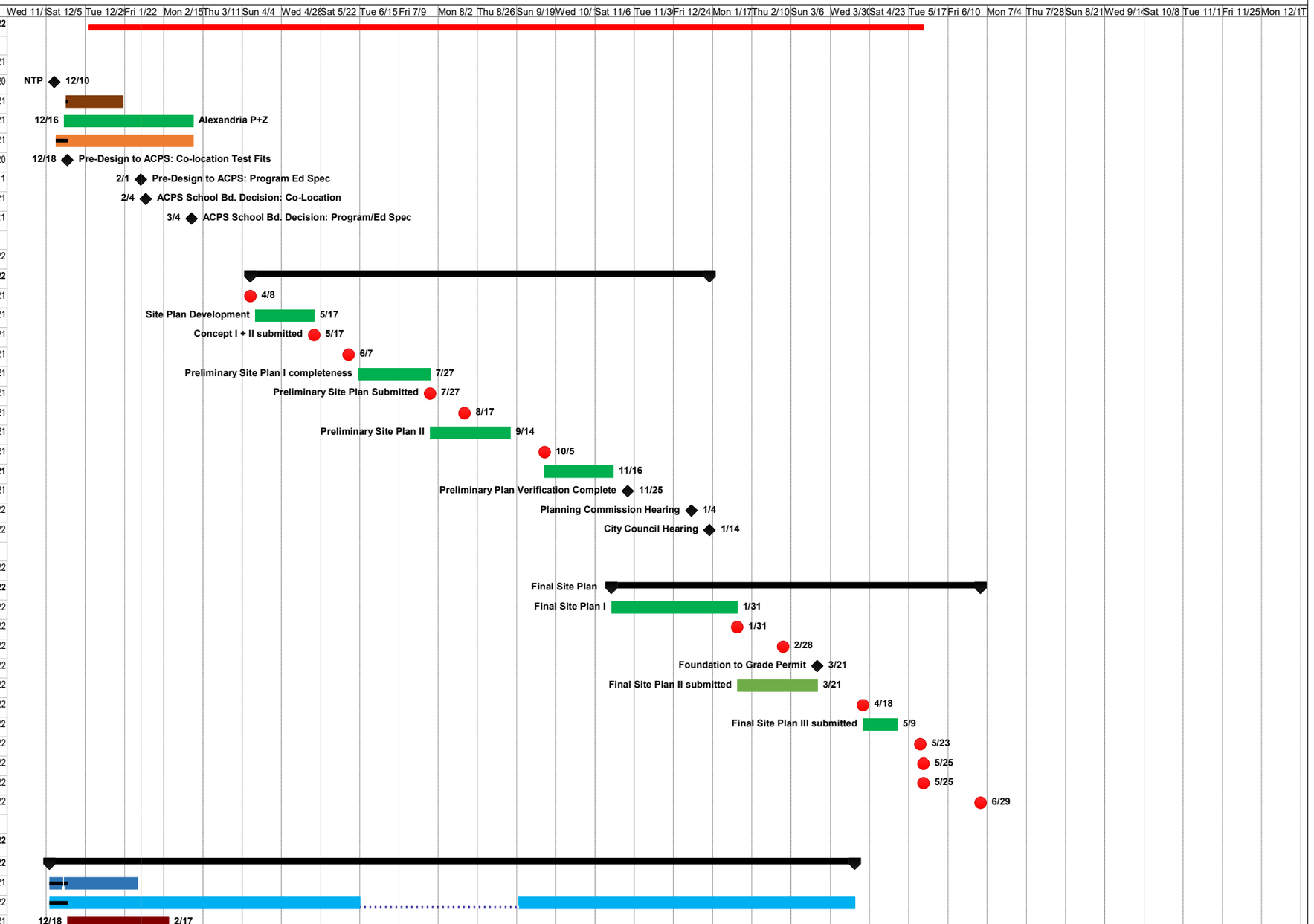
The project's next major milestone will be the Preliminary Site Plan submission and approval that will allow the project to be heard at the Winter 2022 Planning Commission Hearing and CityCouncil Hearing. This milestone aligns with the completion of the design development process and the subsequent submission of the final site plan. Given the schedule, the final site plan development package will need to begin prior to the hearings such that submission can occur immediately following a Council approval.

Once the final site plan 1 has been reviewed and the comments addressed, the clearing and grading permit may be issued to allow the contractor to begin construction in Spring of 2022. The final building permit is anticipated to be issued by summer 2022, giving a two year construction phase from the foundations in place, with substantial completion at the end of May 2024. This will allow for adequate time for furnishing and equipment to be installed, and the teachers can set up classrooms prior to the first day of school in the 2024-2025 school year.

Once the 2023-2024 school year ends in June 2024, the existing Minnie Howard building may be demolished, and the work associated with constructing the fields and the west end of the site can begin in the summer of 2024. This work is anticipated to last approximately 10 months so the fields may be accessible in the late Spring of 2025.

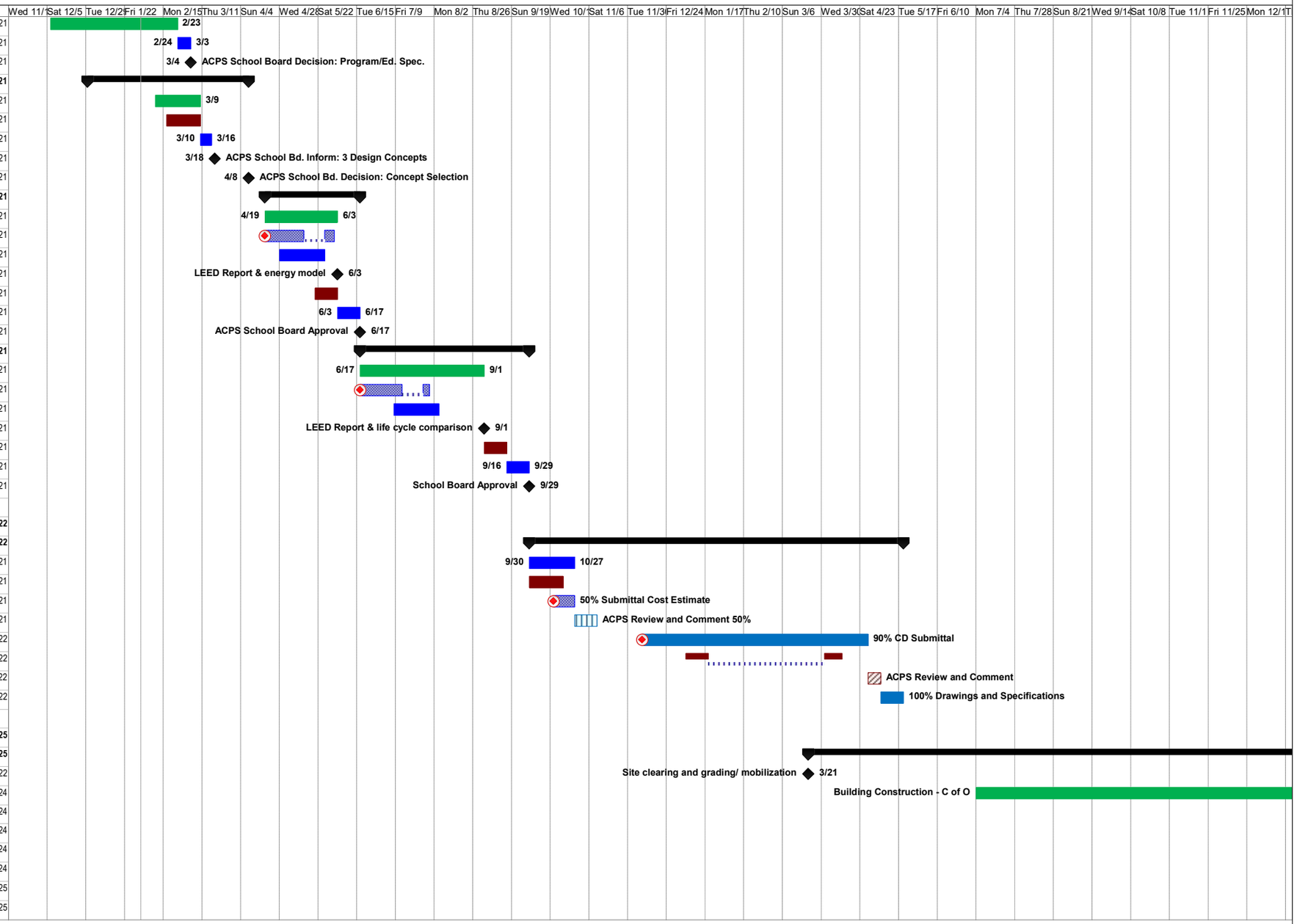
PROJECT WORK PLAN AND TIMELINE - THE HIGH SCHOOL PROJECT

ID	Task Name	Start	Finish
1	**SITE PLAN DEVELOPMENT**	**Thu 12/31/20**	**Wed 5/25/22**
2			
3	A. PREDESIGN	Thu 12/10/20	Thu 3/4/21
4	NTP	Thu 12/10/20	Thu 12/10/20
5	Site Survey	Thu 12/17/20	Wed 1/20/21
6	Alexandria P+Z	Wed 12/16/20	Thu 3/4/21
7	Public Outreach	Fri 12/11/20	Thu 3/4/21
8	Pre-Design to ACPS: Co-location Test Fits	Fri 12/18/20	Fri 12/18/20
9	Pre-Design to ACPS: Program Ed Spec	Mon 2/1/21	Mon 2/1/21
10	ACPS School Bd. Decision: Co-Location	Thu 2/4/21	Thu 2/4/21
11	ACPS School Bd. Decision: Program/Ed Spec	Thu 3/4/21	Thu 3/4/21
12			
13	B. CONCEPT AND PRELIMINARY PLANS	Thu 4/8/21	Fri 1/14/22
14	**Entitlement Process**	**Thu 4/8/21**	**Fri 1/14/22**
15	ACPS School Bd. Decision: Design Concept	Thu 4/8/21	Thu 4/8/21
16	Site Plan Development	Mon 4/12/21	Mon 5/17/21
17	**Concept I + II submitted**	Mon 5/17/21	Mon 5/17/21
18	Concept Review Comments	Mon 6/7/21	Mon 6/7/21
19	**Preliminary Site Plan I completeness**	Mon 6/14/21	Tue 7/27/21
20	Preliminary Site Plan Submitted	Tue 7/27/21	Tue 7/27/21
21	Preliminary Completeness Comments	Tue 8/17/21	Tue 8/17/21
22	**Preliminary Site Plan II**	Wed 7/28/21	Tue 9/14/21
23	Premininary Plan Deemed Complete	Tue 10/5/21	Tue 10/5/21
24	**Preliminary Site Plan Verification**	**Wed 10/6/21**	**Tue 11/16/21**
25	Preliminary Plan Verification Complete	Thu 11/25/21	Thu 11/25/21
26	**Planning Commission Hearing**	Tue 1/4/22	Tue 1/4/22
27	**City Council Hearing**	Fri 1/14/22	Fri 1/14/22
28			
29	C. SITE PLAN SUBMITTAL	Tue 11/16/21	Wed 6/29/22
30	**Final Site Plan**	**Tue 11/16/21**	**Wed 6/29/22**
31	Final Site Plan I	Tue 11/16/21	Mon 1/31/22
32	**Final Site Plan I submitted**	Mon 1/31/22	Mon 1/31/22
33	Final Site Plan I comments sent	Mon 2/28/22	Mon 2/28/22
34	**Foundation to Grade Permit**	Mon 3/21/22	Mon 3/21/22
35	**Final Site Plan II submitted**	Tue 2/1/22	Mon 3/21/22
36	Final Site Plan II comments sent	Mon 4/18/22	Mon 4/18/22
37	**Final Site Plan III submitted**	Tue 4/19/22	Mon 5/9/22
38	Final Site Plan III comments sent	Mon 5/23/22	Mon 5/23/22
39	Mylars submitted	Wed 5/25/22	Wed 5/25/22
40	**Building Permit Submitted to Code**	Wed 5/25/22	Wed 5/25/22
41	Building Permit Issued	Wed 6/29/22	Wed 6/29/22
42			
43	**D. SCHEMATIC/DESIGN DEVELOPMENT**	**Mon 12/7/20**	**Wed 4/13/22**
44	**Predesign Submission**	**Mon 12/7/20**	**Wed 4/13/22**
45	ACPS Programming Meetings	Mon 12/7/20	Fri 1/29/21
46	ACPS Stakeholder Meetings (EDT, IAB, etc.)	Mon 12/7/20	Wed 4/13/22
47	Prelim. Cost Estimate	Fri 12/18/20	Wed 2/17/21



PROJECT WORK PLAN AND TIMELINE - THE HIGH SCHOOL PROJECT

ID	Task Name	Start	Finish
48	Pre-Design Submissions	Mon 12/7/20	Tue 2/23/21
49	ACPS Review	Wed 2/24/21	Wed 3/3/21
50	ACPS School Board Decision: Ed. spec.	Thu 3/4/21	Thu 3/4/21
51	**Concept Design**	**Wed 12/30/20**	**Thu 4/8/21**
52	3 Design Concept Submission to ACPS	Wed 2/10/21	Tue 3/9/21
53	Cost Estimate	Wed 2/17/21	Tue 3/9/21
54	ACPS Review	Wed 3/10/21	Tue 3/16/21
55	ACPS School Bd. Inform: 3 Design Concepts	Thu 3/18/21	Thu 3/18/21
56	ACPS School Bd. Decision: Concept Selection	Wed 12/30/20	Thu 4/8/21
57	**Schematic Design**	**Mon 4/19/21**	**Thu 6/17/21**
58	Schematic Design	Mon 4/19/21	Thu 6/3/21
59	**LEED meeting**	Mon 4/19/21	Mon 5/31/21
60	Material + Systems Outline	Wed 4/28/21	Tue 5/25/21
61	LEED Report & energy model	Thu 6/3/21	Thu 6/3/21
62	Cost Estimate	Thu 5/20/21	Thu 6/3/21
63	ACPS Review + Comment	Thu 6/3/21	Thu 6/17/21
64	ACPS School Board Approval	Thu 6/17/21	Thu 6/17/21
65	**Design Development**	**Thu 6/17/21**	**Wed 9/29/21**
66	Design Development Submission	Thu 6/17/21	Wed 9/1/21
67	**LEED meeting**	Thu 6/17/21	Thu 7/29/21
68	Material + Systems Outline	Thu 7/8/21	Wed 8/4/21
69	LEED Report & life cycle comparison	Wed 9/1/21	Wed 9/1/21
70	Cost Estimate	Thu 9/2/21	Wed 9/15/21
71	ACPS Review + Comment	Thu 9/16/21	Wed 9/29/21
72	School Board Approval	Wed 9/29/21	Wed 9/29/21
73			
74	**E. CONSTRUCTION DOCUMENTS**	**Thu 9/30/21**	**Thu 5/19/22**
75	**CD Drawings**	**Thu 9/30/21**	**Thu 5/19/22**
76	50% Contract Documents	Thu 9/30/21	Wed 10/27/21
77	Enhanced commissioning	Thu 9/30/21	Wed 10/20/21
78	50% Submittal Cost Estimate	Fri 10/15/21	Wed 10/27/21
79	ACPS Review and Comment 50%	Thu 10/28/21	Wed 11/10/21
80	90% CD Submittal	Thu 12/9/21	Wed 4/27/22
81	Prepare/Submit Cost Estimates (2)	Wed 1/5/22	Mon 4/11/22
82	ACPS Review and Comment	Thu 4/28/22	Thu 5/5/22
83	100% Drawings and Specifications	Fri 5/6/22	Thu 5/19/22
84			
85	**F. CONSTRUCTION**	**Mon 3/21/22**	**Wed 4/30/25**
86	**SITE WORK**	**Mon 3/21/22**	**Wed 4/30/25**
87	Site clearing and grading/ mobilization	Mon 3/21/22	Mon 3/21/22
88	Building Construction - C of O	Mon 7/4/22	Fri 5/31/24
89	Substantial Completion	Fri 5/31/24	Fri 5/31/24
90	Teacher set up in classrooms	Mon 6/3/24	Fri 7/12/24
91	First Day of School Minnie Howard Campus	Tue 9/3/24	Tue 9/3/24
92	Demolition of Existing Building	Thu 6/20/24	Tue 7/9/24
93	Field Construction	Wed 7/10/24	Tue 4/29/25
94	Final Cert. of Occupancy Project Complete	Wed 4/30/25	Wed 4/30/25



PROJECT WORK PLAN AND TIMELINE - THE HIGH SCHOOL PROJECT

ID	Task Name	Start	Finish
48	Pre-Design Submissions	Mon 12/7/20	Tue 2/23/21
49	ACPS Review	Wed 2/24/21	Wed 3/3/21
50	ACPS School Board Decision: Program/Ed. Sp	Thu 3/4/21	Thu 3/4/21
51	**Concept Design**	**Wed 12/30/20**	**Thu 4/8/21**
52	3 Design Concept Submission to ACPS	Wed 2/10/21	Tue 3/9/21
53	Cost Estimate	Wed 2/17/21	Tue 3/9/21
54	ACPS Review	Wed 3/10/21	Tue 3/16/21
55	ACPS School Bd. Inform: 3 Design Concepts	Thu 3/18/21	Thu 3/18/21
56	ACPS School Bd. Decision: Concept Selection	Wed 12/30/20	Thu 4/8/21
57	**Schematic Design**	**Mon 4/19/21**	**Thu 6/17/21**
58	Schematic Design	Mon 4/19/21	Thu 6/3/21
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62	Cost Estimate	Thu 5/20/21	Thu 6/3/21
63	ACPS Review + Comment	Thu 6/3/21	Thu 6/17/21
64	ACPS School Board Approval	Thu 6/17/21	Thu 6/17/21
65	**Design Development**	**Thu 6/17/21**	**Wed 9/29/21**
66	Design Development Submission	Thu 6/17/21	Wed 9/1/21
67	**LEED meeting**	Thu 6/17/21	Thu 7/29/21
68	Material + Systems Outline	Thu 7/8/21	Wed 8/4/21
69	LEED Report & life cycle comparison	Wed 9/1/21	Wed 9/1/21
70	Cost Estimate	Thu 9/2/21	Wed 9/15/21
71	ACPS Review + Comment	Thu 9/16/21	Wed 9/29/21
72	School Board Approval	Wed 9/29/21	Wed 9/29/21
73			
74	**E. CONSTRUCTION DOCUMENTS**	**Thu 9/30/21**	**Thu 5/19/22**
75	**CD Drawings**	**Thu 9/30/21**	**Thu 5/19/22**
76	50% Contract Documents	Thu 9/30/21	Wed 10/27/21
77	Enhanced commissioning	Thu 9/30/21	Wed 10/20/21
78	50% Submittal Cost Estimate	Fri 10/15/21	Wed 10/27/21
79	ACPS Review and Comment 50%	Thu 10/28/21	Wed 11/10/21
80	90% CD Submittal	Thu 12/9/21	Wed 4/27/22
81	Prepare/Submit Cost Estimates (2)	Wed 1/5/22	Mon 4/11/22
82	ACPS Review and Comment	Thu 4/28/22	Thu 5/5/22
83	100% Drawings and Specifications	Fri 5/6/22	Thu 5/19/22
84			
85	**F. CONSTRUCTION**	**Mon 3/21/22**	**Wed 4/30/25**
86	**SITE WORK**	**Mon 3/21/22**	**Wed 4/30/25**
87	Site clearing and grading/ mobilization	Mon 3/21/22	Mon 3/21/22
88	Building Construction - C of O	Mon 7/4/22	Fri 5/31/24
89	Substantial Completion	Fri 5/31/24	Fri 5/31/24
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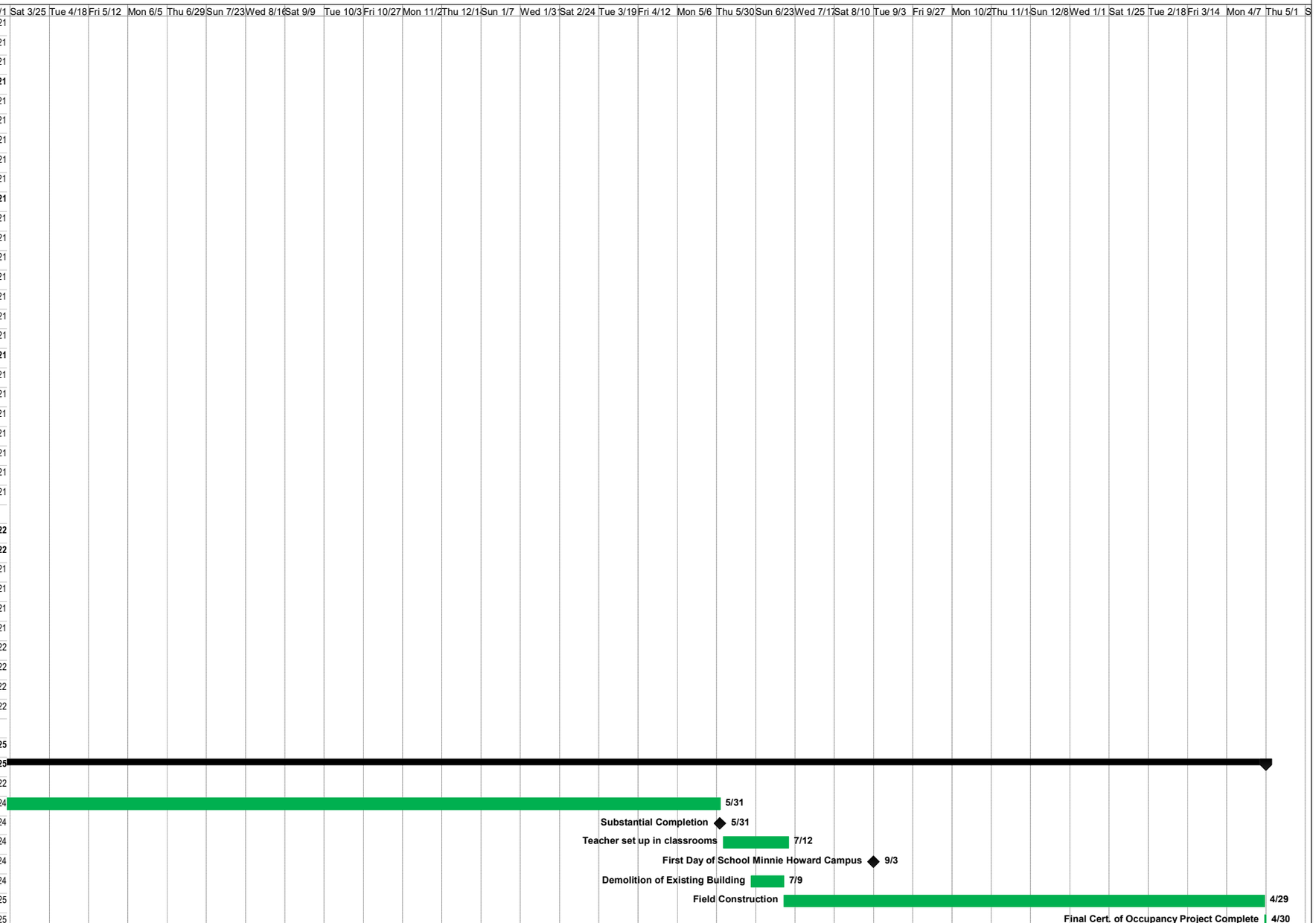

6.4 MEETINGS

PROJECT MEETINGS

The following is a list of meetings that have occurred with ACPS Leadership, stakeholders, and City Agencies since our design team began this project through February 26, 2021. Internal A/E design team meetings (including design, programming, A/E team, budget, schedule, and daily architectural team meetings) are not included.

NOVEMBER 2020

11/23 EDT and THSP Space and Site Program Overview

11/24 EDT and THSP Space and Site Program Overview

DECEMBER 2020

12/4 Design Contract Kick Off Status and Planning

12/7 THSP - Core Team Project Weekly Progress Meeting

12/8 School Space Team A/E Kick Off Prep

12/8 School Space Team A/E Team Orientation and Kick Off

12/9 Affordable Housing Site Planning and Design Assumptions

12/9 Zoning Informal Meeting

12/9 THSP Design and DSUOP Schedule Meeting

12/9 EDT Meeting – SLCs

12/10 School Scheduling Meeting w/ ACPS Leadership-School Scheduling Associates

12/14 THSP - Core Team Project Weekly Progress Meeting

12/15 Program Verification Status and Outstanding Questions

DECEMBER 2020

12/16 Fields and Athletic Spaces Requirements Confirmation

12/16 Planning & Zoning/ACPS Bi-Weekly Meeting

12/16 Focus Group Meeting - Big Picture Questions

12/18 Focus Group Meeting

12/18 THSP CTE Programs and Spaces

12/18 Project Progress Meeting

12/21 School Scheduling Meeting w/ TCW-School Scheduling Associates

JANUARY 2021

1/4 THSP - Core Team Project Weekly Progress Meeting

1/4 School Scheduling Meetings w/ School Scheduling Associates

1/5 ACPS-Arch Weekly Design Coordination Meeting

1/5 Energy Savings Performance Contract (ESPC) Meeting

1/6 Public Open Space (POS) Meeting

1/6 Test Fits Meeting w P&Z, T&ES, RPCA, and Housing

1/7 P&Z CIDR Introduction Meeting

1/7 School Scheduling Meetings w/ TCW-School Scheduling Associates

1/8 Project Schedule Meeting

1/8 School Scheduling Meetings w/ TCW LT-School Scheduling Associates

JANUARY 2021

1/8 School Scheduling Meetings w/ TCW LT-School Scheduling Associates

1/8 School Scheduling Meeting w/ TCW LT-School Scheduling Associates

1/8 Budget Meeting

1/11 THSP - Core Team Project Weekly Progress Meeting

1/11 EDT Strategy Meeting

1/12 ACPS-Arch Weekly Design Coordination Meeting

1/13 Planning & Zoning/ACPS Weekly Meeting

1/13 Contract-Consultant Meeting

1/13 EDT Meeting (group 1-design patterns, group 2-school scheduling)

1/14 School Scheduling Meeting w/ TCW-School Scheduling Associates

1/15 EDT Recap and Next Steps Meeting

1/15 King Street Campus – Site Visit/Tour

1/19 ACPS-Arch Weekly Design Coordination Meeting

1/20 EDT Full Group Meeting

1/20 Alexandria Health Department Meeting

1/20 EDT Focus Group Meeting

1/21 Senior Leadership Team (SLT) Meeting

1/21 EUI, PV, Roof Area, and Housing Meeting

JANUARY 2021

1/21 School Board Work Session (Information on colocation)

1/25 THSP - Core Team Project Weekly Progress Meeting

1/25 THSP Community Meeting

1/26 ACPS-Arch Weekly Design Coordination Meeting

1/26 School Scheduling Meeting w/ TCW-School Scheduling Associates

1/27 Planning & Zoning/ACPS Weekly Meeting

1/28 Special Education Requirements for THSP Meeting

1/28 Library Requirements for THSP Meeting

1/28 Counselor/College Career Center/Scholarship Fund of Alexandria for THSP Meeting

1/29 Department of Community and Human Services (DCHS) Space Requirements Meeting

1/29 International Academy Space Requirements Meeting

FEBRUARY 2021

2/1 THSP - Core Team Project Weekly Progress Meeting

2/2 ACPS-Arch Weekly Design Coordination Meeting

2/3 Planning & Zoning/ACPS Weekly Meeting

2/4 School Board Meeting – Co-location Decision on Housing

6.4 MEETINGS

FEBRUARY 2021

2/5 THSP Prep for Staff Meetings w ACPS

2/5 Review of ACPS' comments on Comprehensive Program/Ed Spec Draft

2/8 THSP - Core Team Project Weekly Progress Meeting

2/9 Prep/Sync for EDT Meeting

2/9 Parking Requirements Meeting w/ TCW and RPCA

2/9 ACPS-Arch Weekly Design Coordination Meeting

2/10 Planning & Zoning/ACPS Weekly Meeting

2/10 Budget Review Meeting

2/10 EDT Meeting

2/16 ACPS-Arch Weekly Design Coordination Meeting

2/17 Planning & Zoning/ACPS Weekly Meeting

2/17 THSP Prep for School Board Work Session

2/18 Prep for EDT Meeting

2/18 ACPS Review of Ed Spec Updated Submission 2 and School Scheduling

2/18 Dry Run for School Board Work Session

2/18 School Board Work Session (Inform Ed Spec)

2/19 Prep for Teacher and Student Feb 22 Meetings

2/22 THSP - Core Team Project Weekly Progress Meeting

FEBRUARY 2021

2/22 T.C. Williams Teacher Feedback on Ed Spec - Session 1

2/22 T.C. Williams Teacher Feedback on Ed Spec - Session 2

2/22 T.C. Williams Teacher Feedback on Ed Spec - Session 3

2/22 T.C. Williams Student Feedback Session

2/22 Prep for EDT Meeting

2/22 Student Participation Planning

2/23 EDT Meeting Preparation/Dry-Run

2/23 ACPS-Arch Weekly Design Coordination Meeting

2/23 Science Classroom Inventory and Feedback on Adequacy

2/24 IT Services Focus Group Meeting

2/24 P&Z Weekly Design Coordination Meeting

2/24 Maintenance and Custodial Services Focus Group Meeting

2/24 EDT Meeting

2/25 Food Service/Dining Commons Focus Group Meeting

2/25 Fairlington Towne Association Meeting - Project Update

2/26 Science Focus Group Meeting

2/26 Check-In School Board 2x2 Feedback for Ed Spec Submission

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