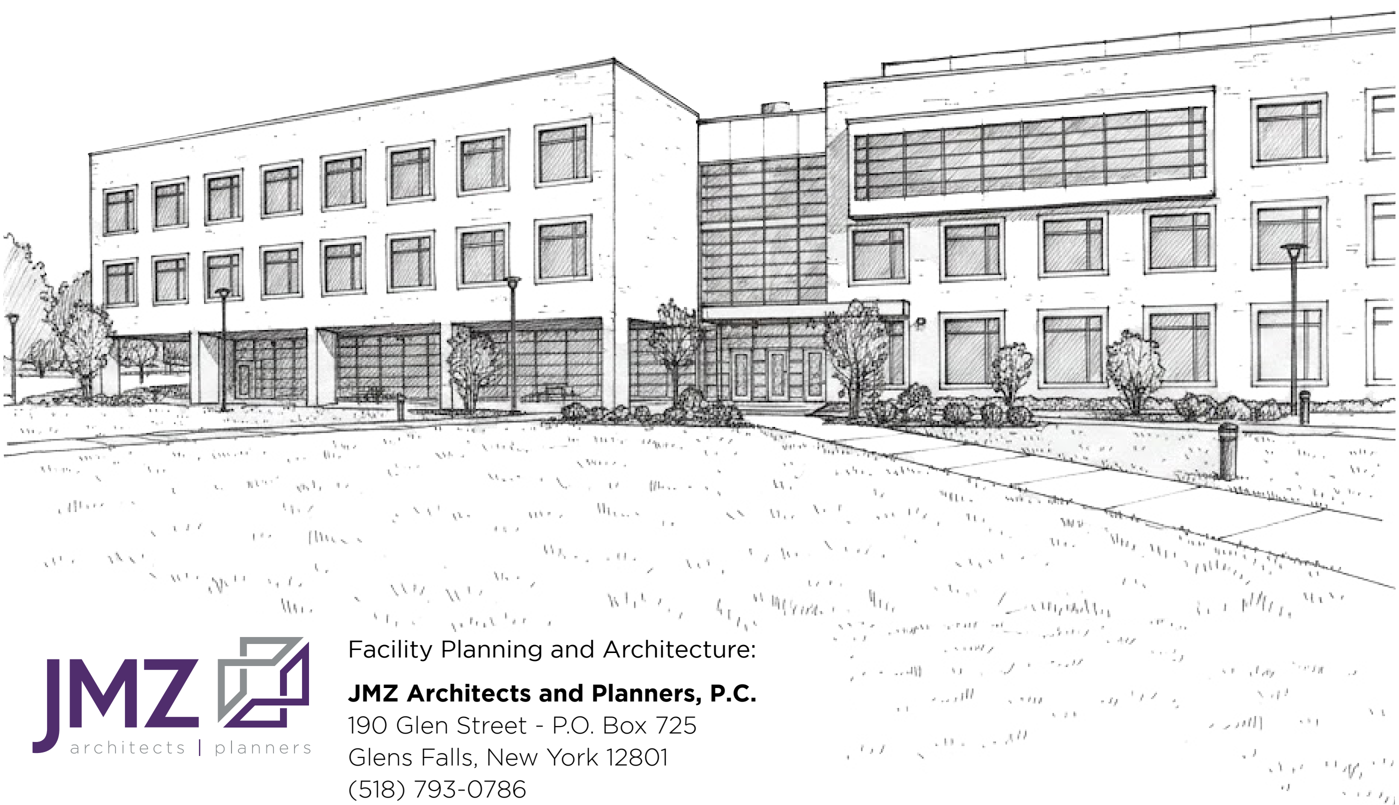
DUNCAN HALL RENOVATION

Part I and II Facility Program

February 27, 2026

HOWARD COMMUNITY COLLEGE

10901 Little Patuxent Parkway
Columbia, MD
21044



Facility Planning and Architecture:

JMZ Architects and Planners, P.C.
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Glens Falls, New York 12801
(518) 793-0786

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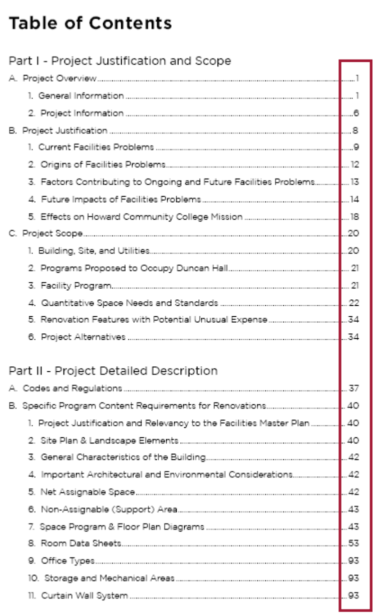
1. The Table of Contents is clickable. Click on a page number to advance to the selected page.
2. A click on the bottom center of any page will return the PDF to the Table of Contents.
3. The PDF includes bookmarks for each section.

1. Clickable Table of Contents



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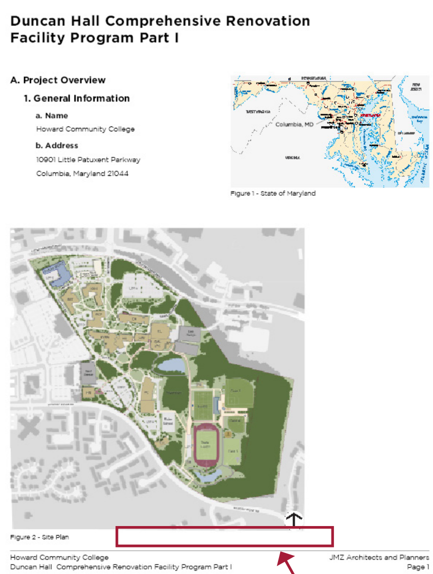

Duncan Hall Comprehensive Renovation Facility Program Part I

A. Project Overview

1. General Information

a. Name

Howard Community College

b. Address

10901 Little Patuxent Parkway
Columbia, Maryland 21044

Figure 1 - State of Maryland

Figure 2 - Site Plan

Howard Community College
Duncan Hall Comprehensive Renovation Facility Program Part I
JMZ Architects and Planners
Page 1

3. Bookmarked PDF

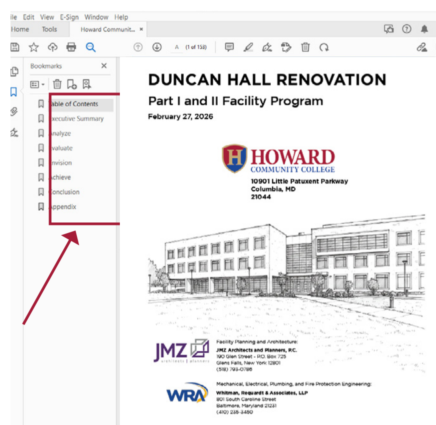

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Table of Contents

Part I - Project Justification and Scope

Part II - Project Detailed Description

Duncan Hall Comprehensive Renovation Facility Program Part I

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Figure 1 - State of Maryland

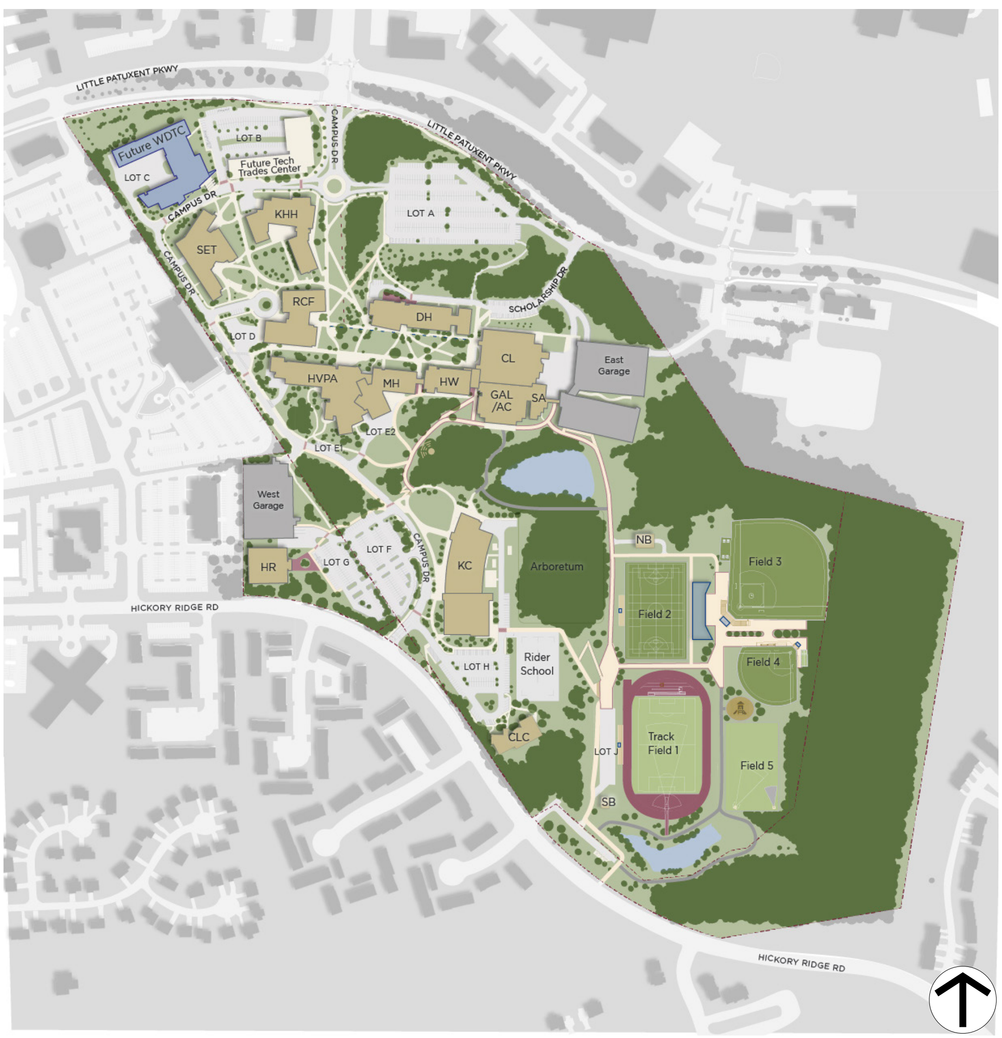


Figure 2 - Site Plan

c. Mission, Vision, and Values

College Mission: Provide pathways to success through accessible, innovative, and high-quality educational opportunities that transform lives and strengthen communities.

College Vision: Be the premier higher education resource for personal and professional achievement in Howard County, Maryland.

Our College values are:

Innovation
Nurturing
Service and Sustainability
Partnerships
Integrity
Respect
Excellence
Diversity, Equity, and Inclusion

d. Historical Summary

Howard Community College (HCC) is a fully accredited, public, two-year institution established in 1966. The College opened in Columbia, Maryland, on October 12, 1970, as the first Maryland community college to open with its own new campus. HCC has since expanded from nine initial programs to more than 130 credit and noncredit offerings.

<u>Degree and Credential Types</u>

The College offers programs designed for transfer to a four-year institution, for immediate career entry, or career advancement. HCC confers two-year degrees and other credentials.

- A.A. Degree (Associate of Arts): Recognizes mastery in the arts and sciences.
- A.A.S. Degree (Associate of Applied Science): Designed primarily to lead to immediate employment.
- A.A.T. Degree (Associate of Arts in Teaching): Designed for transfer to a four-year institution to obtain a baccalaureate degree and teacher certification.
- A.S.E. Degree (Associate of Science in Engineering): Designed for transfer to a four-year institution to obtain a baccalaureate degree in engineering.
- Certificate: A certificate is awarded to students who have concentrated study in a specialized subject matter area and have satisfied completion of the approved curriculum through Howard Community College.
- Letter of Recognition: Granted for completing a designated set of courses intended to enhance skills.

<u>Academic Divisions and Departments</u>

HCC has four academic divisions and a division of Workforce, Career, and Community Development.

- Division of Foundational Learning
- Division of Liberal Studies: Instructional areas include Public & Human Services, Humanities, Performing Arts, Psychology, Social Sciences, Teacher Education, Visual Arts, and World Languages.
- Division of Health and Sciences: This division cultivates curious minds and compassionate professionals through hands-on, inquiry-driven, and career-focused programs in the health, life, and physical sciences. Instructional areas include Health Sciences, Life Sciences, Natural Sciences, and Physical Sciences.
- Division of Business, Engineering, and Technology: This division empowers future leaders, creators, and problem-solvers through innovative, hands-on, and industry-relevant courses. Instructional areas include Business, Cyber Technology, Engineering, Hospitality, and Technology.
- Division of Workforce, Career & Community Education: The Workforce, Career & Community Education division provides training development solutions, health care programs, child care certification, and support through the English Language Center. In FY 2024, HCC served 9,370 noncredit continuing education students, including 3,250 enrolled in workforce development training.

Enrollment Change

The College experienced rapid growth since it opened its doors to 594 students in 1970. By 2014, HCC had reached over 14,000 annual headcount, a figure which held steady most years until the COVID 2019 pandemic. Following a brief drop below 13,000 annual headcount, HCC rebounded to 14,060 annual headcount in 2023-2024.

Despite relatively consistent headcount enrollment, the number of credits achieved per year has decreased, on average, since 2013-2014. That year, credits approached 14 per student. In 2024-2025, students achieved under 12 credits each, on average (Figure 3).

Due to academic restructuring, historical enrollment data by department cannot be directly compared to current figures. To better understand long-term trends, program completions were analyzed using federal Classification of Instructional Programs (CIP) codes (Figure 4).

The three largest CIP areas - Liberal Arts and Sciences, Health Professions, and Business - accounted for 88.7% of completions in 2019 and 87.6% of completions in 2024. As shown in the chart, Liberal Arts has consistently represented more than half of all completions, though its share of completions has decreased due to growth in other CIP areas.

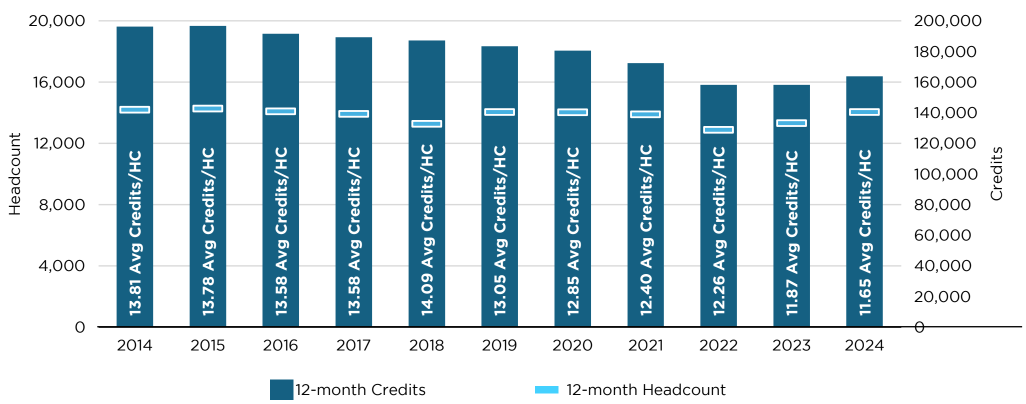


Figure 3 - Fall Headcount (Source: IPEDS)

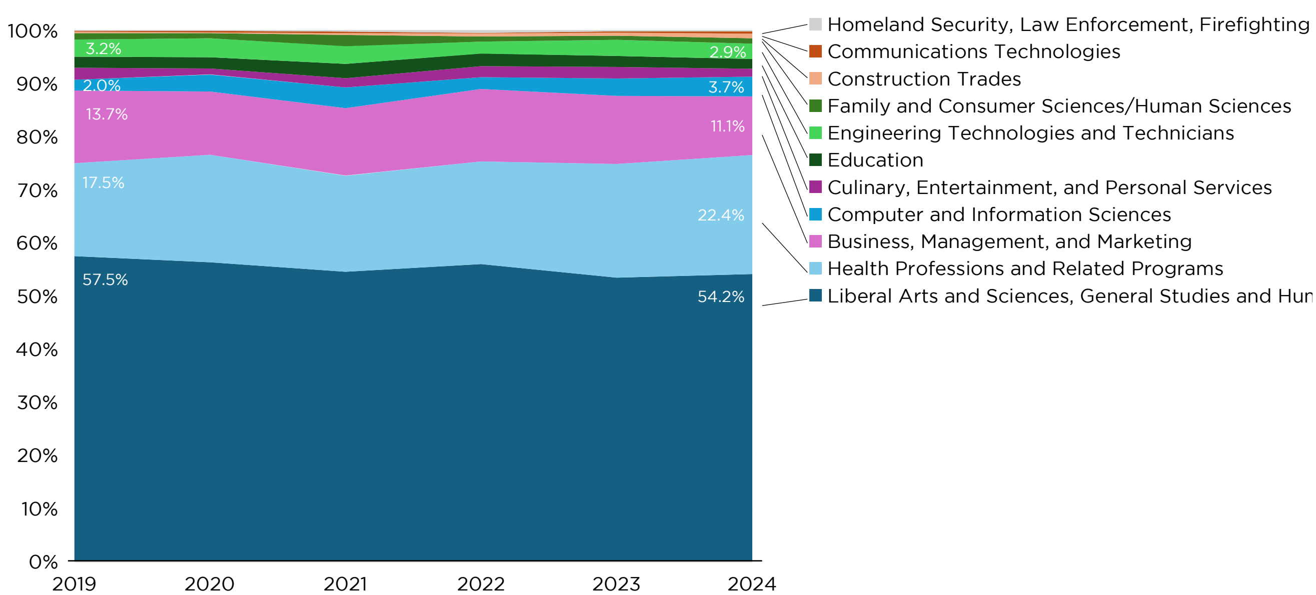


Figure 4 - Completions by CIP Code (source: IPEDS)

Campus Geography

The Howard Community College (HCC) campus is situated in Columbia, Maryland, covering a physical area of 125 acres. The campus is centrally located within the city; surrounding development prevents geographic expansion. The campus's 15 buildings encompass nearly one million gross square feet of space.

The campus preserves sensitive natural areas, integrating them in campus walks and trails. It contains 21.25 acres designated as protected Forest Conservation Areas, which are spread throughout the grounds and limit potential sites for new buildings. The forested sections are composed of local tree species, including oaks, hickory, red maple, cherry, beech, black gum, tulip poplar, and sassafras. Additionally, the headwaters of the Little Patuxent River originate on the HCC campus. The College has implemented a policy to use only native species for new landscape plantings. To maintain the natural ecosystem, initial selective removal of invasive species - such as poison ivy, multi-flora rose, and honeysuckle - has been carried out along forest edges to facilitate the natural recovery of native plant life on the forest floor. The campus also features rain gardens designed to filter and slow rainwater before it enters surface waterways.

The existing pathways are recognized as part of Columbia's public trail network, and the campus is linked to the downtown area by a dedicated hike/bike path, with a BikeShare station located on the quad. However, pedestrian movement and accessibility across campus is discontinuous. Accessible routes and protected pedestrian walks are interrupted by topography and vehicular roads.

Modern Expansion

Since 2000, HCC has undergone a period of expansion, transforming the campus from a collection of modest structures into a vibrant academic environment organized around quads and preserved natural zones.

Between 2000 and 2024, seven major buildings were added:

- Children's Learning Center (2000)
- Duncan Hall (2003)
- Horowitz Visual & Performing Arts Center (2006)
- Rouse Company Foundation Student Services Hall (2007)
- Katherine Hetherington Hall (2013)
- Science, Engineering, and Technology Building (2017)
- Kahlert Foundation Complex (2024)

In addition, significant renovations repurposed older facilities - such as the Nursing Building, now Howard Hall, and the former Science and Technology Building, now Academic Commons. Collectively, these projects have given HCC the look and feel of a comprehensive four-year institution, a sentiment often echoed by visitors to the campus.

The College is continuing campus development with major projects either underway or in the planning phase, which will further define the campus footprint:

- Under Construction: The Workforce Development and Trades Center (WDTC) will expand opportunities in career and technical education.
- Future Development: The College's long-range plan calls for a new Technology Trades Center on the site of Parking Lot B, projected for development in 2035 or later. This facility will support emerging programs in Electric Vehicle Technology, Applied Artificial Intelligence and Machine Learning, and clinical fields such as Dental Hygiene and Cosmetology. Paired with the WDTC, this facility will create a skilled trades and workforce development zone at the North Entrance of HCC.

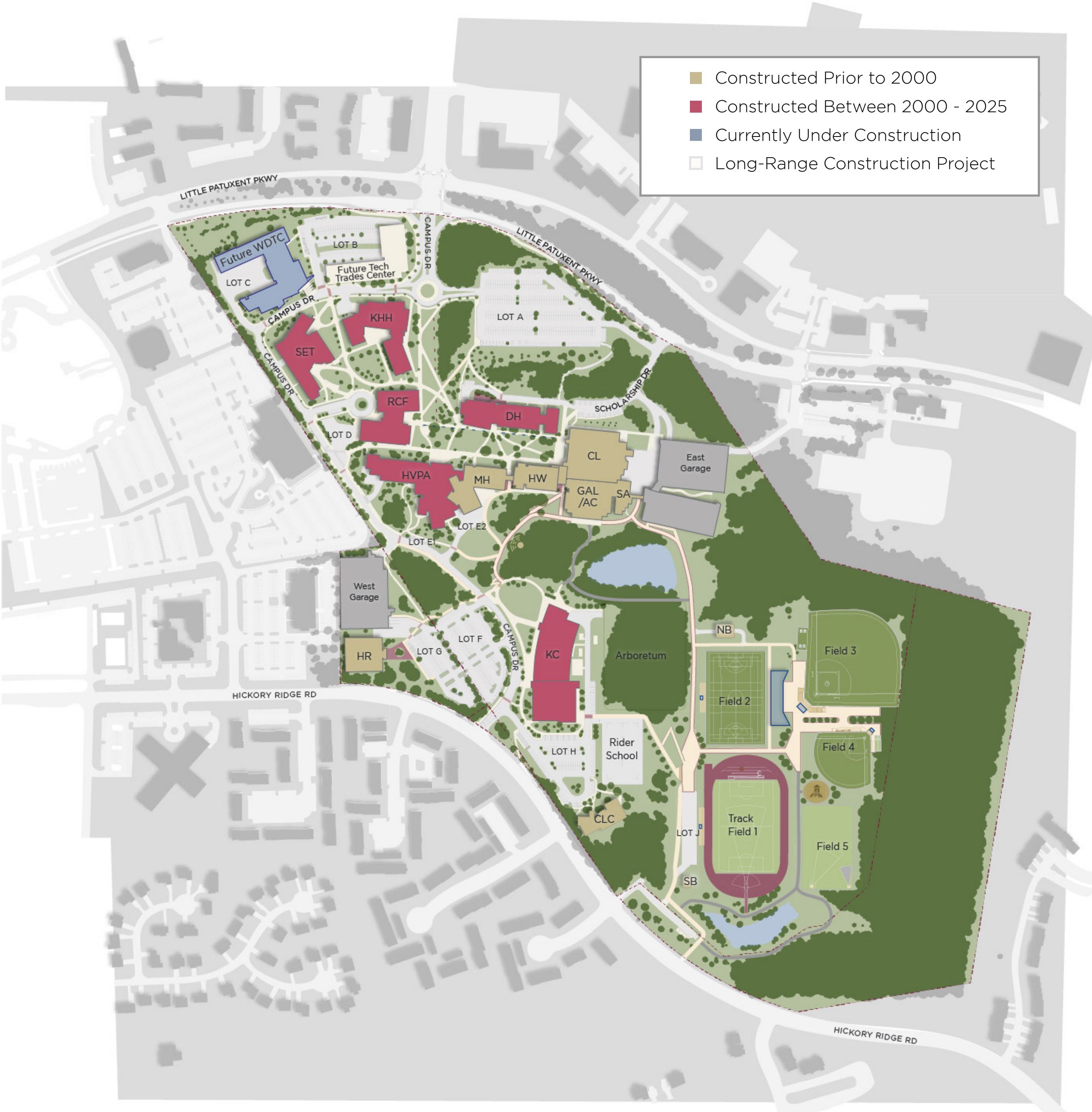


Figure 5 - Campus Expansion

e. Organizational Units Included in the Project

Duncan Hall currently supports English & World Languages and Business & Computer Systems. Following renovation, Duncan Hall will house:

- English Language Center (ELC)
- Department offices for English, World Languages, and Business departments
- General use classrooms
- Specialized labs for English Language Center, Writing, Computer Science, and Entrepreneurship

2. Project Information

a. Duncan Hall

Duncan Hall is a three-story with partial basement, steel-frame academic building constructed in 2003. At 105,035 gross square feet (GSF), it is one of the largest instructional facilities on the Howard Community College campus. The building includes 45 classrooms and instructional labs, representing 16 percent of the College's net instructional space. Duncan Hall also contains faculty offices, support spaces, and informal study areas. Structurally, the building remains sound, but its original mechanical, electrical, and plumbing systems are nearing the end of their useful life.

b. Proposed Renovation Area

The entire Duncan Hall building will be renovated, encompassing 61,820 net assignable square feet (NASF) within its 105,035 gross square feet. The existing distribution of space across functional categories is shown below.

Room Use	NASF	Room Count
Classroom (110)	9,685	14
Class Laboratory (210)	29,907	29
Class Laboratory Service (215)	630	2
Open Laboratory (220)	3,913	2
Office (310)	8,360	56
Office Service (315)	295	2
Conference Room (350)	1,729	4
Study Room (410)	1,365	5
Media Production (530)	462	1
Lounge (650)	1,080	3
Lounge Service (655)	312	3
Meeting Room (680)	2,822	1
Shop Service (725)	1,260	2
Total	**61,820**	**124**

Figure 6 - Existing Duncan Hall Uses

c. Major Purpose of the Project

Duncan Hall's aging building systems led to its comprehensive renovation being a priority project in HCC's 2025 Facilities Master Plan (FMP). In addition, its classrooms are in need of equipment and finishes updates. A campuswide instructional space utilization study confirmed that Duncan Hall could be taken offline for renovation.

- The Kahlert Complex absorbs demand from the Hickory Ridge Building, an aging office building that was converted to classrooms.
- Hickory Ridge can serve as swing space for the Duncan Hall renovation. In addition, there are 23 classrooms in the buildings surrounding the College Green (excluding Duncan Hall) that can absorb up to 140 additional hours of instruction, according to analysis of the fall 2023 course schedule and physical space inventory.
- When complete, occupants will move back to Duncan Hall, leaving Hickory Ridge vacant for renovation.

d. Major Functions in the Building

When complete, Duncan Hall will continue to serve as a core academic building with expanded functions serving the English Language Center.

- General education classrooms and labs will be reconfigured for flexible layouts, team projects, and digital integration.
- Computer and language labs will be redesigned to support collaborative and technology-assisted learning.
- Faculty and staff offices will be modernized.
- The English Language Center offices will be located on the first floor to better serve diverse learners and connect community-facing programs with the academic heart of campus.
- Student lounges, informal learning spaces, and collaboration areas will be modernized.

e. Site Plan

HCC is located on a 120-acre site in Columbia, Maryland approximately 35 minutes south of Baltimore and 50 minutes north of Washington, D.C.. The campus is organized around a pedestrian spine that connects major academic buildings. The primary vehicular access for the entire campus is facilitated by Campus Drive. Campus Drive connects the campus via two main entrance points:

- The northern entrance is located along Little Patuxent Parkway.
- The southern entrance is located off Hickory Ridge Road.

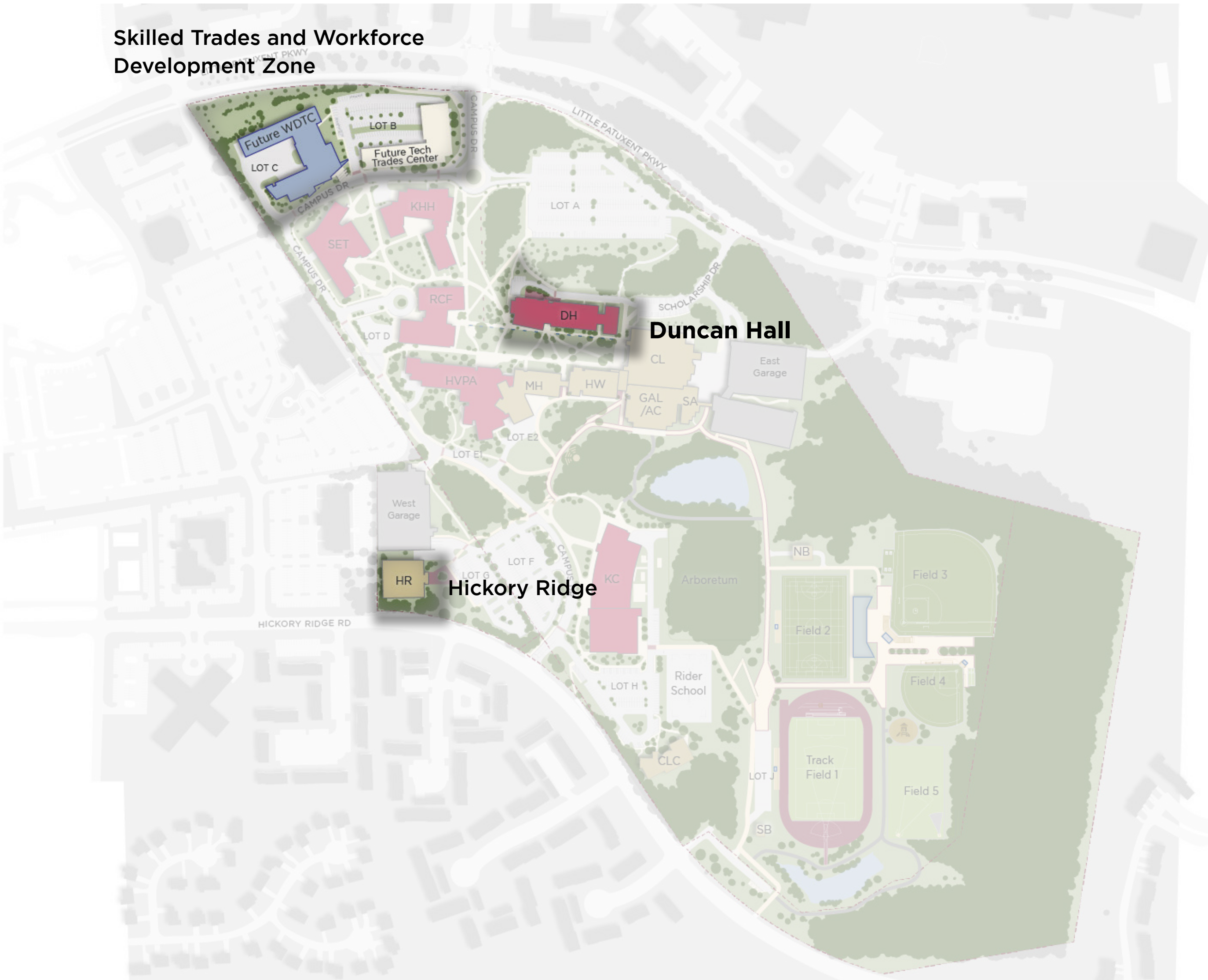


Figure 7 - Duncan Hall Location, and locations of related facilities

f. Building Location

Duncan Hall is located in the academic core, adjacent to the Clark Library and formal Quad. It is served by parking lot A.

Other buildings and zones mentioned in this Facility Program include:

- The Hickory Ridge Building, which houses Workforce, Career & Community Education offices and lecture spaces, including the English Language Center that is proposed to relocate to Duncan Hall.
- The Skilled Trades and Workforce Development Zone, defined by the Workforce Development and Training Center (under construction) and the Technology Trades Center (proposed as a long-range project in the 2025 Facilities Master Plan). .

B. Project Justification

Defining and Measuring Problems

Renovating Duncan Hall and replacing its building systems before 2032 protects HCC against the disruption of unexpected system failures in one of its most heavily used academic buildings. As it approaches its third decade of service, Duncan Hall's structure remains sound, yet its systems are at the end of their useful life. The following pages will outline why Duncan Hall's current condition and space allocation are not suitable for HCC's planned uses of the building.

Existing conditions were documented through facility walkthroughs, maintenance logs, and utilization studies that were part of the 2025 Facilities Master Plan (FMP). Quantitative data were verified through the College's space inventory and class scheduling records, while qualitative assessments were based on field observations and interviews of building users.

FMP enrollment projections show fall 2035 FTDE exceeding 3,000, which would prompt analysis using Maryland's standards for large colleges (Figure 8). While HCC's fall 2023 seat fill in classrooms and computer classrooms exceeded the Maryland target, its hourly utilization did not. Improving hourly utilization by 11 hours per week to reach the large college standard would require changes to scheduling practice and college culture that cannot be implemented overnight. The consultant evaluated swing space needs and Duncan Hall reoccupancy requirements using the Maryland standards for small colleges. As HCC grows, it can accommodate new students while improving hourly utilization to approach 27 hours per week.

Enrollment projections from the Maryland Higher Education Commission (MHEC) and the Facilities Master Plan (FMP) are displayed in Figure 8, right side. Since the FMP projections were made, 2024 data have been submitted.

- Weekly Student Contact Hour projections start with a substantial variation in 2024 and end the decade in 2034 with the MHEC projection 10.8 percent lower than the consultant's.
- Headcount projections align well between HCC's actual enrollment, the consultant's projection, and MHEC's projection. The MHEC

Maryland Utilization Standards

Small Colleges

Colleges with up to 3,000 FTDE

	Hours/ Week	Seat Fill
Classroom	20	60%
Class Lab	15	60%

Large Colleges

Colleges with over 3,000 FTDE

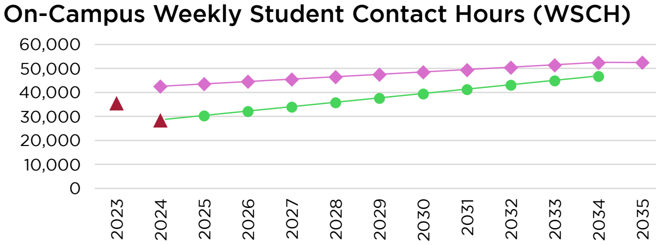
	Hours/ Week	Seat Fill
Classroom	27	67%
Class Lab	18	60%

HCC Fall 2023 Utilization Rates

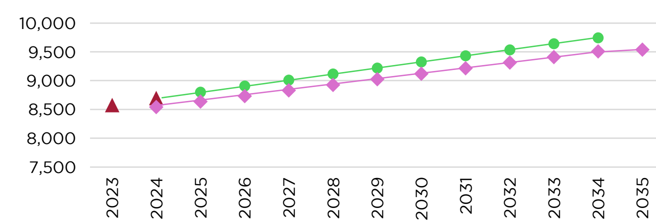
	Hours/ Week	Seat Fill
Classroom	16	74%
Class Lab	13	63%

HCC Enrollment Projections

On-Campus Weekly Student Contact Hours (WSCH)



Headcount



On-Campus Full Time Day Equivalent (FTDE)

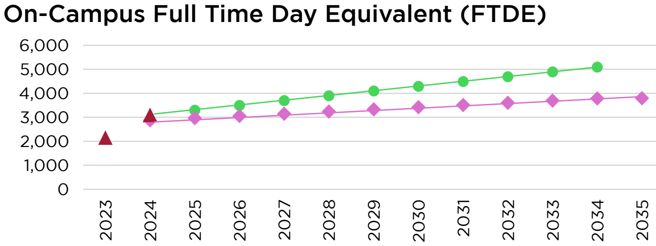


Figure 8 - Enrollment Projection and Utilization Standards

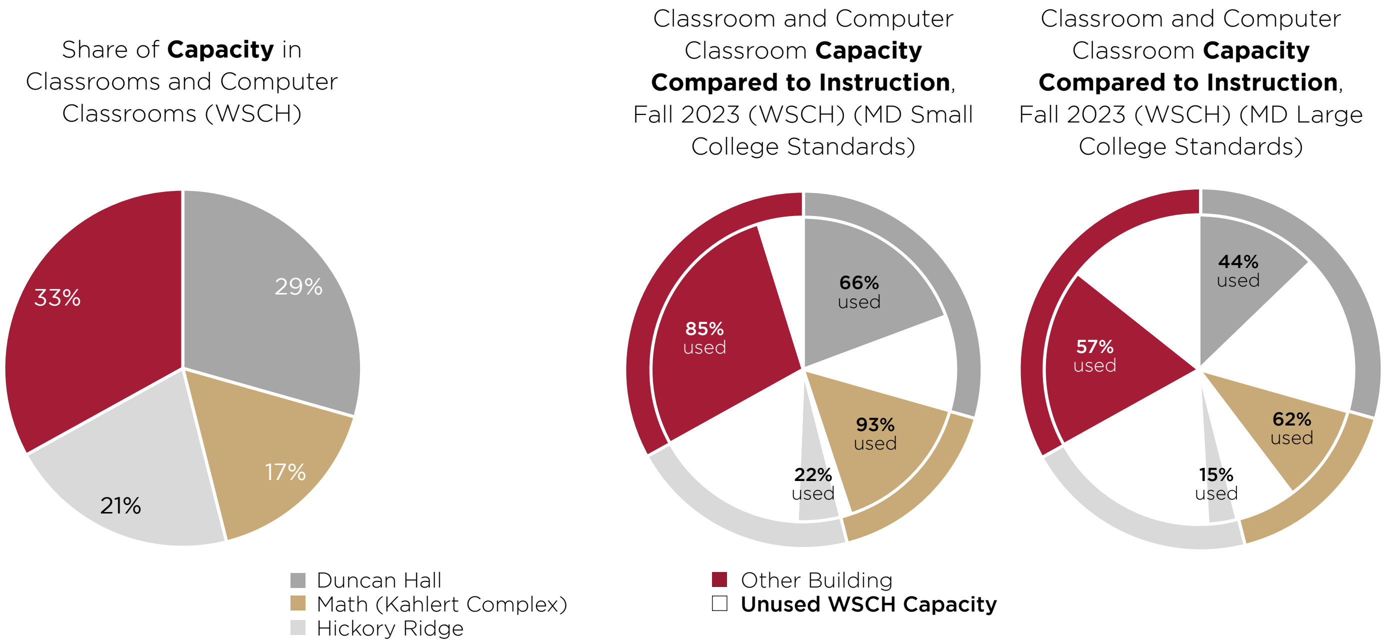


Figure 9 - Instructional Capacity and Demand
Totals may not sum to 100% due to rounding

2034 projection is 2.5% higher than the consultant projection.

- FTDE projections start from around 3,000 FTDE in 2024, but diverge substantially over time. MHEC's 2034 projection is 34 percent higher than the consultant's projection.

The consultant's WSCH projection reflects HCC's goal of increasing on-campus instruction delivery and incorporates the for-credit instruction associated with the College's new Skilled Trades programs, planned to come online in fall 2026. The FTDE and WSCH rate of change projected by the consultant reflects moderate, consistent, growth through 2035.

1. Current Facilities Problems

a. Quantitative Facilities Problems

Instructional Space Utilization

Figure 9 illustrates the instructional capacity at HCC in classrooms and computer classrooms. Duncan Hall comprises 29 percent of the College's total lecture capacity in WSCH.

After the Kahlert Complex opened, Duncan Hall's instructional space comprised 29% of HCC's weekly student contact hour (WSCH) capacity in classrooms and computer classrooms (Figure 9, left side).

Instructional capacity in WSCH was evaluated using Maryland standards for small colleges (with 3,000 FTDE or fewer) and large colleges (3,001 FTDE or more). Fall 2023 instructional demand was compared to both standards, showing there is unused capacity campuswide in classrooms and computer classrooms (Figure 9, right side).

Even if the total HCC classroom count is reduced, the college could accommodate growth in lecture demand. Relocating the English Language Center from Hickory Ridge to Duncan Hall would shift eight classrooms to other uses, which would bring better hourly utilization to Duncan Hall and the rest of HCC's classrooms.

HCC Instructional Capacity

If Duncan Hall were to go offline unexpectedly, the College would lose 14,952 weekly student contact hours (WSCH) worth of capacity, using the small college standards. HCC could increase classroom and computer classroom WSCH by 16% before unused capacity would be fully utilized.

The 2025 Facilities Master Plan projects a 24% increase in WSCH demand by 2035. As demand grows past 16%, **if Duncan Hall were to go offline unexpectedly due to systems failure, HCC would be unable to accommodate its on-campus instructional demand without rapidly altering its scheduling practices. Therefore, completing renovation before reaching that critical growth threshold is a Facilities Master Plan priority.**

b. Existing Qualitative Facilities Problems

Instructional Spaces and Technology

- Existing classrooms and computer classrooms are designed for lecture-based delivery with heavy furnishings and stationary computer workstations, restricting collaboration and group work.
- Approximately 1,000 desktop computers occupy 45 instructional spaces. Students and faculty report that limited flexibility and outdated hardware impede active learning and the use of personal devices.
- Electrical and data access are inconsistent. Many rooms lack sufficient outlets, and wireless connectivity is unreliable in some areas.

Common Areas and Informal Learning

- Lounges and study areas are evenly distributed but lack variety in lighting, furniture, and acoustic conditions. Spaces are not well-suited to the diverse sensory needs of today's student body.
- Additional power outlets and Wi-Fi coverage are required for productive use of informal spaces.

Finishes and Interiors

- Finishes are functional but dated.
- Department offices and academic areas do not express the character of the user groups occupying them. The building lacks Howard Community College branding and school spirit.

Building Systems

- The HVAC system is original (2003) and relies on fossil fuels. It is nearing the end of its useful life and does not meet current energy codes or Maryland's electrification requirements.
- The electrical system lacks adequate receptacle counts to support expanded digital infrastructure.
- Plumbing fixtures predate modern low-flow standards. Replacement offers an opportunity for water conservation.
- Lighting systems include a mix of fluorescent and LED fixtures. Not all spaces have occupancy sensors or systems controls.

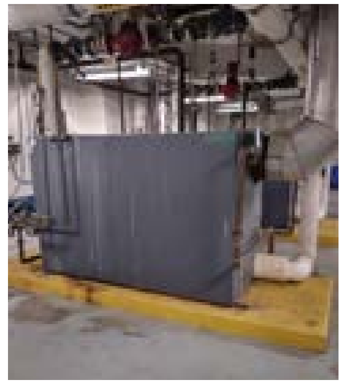
Envelope and Thermal Efficiency

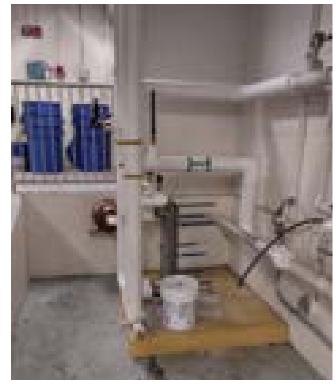
- Window seals are beginning to fail, contributing to condensation between glazing layers.
- Deferred envelope maintenance risks moisture intrusion and energy loss.
- Users report discomfort due to solar heat gain and glare on the building's unshaded south side.

Accessibility and Circulation

- Duncan Hall meets minimum accessibility standards but lacks the intuitive wayfinding, varied lighting and finishes for users with different sensory abilities, and inclusive group areas expected in modern facilities.
- Upgrading circulation zones and shared spaces will enhance the student experience and foster equity in access.

Deteriorating sealant at skylight





Mechanical equipment original to building construction

Damage at sills and thresholds

Glazing units fogged due to failed seals

Functional, but dated, plumbing fixtures; partially-compliant ADA accommodations

2. Origins of Facilities Problems

The challenges in Duncan Hall stem not only from the age and condition of the facility but also from shifts in academic practice, student demographics, technology use, and regulatory requirements. Understanding these broader influences provides the context for why modernization is necessary now and why incremental repair would not be sufficient.

a. Shift from static to dynamic instruction

When Duncan Hall was constructed in 2003, the internet was still emerging as an instructional tool and students did not have access to laptops and mobile phones. Computer stations were hard-wired and bulky, requiring fixed furnishings. In classrooms, lectures tended to be instructors standing at the white board talking to students in tablet armchairs.

Today, modern instructional spaces foster group learning and flexible furnishings. Desks need to be large enough to hold students' computers and books, yet light and mobile to facilitate reconfiguration. Strong wireless internet is essential. Instructional technology is expected to shift seamlessly between views of instructors' material, internet content, and students' work.

b. Disparities with modern systems

In the past 22 years, sustainable design has transformed building systems. Duncan Hall's existing HVAC equipment, electrical distribution, lighting, and plumbing fixtures were code-compliant in 2003 but are inefficient today.

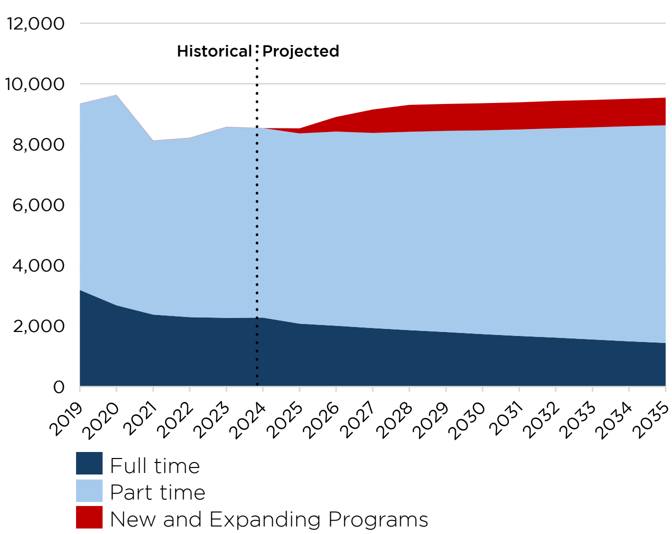
Modernizing equipment would benefit HCC by reducing the College's water and energy consumption. Modernization would benefit the municipality by preserving groundwater and surface water, reducing burden on the regional power grid imposed by processing and pumping water, and reducing fossil fuel emissions.

c. Shifting demands campuswide

Today, community members seeking the English Language Center arrive on-campus at the Hickory Ridge Building, an aging office building that was partially converted to classrooms. The building makes a poor first impression and it is physically separated from the heart of campus. It is not a welcoming experience for these Howard County residents.

The 2025 FMP recommends integrating the English Language Center into the heart of Campus. This move would create a single, welcoming, modern front door for community members seeking English Language assistance.

Headcount Projections



Student Credit Hours

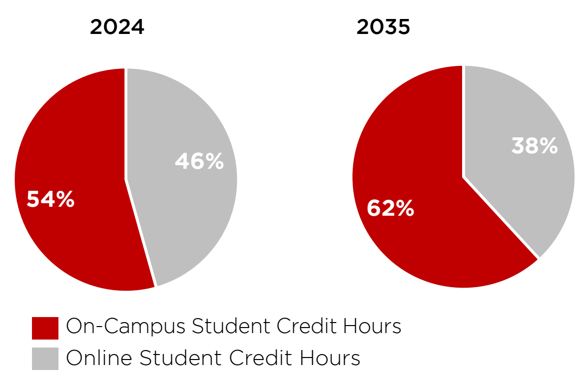


Figure 10 - Enrollment Changes

3. Factors Contributing to Ongoing and Future Facilities Problems

a. Enrollment Changes

The College plans to reduce online instruction from 46% of student credit hours (SCH) in 2024 to 38% by 2035 (Figure 10). Headcount (on-campus, online, and off-campus) is projected to increase by 11.6% between 2024 and 2035.

These combined factors - enrollment growth and the return to face-to-face instruction - will increase on-campus FTE in lecture and computer classroom space.

b. Teaching and Technology Evolution

Active and hybrid learning require adaptable layouts, mobile technology, and robust wireless infrastructure. Limited power, data capacity, and immovable furniture prevent faculty from employing modern pedagogies effectively.

c. Regulatory and Sustainability Mandates

Maryland's Climate Solutions Now Act of 2022 requires all public institutions to transition away from fossil-fuel systems by 2030. Duncan Hall's natural-gas HVAC equipment does not comply with this mandate.

Beyond electrification, State sustainability policy also promotes high-performance building envelopes, efficient lighting, and water-saving plumbing fixtures. Upgrading Duncan Hall's systems to meet these standards will reduce operating costs and improve occupant comfort while aligning with State climate goals.

c. Deferred Modernization

In the next decade, the facility's systems deficiencies are expected to intensify. The lack of adaptable technology infrastructure will widen the gap between pedagogy and the building's capabilities.

Mechanical, electrical, and plumbing systems have exceeded two decades of use and will approach or surpass their functional life span within the next ten years. Deferred replacement will heighten the risk of system failure, leading to potential disruption of instruction and higher maintenance costs.

New sustainability mandates will make existing gas-fired systems noncompliant by 2030, and each year of delay will increase the scope and cost of replacement. Similarly, the continued aging of lighting, finishes, and envelope materials will reduce comfort, increase energy consumption, and reinforce the perception that Duncan Hall lags behind the quality of newer campus buildings.

Without renovation, the College will face compounding operational challenges and an accelerating loss of efficiency and reliability. Addressing these problems in a planned, comprehensive renovation will prevent costly emergency repairs and align Duncan Hall with the College's long-term instructional and sustainability goals.

d. Evolving Student Needs

The growing number of adult learners underscores the importance of creating spaces where building users can maximize use of their time. Lounges with abundant power and data, places for students with children, and amenities for commuters can help students feel supported by the institution.

Many students have sensory sensitivities and learning differences. Updating Duncan Hall's interiors will provide varied environments will reflect the College's emphasis on wellness, belonging, and universal design.

4. Future Impacts of Facilities Problems

The measurable factors of future challenges are enrollment changes, regulatory and sustainability mandates, and deferred modernization.

a. Enrollment changes and lecture capacity

If fall 2023 demand is overlaid on the HCC lecture inventory (including the Kahlert Complex) there is capacity for a 32% increase in lecture instruction. If Duncan Hall remains in-service, as-is, for the next decade, HCC will have sufficient classroom and computer classroom capacity to accommodate growth. A challenge arises if Duncan Hall is removed from service.

- If Duncan is taken offline after 2032, enrollment is projected to grow sufficiently that the displaced demand could not be accommodated on-campus. Hourly classroom and computer classroom utilization would need to average over 28 daytime hours per week, a 40% increase over the Maryland target and a 60% increase over HCC's fall 2023 average hourly classroom hourly utilization.
- If Duncan Hall is renovated and complete before 2032, the FMP recommendation of Hickory Ridge renovation will be possible.
- Figure 13 illustrates three scenarios for future HCC lecture space. The first, fall 2023, illustrates instructional supply (orange dot) and demand (blue bar) as it would be with the Kahlert Complex included in the inventory. It assumes course caps are matched to the classroom capacity range that best matches the Maryland utilization target of 60% seat fill.
- Figure 13, Duncan Offline, illustrates a scenario in which Duncan is removed from service before 2032. Hourly utilization would need to increase to 24 hours/week during that period. If that hourly utilization rate cannot be achieved, some meeting spaces on-campus could function as lecture spaces. Based on their sizes, four rooms were identified as potential spaces for temporary lecture instruction:
  - Howard 201
  - SET 310
  - Library 237
  - Library 230
- Figure 13, FMP-Recommended Fall 2035, illustrates the classroom inventory compared to demand if enrollment projections are met, Duncan Hall is online (renovated with some space reallocation), and Hickory Ridge is partially dedicated to non-credit and administrative uses.
- The average lecture station at HCC is 28 square feet. This generous station size enables lecture spaces to be filled more than the Maryland-recommended 60%. Looking into the 2030s, 80% seat fill is suggested as the HCC target average.
- The final chart of Figure 13 illustrates the 2025 FMP long-range scenario in which HCC is operating at capacity and preparing to add a Technical Trades Center, which would include classrooms to provide a slightly larger seating capacity to buffer against enrollment surges.

b. Office and workstation needs

Maintaining the College's 19:1 student:faculty ratio would exceed HCC's projected new hires. HCC seeks to regain the staffing efficiency lost in the past decade. Only nine net additional employees are expected to support new workforce and trades programs. By limiting new hires, the College intends to increase the student:faculty ratio to 25 by 2035.

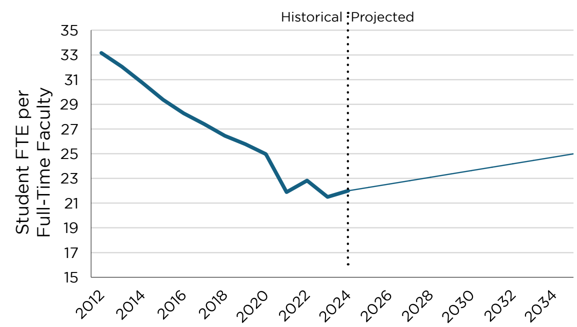


Figure 11 - Student:Faculty Ratio over time

c. Regulatory and Sustainability Mandates

The Maryland Climate Solutions Now Act specifies a 60% reduction in greenhouse gas emissions (GHG) by 2031 compared to a 2006 baseline. Given that Duncan Hall was constructed to meet or exceed building code requirements in 2003, it is reasonable to assume the building's energy performance reduce GHG if renovated.

Conversion to all-electric heating is a key strategy in achieving this goal. New, modern systems will likely consume less energy as a whole (measured in BTUs), but the shift from fossil fuels to electric will increase the building's kilowatt-hour demand. The campus electrical infrastructure will require upgrades to accommodate this change.

On-Campus Day Total Credit WSCH

	Actual						Projected	Projected
	Fall '19	Fall '20	Fall '21	Fall '22	Fall '23	Fall '24	Fall '29	Fall '35
	69,785	69,785	55,902	56,755	35,534	42,436	51,225	52,411
Arts & Humanities	8,784	8,784	7,037	7,144				
● Business/Computer	8,659	8,659	6,936	7,042				
● English/World Lang	11,630	11,630	9,316	9,459				
Health Sciences	5,866	5,866	4,699	4,770				
Mathematics	11,569	11,569	9,267	9,409				
Social Sciences/Education	10,786	10,786	8,640	8,772				
Science & Technology	12,492	12,492	10,007	10,159				
Division of Foundational Learning					14,391	15,491	15,321	15,661
Division of Liberal Studies					7,332	7,866	7,779	7,953
Division of Liberal Studies (Trades Gen Ed)							1,391	1,391
Division of Liberal Studies (New Theater Design & Management Program)							99	132
Division of Liberal Studies (New Music Theater Program)							345	570
Division of Health, Science, and Technology					13,649	18,842	18,635	19,049
Division of Health and Science (Trades Gen Ed)							305	305
Division of Health & Science - Expanded Nursing Program							860	860
Division of Health & Science - Expanded Dental Hygiene Program							970	970
Division of Health & Science - Expanded Cardiovascular Technology Program							1,240	1,240
Division of Business and Technology - Electric Vehicle Technician (1 Year Certificate)							320	320
Division of Business and Technology - Applied Artificial Intelligence and Machine Lng							240	240
Division of Business and Technology - Cloud Operations							680	680
Division of Learning Experience					162	237		
Division of Business and Technology (Trades)							3,040	3,040
WCCE Weekly Student Contact Hours (not totaled above)					2,782			3,436

Figure 12 - Total Weekly Student Contact Hour Projections

On-Campus Day Lecture WSCH

	Actual						Projected	Projected
	Fall '19	Fall '20	Fall '21	Fall '22	Fall '23	Fall '24	Fall '29	Fall '35
	31,403	31,403	25,156	25,540	15,990	19,097	24,510	25,097
Arts & Humanities	3,953	3,953	3,167	3,215				
● Business/Computer	3,896	3,896	3,121	3,169				
● English/World Lang	5,234	5,234	4,192	4,256				
Health Sciences	2,640	2,640	2,114	2,147				
Mathematics	5,206	5,206	4,170	4,234				
Social Sciences/Education	4,854	4,854	3,888	3,947				
Science & Technology	5,621	5,621	4,503	4,572				
Division of Foundational Learning					6,476	6,971	6,894	7,048
Division of Liberal Studies					3,299	3,540	3,501	3,579
Division of Liberal Studies (Trades Gen Ed)							1,391	1,391
Division of Liberal Studies (New Theater Design & Management Program)							65	87
Division of Liberal Studies (New Music Theater Program)							228	376
Division of Health, Science, and Technology					6,142	8,479	8,386	8,572
Division of Health and Science (Trades Gen Ed)							0	0
Expanded Nursing Program							440	440
Expanded Dental Hygiene Program							490	490
Expanded Cardiovascular Technology Program							520	520
Electric Vehicle Technician (1 Year Certificate)							160	160
Applied Artificial Intelligence and Machine Learning							240	240
Cloud Operations							680	680
Division of Learning Experience					73	107		
Division of Business and Technology (Trades)							1,515	1,515
WCCE Weekly Student Contact Hours (not totaled above)					2,244			2,771

Figure 13 - Lecture Weekly Student Contact Hour Projections

● For-credit programs located in Duncan Hall

Fall 2023 Demand, with Kahlert Foundation Complex in Inventory

Target: 20 hours/week, 60% Seat Fill

Duncan Offline, Hickory Ridge In Use

Target: 24 hours/week, between 60% and 80% Seat Fill

FMP-Recommended Fall 2035

Target: Up to 21 hours/week, 80% Seat Fill (Hickory Ridge offline for renovation)

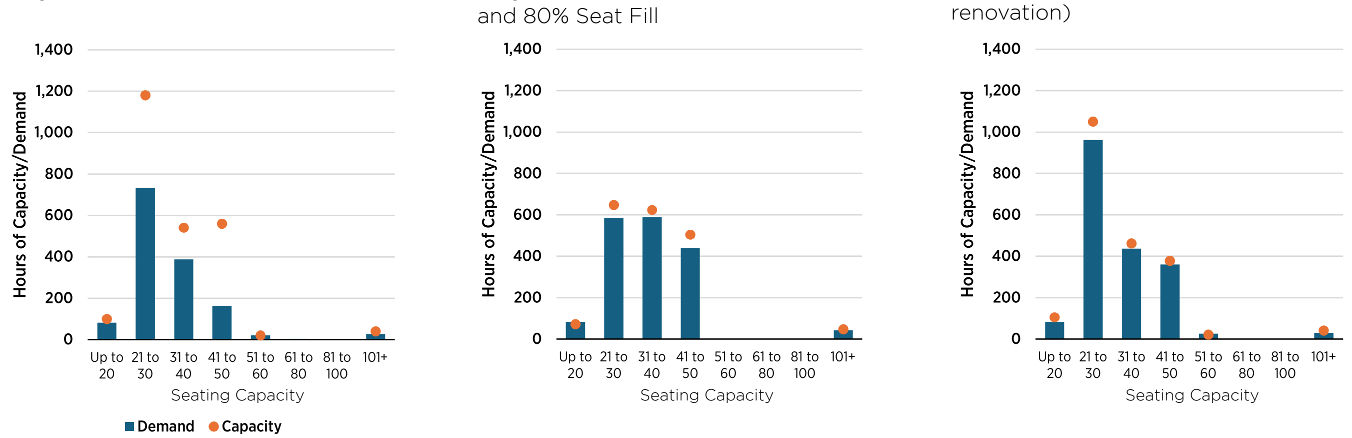


Figure 14 - Classroom and Computer Classroom Demand Planning

d. Deferred Modernization

Cost Considerations

Aside from minor updates in 2019, Duncan Hall retains its original systems and finishes. The College's maintenance plan identifies $4.4 million in system refurbishments between 2024 and 2031. The 2025 FMP identifies Duncan Hall as an enabling project for renovating the Hickory Ridge Building. Hickory Ridge is expected to have facilities maintenance costs of $1.4 million through 2028 (Figure 15).

If facilities maintenance costs were folded into construction costs, expenditures would begin for Duncan Hall in 2029 (Figure 16).

Condition Considerations

Figure 17 shows each HCC building as a different color, sorted by renovation need. High need includes aging structures with no renovations in the past 20 years and substantial systems replacement needs. Medium need includes buildings that are

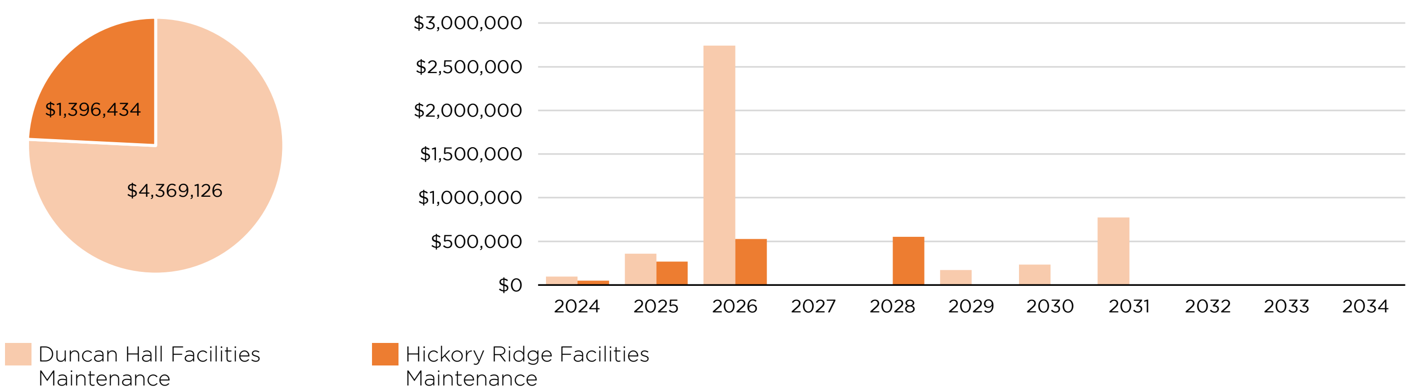


Figure 15 - Facilities Maintenance Estimates (Source: Howard Community College, 2024) Annual Escalation 2.5%

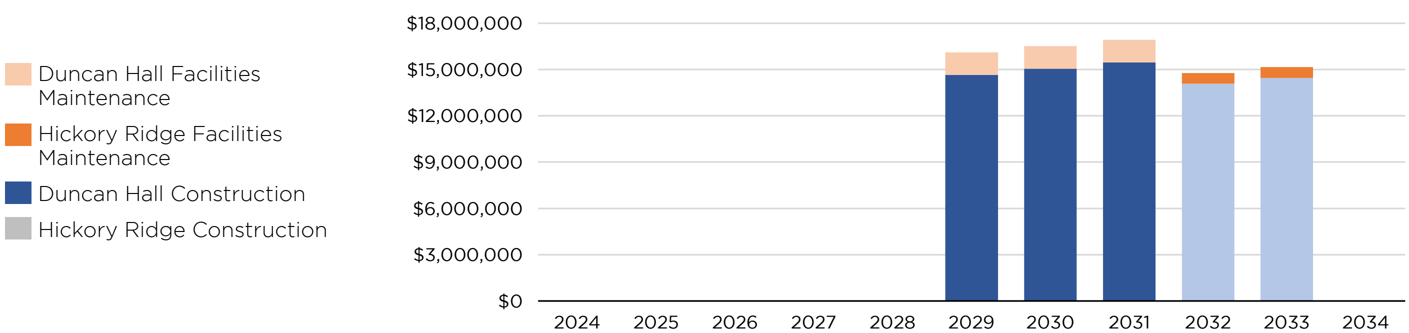


Figure 16 - Construction Estimates (Source: 2025 FMP) Annual Escalation 2.5%

functional but will need equipment replacements in the next decade. Low need buildings were recently constructed or renovated and in very good condition.

In Figure 17, left, the 2024 building conditions table shows that HCC is generally well-positioned. Fifty-four percent of its inventory has low need. However, due to the age of some buildings, the College is approaching a position in which high need projects are starting to accumulate, potentially leading to maintenance and renovations being further deferred due to cost. Duncan Hall renovation enables renovation or repurposing of Hickory Ridge, therefore the two buildings are boxed together in the high need category.

Figure 17, center, shows the distribution of facilities NASF by condition if all the 2025 FMP recommendations are implemented *except for* Duncan Hall and Hickory Ridge. Buildings will age and shift into the high need and medium need categories, and Duncan and Hickory Ridge will remain with high needs. As more buildings age-into the medium and high need categories, the costs to remedy building deficiencies could become unmanageable.

Figure 17, right, shows the results of the ideal FMP 2025 implementation sequence and timeline. By 2035, only one building would remain on the high need list, and HCC would be ready to embark on its next decade of capital projects.

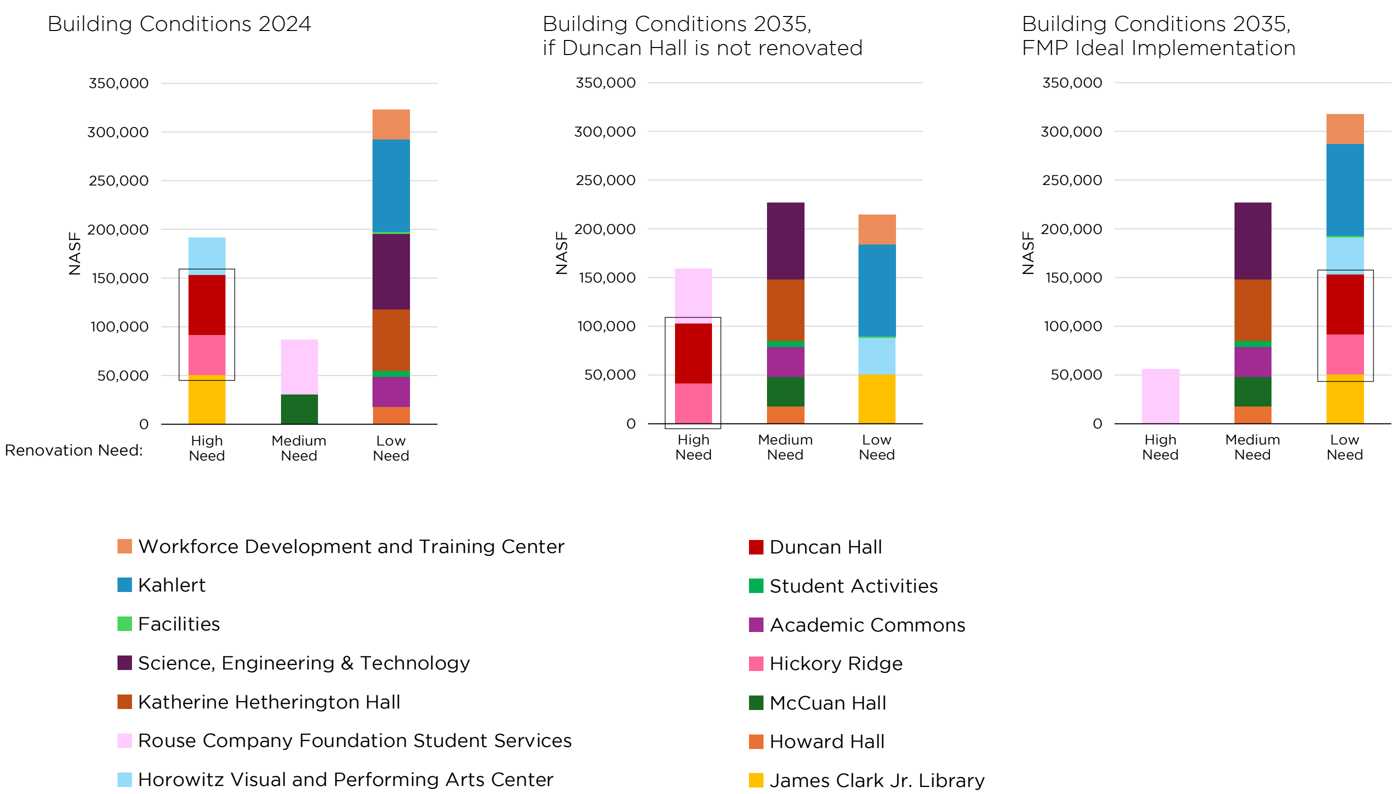


Figure 17 - Changes in Building Condition Over Time

5. Effects on HCC Mission

Potential Results of Inaction	Harm to Building Users
Duncan Hall's HVAC system could fail unexpectedly, prompting emergency relocation of Duncan Hall instruction, activities, and occupants. Repairing or replacing the failed system would be costly and disruptive to HCC operations, and would not correct the remaining deficiencies of Duncan Hall.	In fall 2023, daytime course sections in Duncan Hall enrolled 3,280 students. Some are likely duplicated (students taking more than one class in the building) but nonetheless they occupy time and space in the building. Staff data show 57 office occupants in Duncan Hall. These building users would need to be housed elsewhere on campus in the event of HVAC system failure.
A subsequent result of hurried replacement of HVAC systems is the inability to account for future energy saving measures when sizing the equipment. Heating and cooling loads would be based on the existing features of the building, not a renovated building with updated lighting, occupancy sensors, automated controls, and a refurbished building envelope.	If HVAC is replaced in advance of other building improvements, imbalanced systems could cause problems with climate control if Duncan Hall is renovated in the future.
Compounding deferred maintenance at Duncan Hall would add it to HCC's existing list of high-need projects. Timely remediation of major facilities deficiencies campus-wide would become less feasible (in cost and labor) over time.	Campuswide, facilities will be perceived to be in poorer condition.
HCC's vision to welcome the English Language Center into the heart of campus at Duncan Hall would not come to fruition. English language learners would continue to learn in Hickory Ridge's low-quality instructional space while their peers in for-credit courses occupy modern, comfortable classrooms in the academic core.	As far back as HCC's 2009 Facilities Master Plan, Hickory Ridge was in need of renewal. In fall 2023, English Language Center courses enrolled 767 students (potentially duplicated) who took courses in Hickory Ridge. For HCC to fully welcome these students, their instructional spaces should be of equal quality to other HCC facilities.
Over time, faculty and students will avoid scheduling classes in Duncan Hall due to its antiquated instructional technology, aging finishes, and unreliable building systems. The building will become a burden to maintain, falling into declining condition while occupying landmark property on the main quad.	Students and faculty whose required courses and offices are in Duncan Hall will perceive the inequity of their classrooms, labs, and offices.
Non-compliance with the Maryland Climate Solutions Now Act could lead to fines on the institution. While the State is still developing the exact penalties, after 2028 institutions with space inventory of 35,000 square feet or more could be fined for every ton of greenhouse gas emissions exceeding 40% of the 2006 baseline.	

Harm to HCC Operations

Staff time and effort would be diverted from other essential maintenance projects. Without sufficient time to plan, there is potential for unsuitable spaces to be pressed into service as instructional and office space, causing undue wear-and-tear on temporary accommodations.

Over-sizing HVAC equipment is costly and would divert funds from other necessary facilities maintenance.

The completed renovation of Duncan Hall is the enabling project allowing Hickory Ridge to either be renovated for HCC uses or repurposed for Early College. Delay of Duncan renovation leaves facilities staff with two high-need buildings to maintain.

English Language Center students are potential for-credit students. Continuing to serve them in Hickory Ridge could discourage them from pursuing for-credit enrollment.

Duncan Hall will become further underutilized (34% of its capacity was unused in fall 2023). Instructional demand will be pushed to other buildings, creating an artificial perception of space shortages in the most in-demand buildings.

Funds intended for facilities maintenance could be unavailable due to fees related to non-compliance.

Effect on HCC Mission

Innovation would not be consistent - the College's most advanced, modern facilities have been constructed around the campus perimeter. Investment is required in the heart of campus.

Nurturing would not be evident - Busy adult learners need spaces that allow them to be efficient in every moment of the day. Duncan Hall does not currently have family spaces or lounge/study space with suitable power and data to allow all users to plug-in and work at the same time.

Service and Sustainability would be delayed. Duncan Hall would not comply with Maryland's Climate Solutions Now Act, potentially incurring fines.

Partnerships would appear to be lower priority. Community Language programs would remain housed in the Hickory Ridge Building, a poor-quality structure removed from the heart of campus.

Integrity would diminish over time. Over time, mounting facilities maintenance demands for Duncan Hall could become unmanageable, making a poor impression of the College's ability to provide exceptional learning environments.

Respect would be less evident. Duncan Hall would remain a space of diminished quality compared to the rest of campus.

Excellence in academics and facilities would be less evident. Instructors, community, and students will self-select courses and events that take place outside Duncan Hall.

Diversity, Equity, and Inclusion would be less evident. Duncan Hall's few accessibility challenges will remain unaddressed, and it will lack universal design features present in other HCC buildings.

C. Project Scope

1. Building, Site, and Utilities

The proposed project is a comprehensive renovation of Duncan Hall, including replacement of its window systems, metal cladding, and entrance systems.

Basement Level: Replace mechanical equipment and electrical distribution equipment, replace ductwork and piping as needed to connect new equipment to existing chases and passages. Renovate existing Information Technology workshop in its current configuration. Refresh finishes and lighting in existing storage and circulation areas.

First Floor: Replace all finishes and lighting. Reconfigure 7,500 SF (24%) of the interior floor area. Expand access to power and WiFi in assembly, lounge, and instructional spaces.

Second Floor: Replace all finishes and lighting. Reconfigure 5,600 SF (18%) of the interior floor area. Expand access to power and WiFi in instructional spaces and study areas.

Second Floor: Replace all finishes and lighting. Reconfigure 5,600 SF (18%) of the interior floor area. Expand access to power and WiFi in instructional spaces and study areas.

Roof: Replace HVAC equipment and curbs. Roof has been recently replace, therefore roof replacement is recommended only for the area of the mechanical equipment.

Site improvements will create seating areas along the path from Parking Lot A to the building's northern entrance, enhancement of the existing terrace on the north side of the assembly room, and creating areas of seating and shade along the building's south side on the College Green.

Electrical capacity will be expanded to accommodate new HVAC systems and expanded access to power for charging personal devices.

	GSF	Reconfigure	Renovate
Basement	11,715	0	11,715
First Floor	31,000	7,500	23,500
Second Floor	31,160	5,600	25,560
Third Floor	31,160	5,600	25,560
Total GSF	**105,035**	**18,700**	**86,335**
		17.8%	*82.2%*

2. Programs Proposed to Occupy Duncan Hall

a. English Language Center
b. Academic Departments
    English
    World Languages
    Computer Science (instructional space only)
    Business
c. Assembly/Multipurpose (existing to remain, renovate)
d. Information Technology (existing to remain, renovate)
e. Public Safety

3. Facility Program

Duncan Hall will remain an academic building comprised of classrooms, computer classrooms, dry labs, and faculty/staff offices. An existing assembly/multipurpose space will remain.

Space Program Summary

		Existing	Proposed
Floor	Space Type	NASF	NASF
B	300 - Office	1,275	1,275
	700 - Service	1,475	1,475
Basement		**2,750**	**2,750**
1	100 - Classroom/Computer Classroom	2,930	5,770
	210 - Class Lab	5,963	0
	220 - Open Lab	1,955	970
	300 - Office	2,536	4,565
	400 - Study	0	460
	600 - Assembly/Lounge	3,787	6,270
	700 - Service	244	320
First Floor		**17,415**	**18,355**
2	100 - Classroom/Computer Classroom	3,337	10,890
	210 - Class Lab	10,882	1,600
	220 - Open Lab	2,960	3,990
	300 - Office	3,442	3,240
	400 - Study	0	220
	600 - Assembly/Lounge	104	325
	700 - Service	220	220
Second Floor		**20,945**	**20,485**
3	100 - Classroom/Computer Classroom	2,774	14,170
	210 - Class Lab	12,343	0
	220 - Open Lab	845	1,910
	300 - Office	4,205	3,085
	400 - Study	0	520
	600 - Assembly/Lounge	323	325
	700 - Service	220	220
Third Floor		**20,710**	**20,230**
Grand Total		**61,820**	**61,820**

	Existing	Proposed	Delta
Space Type	NASF	NASF	NASF
100 - Classroom/Computer Classroom	9,041	30,830	21,789
210 - Class Lab	29,188	1,600	(27,588)
220 - Open Lab	5,760	6,870	1,110
Subtotal: Instructional Space	*43,989*	*39,300*	*(4,689)*
300 - Office	11,458	12,165	707
400 - Study	0	1,200	1,200
600 - Assembly/Lounge	4,214	6,920	2,706
700 - Service	2,159	2,235	76
	61,820	**61,820**	**0**

4. Quantitative Space Needs and Space Standards

Space needs for the Duncan Hall renovation were considered in three categories:

- Aggregate, campuswide classroom needs
- Department-specific lab needs
- Department office needs

In addition, student life and study space allocations were defined in the space program. Originally, these spaces were not distinguished from lobby and circulation space.

Space needs were described in detail for a faculty and staff Steering Committee during the building programming process. Excerpts of Steering Committee presentations describe the quantitative space needs.

All instructional space was classified as classrooms for future uses. While some computer classrooms may have software installed to enable instruction in specific disciplines, it is intended that classrooms and computer classrooms will be flexible enough to use for instruction in many subjects.

Maryland target utilization rates were applied.

Maryland Utilization Targets

Colleges with up to 3,000 FTDE

	Hours/ Week	Seat Fill
Classroom	20	60%
Class Lab	15	60%

Colleges with over 3,000 FTDE

	Hours/ Week	Seat Fill
Classroom	27	67%
Class Lab	18	60%

The hours of 8:00 AM to 5:00 PM, Monday through Friday were considered daytime, with any class that started after 5:00 PM considered evening. Peak utilization was evaluated during the first full academic week of October, 2023, yet springtime utilization was considered to identify room uses where spring use exceeds fall use.

Classroom station sizes range from 22 square feet per station for tables and chairs in general use classrooms and 30 square feet per station in computer classrooms. Potential room layouts are displayed in Figure 23 (page 30).

Office stations range from 60 square feet (for staff workstations) to 140 square feet (for existing private offices that will not be reconfigured). Conference room seats were tabulated at 20 square feet.

Existing Uses & Swing Space Demands

Instructional spaces in Duncan Hall were evaluated using the fall 2023 course schedule in the Facilities Master Plan. While some classrooms were well-utilized (dark red color, Figure 18), others had capacity remaining.

Campuswide, in fall 2023 classroom hourly use averaged 16 hours per week. When the Kahlert Foundation Complex opened in fall 2024, additional classroom capacity was added. To accommodate Duncan Hall demand in existing HCC classrooms, average hourly classroom use will need to meet or exceed 20 hours per week. Swing space needs and campuswide capacity are displayed in Figure 19.

The Facilities Master Plan evaluated space needs for long-range scenarios. Space demands for 2035 are displayed in Figure 20. The chart Duncan Hall Re-Occupancy: Classroom Demand illustrates how the Duncan Hall renovation will drive increased classroom efficiency campuswide.

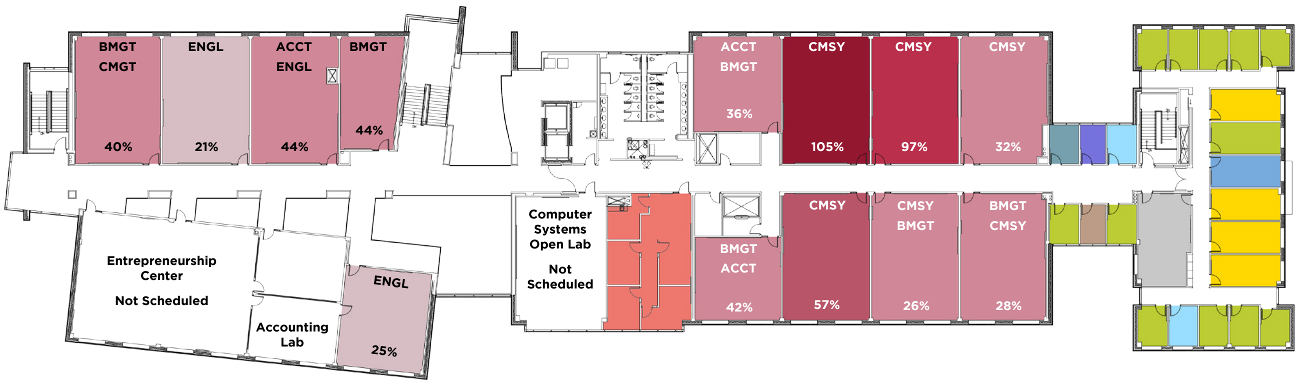
Figures 21 a, b, and c and 22 a, b, and c illustrate existing floor plans and space-related challenges and the proposed floor plans with actions that address the challenges (pages 26-31).

Duncan Hall's role in completing long-range Facilities Master Plan projects, including renovation/repurposing of the Hickory Ridge Building, Clark Library renovation, and proposed construction of a Technology Trades Center, is shown in Figure 24.

Figure 18 - Fall 2023 Instructional Space Use, Office Assignments

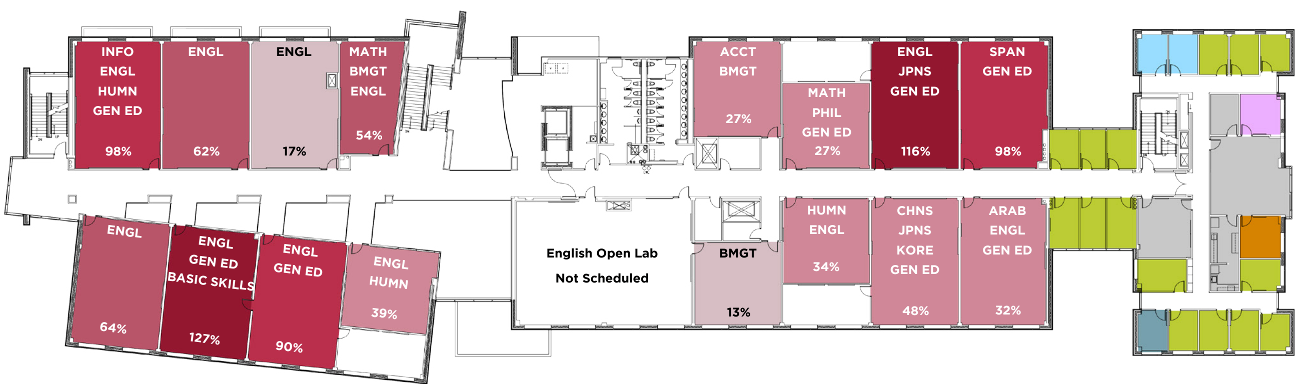
Floor 3

Existing



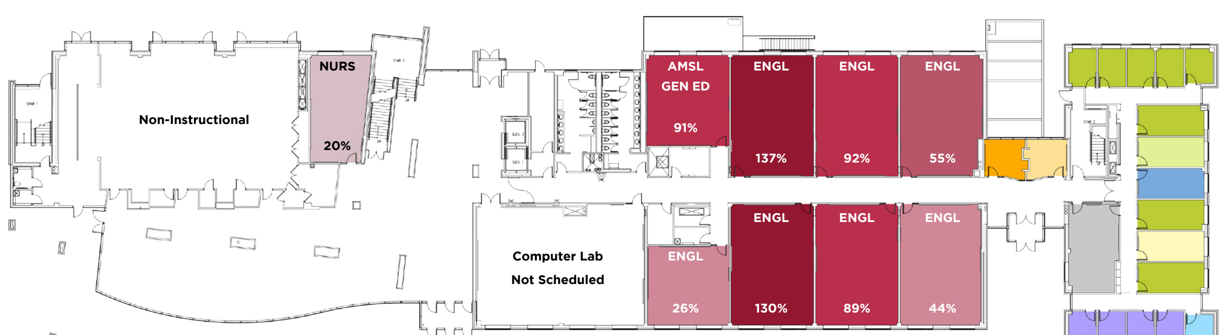
Floor 2

Existing



Floor 1

Existing



Instructional Spaces

Classroom/Computer Classroom (Percent Capacity Scheduled Fall 2023)

TEXT = groups that scheduled the room most

00% = percent room capacity used

Capacity @ MD Targets:
60% seat fill, 20 hours/week

Offices

- English & World Languages
- English Language Center
- Academic Affairs
- Accounting
- Business
- Step Up
- Community Connections
- Boys and Girls Club
- Shared Office Resources

Swing

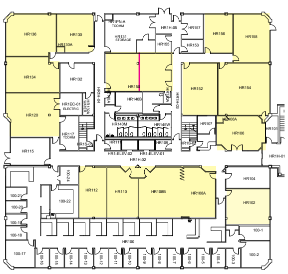
Duncan Hall Instruction & Offices requiring space

Subjects from Duncan needing space	Total F'35 Hours	Hours per week, per Classroom				
		16	18	20	22	24
Accounting, Business, Computer Science	148	9.2	8.2	7.4	6.7	6.2
English 121	170	10.6	9.4	8.5	7.7	7.1
English (all other)	69	4.3	3.8	3.5	3.1	2.9
World Languages & ELC in Duncan Hall	170	10.7	9.4	8.5	7.7	7.1
Humanities, Information Literacy	40	2.5	2.2	2.0	1.8	1.7
Total Demand to Export	**596**	**37.3**	**33.1**	**29.8**	**27.1**	**25.0**

Number of classrooms required = Total F'35 Hours/Hours per week, per Classroom

Offices from Duncan needing space	Total
Private Offices (faculty and academic-related)	50
Private or Shared Offices (non-academic)	6
Adjunct Shared Spaces	3

Aiming for 25-30 classrooms/labs and 56 offices/workstations.



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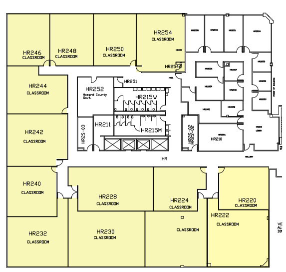


2

1

Hickory Ridge

15 DH swing classrooms/labs
43 DH swing workstations
3 DH swing meeting rooms
7 swing private offices

- Existing functions to remain
- Instructional Spaces: 17 WCCE priority, 15 DH swing priority
- Swing space offices/workstations
- New partition

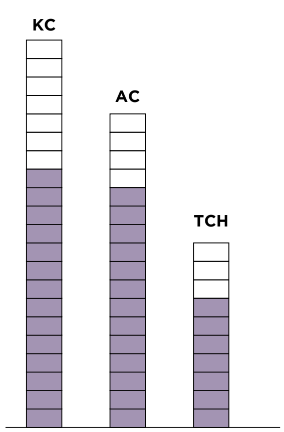
3

Clark Library First Floor

4 DH swing classrooms/labs
6 DH swing workstations

- Existing functions to remain
- DH swing priority classrooms
- Swing space office workstations

Hickory Ridge and Clark Library can accommodate the demand of 19 classrooms. The remaining demand is equivalent to 6-11 classrooms, depending on hourly efficiency. The Kahlert Complex (KC), Academic Commons (AC), and Thomas P. Clement Hall (TCH) have capacity equivalent to 14 classrooms.



Equivalent of 14 classrooms available to absorb remaining demand.

- Classroom capacity available @ 22 Hours/week
- Classroom demand F2035 @ 22 Hours/week

Figure 20 - 2035 Space Needs and Capacity

2035 Classroom Demand

Campuswide:

109 General Use Classrooms available in Fall 2035 (excludes WDTC)

When Duncan is complete:

At 20 hours/week, up to 20 classrooms at a time could be taken offline for other uses or renovations.

Floor-by-floor renovation of Hickory Ridge would be possible.

Fall 2035 Classrooms available **109**

	Fall 2035 classroom demand (hours)	Hours per week in classrooms, campuswide				
		16	**18**	**20**	**22**	**24**
-10%	1,450	91	81	72	66	60
	1,530	96	85	77	70	64
Projection	**1,611**	101	90	81	73	67
	1,692	106	94	85	77	70
+10%	1,772	~~111~~	98	89	81	74

Duncan Hall Re-Occupancy: Classroom Demand

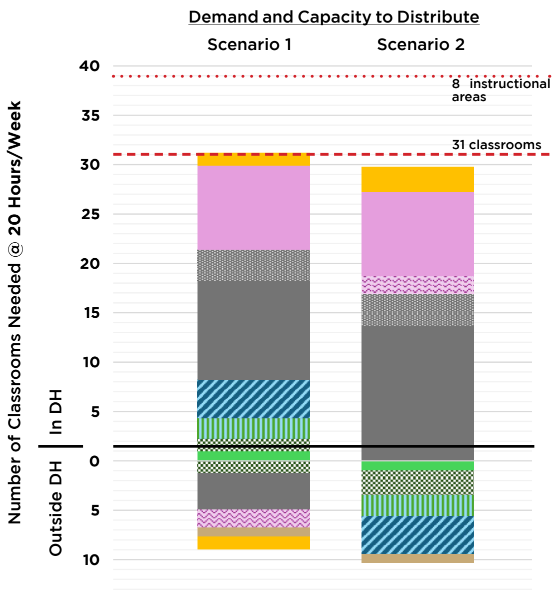
Scenario 1

Some ELC meetings shift into nearby Campus buildings. Shift some English (non-121) and Modern Languages to nearby Campus buildings. Nearby buildings on the Quad (excluding Duncan Hall) contain 23 classrooms.

Distribute Humanities, Philosophy, Information Literacy, and Basic Skills lectures to other Campus buildings.

Scenario 2

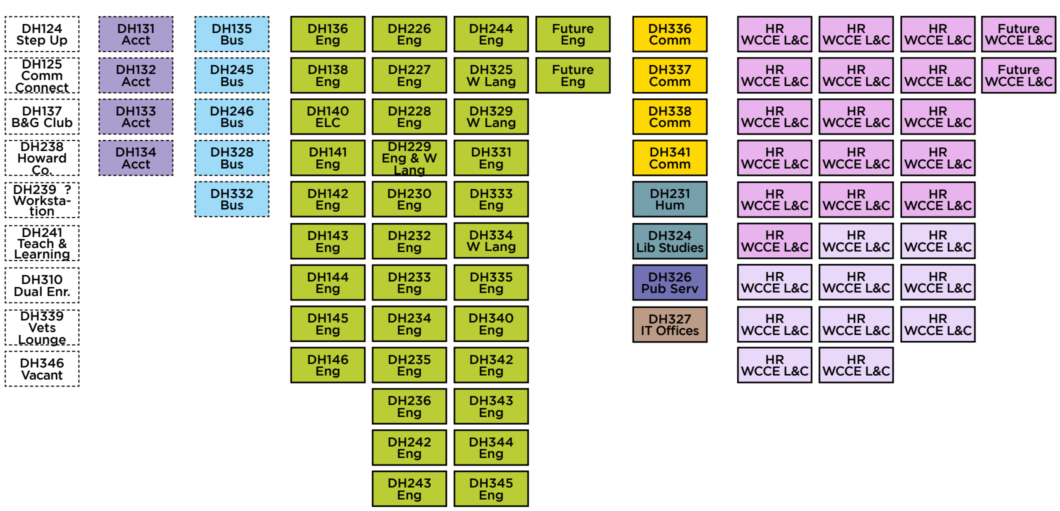
Business, Accounting, and Computer Science ultimately move to a new Technology Trades Center. Distribute Humanities, Philosophy, Information Literacy, and Basic Skills lectures to other Campus buildings.



2035 Office Demand

8 to 17 Spare

Total	Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
Existing	38	3	3	65	2	2	3	5	2	2	
Potential	*31*	*8*	*6*	*78*	*11*	*3+4*	*4*	*11*	*5*	*2*	*1*



Offices Needed: 0 4* 5* 35 8 18 private/10 workstation

*Potential to relocate to a different building if long-range planning permits

Floor 1

Existing

Challenges:

Assembly space has too little storage.

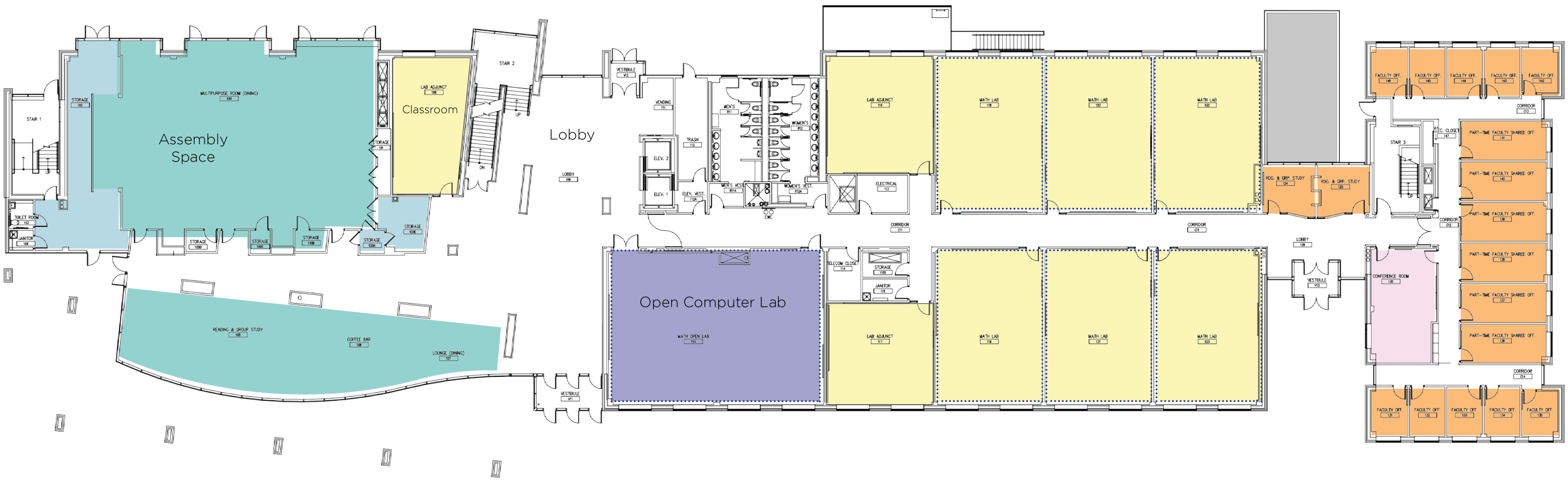
IT/Networking needs a service point in this area.

The wedge-shaped classroom 108 is too small and is difficult to furnish.

Public Safety does not have a dedicated space.

Building Maintenance storage is cramped due to sharing space with the service corridor.

The monumental stair in the lobby does not have a fire rated enclosure, therefore the County reportedly does not allow it to be counted toward egress capacity.



Challenges:

Lounge contains little variety of features and few amenities.

Computer Lab is too large for the number of students it serves.

Offices on the first floor are not configured to accommodate the 18 private offices and 8 workstations required to house the WCCE Language and Culture employees that are proposed to Duncan Hall from Hickory Ridge.

Floor 1

Potential

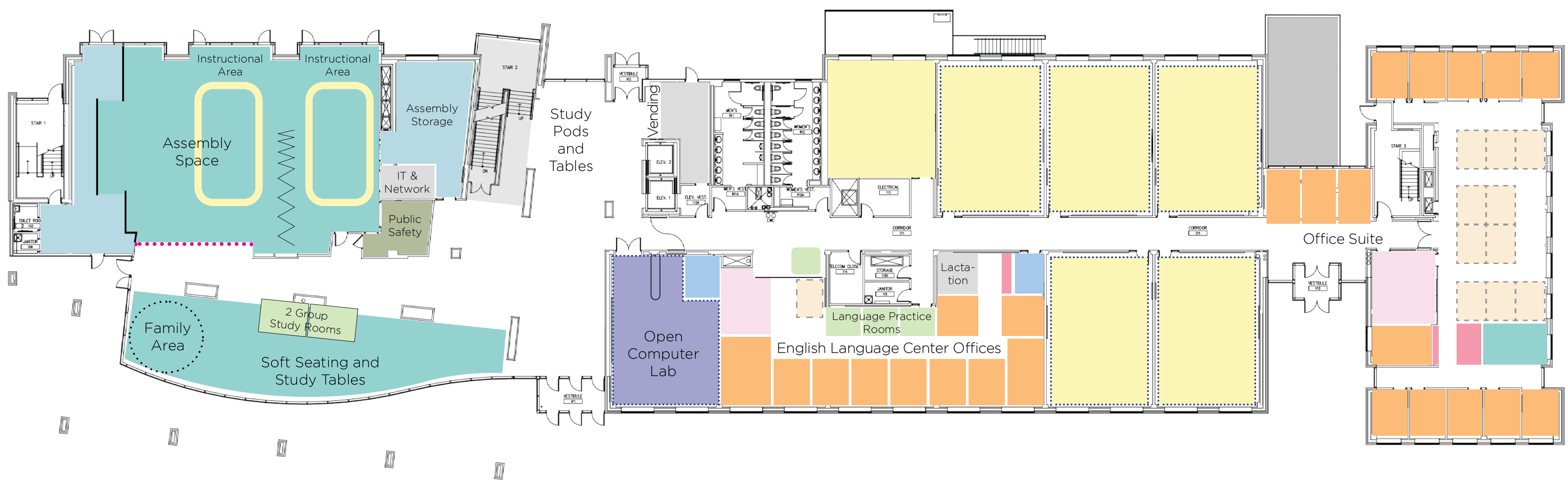
Actions:

Repurpose classroom 108 to create more storage for the Assembly space and create an IT room.

Create a Public Safety office in a former storage room.

Modify the service corridor 112 to include underutilized vending space (room 111).

Enclose the monumental stair with a combination of fire rated walls and a fire rated glazing assembly.



Actions:

Create zones within the large lounge and lobby to host a variety of activities and welcome individuals with many study/social preferences.

Reduce the size of the Computer Lab.

Create a welcoming office suite to house the student-facing staff of the WCCE Language and Culture department. Include enclosed study/speech practice rooms and open study/social space.

Reconfigure the office suite to create workstations for part-time WCCE staff and office service/storage space.

Offices not occupied by WCCE staff can be allocated to English, World Languages, or other faculty.

Floor 2

Existing

Challenges:

The wedge-shaped classroom 208 is too small and is difficult to furnish.

Additional offices will be required to accommodate ELC employees, regardless of where they are placed in Duncan Hall.

Challenges:

Existing classrooms have been partitioned to create small accessory rooms that cannot be scheduled independent of the adjacent classrooms. These spaces are occasionally used as breakout rooms, but many are underutilized.

The Writing Lab should be reconfigured to include more varied types of spaces: computer workstations, group work areas, reading space, tutoring space, and a breakout area.

Language courses have enrollment caps of 15 students. Existing classrooms are too large to house sections of this size efficiently.

The open office area in the center of the second floor suite is underutilized.

Faculty in Duncan Hall lack central spaces for department activities and socializing.

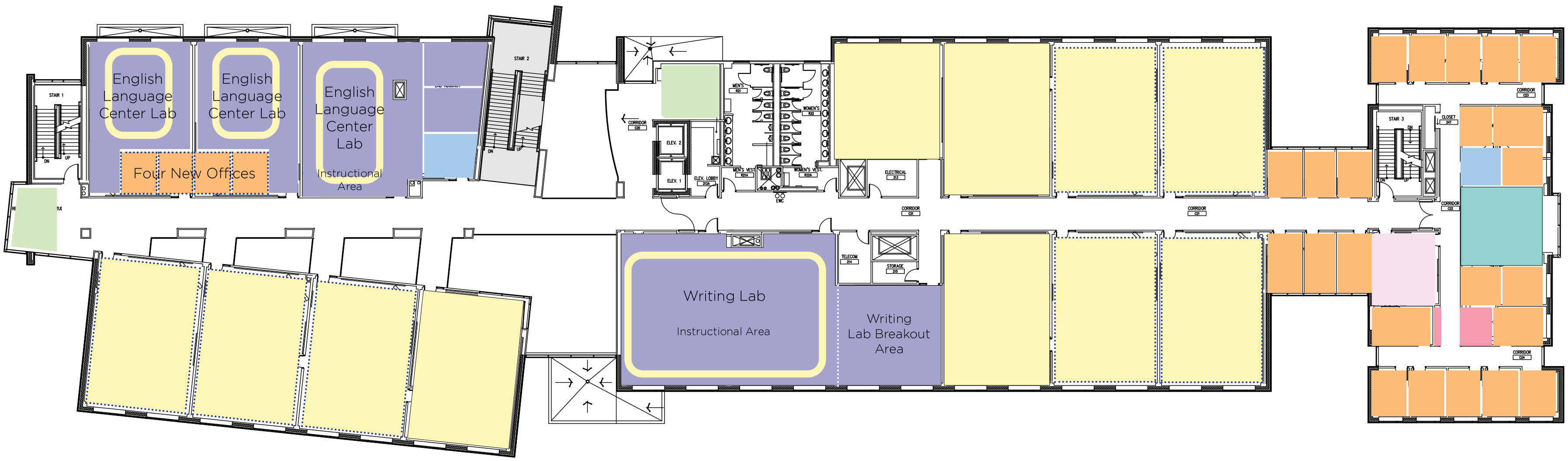
Floor 2

Potential

Actions:

Join Classrooms 206 and 208 to create a dedicated English Language Center Lab. Create accessory spaces for break-out activities, speaking practice, group work, or other purposes. Create a storage room to support second floor instructional spaces.

Create four offices off of corridor 200 (west side) for ELC faculty who should be housed adjacent to the primary ELC instructional spaces. The resulting small classrooms could house 30 tablet armchairs, 24 table/chair stations, or 20 computer stations.



Actions:

Remove partitions to create large classrooms in three second floor locations.

Reconfigure the Writing Lab. Create a more connected, engaging Writers' lounge in the accessory space.

Reconfigure the center of the office suite to create office service/storage rooms, private offices, and a central social/workroom.

Floor 3

Existing

Challenges:

The existing Entrepreneurship Lab is outdated and requires adjacent offices for business faculty.

Faculty in Duncan Hall lack central spaces for department activities and socializing.

Floor 3

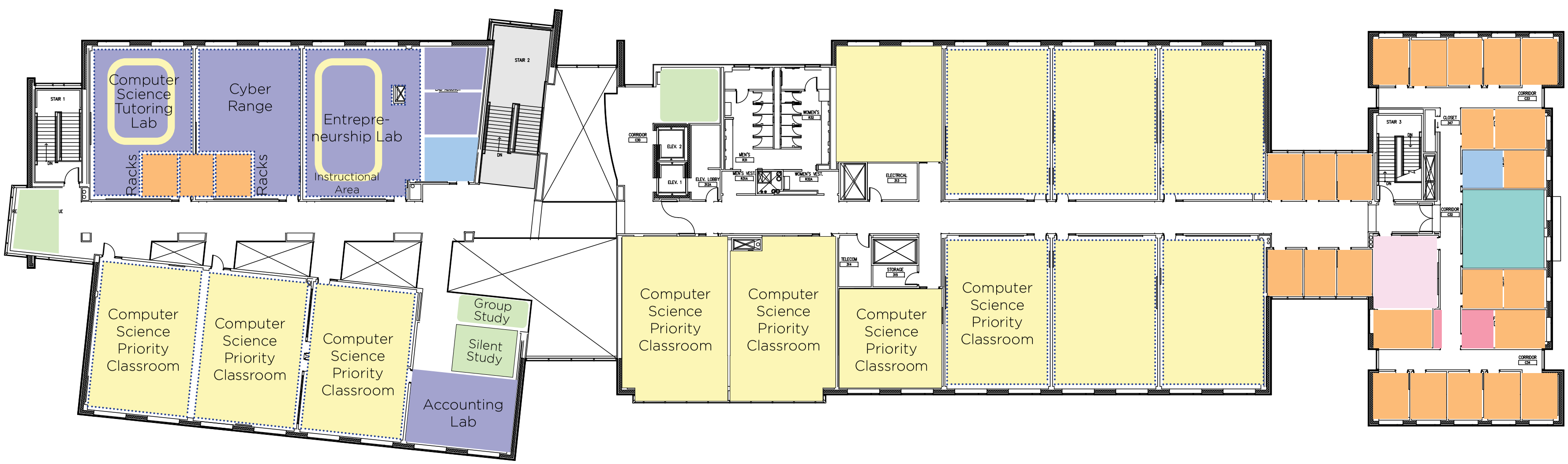
Potential

Actions:

Join Classrooms 306 and 308 to create a dedicated Entrepreneurship Lab. Create accessory spaces for break-out activities, recording, group work, or other purposes. (Recording facilities should be available for use by other departments.) Create a storage room to support third floor instructional spaces. Create an accounting lab and group/silent study space.

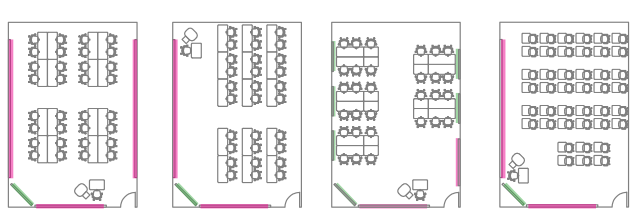
Create three offices off of corridor 300 (west) for faculty who should be housed adjacent to specialized instructional spaces. The resulting small labs could house up to 16 dual-monitor computer stations each.

Reconfigure the center of the office suite to create office service/storage rooms, private offices, and a central social/workroom.



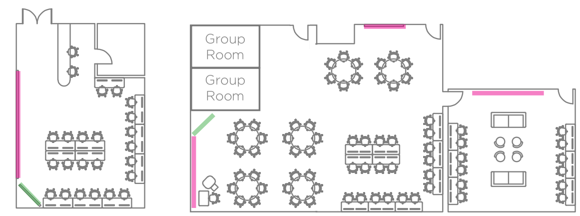
Total	Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
Existing	38	3	3	65	2	2	3	5	2	2	
Potential	*30*	*8*	*6*	*77*	*11*	*3+4*	*4*	*11*	*5*	*2*	*1*

Potential Room Layouts



Seminar Style (32) | Rows (30) | Group Projects (30) | Maximum Capacity (42)

Large General Use Classrooms

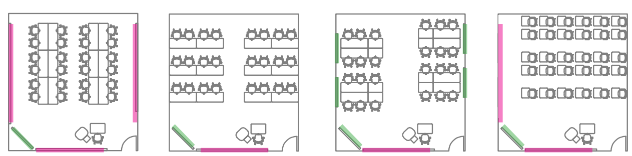


General Computer Lab (22)

Group (2x6)

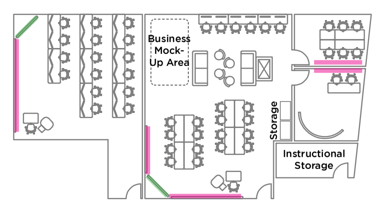
Writing Lab
Round (36)
Computer (20)

Breakout Room
Soft Seating (8)
Computer (12)



Seminar Style (24) | Rows (24) | Group Projects (24) | Maximum Capacity (30)

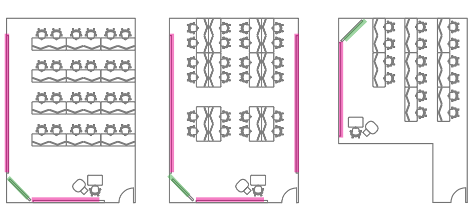
Medium General Use Classrooms



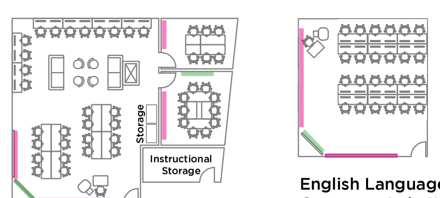
Cyber Range and Tutoring Lab (16)

Entrepreneurship Lab
Computer (6)
Soft Seating (8)
Tables (16)

Project Room (6)
Recording Room (6)



Computer Science Priority Classrooms (24 or 16)



English Language Center Lab
Computer (12)
Soft Seating (8)
Tables (16)

Seminar/Group Room (10)
Study Room (6)

English Language Center Computer Lab (24)

Monitor or Projection Screen
Whiteboard

Key Furnishings

Ideal furniture configurations will use KI brand products or comparable products from another manufacturer. For accessibility, provide one power-operated adjustable-height student workstation per classroom or lab.

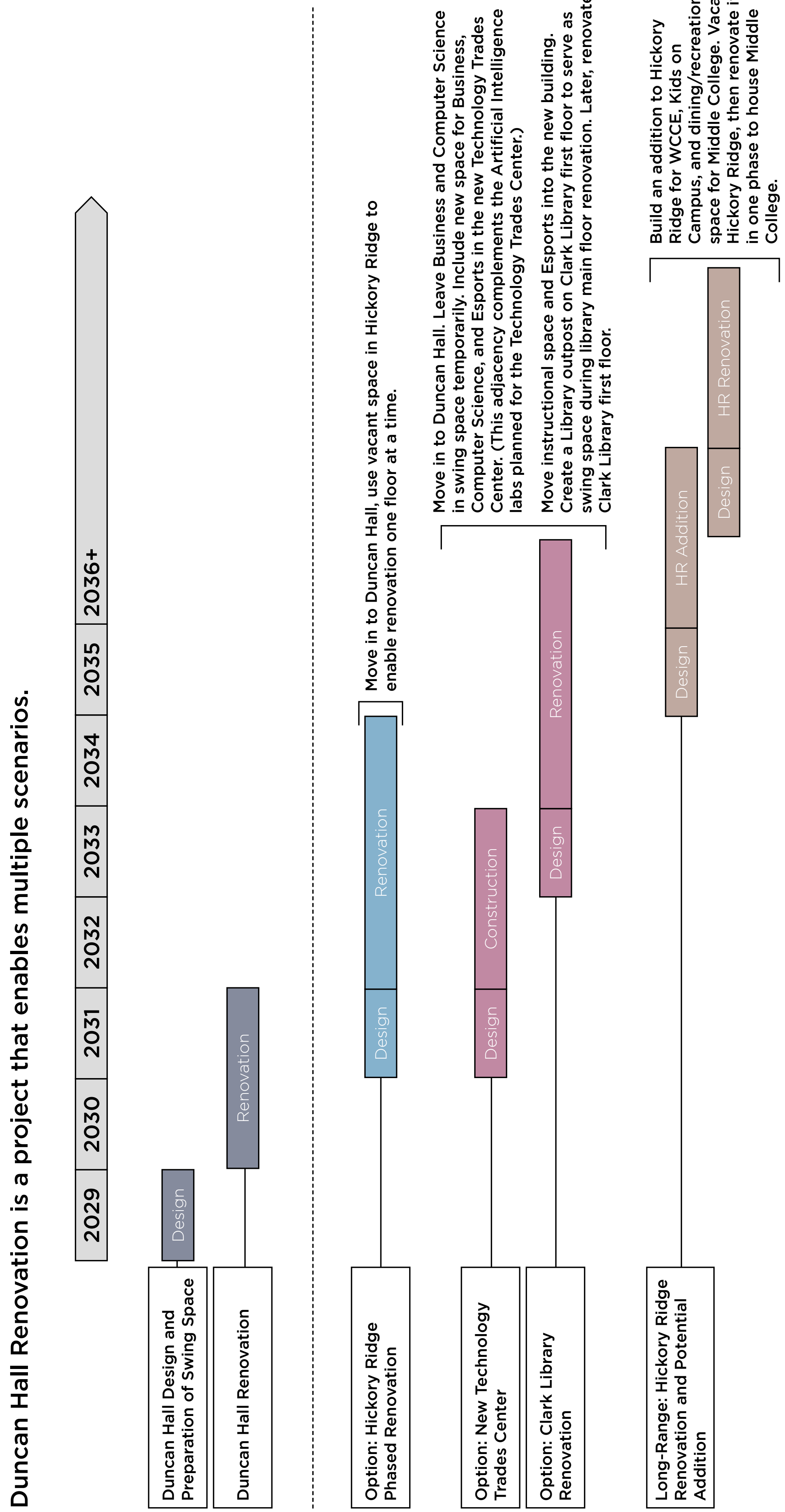
Connection Zone computer lab benching

Pirouette classroom tables (option: single circuit electrical)

Tributaire adjustable height lectern with adjacent work table

Strive tablet armchair (for maximum occupancy scenario only)

Figure 24 - Long-Range Considerations



5. Renovation Features with Potential Unusual Expense

The following element of the renovation does not constitute an unusual expense, but it is a component that will enable more flexible use of the building.

The existing central stair is open, connecting all three stories of the building. Though smoke evacuation and fire separation is present to isolate the open three-story lobby, Howard County building officials have determined that the number of occupants in Duncan Hall could not increase without an increase in exit capacity. Duncan Hall's large classrooms, therefore, are limited to 24 occupants, though they could easily accommodate 30 or more (even with generous station sizes).

The project scope includes creating a fire rated enclosure around the central stair to create a code-compliant third egress stair. This will enable the College to use Duncan Hall's large classrooms to accommodate up to 49 occupants, each, at peak occupancy (tablet armchairs, 20 square feet per station) if needed.

6. Project Alternatives

To accomplish the Facilities Master Plan goal of incorporating the English Language Center (ELC) and Basic Skills instruction in the heart of campus, updating Duncan Hall instructional spaces, and modernizing Duncan Hall building systems, three alternate pathways are possible.

Continue to manage operations and services under current conditions

Address facilities needs as they occur, making no substantial changes to HCC academic or facilities maintenance operations.

Change internal policies or practices

Increase campuswide average classroom hourly use to accommodate ELC and Basic Skills instruction in the heart of campus. As funding and academic schedules allow, update classrooms, offices, and building systems.

Construct an addition to a building in the Heart of Campus to accommodate ELC and Basic Skills

Space Type	SF
General Use Classrooms (17) & Support	14,025
English Language Center Labs & Support	3,100
Office Suites & Support	3,450
Circulation, Restrooms & Service	6,175
Potential Addition Gross SF	**26,750**

Description of Alternatives

Continue to manage operations and services under current conditions

Under existing operations, English Language Center and Basic Skills students will continue to attend classes in Hickory Ridge, separated geographically from the academic core of HCC. They will continue to occupy lower-quality instructional environments than their credit-attempting peers.

Occupants of Duncan Hall could continue their activities, but substantial improvements to the building would not be possible if it remains occupied. Upgrades like expanding device-charging capacity and converting to all-electric HVAC would not be possible without substantial disruption to operations..

The building's occupant count would remain limited due to the unenclosed central stair, which Howard County building officials have stated cannot be counted toward egress capacity.

Change internal policies or practices

Students served by the English Language Center and those who require Basic Skills (BS) instruction are instructed in reserved classrooms where instructional resources are consistent and students feel secure. As students' instruction progresses and they develop confidence in the College environment, students can participate in instruction that takes place outside the block of ELC/BS classrooms.

The ELC and BS groups utilize 25 classrooms and labs in Hickory Ridge. Due to the building's remoteness, these rooms are used exclusively by ELC and BS. If the groups' instruction were moved closer to the HCC heart of campus, advanced ELC and BS classes could use general use classrooms. ELC and BS would require priority use of 17 classrooms and labs, which could be used by other groups after ELC/BS needs are met. Today, departments outside ELC/BS do not use Hickory Ridge due to its poor condition and distant location.

To absorb Hickory Ridge instruction in other HCC buildings, average classroom instructional hours-per-week would need to increase from the fall 2023 rate of 16 hours per week to 20 hours per week in the short term, with further increases to 22-24 hours per week by 2035. At least one full floor of Hickory Ridge would need to remain in use for Workforce Development and Community Education offices, personal enrichment classes, and summer camps.

While this approach would allow Hickory Ridge to be partially vacated and potentially renovated in phases, Duncan Hall would be too much in-demand to be taken offline for renovations or systems upgrades.

An unexpected interruption to HVAC function in Duncan Hall in this scenario could cause non-instructional spaces in Clark Library, Horowitz Visual and Performing Arts Center, Kahlert Foundation Complex, and the Rouse Company Foundation Services Hall to be utilized for lecture instruction and faculty offices.

Remedying an unexpected HVAC failure in Duncan Hall would not necessarily allow for the energy efficiency upgrades that would enable accurate sizing of replacement HVAC components. The time required for design and implementation of energy saving measures and all-electric systems in Duncan Hall would prolong displacement of its occupants.

Construct an addition to a building in the Heart of Campus to accommodate ELC and Basic Skills

Constructing a 26,750 gross square foot addition in HCC's academic core is a compelling idea from a site development standpoint. An addition at the junction of Academic Commons and Howard Hall could help solve accessibility challenges resulting from grade change. However, the College's space inventory does not justify creation of additional classrooms and offices, even when enrollment growth is considered.

The Facilities Master Plan accounted for the College's new buildings that were under construction at the time of the study (Kahlert Foundation Complex and WDTC) and recommended strategic space reassignments and reallocations to meet academic needs. The table and charts below, Figure 25 and Figure 26, show a 2035 scenario in which the Hickory Ridge building is offline for renovation but other HCC buildings remain in-service.

If HCC's 2026 space inventory is a match to MHEC small college target 2035 needs with the Hickory Ridge Building offline, and classroom and office needs are met, there is no calculated justification to create new classrooms and offices. The College prefers to increase utilization of its existing inventory and modernize its current facilities before requesting additional non-specialized space.

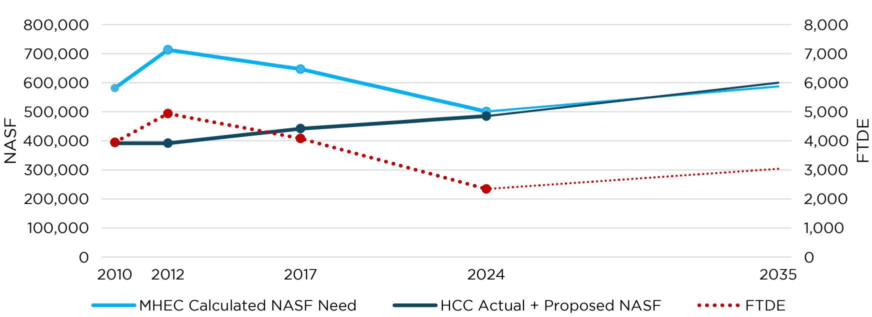
The College could be in need of additional specialized space around the year 2035, depending on enrollment growth and launch of new academic or workforce development programs.

Figure 25 - Facilities Master Plan: Space Inventory Changes

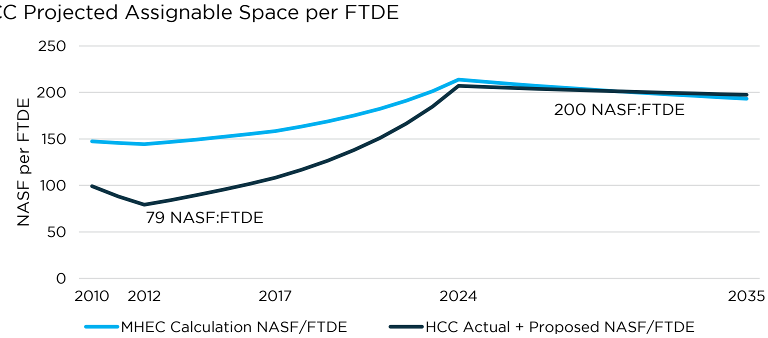
Inventory Changes (NASF)	2024 Inventory	Kahlert Foundation Complex	WDTC	Potential Changes	Recommended Additions	2035 Resulting Inventory	Net Change 2024 to 2035	Percent Change
Classrooms	53,653	16,859	2,800	(12,558)	5,672	66,426	12,773	23.8%
Laboratories	198,002	8,358	22,084	(15,425)	14,400	227,419	29,417	14.9%
Offices	134,140	17,317	3,885	(14,611)	3,774	144,505	10,365	7.7%
Library/Study	29,375	4,771		490	1,840	36,476	7,101	24.2%
Special Use/Athletics	7,408	41,783				49,191	15,430	208.3%
(Former Athletic Center, Replaced)	*26,353*							
General Use/Assembly/Lounge	48,079	3,194		1,259	700	53,232	5,153	10.7%
Building Services	16,171	1,803	1,150	(544)	2,400	20,980	4,809	29.7%
Student Health Care	1,551					1,551		0.0%
Total	514,732	94,085	29,919	(41,389)	28,786	599,780	85,048	16.5%

Figure 26 - Facilities Master Plan Comparisons: MHEC calculated space needs and HCC projected space through 2035

Comparison: MHEC Calculated Space Need, HCC Projected Space Need, and FTDE



Comparison: MHEC Calculated Assignable Space (NASF) per FTDE and HCC Projected Assignable Space per FTDE



Duncan Hall Comprehensive Renovation Facility Program Part II

This section, combined with Part I of the Facility Program, contains the building details as required by the *State of Maryland's Facility Program Manual* for *Renovation Projects*.

Duncan Hall

A. Codes and Regulations

The renovation of Duncan Hall at Howard Community College (HCC) shall conform to the most current editions of the building, health and safety codes and standards. The following list contains codes and regulations that will apply to the Florestano Building. The design team shall confirm the list of code requirements before commencing design. Conformance with the following codes and regulations is required:

- SMART GROWTH AND NEIGHBORHOOD CONSERVATION – SMART GROWTH AREAS: All facility programs shall comply with the principles and practices outlined in Smart Growth legislation identified as Acts of 1997, Chapter 759, Article – State Finance and Procurement, Section 5 – 7B – 01 through Section 5 – 7B – 10, subtitled Priority Funding Areas.
- MARYLAND BUILDING REHABILITATION CODE: All facility programs shall comply with Title 05, Subtitle 16, Maryland Building Rehabilitation Code, under COMAR Regulations 05.16.01 through 05.16.08.
- GREEN BUILDING PROGRAM: All facility programs shall comply with State Finance and Procurement Article 3-602.1 and all of the regulations and guidelines identified in the Maryland Green Building Council's High Performance Green Building Program.
- BUILDING CODE: The Building Code of the State of Maryland is the latest adopted edition of the International Building Code (IBC), National Plumbing Code (NPC), International Mechanical Code (IMC), NFPA 101 Life Safety Code, International Energy Conservation Code (IECC), National Electrical Code and current ASHRAE standards, with all appendices, references and additions incorporated. Building plumbing systems also must comply with the requirements of COMAR Title 09, Department of Licensing and Regulation, Subtitle 20, Board of Commissioners of Practical Plumbing (the State Plumbing Code). Building heating systems utilizing boiler supplied hot water must comply with the requirements of COMAR Title 09, Subtitle 12 Division of Labor and Industry, Chapter 01 Board of Boiler Rules (the State Boiler Code), and Boiler & Pressure Vessel Safety Act & Regulations (Article 48, Section 167-180A, Annotated Code of MD). Compliance with all regulations and requirements of local and service district utility companies (electric, water, sewerage) where work is to be located is required. (See Note 1 and Note 2)
- COAST SMART CONSTRUCTION PROGRAM: All facility programs shall comply with the Coast Smart Construction Program under the Coast Smart Council in the Department of Natural Resources, created by House Bill 615-Section 3-1001-3-1004 (2014) to establish Coast Smart Infrastructure siting and design criteria to address sea level rise and coastal flood impacts on capital projects.
- ELEVATOR CODE: Regulations Governing Elevators, Dumbwaiters, Escalators and Moving Walks ANSI A17.1 or the latest edition, and other requirements of the State Department of Licensing and Regulation, Division of Labor and Industry. (COMAR 09.12.81 through 09.12.83) (See Note 2)

- FIRE CODE: The State Fire Prevention Code (COMAR 29.06.01 and 29.06.02) which references the NFPA National Fire Codes, latest edition, including Standards, Recommended Practices Manuals, etc. (See Note 3)
- FLOOD PLAIN: Management Regulations & Permits, Department of Natural Resources (COMAR 26.17.04)
- FOOD PREPARATION: Maryland State Department of Health Regulations for Eating and Drinking Establishments (COMAR 10.15). This applies whenever food preparation or serving areas are included in the project. These regulations are interpreted by the Maryland Department of Health. (See Note 4)
- FOREST CONSERVATION: Maryland Department of Natural Resources regulations for development of Forest Stand Delineation and Forest Conservation Plan in accordance with Forest Conservation Act (COMAR 08.19.04).
- HANDICAPPED ACCESSIBILITY: Regulations Governing Construction of Facilities for the Handicapped by the State of Maryland (COMAR 05.02.02), the Fair Housing Amendments Act (1988) and the Americans with Disabilities Act (1990 and 2010) or other Federal regulations, where applicable, will supersede COMAR requirements. (See Note 1)
- HAZARDOUS WASTE: Maryland Department of the Environment for disposal of controlled hazardous substances. These regulations establish standards for generators of hazardous waste. (COMAR 26.13.03) (See Note 5)
- HIGHWAYS: Regulations of the Maryland Department of Transportation, State Highway Administration, for any construction affecting a State highway route or right-of-way.
- LEAD EXPOSURE: Maryland Occupational Safety and Health Standards for occupational exposure to lead in construction work. These regulations apply to occupational exposure to lead in every employee in construction work. (COMAR 09.12.32)
- MECHANICAL & GAS, ELECTRICAL, AND ENERGY: (See Building Code) (See Note 1)
- PLUMBING CODE: (See Building Code) (See Note 2)
- SEDIMENT AND EROSION CONTROL AND STORM WATER MANAGEMENT: Regulations of the Maryland Department of the Environment (MDE), Sediment & Storm Water Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230 (MDE Article Sections 4-101 through 4-116 Annotated Code of MD. and COMAR 26.17.01 and 26.17.02). (See Note 5)
  a. Chesapeake Bay Critical Area Criteria (COMAR 27)
  b. Nontidal Wetlands (COMAR 26.23)
  c. Wetlands (COMAR 26.24)
- SAFETY GLAZING: Applies to fixed glass panels immediately adjacent to exit/entrance doors and specific hazardous locations. (COMAR 05.02.06)
- WATER APPROPRIATION: When the project requires the withdrawal of either ground water or surface water, the A/E shall be responsible for complying with all permitting requirements and shall comply with COMAR 26.17.06, “Water Appropriation or Use”.
- WATER DISTRIBUTION, WASTE COLLECTION, ON-SITE WATER SUPPLY, AND ON-SITE WASTEWATER, DISPOSAL: Health Department of Local Jurisdiction
- WATER RESOURCES: Other water resources, rules and regulations of procedure as issued by the Department of the Environment. (COMAR 26.08)
- HISTORIC LANDS AND STRUCTURES: In accordance with Article 83B paragraphs 5-617 and 5-618 of the Annotated Code of Maryland, the Maryland Historical Trust must review capital projects affecting historic properties. These regulations can be obtained from the Maryland Department of Planning. (See Note 6)

Enforcing Agencies (State Regulatory Agencies)

Note 1) DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Director, Maryland Codes Administration

7800 Harkins Road, Lanham, MD 20706
(301) 429-7666

Maryland Accessibility Code, Building Energy Code and Safety Glazing Law

Director, Maryland Codes Administration

(301) 429-7666

State of Maryland Model Performance Building Code

Director, Maryland Codes Administration

(301) 429-7666

Note 2) DEPARTMENT OF LABOR, LICENSING AND REGULATION

Division of Labor and Industry

Commissioner - 1100 N. Eutaw St., Baltimore, MD 21201 - (410) 767-4037

Elevator Safety Inspection

Chief Inspector - (410) 767-2350

Boiler & Pressure Vessel Safety Inspection

Chief Boiler Inspector -- (410) 767-2333

Maryland Occupational Safety & Health (MOSH)

Assistant Commissioner -- (410) 527-2065

Division of Occupational and Professional Licensing

Commissioner - 500 N. Calvert Street, 3rd Fl., Baltimore, MD 21202 - (410) 230-6226

State Board of Plumbing

Executive Director - (410) 230-6270

Note 3) DEPARTMENT OF MARYLAND STATE POLICE

State Fire Marshal

1201 Reisterstown Rd., Pikesville, MD 21208 - (410) 653-8980;

(1-800) 525- 3124

Note 4) DEPARTMENT OF HEALTH

Office of Food Protection -

(410) 767-8440

Note 5) DEPARTMENT OF THE ENVIRONMENT

Director, Water Management Administration - (410) 537-3567

Program Manager, Asbestos and Industrial Hygiene Program
(410) 537-3200

Note 6) DEPARTMENT OF PLANNING

Maryland Historical Trust

Review and Compliance Manager, Office of Preservation Services

(410) 697-9541

All designs shall comply with accepted engineering practices in compliance with the above codes unless specific approval is obtained for a variance.

Although the above list contains major codes and standards which currently apply to construction for the State, it is not to be considered all inclusive.

Howard County Codes

Retrieved 19 February 2026 from https://library.municode.com/md/howard_county/codes/code_of_ordinances?nodeId=HOCOCO_TIT3BU_SUBTITLE_1BUCO

Adopted Codes.

The International Building Code, 2024 Edition, Published by the International Code Council, Inc.

The International Mechanical Code, 2024 Edition, published by the International Code Council, Inc.

The International Energy Conservation Code, 2024 Edition, published by the International Code Council, Inc.

The Life Safety Code, 2024 Edition, published by the National Fire Protection Association.

The Howard County Electrical Code, adopted pursuant to Title 3, subtitle 2 of the Howard County Code.

The Plumbing and Gasfitting Code for Howard County adopted pursuant to Title 3, subtitle 3 of the Howard County Code.

(continued)

The Maryland State Accessibility Code.

The Howard County Sign Code, adopted pursuant to Title 3, Subtitle 5 of the Howard County Code.

Review amendments: https://library.municode.com/md/howard_county/codes/code_of_ordinances?nodeId=HOCOCO_TIT3BU_SUBTITLE_1BUCO

B. Specific Program Content Requirements for Renovations

This project involves renovations to Duncan Hall at Howard Community College. The following narrative provides details about the project, as outlined in the State of Maryland's *Facility Program Manual* criteria for *Renovation Projects*.

Howard Community College holds copies of Duncan Hall construction drawings, including subsequent minor reconfigurations. The accuracy of any furnished documents is not guaranteed by the State. The consulting A/E shall be responsible for verifying dimensions and conditions in the field.

1. Project Justification and Relevancy to the Facilities Master Plan

The renovation of Duncan Hall is consistent with the recommendations of the 2025 Howard Community College Facilities Master Plan. The Master Plan identified Duncan Hall as one of the most heavily utilized academic buildings on campus and concluded that a comprehensive renovation was necessary to address aging building systems, modernize instructional space, and support evolving academic delivery models.

When Duncan Hall opened in 2003, it was aligned with the College's instructional practices and technology standards of that time. Over the past two decades, however, HCC's programs, student demographics, and teaching methodologies have evolved significantly while the building has remained largely unchanged. The Master Plan confirmed that incremental upgrades would not be sufficient to resolve current deficiencies and recommended a full building renovation to extend the useful life of the facility and align it with contemporary academic needs.

The proposed project directly implements that recommendation. Specifically, the Master Plan called for:

- Modernization of general classrooms to support flexible, technology-rich instruction.
- Replacement and upgrading of major building systems that are approaching the end of their useful life.
- Improvements to accessibility, energy performance, and interior environmental quality.
- Reconfiguration of select spaces to better support collaborative learning and student engagement.

Duncan Hall delivers a large share of instructional space and weekly student contact hours on campus. Its continued functionality is essential to the College's academic operations. Renovating the building will ensure that this high-use facility can continue to serve as a core academic resource while meeting current code, energy, and performance standards.

The project also supports broader campus planning goals outlined in the Master Plan, including:

- Reinforcing the central academic core
- Enhancing student success through improved learning environments
- Advancing sustainability goals through energy efficient system replacement
- Preserving the value of existing capital assets through strategic reinvestment rather than new construction

By modernizing Duncan Hall, the College strengthens the academic heart of the campus and advances the long-term implementation strategy established in the Facilities Master Plan.

2. Site Plan & Landscape Elements

Duncan Hall (Figure 1, circled in red) is located along the northern edge of the Campus Green and is accessed from the south and north. The building's main entrance faces an open lawn and gathering space, placing it at one of the most active pedestrian nodes on campus.

Site improvements are planned to enhance the building's connection to the Green, create outdoor destinations, and add areas of shade and rest for individuals crossing campus using pedestrian paths. Duncan Hall's visibility and adjacency to the Green reinforce its role as an HCC landmark. It is a busy campus crossroads and its renovation will require careful construction phasing and access management.

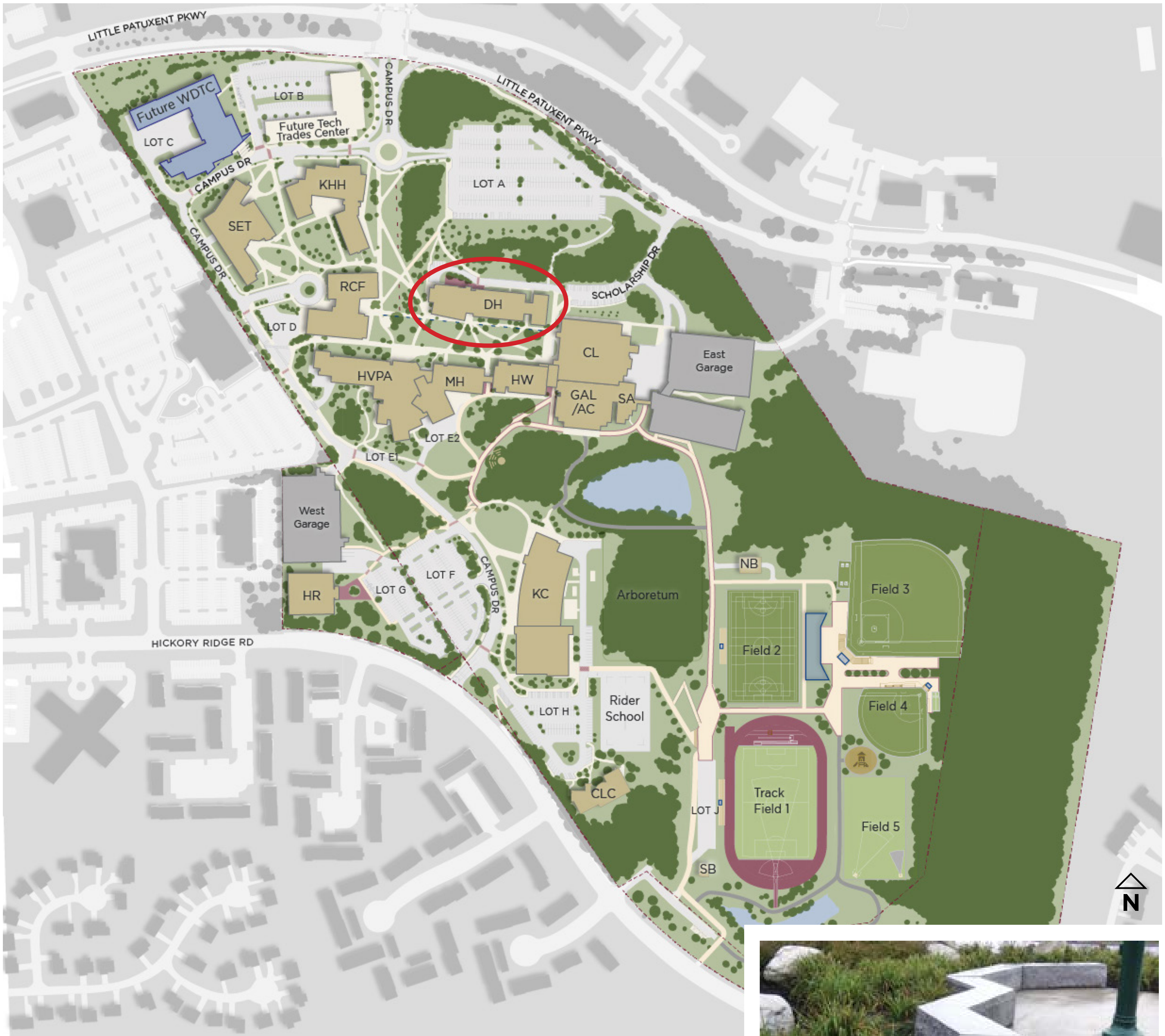


Figure 27 - Howard Community College Site Plan & Excerpts from Facilities Master Plan

1. New/Upgraded Walkways, Outdoor Seating, Landscape, Lighting, Signage and Crosswalks
2. New Outdoor Seating with Shade

* Existing Art

Example outdoor seating

Example new seating/activity area adjacent to existing walk

3. General Characteristics of the Building

Duncan Hall was constructed in 2003 and contains 105,035 gross square feet. The building is organized as three floors above grade with a basement level and serves as a general academic classroom facility within the College's academic core.

The foundation is assumed to consist of shallow spread footings supporting a structural steel frame with concrete elevated floor slabs. The exterior envelope is composed primarily of architectural concrete masonry units with aluminum-framed, double-pane windows. The roof assembly consists of a modified bitumen system. Primary building entry is provided through storefront entrance systems oriented toward the Campus Green and parking lot A.

Interior space includes general purpose classrooms, computer labs, instructional support spaces, faculty offices, and student study areas. Circulation is provided by stairwells and two passenger elevators.

Building systems are largely original to construction. Domestic hot water is supplied by a boiler-based system that was replaced with a plate heat exchanger system in August 2019. Water distribution piping is copper, and sanitary waste piping consists of no-hub cast iron. The building is served by a 3-phase, 4-wire electrical service rated at approximately 3,200 amps, with copper branch wiring throughout

Fire protection consists of a fully sprinklered system, including both wet and dry configurations, supported by an automated fire alarm system with bells, strobes, and pull stations. The building is served by two hydraulic passenger elevators.

Utility service is provided by Howard County for water and sewer. Electric and natural gas service are provided by Baltimore Gas and Electric. A fuel oil storage tank is located on the northeast side of the building.

While the structural components of the building remain sound, most major mechanical and electrical systems are approaching or exceeding twenty years of service. Modernization is required to ensure long-term reliability, energy performance, and compliance with current standards

4. Important Architectural and Environmental Considerations

There will be no change to the building's height, or architectural style, and no expansion beyond the existing building footprint is anticipated.

5. Net Assignable Space

Figure 2 provides a summary of the space program for the proposed renovation of the building, with NSF presented by HEGIS/FICM space code.

Floor	Space Type	Existing NASF	Proposed NASF
B	300 - Office	1,275	1,275
	700 - Service	1,475	1,475
Basement		**2,750**	**2,750**
1	100 - Classroom/Computer Classroom	2,930	5,770
	210 - Class Lab	5,963	0
	220 - Open Lab	1,955	970
	300 - Office	2,536	4,565
	400 - Study	0	460
	600 - Assembly/Lounge	3,787	6,270
	700 - Service	244	320
First Floor		**17,415**	**18,355**
2	100 - Classroom/Computer Classroom	3,337	10,890
	210 - Class Lab	10,882	1,600
	220 - Open Lab	2,960	3,990
	300 - Office	3,442	3,240
	400 - Study	0	220
	600 - Assembly/Lounge	104	325
	700 - Service	220	220
Second Floor		**20,945**	**20,485**
3	100 - Classroom/Computer Classroom	2,774	14,170
	210 - Class Lab	12,343	0
	220 - Open Lab	845	1,910
	300 - Office	4,205	3,085
	400 - Study	0	520
	600 - Assembly/Lounge	323	325
	700 - Service	220	220
Third Floor		**20,710**	**20,230**
Grand Total		**61,820**	**61,820**

Figure 28 - Duncan Hall Space Changes

6. Non-Assignable (Support) Area

- The existing building areas that house toilet rooms, custodial spaces, elevators, and some vertical service shafts will be renovated but the layout will remain as is. A lactation room will be added to the building.
- Circulation: The location of existing vertical circulation is expected to remain in place. Elevators will remain.
- Mechanical: The existing mechanical space will remain. The need for additional mechanical space is not anticipated.
- An unenclosed stair connects three stories of an open lobby. The renovation scope includes enclosing this stair to create a code-compliant egress stair.

7. Space Program & Floor Plan Diagrams

The proposed space program for Duncan Hall is summarized in the tables on the following pages. The tables identify net assignable square footage by FICM category, the number of rooms required, proposed room sizes, and the number of occupants supported at any one time. The program reflects renovation of the three floors above grade and targeted improvements in the basement to support instructional and building support functions.

Per the Facilities Master Plan, HCC does not plan to add substantial faculty and staff for the programs proposed to be housed in Duncan Hall. The Facility Program includes the required offices and workstations for the proposed programs. Nine additional offices and one additional workstation are provided to allow flexibility in hiring and office assignments. For example, computer science faculty are currently housed in another building. The moderate surplus of offices in Duncan Hall will allow some faculty to relocate to Duncan if future needs prompt it.

Major Functions in Building

Basement: The basement level houses building support functions and limited assignable space. Mechanical, electrical, and plumbing systems will be upgraded within existing footprints. Infrastructure improvements at this level are essential to support electrification, system reliability, and long-term building performance.

First Floor: The first floor remains the most publicly accessible instructional level. The lobby and lounge will serve as a crossroads for students of the English Language Center, World Languages, English, and community programs. Offices for the English Language Center will be created on this floor in a visible, welcoming location.

The program adapts some existing general-purpose classrooms to reflect expected enrollment patterns and course section distribution.

Support spaces on this level include updated telecommunications closets and building service areas to support new electrical and data infrastructure. Wayfinding will be updated to reduce congestion during peak class transitions.

Second Floor: The second floor will continue to support a mix of instructional space and faculty offices. Classroom sizes are adjusted to better align with current seat demand. Additional discipline-specific labs, with adjacent faculty offices, will be created.

The faculty office suite will be modified to create a department lounge and shared workroom.

Third Floor: The third floor includes additional instructional space and specialized labs. Computer-based instructional environments will be modernized to support current hardware and network requirements, while allowing flexibility for future technology changes.

Shared faculty meeting rooms will be incorporated to support collaboration and interdisciplinary work. Building support areas, including telecommunications and infrastructure rooms, will be upgraded to accommodate expanded electrical capacity and data distribution required for building electrification and modern instructional technology.

8. Room Data Sheets

Room data sheets, ordered by HEGIS, follow the space program and floor plan diagrams.

Duncan Hall Renovation Space Program

Primary User(s)	Floor	HEGIS	Space Name	Room Capacity	NASF per Room	Number of Spaces	Total NASF
Accounting	3	220	Accounting Lab	14+1	450	1	450
		310	Private Office (reconfiguration)	1+2	105	4	420
	3 Total					5	870
Accounting Total						5	870
Business	3	220	Entrepreneurship Center Open Lab	32	1,120	1	1,120
		225	Entrepreneurship Center Break-Out Room	6	170	1	170
			Entrepreneurship Center Recording/Presentation Room	4	170	1	170
		310	Private Office (reconfiguration)	1+2	105	5	525
	3 Total					8	1,985
Business Total						8	1,985
Communications	1	310	Private Office (reconfiguration)	1+2	105	4	420
	1 Total					4	420
Communications Total						4	420
Computer Science	3	220	Computer Science Tutoring Lab	20+1	820	1	820
			Computer Science Cyber Range	20+1	820	1	820
	3 Total					2	1,640
Computer Science Total						2	1,640
English & World Languages	2	310	Private Office (reconfiguration)	1+2	105	9	945
			Private Office (renovation)	1+2	105	13	1,365
	2 Total					22	2,310
	3	310	Private Office (renovation)	1+2	105	12	1,260
	3 Total					12	1,260
English & World Languages Total						34	3,570
English Language Center	1	310	Office Workstation	1	80	11	880
			Private Office (reconfiguration)	1+2	105	8	840
					130	2	260
			Private Office (renovation)	1+2	105	8	840
			Office Waiting Area	5	100	1	100
		315	Print Alcove		20	2	40
			Office Circulation	(blank)	300	1	300
		350	Meeting Room	7	180	1	180
		410	Language Practice/Recitation Room	2	60	3	180
	1 Total					37	3,620
	2	220	English Language Center (ELC) Lab	24	800	2	1,600
				32	1,120	1	1,120
		225	ELC Break-Out Room	6	170	2	340
	2 Total					5	3,060
English Language Center Total						42	6,680
Future Faculty/Staff	2	310	Private Office (renovation)	1+2	115	5	575
	2 Total					5	575
	3	310	Private Office (renovation)	1+2	105	5	525
	3 Total					5	525
Future Faculty/Staff Total						10	1,100
General Use	1	220	Open Computer Lab	22+1	870	1	870
		225	Open Computer Lab/Instructional Storage		100	1	100
		410	Group Study Room	4	110	2	220
			Open Study Area	2	60	1	60
		650	Department Lounge/Break Room	6	160	1	160
			Lounge	50	1,740	1	1,740
		680	Assembly/Multipurpose Room	150	3,030	1	3,030
		685	Assembly Room Staging/Support (distributed)	(blank)	760	1	760
			Assembly Room Storage	(blank)	510	1	510
	1 Total					10	7,450
	2	410	Open Study Area	4	110	2	220
		650	Department Lounge/Break Room	12	325	1	325
	2 Total					3	545
	3	410	Open Study Area	4	130	3	390
			Enclosed Silent Study	4	130	1	130
		650	Department Lounge/Break Room	12	325	1	325
	3 Total					5	845
General Use Total						18	8,840

Primary User(s)	Floor	HEGIS	Space Name	Room Capacity	NASF per Room	Number of Spaces	Total NASF
Humanities, Liberal Studies	1	310	Private Office (renovation)	1+2	105	2	210
	1 Total					**2**	**210**
Humanities, Liberal Studies Total						**2**	**210**
Instruction, Computer Science Priority	3	110	Large Classroom - Computer Science Priority	24+1	990	6	5,940
			Medium Classroom - Computer Science Priority	16+1	650	1	650
	3 Total					**7**	**6,590**
Instruction, Computer Science Priority Total						**7**	**6,590**
Instruction, General	1	110	Large Classroom	41+1 (max)	990	5	4,950
			Medium Classroom	31+1 (max)	750	1	750
		115	Instructional Storage		70	1	70
	1 Total					**7**	**5,770**
	2	110	Large Classroom	41+1 (max)	990	10	9,900
			Medium Classroom	31+1 (max)	750	1	750
		115	Instructional Storage		120	2	240
	2 Total					**13**	**10,890**
	3	110	Large Classroom	41+1 (max)	990	5	4,950
			Medium Classroom	31+1 (max)	750	1	750
		115	Instructional Storage		120	2	240
	3 Total					**8**	**5,940**
Instruction, General Total						**28**	**22,600**
Office of Information Technology	B	710	IT Workshop	6	1,050	1	1,050
		715	IT Storage		425	1	425
	B Total					**2**	**1,475**
	1	715	Data Room (reconfiguration)		100	1	100
			Data Room and Electrical Room (renovation)	(blank)	110	2	220
	1 Total					**3**	**320**
	2	715	Data Room and Electrical Room (renovation)		110	2	220
	2 Total					**2**	**220**
	3	715	Data Room and Electrical Room (renovation)		110	2	220
	3 Total					**2**	**220**
Office of Information Technology Total						**9**	**2,235**
Public Safety	1	310	Public Safety Office	3	160	1	160
	1 Total					**1**	**160**
Public Safety Total						**1**	**160**
Writing Center	2	220	Writing Center Open Computer Lab	30	1,880	1	1,880
		225	Writing Center Break-Out Room	20	650	1	650
	2 Total					**2**	**2,530**
Writing Center Total						**2**	**2,530**
Shared Resources	B	315	Department Storage		375	1	375
					900	1	900
	B Total					**2**	**1,275**
	1	315	Office Storage/Workroom		75	1	75
		350	Conference Room	12	260	1	260
		653	Lactation Room	(blank)	70	1	70
	1 Total					**3**	**405**
	2	315	Office Storage/Workroom		75	1	75
			Print Alcove	(blank)	20	1	20
		350	Conference Room	12	260	1	260
	2 Total					**3**	**355**
	3	315	Office Storage/Workroom		75	1	75
			Print Alcove	(blank)	20	1	20
		350	Conference Room	12	260	1	260
	3 Total					**3**	**355**
Shared Resources Total						**11**	**2,390**
Grand Total						**183**	**61,820**

Figure 29 - Proposed Space Program for Lower Level and First Floor of Duncan Hall

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*

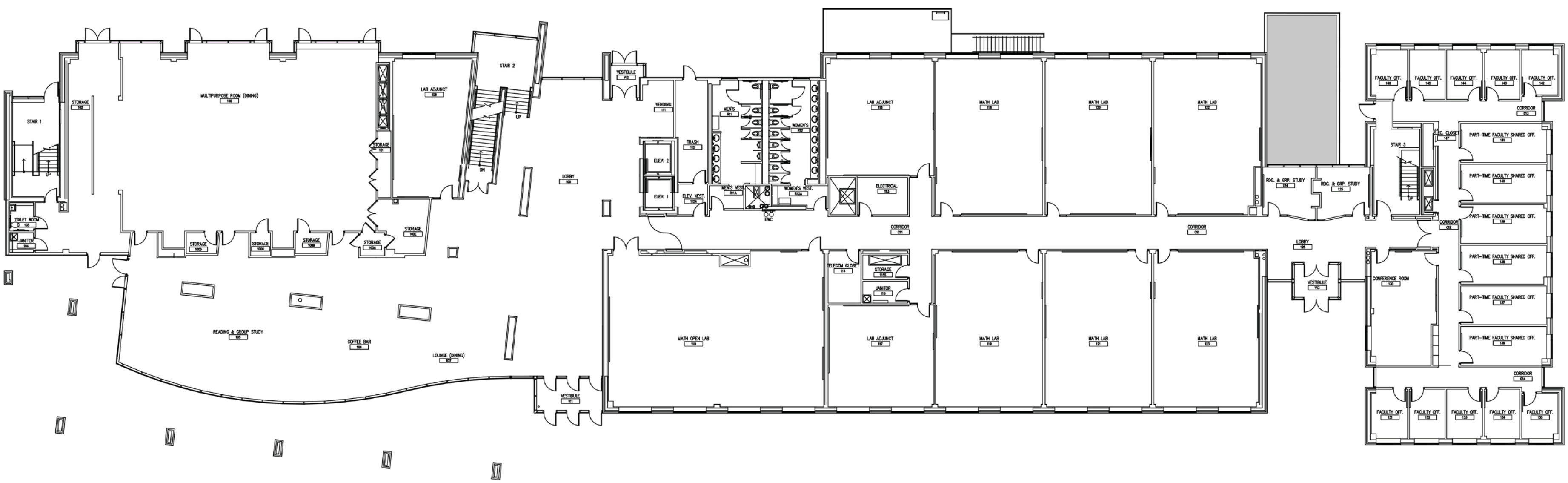


Figure 4

Duncan Hall Existing Floor Plan Diagrams
First Floor

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*

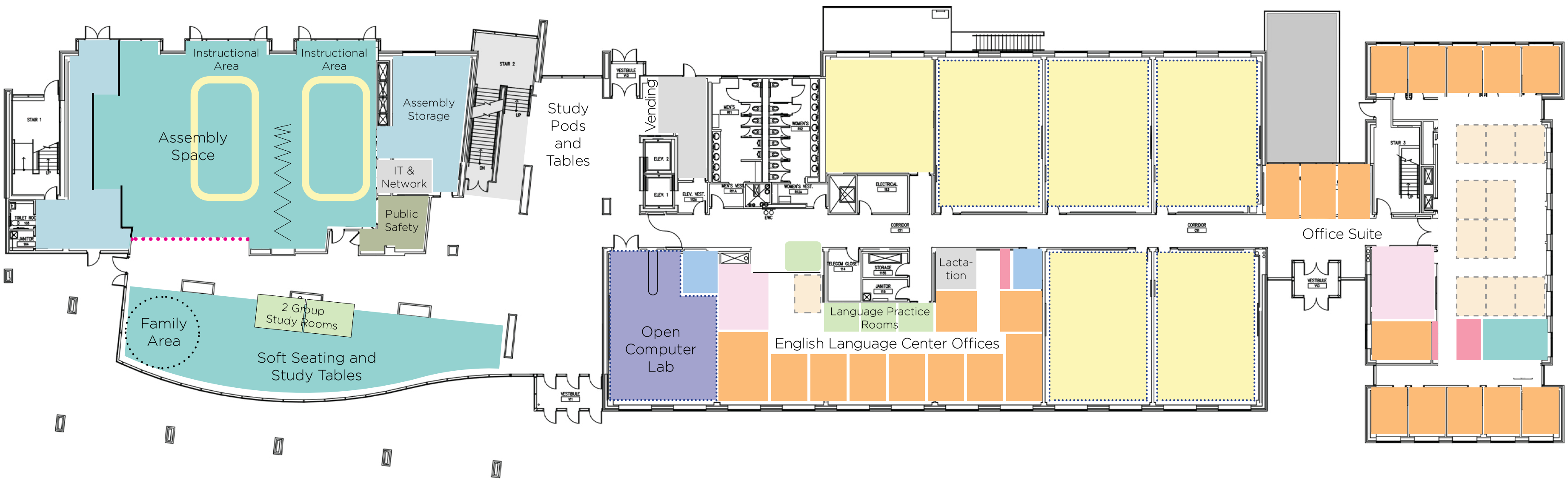


Figure 4

Duncan Hall Renovation Floor Plan Diagrams
First Floor

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*
2	Existing	15	1	3	20	1	2	1	2			
2	*Potential*	*11*	*4*	*2*	*27*		*1+1*	*1*	*2*	*1*		

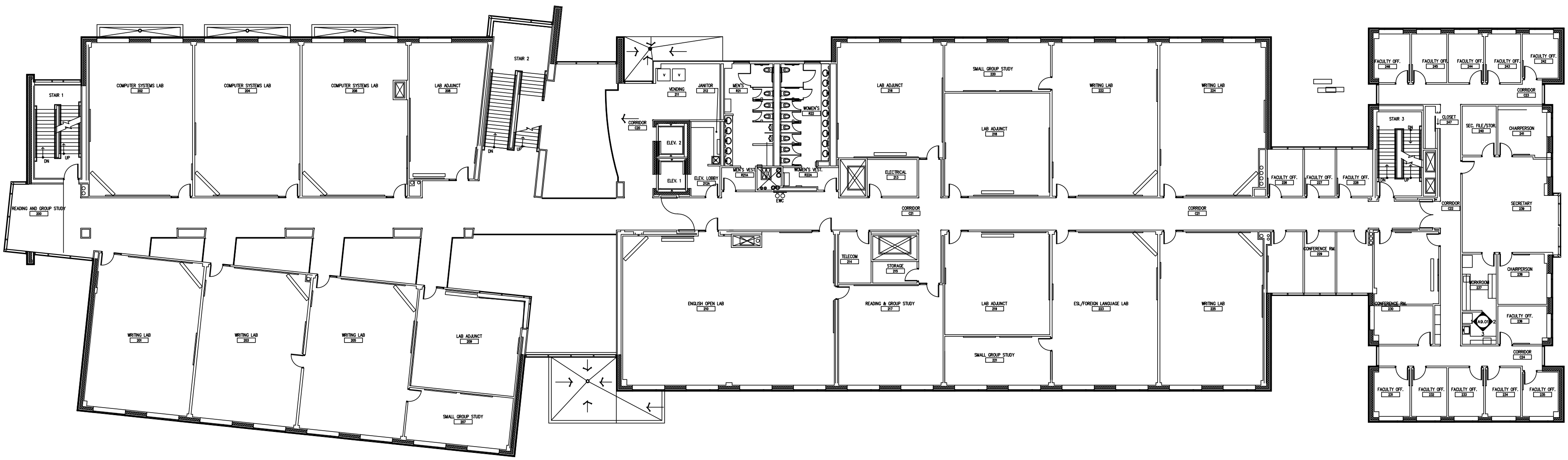


Figure 4

Duncan Hall Existing Floor Plan Diagrams
Second Floor

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*
2	Existing	15	1	3	20	1	2	1	2			
2	*Potential*	*11*	*4*	*2*	*27*		*1+1*	*1*	*2*	*1*		

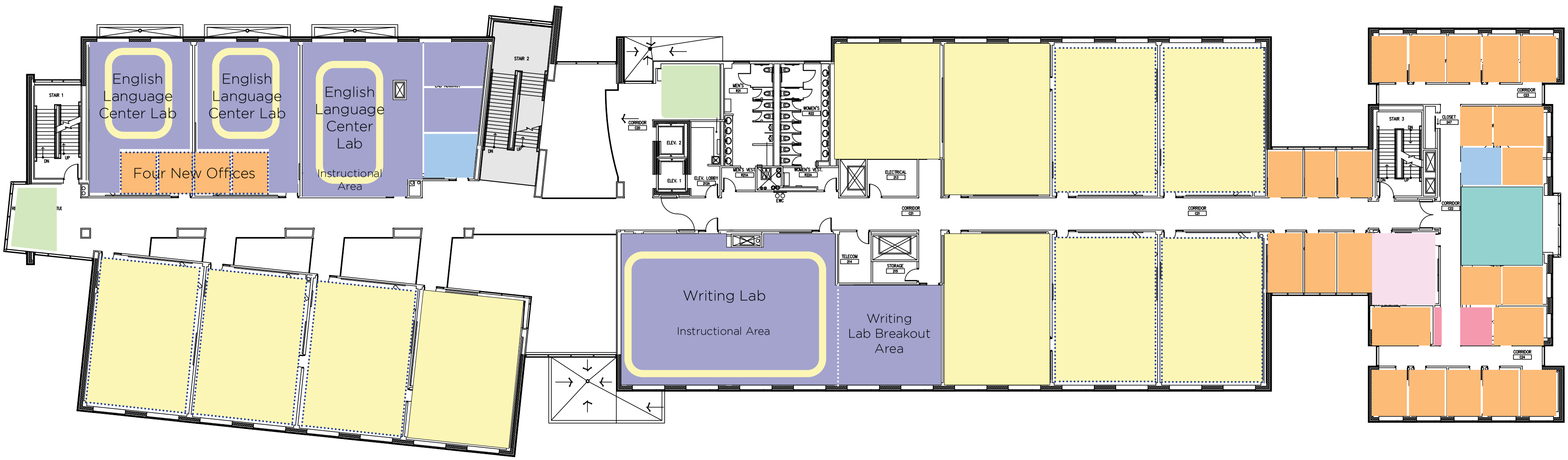


Figure 4

Duncan Hall Renovation Floor Plan Diagrams
Second Floor

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*
2	Existing	15	1	3	20	1	2	1	2			
2	*Potential*	*11*	*4*	*2*	*27*		*1+1*	*1*	*2*	*1*		
3	Existing	14	1		27	1		1	3			
3	*Potential*	*13*	*4*	*2*	*26*		*1+1*	*1*	*3*	*1*		

Dotted = raised floor

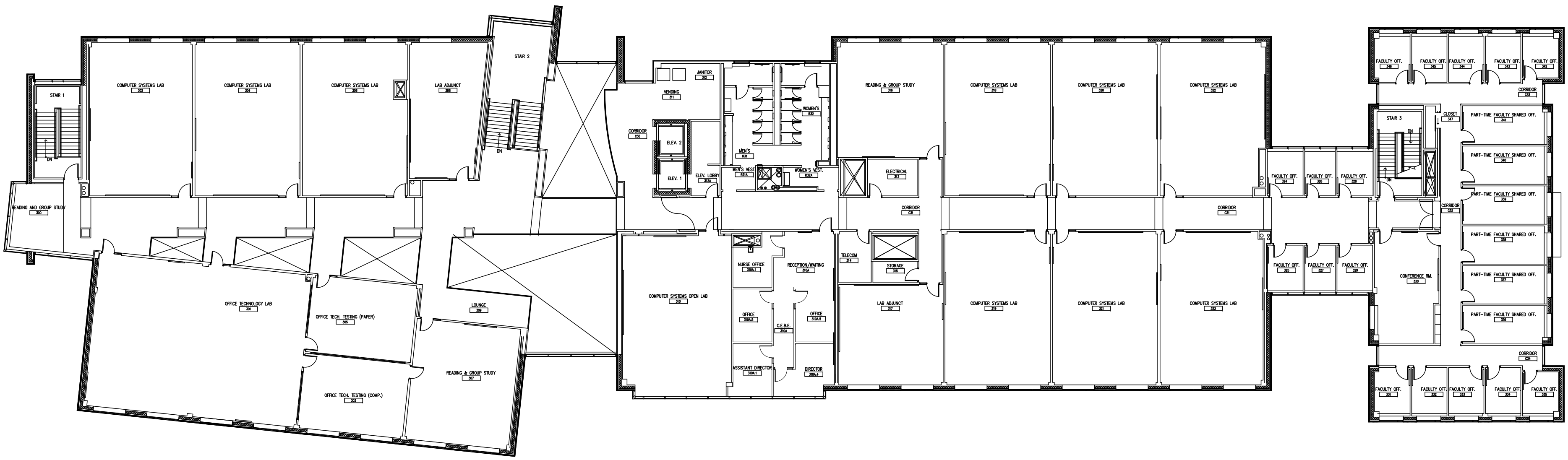


Figure 4

Duncan Hall Existing Floor Plan Diagrams
Third Floor

Floor		Classroom/ Computer Classroom	Special Center/ Open Lab	Instructional Service	Office	Workstation	Office Service	Conference Room	Group Study	Assembly/ Lounge/ Multipurpose	Assembly Service	Public Safety
1	Existing	9	1		18			1		2	2	
1	*Potential*	*6*	*1*	*2*	*24*	*11*	*1+2*	*2*	*6*	*3*	*2*	*1*
2	Existing	15	1	3	20	1	2	1	2			
2	*Potential*	*11*	*4*	*2*	*27*		*1+1*	*1*	*2*	*1*		
3	Existing	14	1		27	1		1	3			
3	*Potential*	*13*	*4*	*2*	*26*		*1+1*	*1*	*3*	*1*		

Dotted = raised floor

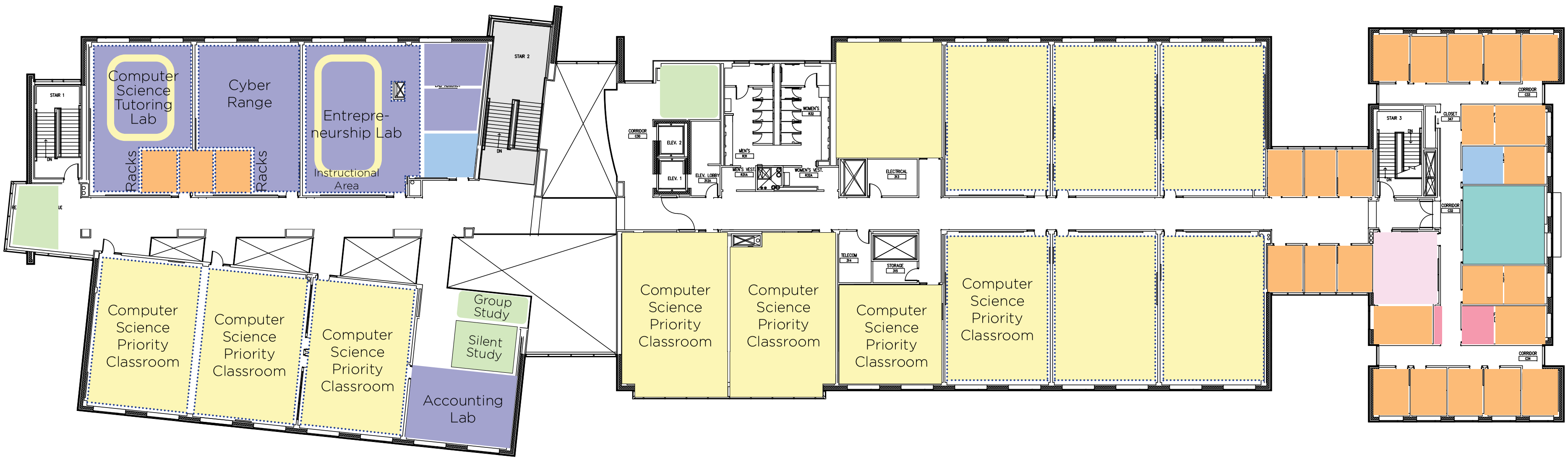


Figure 4

Duncan Hall Renovation Floor Plan Diagrams
Third Floor

Room Data Sheets

General Notes

- All walls should be of metal studs that extend to the upper deck and include sound attenuating batts to achieve a minimum STC rating of 50.
- Sound-rated walls, such as those in testing areas, counseling and advising offices, should use resilient channels to achieve an STC rating of 54. If a higher STC rating is desired, wall studs should be staggered. Seals should be installed at doors, wall receptacles, and switches.
- Minimize/mitigate noise from HVAC equipment and air flow in all occupied spaces.
- All interior finishes, including those in corridors and toilet rooms should be replaced.
  - Offices/Administrative Spaces
    - Floor/Base: Anti-static carpet tile; rubber base.
    - Walls: GWB; low-VOC paint.
    - Ceilings: 2'x 2' ACT.
  - Entry Lobby, Corridors
    - Floor/Base: Porcelain or terrazzo tile and base.
    - Walls: Abuse-resistant GWB; low VOC paint.
    - Ceilings: 2'x 2' ACT, GWB, some areas with specialty metal or wood veneer ceiling systems in entry lobby and lounge area.
  - Toilet Rooms
    - Floor/Base: Ceramic tile floor and base.
    - Walls: Ceramic tile on moisture-resistant GWB.
    - Ceilings: ACT.
- Existing toilet rooms will receive new fixtures in their current locations. Provide all required ADA fixtures and furnishings.
- Provide access control at all building entrances and office suites. Coordinate access control with College.

Space Name:	Medium General Use Classroom	Location (Quantity):	Floor 1 (1); Floor 2 (1); Floor 3 (1)

HEGIS Code:	110	***Area NASF:***	750	**Space Quantity:**	3

Function:	General Use Classroom
Occupants:	Ideal: 24 students + 1 faculty (with tablet armchairs: 30 students + 1 faculty)
Relationships:	Distributed throughout the building, adjacent to other general use classrooms with access to shared storage

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	28 linear feet (min) up to 40 linear feet of white board, depending on room configuration
Moveable Furnishings	Furnishings of this specification or similar: (12) 29" H x 60" W x 24" D KI brand Pirouette Tables - one should be height-adjustable for accessibility, (25) KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; WiFi sufficient for 24 student laptops; wired internet for instructor's laptop
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; remaining outlet distribution per building code (charging for student devices not anticipated in this room type)
Mechanical	General Building
Plumbing	None
Specialized Equipment	2 second-floor rooms have existing raised floor system that will require replacement.

Space Name:	Large General Use Classroom	Location (Quantity):	Floor 1 (5); Floor 2 (10); Floor 3 (5)

HEGIS Code:	110	*Area NASF:*	Avg: 990 SF Min: 940 SF Max: 1,003 SF	**Space Quantity:**	20

Function:	General Use Classroom
Occupants:	Ideal: 24 students + 1 faculty (with tablet armchairs: 42 students + 1 faculty)
Relationships:	Distributed throughout the building, adjacent to other general use classrooms with access to shared storage

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	36 linear feet (min) up to 60 linear feet of white board, depending on room configuration
Moveable Furnishings	Furnishings of this specification or similar: (12) 29" H x 60" W x 24" D KI brand Pirouette Tables - one should be height-adjustable for accessibility, 25 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; WiFi sufficient for 24 student laptops; wired internet for instructor's laptop Option: In limited rooms, provide (4) large wall monitors to serve pods of six students, provide a docking station for each pod to enable students to connect
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; remaining outlet distribution per building code (charging for student devices not anticipated in this room type)
Mechanical	General Building
Plumbing	None
Specialized Equipment	17 rooms throughout the building have existing raised floor system that will require replacement.

Space Name:	**Medium Classroom (Computer Science Priority Scheduling)**	**Location (Quantity):**	**Floor 1 (0); Floor 2 (0); Floor 3 (1)**

HEGIS Code:	110	***Area NASF:***	650	**Space Quantity:**	1

Function:	Computer Classroom/Lab
Occupants:	16 students + 1 faculty
Relationships:	Third floor near Cyber Range and Entrepreneurship Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	28 linear feet (min) up to 40 linear feet of white board, depending on room configuration
Moveable Furnishings	Furnishings of this specification or similar: Approximately 60 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 17 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 16 CPUs; wired internet for instructor's laptop
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 16 CPUs and 32 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	1 third-floor room has existing raised floor system that will require replacement.

Space Name:	**Large Classroom (Computer Science Priority Scheduling)**	**Location (Quantity):**		**Floor 1 (0); Floor 2 (0); Floor 3 (6)**	

HEGIS Code:	110	***Area NASF:***	Avg: 990 SF Min: 940 SF Max: 1,003 SF	**Space Quantity:**	6

Function:	Computer Classroom/Lab
Occupants:	24 students + 1 faculty
Relationships:	Third floor

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	36 linear feet (min) up to 60 linear feet of white board, depending on room configuration

Moveable Furnishings	Furnishings of this specification or similar: Approximately 72 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 27 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table

Storage	None

Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; WiFi sufficient for 24 student laptops; wired internet for instructor's laptop

Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 25 CPUs and 50 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	Five third-floor rooms have existing raised floor systems that will require replacement.

Space Name:	Instructional Storage	Location (Quantity):	Floor 1 (2); Floor 2 (2); Floor 3 (2)

HEGIS Code: 115	***Area NASF:*** Average 108; Min 75 SF Max 120 SF	**Space Quantity:**	6

Function:	Storage to support lecture spaces
Occupants:	N/A
Relationships:	Accessed from office suites or general circulation

Architectural	Flooring:	VCT	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Gypsum Board	Min.Ceiling Ht:	9'0"
	Windows:	None	Window Treatments:	None
	Doors:	Solid Wood; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	None

Moveable Furnishings	Reconfigurable heavy duty shelving units, 48" wide x 18" deep x 72" high

Storage	None

Technology	None

Lighting	Utility-grade LED surface-mount ceiling fixtures
Electrical	Code-required number of duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	English Language Center Instructional Lab	Location (Quantity):	Floor 1 (0); Floor 2 (2); Floor 3 (0)

HEGIS Code:	210	Area NASF:	800	Space Quantity:	1

Function:	Computer Classroom/Lab
Occupants:	16 students + 1 faculty
Relationships:	Second floor near English Language Center Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/ insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board

Moveable Furnishings	Furnishings of this specification or similar: Approximately 60 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 17 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table

Storage	None

Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 16 CPUs; wired internet for instructor's laptop

Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 16 CPUs and 32 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	This room has existing raised floor system that will require replacement.

Space Name:	**Open Computer Lab - General Use**	**Location (Quantity):**	**Floor 1 (1); Floor 2 (0); Floor 3 (0)**

HEGIS Code:	220	***Area NASF:***	870	**Space Quantity:**	1

Function:	Open Computer Lab
Occupants:	22 students + 1 faculty
Relationships:	First floor directly adjacent to lobby and lounge area

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	28 linear feet (min) up to 40 linear feet of white board, depending on room configuration
Moveable Furnishings	Furnishings of this specification or similar: Approximately 60 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 23 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 22 CPUs; wired internet for instructor's laptop
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 22 CPUs and 22 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	The room has existing raised floor system that will require replacement.

Space Name:	**English Language Center Open Lab**	**Location (Quantity):**	**Floor 1 (0); Floor 2 (1); Floor 3 (0)**

HEGIS Code:	220	***Area NASF:***	1,120	**Space Quantity:**	1

Function:	Open Computer Lab to support English Language Center
Occupants:	36 students + 2 faculty/staff
Relationships:	Second floor

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board
Moveable Furnishings	Furnishings of this specification or similar: Approximately 40 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, (8) 29" H x 60" W x 24" D KI brand Pirouette Tables - one should be height-adjustable for accessibility; 38 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table; soft seating for 8 individuals
Storage	Two 36" wide wardrobes
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 12 CPUs; wired internet for instructor's laptop; WiFi sufficient for 16 student laptops
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles on the north end of the room to serve 12 CPUs and 12 monitors; provide 1.25x code-required amount for remaining receptacles to allow intermittent charging of students' laptops
Mechanical	General Building
Plumbing	None
Specialized Equipment	The room has existing raised floor system that will require replacement.

Space Name:	Entrepreneurship Center (Open Lab)	Location (Quantity):	Floor 1 (0); Floor 2 (0); Floor 3 (1)

HEGIS Code:	220	***Area NASF:***	1,120	**Space Quantity:**	1

Function:	Open Computer Lab to support English Language Center
Occupants:	30 students + 2 faculty/staff
Relationships:	Third floor

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board
Moveable Furnishings	Furnishings of this specification or similar: Approximately 18 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, (8) 29" H x 60" W x 24" D KI brand Pirouette Tables - one should be height-adjustable for accessibility; 38 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table; soft seating for 8 individuals
Storage	Two 36" wide wardrobes
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 6 CPUs; wired internet for instructor's laptop; WiFi sufficient for 16 student laptops
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles on the north end of the room to serve 6 CPUs and 6 monitors; provide 1.25x code-required amount for remaining receptacles to allow intermittent charging of students' laptops
Mechanical	General Building
Plumbing	None
Specialized Equipment	The room has existing raised floor system that will require replacement.

Space Name:	**Accounting Open Lab**	**Location (Quantity):**	**Floor 1 (0); Floor 2 (0); Floor 3 (1)**

HEGIS Code:	220	***Area NASF:***	450	**Space Quantity:**	1

Function:	Computer Classroom/Lab
Occupants:	12 students + 1 faculty
Relationships:	Third floor near Entrepreneurship Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/ insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board
Moveable Furnishings	Furnishings of this specification or similar: Approximately 40 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 17 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 16 CPUs; wired internet for instructor's laptop
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 16 CPUs and 32 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	This room has existing raised floor system that will require replacement.

Space Name:	Computer Science Tutoring (Open Lab)	Location (Quantity):	Floor 1 (0); Floor 2 (0); Floor 3 (1)

HEGIS Code: 220	***Area NASF:*** 820	**Space Quantity:** 1

Function:	Computer Classroom/Lab
Occupants:	16 students + 1 faculty
Relationships:	Third floor near Entrepreneurship Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board
Moveable Furnishings	Furnishings of this specification or similar: Approximately 60 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 17 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 16 CPUs; wired internet for instructor's laptop
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 16 CPUs and 32 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	This room has existing raised floor system that will require replacement.

Space Name:	**Cyber Range (Open Lab)**	**Location (Quantity):**	**Floor 1 (0); Floor 2 (0); Floor 3 (1)**

HEGIS Code:	220	***Area NASF:***	820	**Space Quantity:**	1

Function:	Computer Classroom/Lab
Occupants:	16 students + 1 faculty
Relationships:	Third floor near Entrepreneurship Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board

Moveable Furnishings	(Department has existing furnishings they may wish to reuse.) Furnishings of this specification or similar: Approximately 60 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 17 KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table

Storage	None

Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 16 CPUs; wired internet for instructor's laptop

Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles distributed throughout the room to serve 16 CPUs and 32 monitors; remaining receptacles if needed to meet code requirements
Mechanical	General Building
Plumbing	None
Specialized Equipment	This room has existing raised floor system that will require replacement.

Space Name:	Writing Center (Open Lab)	Location (Quantity):	Floor 1 (0); Floor 2 (1); Floor 3 (0)

HEGIS Code:	220	***Area NASF:***	1,880	**Space Quantity:**	1

Function:	Open Computer Lab to support Writing and Tutoring
Occupants:	48 students + 2 faculty/staff
Relationships:	Second floor

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing masonry openings to remain; redesign glazing/insulated panel distribution to allow computer placement along exterior wall	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	24 linear feet (min) of white board
Moveable Furnishings	Furnishings of this specification or similar: Tables with option for single-circuit electrical: (10) 29" H x 60" W x 24" D KI brand Pirouette Tables - one should be height-adjustable for accessibility, (4) 60" diameter KI brand round Pirouette Tables; (50) KI brand Torsion On the Go! Nesting Chairs, (1) KI brand Tributaire lectern, (1) 29"H x 42" W x 30" D KI brand Pirouette table
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, plug-and-play interface with instructor's laptop at lectern; Instructor voice amplification system: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; wired internet for 20 laptops; wired internet for instructor's laptop; WiFi sufficient for 12 student laptops
Lighting	LED Indirect/direct, occupancy sensor controls, configure fixtures parallel to windows with tiered switching to allow separate operation of corridor-side and window-side
Electrical	One quad wall outlet at teaching wall to serve lectern; sufficient receptacles on the south end of the room to serve 20 laptops; provide 1.25x code-required amount for remaining receptacles to allow intermittent charging of students' laptops
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	Recording Room	Location (Quantity):	Floor 1 (0); Floor 2 (0); Floor 3 (1)

HEGIS Code:	225	*Area NASF:*	170	**Space Quantity:**	1

Function:	A/V recording facility, accessory to Entrepreneurship Lab, open to all students
Occupants:	6
Relationships:	Accessed through the Entrepreneurship Lab

Architectural	Flooring:	Carpet with static-dissipative properties	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	None	Window Treatments:	None
	Doors:	Solid Wood with sound gasketing; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	8 linear feet (min) white board; enhanced wall-mounted acoustical treatments to facilitate audio recording
Moveable Furnishings	Furnishings of this specification or similar: (1) 29" H x 60" W x 24" D KI brand Pirouette Table - height-adjustable for accessibility, 6 KI brand Torsion On the Go! Nesting Chairs; movable green-screen
Storage	None
Technology	WiFi sufficient for 6 student laptops

Lighting	LED Indirect/direct, occupancy sensor controls
Electrical	1.25x code-required number of duplex wall outlets, evenly distributed through the room
Mechanical	General Building
Plumbing	None
Specialized Equipment	Light mounted outside the room to indicate when the room is in use; enhance typical STC rating to STC 60+

Space Name:	Small Breakout Room/Study Room	Location (Quantity):	Floor 1 (0); Floor 2 (2); Floor 3 (1)

HEGIS Code:	225	***Area NASF:***	170	**Space Quantity:**	3

Function:	Group study/project rooms to support open labs
Occupants:	6
Relationships:	Accessed through English Language Center and Entrepreneurship Lab

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	8 linear feet (min) white board
Moveable Furnishings	Furnishings of this specification or similar: (2) 29" H x 60" W x 24" D KI brand Pirouette Tables, (2) 29" H x 36" W x 24" D KI brand Pirouette Tables, 6 KI brand Torsion On the Go! Nesting Chairs
Storage	None
Technology	WiFi sufficient for 6 student laptops
Lighting	LED Indirect/direct, occupancy sensor controls
Electrical	Code-required number of duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	**Writing Center Breakout Room/Study Room**	**Location (Quantity):**	**Floor 1 (0); Floor 2 (1); Floor 3 (0)**

HEGIS Code:	225	***Area NASF:***	650	**Space Quantity:**	1

Function:	Group study/tutoring/meeting room to support open labs
Occupants:	20
Relationships:	Accessed through Writing Lab

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"

Built in Millwork/Equipment	16 linear feet (min) white board
Moveable Furnishings	Furnishings of this specification or similar: Approximately 40 linear feet of KI brand Connection Zone 24" deep benching with racks to hold CPU - one 72" section should be height-adjustable for accessibility, 12 KI brand Torsion On the Go! Nesting Chairs, soft seating for 8 individuals
Storage	None
Technology	WiFi sufficient for 8 student laptops
Lighting	LED Indirect/direct, occupancy sensor controls
Electrical	Code-required number of duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name: Private Office		**Location (Quantity):**	Floor 1 (24), Floor 2 (27), Floor 3 (26)	
HEGIS Code: 310	***Area NASF:***	Avg: 110 SF Range: 97 SF to 130 SF	**Space Quantity:**	77
Function:	Faculty or staff office			
Occupants:	1 + 2 guests			
Relationships:	Access from common circulation or office suite circulation			
Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	Card Access	Door Size:	3'0" x 7'0"
Built in Millwork	None			
Moveable Furnishings	Furnishings of this specification or similar: KI brand Workzone Desking system components: 60" L x 30" D primary desk; 48" L x 24" D return with overhead cabinet, integral under-cabinet light, (1) Oath task chair, (2) Katera guest chairs			
Storage	Furnishings of this specification or similar: (2) KI brand 700 series book cases 36" W x 12" D x 66.8" H; (1) KI brand 700 series credenza file/file 30" W x 18.9" H x			
Technology	Docking station for laptop, (2) flat screen monitors, phone, WiFi, wired internet for docking station			
Lighting	Indirect/direct LED, occupancy sensor			
Electrical	Code-required duplex wall outlets plus (2) additional duplex receptacles at desk			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	Private Office for Public Safety	Location (Quantity):	Floor 1 (1), Floor 2 (0), Floor 3 (0)

HEGIS Code:	310	***Area NASF:***	160	**Space Quantity:**	1

Function:	Faculty or staff office
Occupants:	3
Relationships:	Access from first floor lobby, visibility through lobby to observe corridors, entrances, and lounge

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	10 LF interior windows, 40" AFF sill to 84" AFF head, aluminum storefront frames - provide views to the two main building entrances	Window Treatments:	No
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	Card Access	Door Size:	3'0" x 7'0"

Built in Millwork	Approx 20 LF built-in desk, plastic laminate finish
Moveable Furnishings	Furnishings of this specification or similar: (3) Oath task chairs
Storage	Furnishings of this specification or similar: (3) KI brand 700 series credenza file/file 30" W x 18.9" H x 27.9" H, (3) standard metal lockers for officers'
Technology	(2) CPU workstations with flat screen monitors; additional monitors to display security cameras, (1) phone per workstation; (1) shared printer
Lighting	Indirect/direct LED, occupancy sensor
Electrical	Code-required duplex wall outlets plus (2) additional duplex receptacles at each workstation
Mechanical	General Building
Plumbing	None
Specialized Equipment	College-specified campus emergency communications system

Space Name:	First Floor Office Suite: Open office	Location (Quantity):	Floor 1 (1 open office with 10 workstations)

HEGIS Code: 310	Area NASF: 800	Space Quantity: 1

Function:	Staff workstations (80 SF each) (Circulation characteristics listed separately)			
Occupants:	10			
Relationships:	Suite access from general circulation			
Architectural	Flooring: Carpet		Base: Rubber	
	Walls: Gypsum Wall Board		Wall Finish: Paint	
	Ceiling: Acoustic Panel		Min.Ceiling Ht: 9'0"	
	Windows: Existing configuration to remain		Window Treatments: Yes	
	Doors: None			
	Access: Suite has card access		Door Size: None	
Built in Millwork	None			
Moveable Furnishings	Furnishings of this specification or similar for 10 workstations: KI brand Unite monolithic fabric panels with integral cord passage, translucent privacy panel above, up to 16 linear feet (outside length) worksurface in L-shape, (1) Oath task chair, (1) overhead cabinet with integral under-cabinet light			
Storage	Furnishings of this specification or similar for 10 workstations: (1) KI brand under-counter 700 series credenza file/file 30" W x 18.9" H x 27.9" H			
Technology	Per workstation: 1 CPU, (2) flat screen monitors, phone, WiFi, wired internet for CPU			
Lighting	In the open office: Indirect/direct LED, occupancy sensor; Workstation: task lighting			
Electrical	(2) quad receptacles per workstation; additional code-required duplex outlets as needed			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	English Language Center Reception, Waiting Area, and Circulation	Location (Quantity):	Floor 1 (1 open office WS with waiting for 5)

HEGIS Code:	310, 315	***Area NASF:***	480	**Space Quantity:**	1

Function:	Staff workstation (80 SF), student/visitor waiting area, suite circulation
Occupants:	6
Relationships:	Suite access from general circulation

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Suite entrance interior aluminum storefront, solid wood door with glazing		
	Access:	Suite has card access	Door Size:	None

Built in Millwork	None
Moveable Furnishings	Furnishings of this specification or similar for 1 workstation: KI brand Unite monolithic fabric panels with integral cord passage, translucent privacy panel above, up to 16 linear feet (outside length) worksurface in L-shape, (1) Oath task chair, (1) overhead cabinet with integral under-cabinet light; plus (5) Torsion Air stackable chairs
Storage	Furnishings of this specification or similar for 1 workstation: (1) KI brand under-counter 700 series credenza file/file 30" W x 18.9" H x 27.9" H
Technology	Per workstation: 1 CPU, (2) flat screen monitors, phone, WiFi, wired internet for CPU
Lighting	In the open office: Indirect/direct LED, occupancy sensor; Workstation: task lighting
Electrical	(2) quad receptacles per workstation; additional code-required duplex outlets as needed
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	**Office Storage/ Workroom**	**Location (Quantity):**	**Floor 1 (1); Floor 2 (1); Floor 3 (1)**

HEGIS Code:	315	***Area NASF:***	75 SF	**Space Quantity:**	3

Function:	Storage to support office suites			
Occupants:	N/A			
Relationships:	Accessed from office suites			
Architectural	Flooring: VCT		Base: Rubber	
	Walls: Gypsum Wall Board		Wall Finish: Paint	
	Ceiling: Gypsum Board		Min.Ceiling Ht: 9'0"	
	Windows: None		Window Treatments: None	
	Doors: Solid Wood; frame and door configuration to match existing adjacent openings			
	Access: General use		Door Size: 3'0" x 7'0"	
Built in Millwork/Equipment	None			
Moveable Furnishings	Reconfigurable heavy duty shelving units, 48" wide x 18" deep x 72" high			
Storage	None			
Technology	None			
Lighting	Utility-grade LED surface-mount ceiling fixtures			
Electrical	Code-required number of duplex wall outlets			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	**Print Alcove**	**Location (Quantity):**	**Floor 1 (2); Floor 2 (1); Floor 3 (1)**

HEGIS Code: 315	***Area NASF:*** 20	**Space Quantity:** 4

Function:	Work area to support office suites
Occupants:	N/A
Relationships:	Accessed from office suite circulation

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Dropped soffit with gypsum board	Min.Ceiling Ht:	8'-0"
	Windows:	None	Window Treatments:	None
	Doors:	None		
	Access:	General use	Door Size:	None

Built in Millwork/Equipment	5 linear feet base cabinets and upper cabinets (leave 48" wide clear floor width for printer/copier)
Moveable Furnishings	None
Storage	None
Technology	Network capability for one office copier/printer
Lighting	Recessed lighting over printer, under-cabinet lighting
Electrical	Code-required number of duplex wall outlets
Mechanical	General Building, Additional exhaust as-needed for printer/copier
Plumbing	None
Specialized Equipment	Printer/copier

Space Name:	Conference Room @ Faculty Offices	Location (Quantity):	Floor 1 (1), Floor 2 (1), Floor 3 (1)

HEGIS Code: 350	Area NASF: 260	Space Quantity: 3

Function:	Conference room for faculty/staff office suite
Occupants:	12 at table, 4 along wall
Relationships:	Access from office suites

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	None	Window Treatments:	None
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3'0" x 7'0"

Built in Millwork	12 LF min. whiteboard
Moveable Furnishings	Furnishings of this specification or similar: KI brand Pirouette rectangular TT-base conference table 120" wide, 60" deep, 29" high; (16) KI brand Torsion On the Go! Nesting Chairs
Storage	None
Technology	Digital media projection system: ceiling mounted projector, motorized screen, docking station for presenter's laptop at conference table; WiFi for 16 laptops
Lighting	Indirect/direct LED, occupancy sensor
Electrical	Code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	**English Language Center Conference Room**	**Location (Quantity):**	**Floor 1 (1), Floor 2 (0), Floor 3 (0)**

HEGIS Code:	350	***Area NASF:***	180	**Space Quantity:**	1

Function:	Meeting room for faculty/staff office suite			
Occupants:	8			
Relationships:	Access from English Language Center office suite			
Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	None	Window Treatments:	None
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3'0" x 7'0"
Built in Millwork	8 LF min. whiteboard			
Moveable Furnishings	Furnishings of this specification or similar: KI brand Pirouette rectangular TT-base conference table 72" wide, 60" deep, 29" high; (8) KI brand Torsion On the Go! Nesting Chairs			
Storage	None			
Technology	Digital media projection system: ceiling mounted projector, motorized screen, docking station for presenter's laptop at conference table; WiFi for 8 laptops			
Lighting	Indirect/direct LED, occupancy sensor			
Electrical	Code-required duplex wall outlets			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	Department Storage	Location (Quantity):	Basement (2)

HEGIS Code:	315	**Area NASF:**	(1) at 375 SF, (1) at 900 SF	**Space Quantity:**	2

Function:	Storage
Occupants:	N/A
Relationships:	Access from basement corridor

Architectural	Flooring:	VCT	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Gypsum Board	Min.Ceiling Ht:	8'-0"
	Windows:		Window Treatments:	
	Doors:	Solid Wood; frame and door configuration ETR		
	Access:	General Access	Door Size:	Existing sizes/frames to remain

Built in Millwork	None
Moveable Furnishings	Reconfigurable heavy duty shelving units, 48" wide x 18" deep x 72" high
Storage	None
Technology	None
Lighting	Utility-grade surface mounted LED
Electrical	Code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	**Office Suite Circulation**		**Location (Quantity):**	**Floor 1 (1), Floor 2 (1), Floor 3 (1)** C12, C22, C32 - Coded as W06, shown here to describe characteristics	
HEGIS Code:	W06	***Area NASF:***	Varies	**Space Quantity:**	3

Function:	Secured circulation for office suites
Occupants:	N/A
Relationships:	Access from common circulation

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	No
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	Card Access	Door Size:	Pair 3'0" (min width) x 7'0"

Built in Millwork	None
Moveable Furnishings	None
Storage	None
Technology	None

Lighting	Indirect/direct LED, occupancy sensor
Electrical	Code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	Open Study Area	Location (Quantity):	Floor 1 (1), Floor 2 (2), Floor 3 (3)

HEGIS Code: 410	Area NASF: 60 SF - 130 SF	Space Quantity: 7

Function:	Informal soft seating areas
Occupants:	2 to 5
Relationships:	Access from common circulation

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing to remain	Window Treatments:	Yes
	Doors:	None		
	Access:	General Access	Door Size:	None

Built in Millwork	None
Moveable Furnishings	Furnishings of this specification or similar: soft seating for 2 to 5 occupants; provide at least one computer-use area per floor to include 6 linear feet of KI brand Connection Zone 24" deep benching with racks to hold (2) CPUs, (2) KI brand Torsion On the Go! Nesting Chairs
Storage	None
Technology	Wired internet for (2) CPUs,
Lighting	Indirect/direct LED, occupancy sensor
Electrical	Code-required duplex wall outlets plus (1) quad receptacle to serve 2 CPU and 2 flat screen monitors
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	Group Study Room	Location (Quantity):	Floor 1 (0); Floor 2 (0); Floor 3 (1)

HEGIS Code: 410	***Area NASF:*** 130	**Space Quantity:** 1

Function:	Group study/project room			
Occupants:	4			
Relationships:	Accessed from general circulation			
Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General use	Door Size:	3'0" x 7'0"
Built in Millwork/Equipment	8 linear feet (min) white board			
Moveable Furnishings	Furnishings of this specification or similar: (2) 29" H x 60" W x 24" D KI brand Pirouette Tables, (2) 29" H x 36" W x 24" D KI brand Pirouette Tables, 6 KI brand Torsion On the Go! Nesting Chairs; provide computer desk with CPU in one room 4 linear feet of KI brand Connection Zone 24" deep benching with racks to hold (1) CPU, (1) KI brand Torsion On the Go! Nesting Chair			
Storage	None			
Technology	WiFi sufficient for 6 student laptops			
Lighting	LED Indirect/direct, occupancy sensor controls			
Electrical	Code-required number of duplex wall outlets			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	Group Study Room	Location (Quantity):	Floor 1 (2), Floor 2 (0), Floor 3 (0)

HEGIS Code:	410	***Area NASF:***	110	**Space Quantity:**	2

Function:	Enclosed study rooms			
Occupants:	4			
Relationships:	Access from first floor lounge			
Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	3'-0" x 7'-0" sidelight for visual supervision	Window Treatments:	None
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3'-0" x 7'-0"
Built in Millwork	In one room provide 4 linear feet of 24" deep laminate countertop for a CPU and monitor			
Moveable Furnishings	Furnishings of this specification or similar: KI brand Pirouette rectangular TT-base conference table 42" wide, 60" deep, 29" high; (4) KI brand Torsion On the Go! Nesting Chairs			
Storage	None			
Technology	WiFi for 4 laptops; in the room with the built-in countertop, provide one CPU with wired internet and one monitor			
Lighting	Indirect/direct LED, occupancy sensor			
Electrical	Code-required duplex wall outlets			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	Language Practice room	Location (Quantity):	Floor 1 (3), Floor 2 (0), Floor 3 (0)

HEGIS Code:	410	Area NASF:	60 SF	Space Quantity:	3

Function:	Enclosed rooms for one-on-one speaking and signing practice
Occupants:	2
Relationships:	Access from English Language Center offices

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'0"
	Windows:	None	Window Treatments:	None
	Doors:	Solid wood with full vision panel, frosted except for 12" high unfrosted strip at eye level; frame to match adjacent existing offices		
	Access:	General Access	Door Size:	3'-0" x 7'-0"

Built in Millwork	None
Moveable Furnishings	Furnishings of this specification or similar: (1) 29" H x 30" W x 30" D KI brand Pirouette square x-base table, (2) KI brand Torsion On the Go! Nesting Chairs
Storage	None
Technology	Sufficient WiFi for 2 laptops
Lighting	Indirect/direct LED, occupancy sensor
Electrical	Code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	Lounge area in Lobby	Location (Quantity):	Floor 1 (1), Floor 2 (0), Floor 3 (0)

HEGIS Code: 650	Area NASF: 1,740	Space Quantity: 1

Function:	Open lounge adjacent to Assembly Room
Occupants:	50
Relationships:	Access from first floor lobby

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	8'0"
	Windows:	Existing configuration to remain	Window Treatments:	None
	Doors:	None		
	Access:	General Access	Door Size:	None

Built in Millwork	60 LF built-in benches along windows, distributed - areas of dropped soffit and enhanced finishes for accent areas - enhanced acoustical treatments on interior walls
Moveable Furnishings	Furnishings of this specification or similar: Mixed furnishings - provide charging stations at 50% of units: soft seating for groups, soft seating for individuals, tables and chairs for study groups of 2/4/8 individuals, approximately four pieces of indoor toddler play furnishings for a family study area
Storage	None
Technology	Sufficient WiFi for 50 laptops
Lighting	Indirect/direct LED, accent lighting
Electrical	1.5x code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	**Faculty-Staff Lounge**	**Location (Quantity):**	**Floor 1 (1), Floor 2 (0), Floor 3 (0)**

HEGIS Code:	650	***Area NASF:***	160	**Space Quantity:**	1

Function:	Kitchenette and dining
Occupants:	6
Relationships:	Access from office suite

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'-0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3'-0" x 7'-0"

Built in Millwork	6 LF base cabinets and upper cabinets

Moveable Furnishings	Furnishings of this specification or similar: (2) 29" H x 60" W x 30" D KI brand Pirouette Tables, (5) KI brand Torsion On the Go! Nesting Chairs

Storage	None

Technology	Sufficient WiFi for 5 laptops

Lighting	Indirect/direct LED, accent lighting
Electrical	code-required duplex wall outlets
Mechanical	General Building, additional exhaust volume for kitchenette area
Plumbing	Sink
Specialized Equipment	Refrigerator (18 cu ft min), microwave

Space Name:	Faculty-Staff Lounge	Location (Quantity):	Floor 1 (0), Floor 2 (1), Floor 3 (1)

HEGIS Code: 650	***Area NASF:***	325	**Space Quantity:**	2

Function:	Second & Third floor: Kitchenette, dining, meetings
Occupants:	12
Relationships:	Access from office suites

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9′-0″
	Windows:	Existing configuration to remain	Window Treatments:	Yes
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3′-0″ x 7′-0″

Built in Millwork	6 LF base cabinets and upper cabinets; 12 LF work counter
Moveable Furnishings	Furnishings of this specification or similar: Mixed furnishings -soft seating for 8 individuals, (5) counter-height task chairs, (2) 29″ H x 72″ W x 30″ D KI brand Pirouette Tables, (6) KI brand Torsion On the Go! Nesting Chairs
Storage	None
Technology	Sufficient WiFi for 12 laptops
Lighting	Indirect/direct LED, accent lighting
Electrical	1.5x code-required duplex wall outlets
Mechanical	General Building, additional exhaust volume for kitchenette area
Plumbing	Sink
Specialized Equipment	Refrigerator, microwave

Space Name:	**Assembly room**	**Location (Quantity):**	**Floor 1 (1), Floor 2 (0), Floor 3 (0)**

HEGIS Code:	680	***Area NASF:***	3,030 SF	**Space Quantity:**	1

Function:	Multipurpose: Assembly, Activities, Instruction
Occupants:	150
Relationships:	Access from lobby

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'-0"
	Windows:	Existing configuration to remain	Window Treatments:	Yes, glare reduction plus room darkening
	Doors:	Solid wood interior, aluminum storefront exterior; existing interior frames to remain		
	Access:	General Access	Door Size:	3'-0" x 7'-0"

Built in Millwork	Backstage 8 LF base cabinets

Moveable Furnishings	Existing to be reserved for future use, including platform and lectern

Storage	Adjacent room, see specification sheet

Technology	Digital media projection system: (3) ceiling mounted projectors, (3) motorized screens, (2) independent instructors' lecterns with plug-and-play interface with instructor's laptop, (2) independent instructor voice amplification systems: pendant microphone, ceiling-mounted speakers, plug-and-play interface with instructor's laptop at lectern; WiFi sufficient for 80 laptops; wired internet for (2) instructor's laptops

Lighting	Indirect/direct LED, accent lighting
Electrical	1.25x code-required duplex wall outlets
Mechanical	General Building, sufficient supply/exhaust for assembly with dining
Plumbing	Backstage sink
Specialized Equipment	Replace folding acoustical wall - 46' Long x 14' High

Space Name:	Assembly room storage	Location (Quantity):	Floor 1 (1), Floor 2 (0), Floor 3 (0)

HEGIS Code:	685	***Area NASF:***	510	**Space Quantity:**	1

Function:	Storage for assembly furnishings			
Occupants:	N/A			
Relationships:	Access from assembly room and from lobby			
Architectural	Flooring: VCT		Base:	Rubber
	Walls: Gypsum Wall Board		Wall Finish:	Paint
	Ceiling: Gypsum Board		Min.Ceiling Ht:	9'-0"
	Windows: Existing configuration to remain		Window Treatments:	Frost glazing to prevent views from outside
	Doors: Solid wood; frames to match existing adjacent			
	Access: General Access		Door Size:	Pair 3'-0" x 7'-0"; Assymetrical pair 3'-0" x 7'-0" and 1'-6" x 7'-0"
Built in Millwork	None			
Moveable Furnishings	None			
Storage	None			
Technology	None			
Lighting	Utility-grade surface mounted LED			
Electrical	code-required duplex wall outlets			
Mechanical	General Building			
Plumbing	None			
Specialized Equipment	None			

Space Name:	Assembly room backstage, plus distributed storage	Location (Quantity):	Floor 1 (1), Floor 2 (0), Floor 3 (0)

HEGIS Code:	685	Area NASF:	580 SF contiguous plus 180 SF distributed	Space Quantity:	1

Function:	Storage and prep area
Occupants:	N/A
Relationships:	Access from assembly room and from outdoors

Architectural	Flooring:	VCT	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Gypsum Board	Min.Ceiling Ht:	9'-0"
	Windows:	Existing configuration to remain	Window Treatments:	Frost glazing to prevent views from outside
	Doors:	Solid wood interior, aluminum storefront exterior; existing interior frames to remain		
	Access:	General Access	Door Size:	Pr. 3'-0" x 7'-0"; (2) single 3'-0" x 7'-0"

Built in Millwork	None
Moveable Furnishings	None
Storage	None
Technology	None
Lighting	Utility-grade surface mounted LED
Electrical	Code-required duplex wall outlets
Mechanical	General Building
Plumbing	None
Specialized Equipment	None

Space Name:	Lactation room	Location (Quantity):	Floor 1 (1), Floor 2 (0), Floor 3 (0)

HEGIS Code:	653	***Area NASF:***	70	**Space Quantity:**	1

Function:	Primary: private room to feed infants and express milk Secondary: meditation
Occupants:	125
Relationships:	Access from general circulation

Architectural	Flooring:	Carpet	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Acoustic Panel	Min.Ceiling Ht:	9'-0"
	Windows:	NA	Window Treatments:	NA
	Doors:	Solid wood, no vision lite		
	Access:	General Access	Door Size:	3'-0" x 7'-0"

Built in Millwork	4 LF base cabinets, wall-mounted infant changing table
Moveable Furnishings	One upholstered chair with upholstered ottoman, side table, dimmable lamp, sound-masking machine
Storage	NA
Technology	NA
Lighting	Indirect/direct LED
Electrical	Ccode-required duplex wall outlets
Mechanical	General Building
Plumbing	Sink
Specialized Equipment	NA

Space Name:	**IT Storage and Workroom**	**Location (Quantity):**	**Basement**

HEGIS Code:	710	***Area NASF:***	1,050 SF workroom plus 425 SF storage	**Space Quantity:**	2

Function:	IT Storage and Workroom
Occupants:	6 in workroom
Relationships:	Access ETR from basement corridor

Architectural	Flooring:	Low Static Resilient Flooring	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Gypsum Board	Min.Ceiling Ht:	8'-0"
	Windows:	NA	Window Treatments:	NA
	Doors:	Solid Wood w/ vision lite; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	ETR

Built in Millwork	None

Moveable Furnishings	Computer Racks - Configure with department; Computer workbenches - configure with department; Heavy-duty wire rack shelving - configure with department

Storage	None

Technology	None

Lighting	Utility-grade surface mounted LED
Electrical	code-required duplex wall outlets, plus additional as required by department
Mechanical	Additional cooling required
Plumbing	None
Specialized Equipment	Additional cellular service required to boost existing

Space Name:	**IT Room**	**Location (Quantity):**	**Floor 1 (3), Floor 2 (2), Floor 3 (2)**

HEGIS Code: 710	***Area NASF:***	ETR, plus one new adjacent to DH100 @ 100 SF	**Space Quantity:** 7

Function:	IT Data Closet
Occupants:	N/A
Relationships:	Access ETR, except new accessed by Assembly Room storage

Architectural	Flooring:	Low Static Resilient Flooring	Base:	Rubber
	Walls:	Gypsum Wall Board	Wall Finish:	Paint
	Ceiling:	Gypsum Board	Min.Ceiling Ht:	9'-0"
	Windows:	NA	Window Treatments:	NA
	Doors:	Solid Wood; frame and door configuration to match existing adjacent openings		
	Access:	General Access	Door Size:	3'-0" x 7'-0"

Built in Millwork	None
Moveable Furnishings	Computer Racks - Configure with department
Storage	None
Technology	None
Lighting	Utility-grade surface mounted LED
Electrical	code-required duplex wall outlets, plus additional as required by department
Mechanical	Additional cooling required
Plumbing	None
Specialized Equipment	None

9. Office Types

- **Open offices** are only provided where an open floor plan will facilitate communication and collaboration among staff. In the proposed renovation, an open office area in the English Language Center office suite will house up to 10 staff members. Workstations are programmed at 80 SF each.
- **Shared offices** may be occupied by two individuals at the same time or by two individuals who will rotate between working in the office and working remotely, so only one person will be in the office at any one time. In the Duncan Hall renovation, shared offices are not marked separately from private offices to allow maximum flexibility in future space assignments.
- **Private offices** will be between 105 SF and 140 SF, depending on whether the space is an existing office (renovated as-is) or a new/reconfigured office. It is intended that all full-time faculty will have private offices.

10. Storage and Mechanical Areas

- **Storage** spaces will remain in their current configurations and include custodial closets, housekeeping storage rooms, mechanical rooms, and storage rooms serving administrative and faculty offices. No hazardous material storage is anticipated.
- Existing **mechanical rooms** will remain.
- Existing **building system shafts** will remain.

11. Curtain Wall System

The north and south curtain wall systems will be replaced as part of the renovation.

12. Factors to be Considered in Design of the Building, Design Objectives

Architectural

The replacement of architectural elements shall be coordinated to minimize energy consumption and optimize the use of natural daylight. At a minimum, the design shall meet the requirements of the Howard County Energy Design Guidelines.

Site

Little sitework is anticipated associated with the Duncan Hall renovation, yet improvements were recommended in the Facilities Master Plan to create seating and gathering areas along the path from Parking Lot A and adjacent to the Campus Green south of the building.

1. New/Upgraded Walkways, Outdoor Seating, Landscape, Lighting, Signage and Crosswalks
2. New Outdoor Seating with Shade

* Existing Art

Mechanical and Plumbing

a. General Criteria and Codes/Standards

The A/E will design replacement of central HVAC equipment and distribution piping and ductwork including boilers, chillers, air handling units, terminal equipment, and controls as required to complete a systemic replacement and improve building HVAC performance and energy efficiency. The new system will comply with the Maryland Building Energy Performance Standards (BEPS) regulations, including use of all electric heating and cooling systems.

The A/E will coordinate the design of all elements of the building mechanical and plumbing systems and equipment to meet the requirements of function, energy, and aesthetics. The design will comply with all applicable codes, good engineering practice, and the College standards. The A/E will select the building HVAC and plumbing system types and control strategies, lighting types, daylighting approach, and equipment locations as part of the early discussions in the pre-schematic phase of the project. Selections should be made so that they integrate smoothly into the other design phases of the project. Components should not create roadblocks that would interfere with schedule and/or achievement of LEED Silver rating.

In general, the work will be designed to provide maximum reliability. This may require the use of standard equipment or alternate modes of operation for critical systems or equipment. The requirement for reliability also includes the avoidance of systems or equipment for which there is inadequate history of satisfactory performance. In addition, the work will be designed to be readily maintainable. Adequate clearances for servicing will be provided for all operating equipment. No operating equipment will be located above ceilings unless specifically designed for above ceiling applications.

An "Energy Analyst" is a required part of the A/E team and is responsible for ensuring that the project design team is aware of their responsibility to review project design for compliance and prepare written reports at the Schematic and Design Development Phase.

A "Fire Protection Analyst" is required to develop analysis to accompany mechanical system design efforts. Their work will provide a technical basis to validate system modifications conform with codes and standards, specifically related to smoke evacuation in the atrium.

The A/E is responsible for developing the design to comply and adhere to:

- Current Howard County building codes
- International Building Code (IBC)
- International Mechanical Code (IMC)
- International Plumbing Code (IPC)
- International Energy Conservation Code (IECC)
- Howard County Amendments
- NFPA 101
- NFPA 13
- NFPA Standards
- ANSI 17.1-Elevator Code
- ASHRAE Handbooks- HVAC System Design Guidelines
- ASPE Handbooks- Plumbing Design Guidelines
- SMACNA - Ductwork Design Guidelines
- ASHRAE 62.1-Ventilation Standards
- ASHRAE 90.1-Energy Guidelines
- Americans with Disabilities Act (ADA)

b. Existing Conditions

The building is served by a central plant HVAC system including two dual fuel gas/oil boilers manufactured by Weil Mclain, two 265 ton York water cooled chillers, two BAC cooling towers, and supplemental split systems serving limited areas of the building. AHUs are located on the roof and throughout the building. HVAC equipment was installed in 2003 and is over 20 years old, and while well maintained, it is approaching the end of its expected life. Most of the building is served by VAV air handling units feeding variable air volume terminal boxes to provide zone temperature control. As with the central plant equipment, the VAV boxes are original to the building and have reached the end of their expected life.

c. Design Criteria

The A/E is responsible for ensuring that the new mechanical systems and equipment can be installed, maintained, serviced, and replaced without the removal, relocation, or disturbance of adjacent or unrelated systems, disturbance of the building structure, or affect any part of the building structure for the entrance and exit of equipment. The A/E will design the building mechanical systems and equipment to consider, address and comply with the following requirements:

- ASHRAE and SMACNA requirements and standards.
- LEED Silver Rating certification and development of associated documentation.
- Rooftop air handling units will be of highest quality and specifically designed for rooftop exposure. They will be of the penthouse type with double wall construction, durable finishes, airtight doors, and internal access walkways. College prefers return fans in the exhaust position rather than dedicated return fans. Dampers, regardless of service, will be motor-operated with tight fitting stainless-steel perimeter and lip seals. Provide air handlers with appropriate vibration isolation and packless sound attenuators so that noise from the air handler is not transmitted to the building structure or to the ductwork.
- Ductwork will be of appropriate class, thickness, round or oval double-walled with internal insulation (exposed areas), or single walled with external insulation (above ceilings only). Duct size and configuration will minimize fan horsepower, and sound transmission, and meet the leakage requirements for the class of duct and minimize moisture and heat transfer. Provide ductwork with access doors for inspection and duct cleaning. The ductwork will be galvanized steel from air handing systems to air devices.
- Insulated flexible ductwork (above ceilings) may be used from the branch ductwork to air devices (no more than 5'-0") with supports per SMACNA providing flexibility to ceiling grid alignment.
- Return air distribution will be fully ducted except for office and administrative occupancies, which may include ceiling plenums.
- Ventilation will be in accordance with the latest edition of ASHRAE Standard 62 and base ventilation rates on the prescriptive standards with the appropriate diversities applied. Design ventilation fan systems to provide quiet and appropriate airflow. All ventilation systems will have dampers with motor operators that are interlocked to the motor starter circuits. The dampers will be low leakage, tightly fitting with stainless steel perimeter and lip seals. Connect exhaust/return/supply fans to the Building Automation System and interlock with their respective air handling system.
- Roof mounted equipment requiring any type of service will be a minimum of ten feet from the edge of the roof. Design will comply with OSHA fall protection regulations.
- Consider energy recovery methods when feasible and required by code or life cycle cost effective.
- Exterior HVAC equipment installations, intake and exhaust locations will be developed with consideration to the aesthetics of the building, noise pollution, exhaust air re-entrainment (wind wake), accessibility, maintainability, security, safety regulations and health effects.
- Consideration to the proximity of outdoor air intakes to relief outlets, exhaust outlets, streets, and loading docks. Outdoor air intakes located below grade should be avoided.
- Design Conditions unless otherwise noted:
  - Outside Design Air Values:
    - Winter Design Dry Bulb: 10 F
    - Summer Design Dry Bulb: 95 F
    - Summer Design Wet Bulb: 74 F
  - Inside Design Air Values:
    - Heating- Occupied: 70 F, Unoccupied 55 F
    - Cooling- Occupied: 75 F, Unoccupied 85 F
    - 50% RH
- Noise and vibration control requirements
  - Employ services of an Acoustical Consultant to target space noise criteria and to review building system designs to ensure that the noise criteria are maintained.
  - The control of noise and vibration resulting from mechanical and electrical equipment and/or distribution systems is the responsibility of the A/E and will be considered in the design of the HVAC system to obtain the most rational and cost-effective mechanical room layouts, equipment selection, acoustical shielding, and structural supports required to minimize the generation and transmission of unwanted sound and vibration. Principal considerations which will be addressed are:

- Noise control to provide for maximum usefulness of the facility by keeping levels of sound within ranges which are conducive to study and work or other uses for which the facility is designed.
- Noise control in compliance with OSHA requirements for the health and safety of building occupants; control will be for all areas of the facility, particularly equipment rooms, fan rooms etc
- Vibration control in compliance with the latest edition of the ASHRAE Applications Handbook to limit sound produced by equipment and for protection of the equipment and the building structure.
- Noise and vibration will be considered when selecting and locating equipment. Do not locate equipment near critical acoustical areas or sensitive equipment. Similarly, the A/E will not locate spaces that will be negatively impacted by noise near mechanical or other equipment rooms.
- Inertia pad requirements will be checked for all rotating equipment. Inertia pads will be required for all pumps, compressors, high-pressure fans, etc., that are above the ground floor and the floor on grade.
- For roof-mounted and other exterior equipment, the potential for noise transmission through the bottom of the equipment and into the space below will be evaluated.
- The effect that noise generated by condensing units and other outdoor and/or rooftop equipment or by indoor equipment may have on adjacent buildings or areas will be analyzed.
- Duct design will include an analysis of sound generated by fans and air handlers, and sound generation, transmission, and attenuation in ductwork. Sound attenuators (duct silencers) may be required.
- Applicable standards reference the Room Criteria Method of defining acoustical design goals, which places emphasis on the 500-2000 Hz. range of frequencies (critical in speech interference) while maintaining a balanced sound spectrum. Design for a balanced sound spectrum that is not rumbly, or tonal. Part load equipment performance will also be considered. Designers will refer to the ASHRAE Handbooks and other applicable acoustical design books for more information.
- The building will be an all-electric building.
- Building systems will be designed to permit year round occupancy.

d. Ventilation

- The use of dedicated outdoor air systems (decoupled ventilation systems) for delivering ventilation to trade areas, classrooms, offices, administrative support areas, and similar building areas is recommended. Ventilation air served by the decoupled system will be neutral temperature, 70 to 72 degrees F, with a maximum supply air dew point temperature of 55 degrees F. Colder supply air temperatures are permitted where that will reduce overall building cooling system energy consumption.
- Dedicated outdoor air systems should use building-recovered energy from building exhaust (usually wasted to the atmosphere) to pre-condition fresh outdoor air for temperature and humidity, which will help reduce building energy costs.
- Minimum required air change rates for spaces will consider space dilution and outdoor air ventilation requirements.
- Maintain positive pressure in building to reduce infiltration of humid air in the summer and cold air in the winter during all system modes of operation.
- Ventilate all areas in accordance with ASHRAE 62.1.
- Provide carbon dioxide sensors in high people density spaces to permit reduced supply air to spaces such as, but not limited to, conference and meeting rooms, when they are not occupied and to minimize outdoor ventilation air requirements. Occupancy sensors will be specified to shut-down air to spaces when not in use to reduce building supply air requirements.
- The minimum filter arrangement for supply air handling units for any application will be

specified as 30% efficient (Merv 8) pre-filter, installed upstream of any heat recovery device and 95% efficient (Merv 14) final filter as tested in accordance with ASHRAE Standard 52.2. The maximum filter face velocity will not exceed 500 feet per minute (FPM). Each filter bank within an air handling unit will utilize all filters of the same size.
- Reliability/Redundancy will be determined, in conjunction with the College, based on most critical loads and an appropriate level of system redundancy will be considered to maintain critical loads during a system or utility failure.

e. Cooling Only Systems

- All communication room(s) cooling will be provided with an independent source of cooling.
- Ductless split system air conditioner will be provided for the IT closet. The unit will be direct expansion, split system air conditioning system consisting of exterior unit and interior wall mounted fan coil unit. Condensate pump and wall mounted thermostat will be provided.
- All air-cooled condensers will contain condenser fan modulation and staging controls based on compressor discharge pressure as a means of capacity control for low ambient operation.
- A/E will confirm the number of active rack(s) and anticipated electrical demand.
- All split systems will not exceed the requirements of minimum efficiency per ASHRAE 90.1 and use the new SEER2 ratings.

f. Cooling and Heating Systems

- Perform energy and life cycle cost analysis to determine the most life cycle cost effective HVAC system for building. Analysis and documentation will comply with requirements in the State of Maryland Department of General Services Procedure Manual for Professional Services.
- For Duncan Hall, systems to be evaluated will include Variable Refrigerant Flow (VRF) System, 4 pipe fan coil unit (FCU) system with central heat pump water chillers, and other alternatives approved by DGS.
- The building will be heated and cooled by a stand-alone system (not connected to campus system) comprised of a VRF system, a 4 pipe FCU system with central heat pump water chiller, or other DGS approved system.
- The variable refrigerant flow (VRF) system would be comprised of outdoor heat pump or heat recovery units, indoor fan coil units, selector boxes, group controller and refrigerant piping, along with dedicated outdoor air units. Heat recovery VRF systems allow for simultaneous cooling and heating throughout the building. Heat pump VRF systems allow for either cooling or heating. Refrigerant piping will be extended from the outdoor units and distributed through the space to each zone from selector box(s). Each zone would be provided with indoor unit(s), which will allow the zones to be heated and cooled independently.
- The heat pump water heater system would be comprised of central heat pump chiller modules that can produce either chilled water or heating water. If heating and cooling is required at the same time some modules may be assigned to creating heating water while others create chilled water. Provide four pipe distribution systems to deliver chilled and heating water to fan coils serving individual spaces and dedicated outside air units providing tempered and dehumidified air to the building,
- Supplemental electric heating boilers may be provided for peak heating days where heat pumps chillers cannot produce sufficient heating water.
- Provide wall mounted temperature and humidity sensors.
- Provide redundant components in this system such as compressors and pumps to ensure at N+1 redundancy for central equipment.
- The minimum filter arrangement for supply air handling units for any application (will be specified as 30% efficient (Merv 8) pre-filter and 95% efficient (Merv 14) final filter as tested in accordance with ASHRAE Standard 52.2. For recirculating systems, 85% (Merv 13) final filtration is acceptable. The maximum filter face velocity will not exceed 500 feet per minute (FPM). Each filter bank within an air handling unit will utilize all filters of the same size.
- All air-cooled condensers will contain condenser fan modulation and staging controls based on compressor discharge pressure as a means of capacity control for

low ambient operation.
- All split systems will not exceed the requirements of minimum efficiency per ASHRAE 90.1 and use the new SEER2 ratings.
- CFC refrigerants and refrigerant types HCFC-123 and HCFC-22 are not allowed. Refrigerant HFC-134A is currently being phased out; new equipment will not be installed using HFC-134A.
- Variable refrigerant flow (VRF) systems layout will not exceed maximum allowable refrigerant concentration due to system leaks per ASHRAE guidelines for occupiable spaces.
- Provide refrigerant leak detection in all occupied spaces and mechanical rooms per the ASHRAE requirements. Leak detection status and alarms will be interlocked with the Building Management system for remote alarm notification.

g. Exhaust Systems

- Building exhaust from conditioned spaces will be used to pre-condition fresh outdoor air for temperature and humidity. Except no hazardous exhaust air will be routed to energy recovery wheels where cross contamination is possible.
- Fans installed outdoors will be provided with weather resistant construction.
- Minimum exhaust rates will follow ASHRAE 62.1 standards and International Mechanical Code, whichever is more stringent.

h. Air Distribution Systems

- All ductworks will be designed, constructed, supported and sealed in accordance with SMACNA HVAC Duct Construction Standards and pressure classifications. When the ductwork pressure classification of these standards is exceeded, construct ductwork in accordance with SMACNA Round and Rectangular Industrial Duct Construction Standards.
- Acoustical duct lining in any part of the duct system is prohibited. All ductwork requiring insulation will be externally insulated in accordance with the energy code. Double walled ducts consisting of an outer wall of galvanized sheet metal, an inner wall of perforated galvanized sheet metal with insulation sandwiched between the layers is permitted.
- Ductwork will be galvanized steel. Minimum duct gauge will be 22 for ducts up through 43”, 20 gauge up through 60” and 18 gauge above 60”.
- Seal all ductwork seams, joints, fastener penetrations and fitting connections with sealants in accordance with SMACNA Seal Classification as required by SMACNA Duct Pressure Classification. Specify that all ductwork, regardless of pressure classification, will be constructed to Seal Class A. Where ducts are not continuously welded, provide liquid, mastic, and embedded fabric tape type sealants or combinations, and gaskets as required to meet the specified duct leakage allowance. Sealant composite fire and smoke rating, when tested in accordance with ASTM E 84, NFPA 255 or UL 723, will not exceed Flame Spread of 25 and Smoke Developed of 50.
- The aspect ratio (ratio of width to height) of rectangular ducts should be minimized to reduce pressure losses and initial costs. Duct aspect ratios should not exceed 4:1.
- Each branch duct to individual air devices will have a balancing damper, located as far away from the air terminal as possible. Dampers will be located as close as possible to the location where the duct branches off of the main.
- To minimize fan energy, consideration will be given to the lowest practical velocity and pressure criteria which will provide adequate service. In general, size ductwork to maintain a maximum pressure drop of 0.08’ per 100 lineal feet of ductwork in addition duct airflow velocities will be limited to 1800 feet per minute (FPM) to reduce duct generated noise within the building.
- Duct leakage testing will be performed in accordance with ASHRAE 90.1. All duct systems will be field leak tested at 100% of the duct construction rating. Leak testing will follow general procedures as outlined in the SMACNA HVAC Air Duct Leakage Test Manual, Latest Edition. The A/E will specify the allowable leakage in terms of percent of total rated airflow capacity for each duct system based on leakage allowances accounted for in airflow rate and fan selection calculations. Ductwork to be leak tested after all branch connections are installed.

i. Building Automation System (BAS)

- Integrate building systems will use networked IP technology to provide the maximum cost savings and flexibility. The building automation control systems will comply

with the ASHRAE Standard 135, Building Automation Control Network, An Open Protocol (BACnet).
- The BAS will be a Direct Digital Control (DDC) and ASHRAE Open BACNet compatible system. Interface system with existing Siemens campus wide system.
- The system will consist of DDC devices networked to a Graphical User Interface (GUI) terminal through a network of intermediate control units. The GUI will provide a real-time display of all HVAC and mechanical systems, contain all the standard DDC control programming, and provide secure local and remote operator access.
- Provide a dedicated and secure space in the building for the GUI and provide sufficient work area and storage for the building's drawings and other records. Design the BAS in accordance with Howard Community College standards and preferences.
- Heat recovery, cooling and heating management will be optimized to meet the desired setpoints at all points, with the least possible energy consumption.
- All setpoints to be adjustable.
- All controllers, both supervisory and unitary (unit controllers) will be programmable.

j. Testing, Adjustment, Balancing, and Commissioning

Incorporate the requirements of ANSI/ASHRAE 111-1988 or the most current approved version, Practices for Measurement, Testing, Adjusting, and Balancing of Building Heating, Ventilation, Air Conditioning, and Refrigeration Systems, into the construction specifications. The building will be commissioned by a third-party commissioning agent meeting the LEED certification criteria for scope of services

k. Plumbing

General requirements:
- Provide new fixtures and branch piping in renovated toilet rooms throughout facility. Existing heat exchangers for domestic hot water were recently replaced and may be retained. Existing risers and plumbing piping may be retained where replacement would require destructive access to chases or trenching into existing slab on grade floors.
- Plumbing Systems will comply with the College standards, International Plumbing Code, and as applicable, be ADA compliant
- LEED: Provide all documentation required to attain a Silver certification including modifications to drawings and specifications.
- Piping materials will bear labels, stamps, or other markings of specified testing agency.
- The building will have separate building water meters and sub-meters as required by LEED. Each will be provided with sub-meters for water heating and plumbing fixtures at a minimum.

Domestic cold water system requirements:
- Obtain a hydrant flow test prior to design commencement. Flow test will have been performed within the previous 12 months. Confirm adequate pressure will be provided to the building without pressure booster pumps. If pressure is not adequate, provide a triplex constant pressure booster pump system with variable speed drives with each pump sized at 40% of the estimated requirements.
- Comply with NSF 61 for potable domestic water piping and components. All valves and fittings are to be lead free.
- Provide for expansion of piping subject to temperature changes. This will be accomplished by swings, bends, or loops.
- Water hammer arrestors will be installed in horizontal water piping to quick-closing valves at the end of runs and elsewhere as required to prevent noise or injury to the piping system resulting from water hammer. Water hammer arrestors will be sized as recommended in the Plumbing Drainage Institute Standard WH 201. Field manufactured water hammer arrestors are not acceptable.
- Provide wall hydrants on the exterior of all buildings. A minimum of one (1) wall hydrants will be installed on each building face and the maximum distance between wall hydrants will not exceed 100 ft. The wall hydrants will be of the non-freeze type housed in a lockable wall box.
- No Galvanized, PVC or CPVC allowed on domestic water piping.
- Pro-press fittings are acceptable.
- All the piping serving the domestic water system will be insulated.
- At a minimum, Isolation valves will be

installed on piping at each branch from mains to maximize system isolation which serve the trade areas and toilet rooms.
- Backflow prevention will be provided for the domestic cold water (potable water) inside the building.
- Piping will be sized to maintain a minimum flow of 25 GPM and a minimum pressure of 35 psig at the farthest flush valve and 30 psig at the hydraulically most remote safety shower.
- Water velocity in the distribution piping system will not exceed 6 feet per second and provisions will be made to reduce any water hammer with water hammer arrestors.
- Backflow prevention will be provided to each appliance and fixture as required by the International Plumbing Code.
- Pipe material requirements:
  - Pipe material Under-building-slab, domestic water piping, NPS 2 and smaller, will be the following:
    - Hard copper tube, ASTM B 88, Type K; wrought-copper solder-joint fittings; and brazed joints.
  - Pipe material Under-building-slab, domestic water piping, NPS 2-1/2 and 4, will be the following:
    - Mechanical joint, ductile iron pipe; standard pattern mechanical joint fittings and mechanical joints.
  - Aboveground domestic water piping, NPS 4 and smaller, will be the following:
    - Hard copper tube, ASTM B 88, Type L wrought-copper solder-joint fittings, and soldered joints.

Domestic hot water and recirculating hot water system requirements include:
- Comply with NSF 61 for potable domestic water piping and components. All valves and fittings are to be lead free.
- Provide for expansion of piping subject to temperature changes. This will be accomplished by swings, bends, or loops.
- Provide water hammer arrestors in horizontal water piping to quick-closing valves at the end of runs and elsewhere as required to prevent noise or injury to the piping system resulting from water hammer. Size water hammer arrestors as recommended in the Plumbing Drainage Institute Standard WH 201. Field manufactured water hammer arrestors are not acceptable.
- No Galvanized, PVC or CPVC allowed on domestic water piping.
- All piping serving the domestic water system will be insulated.
- At a minimum, install isolation valves on piping at each branch from mains to maximize system isolation.
- The building will have separate building water meters and sub-meters as required by LEED.
- Hot water will be stored at 140 F and mixed to 130 F for distribution. Provide individual thermostatic mixing valves for showers and public lavatories and sinks to limit discharge temperature to 110 F.
- Design systems to provide hot water within 5 seconds at any system outlet.
- Pipe material requirements:
  - Above ground domestic water piping, NPS 4 and smaller, will be the following:
    - Hard copper tube, ASTM B 88, Type L wrought-copper solder-joint fittings, and soldered joints.

Sanitary drainage system requirements:
- Sanitary drainage and vent system will be provided including waste and vent systems from all plumbing fixtures such as but not limited to water closets, lavatories, service sinks, floor drainage, etc. Sanitary drainage will be connected directly into the site sanitary sewer system without treatment.
- All systems will be provided with accessible cleanouts at the base of every stack and where the sanitary piping change direction, and in all straight mains on a maximum spacing of 50 ft. Provide access covers in finished areas.
- No PVC or plastic piping allowed above grade.
- Pipe material requirements:
  - Sanitary below grade can be schedule 40 polyvinyl chloride or hub and spigot cast iron piping.
  - Sanitary piping within the building, above ground will be service weight cast iron “no hub” pipe with neoprene and stainless steel connectors.

Storm water drainage system requirements:
- Storm water drainage system will be provided for all roof and area drains and be connected into the site storm system.
- Where flat roofs are utilized, storm water drainage overflow system will be provided for all roofs which cannot support

the buildup of rainwater caused by an obstructed primary roof drain and where scuppers are not provided. Storm water drainage overflow system is a separate piping system than storm water drainage from primary roof drains.
- All systems will be provided with accessible cleanouts at the base of every stack and where the storm water piping change direction, and in all straight mains on a maximum spacing of 50 ft. Provide access covers in finished areas.
- No PVC or plastic piping allowed above grade.
- Pipe material requirements:
  - Underground storm drainage piping NPS 6 and smaller will be the following:
    - Service class, cast-iron soil pipe and fittings; gaskets; joints.
  - Above ground storm drainage piping NPS 6 and smaller will be the following:
    - Service class, cast-iron soil pipe and fittings; gaskets; joints.

Water heater requirements:
- Water heaters will serve the entire building. Instantaneous single fixture water heaters are not allowed.
- If heating water is used for HVAC, existing domestic water exchangers may be reused if adequate or replaced with new heat exchangers to provide source for domestic hot water. Provide hot water storage tank sized to meet building hot water demand.
- Otherwise, provide electric water storage type water heaters. Provide two water heaters, each sized for 50 percent of the building demand.

Floor drain requirements:
- All floor and trench drains will be provided with trap primers. Rubber boot type seals are unacceptable.

Trap primer requirements:
- Provide trap primers conforming to ANSI/ASSE 1018.
- When required, provide trap primers with time clock equipped with 24-hour dial with replaceable trippers suitable for 120 V, 60 Hz operation. Interval timers will be base-mounted. Solenoid valve will be all-bronze with threaded connections suitable for 120V, 60 Hz operation.

Plumbing fixture requirements:
- Provide water temperature limiting device conforming ASSE 1070 for lavatories, sinks and as required by code.
- All devices specified will be low flow to minimize water consumption. Where applicable to LEED provide watersense labeled fixtures.
- Shutoff valves will be provided in each supply to each fixture. The finish of fittings, accessories, and supplies exposed to view will be chromium-plated.
- Flush valve type water closets requirements:
  - White vitreous china, wall mounted type or floor mounted automatic hard wired flush valve, elongated bowl and white solid plastic elongated open-front seat.
  - The flushing volume of the flush valve will not exceed 1.28 gallons per flush.
- Flush valve water closet requirements (ADA):
  - White vitreous china, wall mounted type or floor mounted with automatic hard wired flush valve, elongated bowl and white solid plastic elongated open-front seat. The water closet height to top of seat will be in accordance with ICC A117.1.
  - The flushing volume of the flush valve will not exceed 1.28 gallons per flush.
- Flush valve type urinal requirements:
  - White vitreous china, wall mounted, wall outlet, siphon jet, integral trap, and extended side shields.
  - Water flushing volume of flush valve will not exceed 0.125 gallons per flush.
- Flush valve type urinals (ADA) requirements:
  - White vitreous china, wall mounted, wall outlet, siphon jet, integral trap and extended side shields. The urinal height will be in accordance with ICC A117.1.
  - Water flushing volume of flush valve will not exceed 0.125 gallons per flush.
- Lavatories requirements:
  - White rectangular enamel cast-iron lavatory with floor mounted concealed arm carrier support anchored to floor, shelf back type. Provide with commercial weight stop valves, flexible risers, grid drain, adjustable cast brass P trap with cleanout, trap nipple, and escutcheon.
  - Vandal proof deck mounted self-closing metering faucet, easy push handles, push button activator will meet ANSI A117.1, 5-1/8” spout, water conserving 0.5 gpm pressure compensating vandal-proof non

- aerating spray, stainless steel hose, offset tailpiece.
  - Vitreous china lavatories are not allowed.
- Lavatories (ADA) requirements:
  - White rectangular enamel cast-iron lavatory with floor mounted concealed arm carrier support anchored to floor, shelf back type. Provide with commercial weight stop valves, flexible risers, grid drain, adjustable cast brass P trap with cleanout, trap nipple, and escutcheon.
  - Vandal proof deck mounted self-closing metering faucet Easy push handles, push button activator will meet ANSI A117.1, 5-1/8" spout, water conserving 0.5 gpm pressure compensating vandal-proof non aerating spray, stainless steel hose, ADA compliant, offset tailpiece.
  - The height will be in accordance with ICC A117.1.
  - Vitreous china lavatories are not allowed.
- 1Countertop lavatories requirements:
  - White enamel cast-iron, self-rimming type. Provide with commercial weight stop valves, flexible risers, grid drain, adjustable cast brass P trap with cleanout, trap nipple, and escutcheon.
  - Vandal proof deck mounted self-closing metering faucet easy push handles, push button activator will meet ANSI A117.1, 5-1/8" spout, water conserving 0.5 gpm pressure compensating vandal-proof non-aerating spray, stainless steel hose, offset tailpiece.
  - Vitreous china lavatories are not allowed.
- Countertop lavatories (ADA) requirements:
  - White enamel cast-iron, self-rimming type. Provide with commercial weight stop valves, flexible risers, grid drain, adjustable cast brass P trap with cleanout, trap nipple, and escutcheon.
  - Vandal proof deck mounted self-closing metering faucet easy push handles, push button activator will meet ANSI A117.1, 5-1/8" spout, water conserving 0.5 gpm pressure compensating vandal-proof non aerating spray, stainless steel hose, ADA compliant, offset tailpiece.
  - The height will be in accordance with ICC A117.1.
  - Vitreous china lavatories are not allowed.
- Stainless steel drop in sink requirements:
  - Single compartment stainless steel, drop in sink. Provide chrome plated cast brass P trap and stop valves in the supply pipes. Underside will be coated with sound deadening material. Mount sink in counter furnished.
  - Vandal resistant widespread faucet dual wristblade handles, 8" rigid gooseneck spout and chrome finish. 0.5 gpm aerator. Stainless steel drain with removable grid strainer and tailpiece.
- Service sink requirements:
  - Service sinks will be floor mounted terrazzo made of marble chips cast in white Portland cement in accordance with IAPMO PS99. Provide with floor outlet copper alloy body drains, cast integral with terrazzo, with nickel, polished stainless steel strainer and exposed wall mount sink faucet with vacuum breaker, integral stops, level handles, spout with pail hook, stainless steel wall guards, mop hanger, hose, and hose bracket.
- Electric water cooler requirements:
  - Electric water coolers will be ADA compliant, wall-mounted or recessed combined rapid water bottle filling station/ bubbler style water cooler, with a high efficiency cooler, integral filter, and automatic filter reset. The unit will have a minimum chilling capacity of 8.0 gph, with stainless steel splash receptor and cabinet.

I. Fire Suppression

The existing building combination sprinkler/ standpipe system will be modified to accommodate building renovations. The existing automatic sprinkler systems within the areas of renovation will be demolished and replaced with new sprinkler protection. The existing service equipment and riser infrastructure will remain in-tact and will be re-utilized to serve the modified sprinkler systems. System design will be in accordance with all applicable codes, College standards, and good engineering practice. The system will be modified in accordance with NFPA 13, NFPA 14, and Howard County building and fire code requirements, as well as functional requirements of the campus standards.

Automatic sprinkler system requirements:
- Generally, wet-pipe sprinkler systems will be provided throughout the areas of renovation except where other types of fire suppression systems are warranted due to the type of hazard or environmental considerations

of the space(s) being protected, e.g. areas subject to freezing.

- The existing dry-pipe sprinkler system serving the exterior canopy area at the ground floor will be completely demolished and replaced. A new dry-pipe system will be provided and served from a new dry system riser assembly. The dry-pipe sprinkler system will include its own dedicated air compressor and an external resetting type dry pipe valve device. Dry system components to be mounted at a height no greater than 6' above finished floor whenever possible.
- The existing sprinkler system is currently zoned by floor with a dedicated floor control valve assembly provided at each level. The sprinkler valve assemblies will be re-utilized to retain existing system zoning. The sprinkler system zoning will be further subdivided where needed for code compliance.

Standpipe system requirements:

- The standpipe system will be modified and extended where needed to accommodate program requirements. The existing system is a Class I, manual standpipe system and is integrated with the sprinkler system. Existing 2-1/2" fire hose connections are provided at each exit stair landing. Where programming includes enclosure of the central stairway as an exit stairway, the standpipe system will be modified to include a new standpipe riser within the exit stair enclosure with hose connections provided at each stair landing for code required coverage. A supervised control valve will be provided at the base of the standpipe riser for isolation.

Fire water supply requirements:

- A hydrant flow test will be performed prior to design commencement to verify site water supply performance. Water supplies will be designed to meet the largest flow, and pressure demands of the building fire suppression system(s). A minimum 10 psi or 10 percent (10 percent of demand pressure at required flow) safety factor should be provided to accommodate future deterioration and increased demand on fire water supplies. All sprinkler systems will be hydraulically calculated in accordance with NFPA standards to show that the system demand can be met by the available water supply.
- Where required, a fire pump system will be provided to supplement the municipal water supply pressure. The requirement for a fire pump system will be confirmed in design after flow test information is available and the layout is established. A fire pump will be located within a dedicated, fire-rated room enclosure and located at grade level with exterior access.

Sprinkler systems and components requirements:

- Sprinkler system zone piping will extend from existing floor control valve assemblies for distribution throughout the floor or zone. System piping will be routed and concealed in all building areas with suspended ceilings and exposed in areas without ceilings. All piping and fittings will be coated with red paint in areas with exposed ceiling construction. Pipe marker ID labels will be provided for all system piping and spaced at regular intervals. Sprinkler piping will be adequately supported from the building structure in accordance with NFPA 13. Pipe hanger components will be UL listed, or FM approved.
- Sprinkler heads will be recessed, pendent type heads in areas with suspended ceilings and upright type sprinklers in areas with exposed ceiling construction. Other sprinkler styles (pendent, upright, recessed, flush, special application, etc.) will be chosen based on the following items: the hazard being protected, aesthetics, NFPA 13 requirements, approvals/listings, and manufacturers recommendations. Either standard orifice 1/2-inch sprinklers with K-factors of 5.6 or large orifice 17/32-inch with K-factors of 8.0 will be provided depending on the hydraulic demand requirements. Sprinklers will be quick response type in all areas as permitted by NFPA 13. Head guards will be provided for sprinklers installed below 7'-0" above the floor level.
- Dry pendent or dry horizontal sidewall type sprinklers will be used due to freezing conditions, such as unheated areas, small outside canopy areas, etc. Provide corrosive resistant sprinklers heads in areas where chemicals, moisture or corrosive vapors can cause corrosion.

Piping materials and fittings requirements:

- All sprinkler and standpipe piping systems will be black steel and provided with mechanically grooved or threaded fittings. CPVC or copper piping is not acceptable. Sprinkler system piping for wet systems will be:
  - Piping 2" and smaller: Schedule 40 black steel pipe with threaded or grooved fittings.
  - Piping over 2": Schedule 10 black steel pipe with roll grooved fittings.
  - Piping for dry-pipe sprinkler systems will be schedule 40 black steel with grooved or threaded fittings (malleable or ductile). All grooved fittings for dry-pipe systems will be UL listed for dry service.

Design criteria requirements:

- Sprinkler occupancy hazard classifications:
  - Building Service Areas: Ordinary Hazard, Group 1.
  - General Storage Areas: Ordinary Hazard, Group 2.
  - Mechanical Equipment and Electrical Rooms: Ordinary Hazard, Group 1.
  - Office and Public Areas: Light Hazard.
  - Classrooms and Lecture Halls: Light Hazard.
  - Other Areas according to NFPA 13 recommendations unless otherwise indicated.
- Minimum density for automatic-sprinkler piping design:
  - Light-Hazard Occupancy: 0.10 gpm over 1500-sq. ft. area.
  - Ordinary-Hazard, Group 1 Occupancy: 0.15 gpm over 1500-sq. ft. area.
  - Ordinary-Hazard, Group 2 Occupancy: 0.20 gpm over 1500-sq. ft. area.
  - Other Areas according to NFPA 13 recommendations unless otherwise indicated.
- Maximum Protection Area per Sprinkler:
  - Light-Hazard Occupancies: 225 sq. ft.
  - Ordinary-Hazard Occupancies: 130 sq. ft.
  - Other Areas: According to NFPA 13 recommendations unless otherwise indicated.
- Total combined hose-stream demand requirement according to NFPA 13 unless otherwise indicated:
  - Light-Hazard Occupancies: 100 gpm
  - Ordinary-Hazard Occupancies: 250 gpm
- Manual wet-type, Class I Standpipe System, according to NFPA 14 unless otherwise indicated:
  - Minimum 100 psi residual pressure at remote hose connections.

Electrical, Communications, and Electronic Safety and Security

All electrical, communications and electronic safety and security systems will be replaced as part of the building renovation. The project design will incorporate provisions for normal utility power lighting and controls, emergency egress and exit lighting, lightning and surge protection, normal power distribution, emergency power distribution, branch circuit wiring, wiring devices, power for HVAC and plumbing equipment, structured cabling for communication systems, structured-cabling for audio/visual systems, life safety systems and electronic security systems. Building power will be segregated by individual load categories and metered separately in accordance with the applicable LEED requirements.

a. General Criteria and Codes/Standards

The design and installation of electrical, communications and electronic safety and security systems will comply with all applicable codes, standards, good engineering practice, and the applicable standards of the College including:

- Americans with Disabilities Act (ADA)
- National Electrical Code (NEC)
- Applicable sections of the National Fire Protection Association (NFPA)
- State and local codes and regulations
- American Concrete Institute (ACI)
- American National Standards Institute (ANSI)
- Electronics Industry Association/ Telecommunications Industry Association (EIA/TIA)
- Illuminating Engineering Society of North America (IESNA)
- Institute of Electrical and Electronics Engineers (IEEE)
- Insulated Power Cable Engineers Association (IPCEA)
- International Building Code (IBC)
- National Electrical Manufacturers (NEMA)
- Underwriters Laboratories, Inc. (UL)
- US Green Building Council (USGBC)
- Maryland Occupational Safety and Health Administration
- ASHRAE 90.1

b. General Electrical Materials and Methods

- Unless otherwise indicated herein, all aboveground electrical, communications and electronic safety and security systems wiring/cables will be contained within metallic raceways or metallic sheathing and will be installed concealed in finished spaces. Unless otherwise indicated herein, all below slab, in-slab and underground wiring/cabling will be installed in schedule 40 polyvinyl chloride (PVC) conduit and fittings.
- Minimum conduit size for power, lighting and security systems will be 3/4" while minimum conduit size for communications/IP based systems will be 1 1/4". EMT with compression or set screw fittings will be utilized for interior dry locations. Rigid steel conduits with threaded fittings will be utilized in exterior, damp, or wet locations. The conduits for the building's pad mounted transformer secondary electrical service feeder and outside plant (OSP) communications cabling will be minimum 4" PVC-40 and concrete encased.
- Unless otherwise indicated herein, all branch circuit wirings (including lighting controls) and feeders will consist of individual conductors will be copper with 600 volt, THWN/THHN rated insulation. Quantities of conductors will be provided as needed. Each 120- and 277-volt branch circuit will have individual insulated equipment ground and system ground conductors. Sharing of equipment ground and system ground conductors will not be permitted.
- Multiconductor MC type cable will be permitted for branch circuits only within walls and ceilings of finished areas. All wiring, conduits, cables, etc. or power, communications and electronic safety and security systems will be installed concealed in walls and above ceilings where possible.
- Motors will be premium efficiency and meet IEEE standards for Variable Frequency Drive (VFD) compatibility.
- All equipment, transformers, and motors will be energy efficient types designed to minimize the production of harmonic distortion.
- Enclosures for equipment/device in interior dry locations will be NEMA type 1. Enclosures for equipment/devices in exterior, wet or damp locations will be NEMA types 3R.
- Except where VFD's are to be utilized for control of motors, polyphase motors are to be provided with non-reversing full voltage magnetic starters (NEMA size 1 minimum). Fractional horsepower motors (less than 1/2 horsepower) will be provided with thermal manual motor starters.
- Unless it is integral to equipment, adjacent local disconnecting means will be provided. Local disconnecting means will be fusible or non-fusible type as needed for the application.
- Panelboards will have copper busing and be wall mounted, fully rated, and have door in door construction. Panelboards to be surface wall mounted in utility or unfinished spaces. Panelboards to be recessed wall mounted in finished spaces. Recessed panelboards are to be provided with spare conduits up to nearby accessible ceiling for the installation of future branch circuit wiring. Each panelboard will be equipped with built-in type 2 surge protection devices (SPD). Main and branch circuit breakers in the switchgear will be power circuit breakers or insulated case circuit breakers. Main and branch circuit breakers in the panelboards will be inverse time, molded-case thermal magnetic type. Where needed to meet the requirements of the National Electrical Code, branch circuit breaker will be equipped with integral ground fault protection. 20% minimum spaces to be provided within each panelboard for future branch circuit breakers. Acceptable manufacturers are General Electric, Eaton/Cutler Hammer and Square D.
- Switchgear will have freestanding front and rear access enclosures with copper busing barriers between the compartments. Switchgear will be fully rated. Main devices will be power circuit breakers or insulated case circuit breakers, with adjustable trip settings. Branch circuit breakers will be inverse time, insulated case circuit breakers type. Where needed to meet the requirements of the National Electrical Code, main and branch circuit breakers will be equipped with integral ground fault protection. Branch circuit breakers rated 250 amps and larger will have adjustable magnetic trip settings. Switchgear will be equipped with a built-in surge protection device and a digital power meter. Acceptable manufacturers are Siemens, Eaton/Cutler Hammer and Square D.
- Dry type transformers will be of the harmonic cancelling type where necessary to reduce harmonics in the building. Provide energy efficient type TP-1 transformers as a minimum. Acceptable manufacturers are Siemens, Eaton/Cutler Hammer and Square D.

- Automatic transfer switches will be 4 pole, 4 wire, open transition type.
- Interior outlet, pull, splice and junction boxes will be steel. Exterior device boxes will be cast aluminum. Exterior pull, splice and junction boxes will be steel with NEMA 3R rating. The installation of floor boxes will not be permitted unless required by the NEC.
- Except for low voltage lighting controls, snap (toggle) switches are to be 120/277 volt, 20 amp. Lighting controls that require occupant interface are to be located within the immediate vicinity of room entrances.
- General receptacles will be 120 volt, 20 amp NEMA 5-20R type. As applicable, receptacles are to be located per code. In general, general-purpose receptacles within interior finished rooms will be spaces at 12' on center and be spaced at 25' on center in corridors. Exterior receptacles and receptacles located within 6' of interior water sources will be ground fault current protected. Special and simplex receptacles will be provided for dedicated equipment needs.
- Wiring device faceplates in finished spaces will be stainless steel.

c. Normal (Utility) Power Distribution System

- The electrical service for the building is provided from a pad mounted 2500 KVA, 13.2 kV to 480/277V, 3 phase, 4 wire, transformer connected to the existing 13.2KV campus loop 1 (feeders E-1 and W-2). The existing 13.2KV loop 1 also serves the Nursing Building, Horowitz Visual and Performing Arts Center, and RCF Student Services Building.
- The existing 2500 KVA transformer serves a 3200A, 480/277V, 3 phase, 4 wire, Siemens switchgear in the main electrical room which in turn distributes electrical services within the building. The existing electrical equipment did not have Arc Flash Labels and there was some working clearance violations observed in electric rooms.
- The existing 2500 KVA pad mounted transformer and associated 3200A switchgear should be adequate for all electrical building loads in the future. However, the existing BGE services for the campus and the existing 13.2 kV loop 1 will not have the capacity to accommodate all electric power for Duncan Hall. When the existing electrical distribution system reaches 30 years of age, we recommend replacing the system, including the pad mounted transformer and 3200A switchgear. We also recommend providing a dedicated BGE 15 KV service from Little Patuxent Parkway to new 2500 KVA pad mounted transformer and new 3200A switchgear fed separately from a new BGE feeder to accommodate Duncan Hall.
- Where possible, lighting, HVAC equipment, plumbing equipment and any special equipment are to be wired at 277 or 480 volts while general purpose receptacles/other applicable equipment/systems are to be wired at 120 or 208 volts.
- Rooms containing normal electrical (utility) power distribution equipment will be physically separated from rooms that contain emergency power distribution equipment.
- The A/E will prepare a short circuit Fault Study, a Coordination Study, and an Arc Flash Study and update the electrical studies (short circuit, coordination and arc flash) performed by the Contractor's electrical equipment manufacturer. The Contractor will provide the required arc flash signage for each piece of electrical distribution equipment.
- Ground fault protection and grounding electrode system will be provided in accordance with the requirements of the NEC.

d. Emergency Power Distribution System

- Emergency power for Duncan Hall is provided by a 200kW Cummins diesel generator for life safety and standby loads via automatic transfer switches (ATS) in the main electrical room. We recommend replacing the existing emergency power distribution system including the emergency generator, ATS and distribution panels electrical distribution system when the electrical equipment has been in service for 30 years.
- Generator assembly to include a diesel engine prime mover, 277/480-volt output alternator, dual output circuit breakers, NPPA 110 status monitoring panel, sound attenuating weatherproof housing, emergency stop pushbutton, critical grade type silencer, vibration isolators and 24 volt starting system (with charger). Generator assembly to be mounted above the double wall sub-base tank with a minimum containment capacity of 24 hours of fuel capacity. A remote status monitoring panel, along with remote emergency stop pushbutton will be installed within the main electrical room.
- The emergency power output from the generator will be physically separated into two

branches with associated automatic transfer switches and branch circuit panelboards. One branch will serve life safety equipment/ systems while the other branch will service optional emergency power equipment/ systems.

- Emergency Loads: The following is a non-comprehensive list of the loads that will be on emergency power:
  - Life Safety:
    - Egress and Exit Lighting
    - Fire Alarm / Mass Notification System
    - Public Safety Distributed Antenna System (DAS)
  - Optional Equipment:
    - Building IT room equipment and air conditioning systems
    - Emergency blue light phone
    - BMS/ATC controls/systems
    - If applicable, sump pumps
    - If applicable, sewage ejector pumps
    - Electronic security systems (IE video surveillance, access control)
- Including limited provisions for future growth, the estimated rating for the emergency power generator is 75-100 KW.
- In accordance with the NEC, an exterior wall mounted temporary generator docking station that is connected to the life safety branch of the emergency power distribution system.
- Rooms containing normal electrical (utility) power distribution equipment will be physically separated from rooms that contain emergency power distribution equipment.
- All emergency power feeder and branch circuit wiring will be installed in dedicated and isolated raceways.
- Small stand-alone UPS system unit will be provided at and within IT network racks. In addition to being connected to the building's emergency power distribution system, control equipment for electronic security and safety systems and MBS/ATC controls will be equipped with integral emergency battery power.

e. Interior Lighting Systems and Controls

- The existing lighting system includes fluorescent and LED lights. We recommend replacing all existing Interior and exterior lights with LED, provide new lighting controls in accordance with the applicable latest engineering practices, the recommendations of the IESNA, energy conservation codes/ standards (IECC, ASHRAE 90.1) and any standards of the College.
- Point-by-point lighting analysis is to be performed for most spaces. As/Where/if applicable, lighting controls will be installed to take advantage of available natural daylighting. All interior lighting will be LED type with high efficiency drivers. In general, light fixtures will be recessed in finished spaces with ceilings and surface/pendent mounted in spaces without ceilings. Occupancy sensors are required for lighting control in most areas and will include auxiliary dry contacts for connection to the spare auxiliary dry terminals on the DDC terminal equipment controllers. In accordance with LEED and ASHRAE 90.1 guidelines, 50% (minimum) of receptacles in spaces designated under ASHRAE 90.1 are to be controlled by occupancy sensors.
- At a minimum, best practices, room environments, architectural/building elements, anticipated furniture layouts and recommended minimum light levels will be considered when selecting, mounting and locating light fixtures for each interior space.
- Lighting zones and/or provisions for dimming of lights will be incorporated into spaces in which activities will include audio/visual presentations. In spaces with high ceilings, the installation of suspended direct/indirect luminaires should be considered.
- Exit signs will be LED lamped type with a maximum power usage of 5 watts.
- Consolidate and organize all room controls at a convenient wall location adjacent to entry doors. Low voltage push button controls are preferred by College, except for AV systems. Additional controls may be needed at locations adjacent to instructional stations.
- An addressable lighting control system (Acuity Brand) will be provided throughout, tied to campus energy management system. Include local timeout overrides and plug load control in office areas per ASHRAE 90.1. Automatic controls will be provided for all rooms including dimming considerations for multi-functional spaces as well as space grouping and level switching. Include daylight harvesting controls where appropriate at the building perimeter spaces. Local controls will be included to override energy management timeout systems. Occupancy sensor mode is College's preferred method for lighting controls using auto on/off and manual override off.
- Lighting Power Density (LPD) levels will be

in accordance with the IECC and ASHRAE Standard 90.1. For LEED certification purposes, LPD levels will at least meet the requirements of ASHRAE 90.1-2010.

- The following average maintained lighting levels, in foot-candles, are anticipated:

• Offices	30
• Meeting/Conference Rooms	30-40
• Classrooms	50
• Vestibules and Corridors	5-10
• Utility Rooms	30-50
• Storage Rooms	30
• Labs	75
• Shop Areas	75-100

f. Lightning Protection System

A lightning protection analysis is to be conducted to evaluate the need for a lightning protection system. If the result of evaluation suggests that a lightning protection system is recommended, the need for the installation of the system will be approved by the College. The lightning protection system will be installed by a certified lightning installer, be in full compliance with ANSI/UL 96 and ANSI/NFPA 768 or latest editions and have a UL Master Label when completed. The lighting protection system is to be connected to the building's main electrical service grounding electrode system.

g. Fire Alarm/Mass Notification System

- The existing fire alarm system is beyond its service life and will be demolished and replaced with a new system. The building will be provided with a complete, supervised addressable fire alarm system and mass notification per campus standards. All work will be compatible with the existing campus-wide Siemens addressable fire alarm system. The fire alarm system will be monitored by a listed supervising station. The design of the new system will be in accordance with NFPA 72 and Howard County building and fire code requirements, as well as functional requirements of the campus standards.
- The fire alarm system will include integrated emergency voice/alarm communications with selective and building-wide voice signaling capabilities. The system will be designed to include pre-recorded emergency messages but will have additional capability to allow an operator to broadcast a live message either at the Fire Alarm Control Unit or a remote voice console co-located with the remote annunciator panel located at the main entrance. The building fire alarm system control unit will be a microprocessor based, logic controlled, advanced protection type that supervises intelligent, addressable devices. The control panel and power supply panels will be equipped with standby batteries and automatic chargers to accommodate a standby load of 24 hours and an alarm load of 15 minutes.
- A remote alphanumeric fire alarm annunciator panel will be installed within the building main entrance lobby. A graphic display plaque will be installed beside the annunciator panel in order to indicate, at a minimum, locations of the building's main electrical room, building's entrances, OS&Y hose connections and the main water service room.
- Both the main fire alarm control panel and the remote annunciator panel, at a minimum, will have the capability of indicating system trouble conditions, system supervisory conditions, system general alarm conditions, power on/failure conditions, activations of tamper switches, activation of sprinkler flow switches, activation of pull stations, activation of smoke detectors, emergency generator status, and public safety distributed antenna system status.
- An IP-cellular communicator panel will be provided for the fire alarm system to report to both an off-site control monitoring station and the campus security office.
- The building will include speaker audible fire alarm signaling appliances and visible strobe appliances. Audible signaling will provide complete coverage for audibility throughout the facility and strobe notification coverage will be provided as required to meet NFPA 72 and ADA. Clear lens fire alarm strobe appliances marked "ALERT" will be provided.
- Dual action manual pull stations will be provided within 5-feet of each exterior building exit door. Pull stations will be provided with hinged, clear plastic protective covers for tamper resistance. System smoke detectors will be provided above the main control panel and power supply panels. Duct smoke detectors will be provided within the supply air and return air ductwork to automatically shut down air handling units sized 2,000 cfm or greater. The fire alarm system will monitor the building sprinkler and standpipe system in accordance with NFPA 13,

NFPA 14 and NFPA 72. Sprinkler and standpipe system valve tamper and waterflow switches will be connected to the fire alarm system via addressable monitor modules. Fire alarm system will monitor the status of the building's public safety distributed antenna system and emergency generator system.

- All fire alarm IDC, SLC and NAC circuits will be Class B, and all system wiring will be installed in red-painted metallic raceway. Wiring will be solid copper and installed without splices and will terminate on screw-type terminal blocks. The use of wire nuts or similar connections is prohibited. Wiring will be color coded based on circuit type. All 120V power wiring serving system panels or wiring extending beyond the exterior of the building will be provided with UL listed surge protection devices.

h. Public Safety Distributed Antenna System

The building will be provided with a public safety distributed antenna system (DAS). The system will be used to boost bi-directional coverage of radio frequencies utilized by first responders and the College's Offices of Safety and Security and Facilities. The system will not have provisions of cellular carrier service. In general, the system will consist of a single exterior roof mounted donor antenna (grounded), multiple interior omni directional antennas, headend equipment with integral battery backup power source and a network of interconnecting coaxial cables. Cabling to be installed in a dedicated raceway system. At a minimum, system and equipment will be provided and installed in accordance with the requirements of NFPA and the IBC. DAS system will be monitored by the building's fire alarm system.

i. General Communications Systems OSP, Backbone and Horizontal Structured Cabling Criteria, Room Criteria, and Topography

- Design and installation of the structured cabling to and within the building for its communications systems will be in accordance with applicable College standards. Outside plant (OSP) services for the Duncan Hall will originate from the existing telecommunications room located in the basement of the Science Engineering Technology (SET) building. OSP services will consist of single mode optical fiber cable in 2-5" concrete encased conduits. OSP cabling is to enter the building at a Main Distribution Frame (MDF) room and is to be terminated at a freestanding data equipment rack. From the MDF room, backbone communications capability will be extended to a second remote Intermediate Distribution Frame (IDF) room located in the building through the continued use of single mode optical fiber cabling. From both the MDF and IDF rooms, horizontal Cat 6 UTP (unshielded twisted pair) cables will be installed to workstation outlets and other termination locations.
- All OSP, backbone and horizontal cabling will terminate within patch panels located in freestanding data equipment racks.
- Quantities of optical fiber cables and the number of strands to be coordinated with and determined by College.
- Minimum MDF and IDF room sizes will be 100 square feet. MDF and IDF rooms will be appropriately located so that the total length of UTP cables between termination points does not exceed 295'. All walls within MDF and IDF rooms are to be lined with 3/4 inch by 8' high AC grade plywood.
- The MDF and IDF rooms will be provided with appropriate lighting and dedicated 24/7 heating/cooling systems. Locations of lights will allow for proper lighting in both the front and rear of equipment racks. Heating/Cooling systems will be sized to maintain temperatures in the MDF and IDF rooms at approximately 72 degrees F. Indoor heating/cooling equipment will not be located above equipment racks. Convenience power outlets (20A 120 VAC) will be designed on each wall around the rooms. Dedicated power will be provided for each equipment rack and in accordance with the requirements of College. All circuits within MDF and IDF rooms, as well as their associated room heating/cooling systems, will be connected to the building's emergency power distribution system. In addition, each equipment rack will be provided with standalone rack mounted UPS units. Ratings and features of UPS units will be per the requirements of College.
- A telecommunications grounding bus bar (TGB) is to be provided in each MDF and IDF room and be connected to the building's main electrical service grounding electrode system. Equipment racks, cable trays, cable runways, etc., within MDF and IDF rooms will be grounded to the TGB.

j. Communications System Equipment and Pathways

- Design and installation of the equipment and pathways within the building for its communications systems cabling will be in accordance with applicable College standards.
- Within MDF and IDF rooms, ladder type cable runways will be utilized for routing and supporting cables to, between and from equipment racks and other termination equipment/devices. Minimum size of cable runways will be 18" wide.
- Four (4) post, open freestanding, standard 19" equipment racks are to be provided within MDF and IDF rooms for the containment of cable termination devices, network equipment, UPS units, and all other equipment that needs to be rack mounted per College guidelines. All equipment racks are to be provided with vertical cable management. A minimum of 2 equipment racks will be provided for within each MDF and IDF room.
- Preloaded, 48 port, Cat 6 patch panels, along with horizontal wire management, will be provided for within equipment racks for the termination of UTP cables. Quantities of patch panels will allow for termination of all Cat 6 UTP cables plus 25% spares.
- Optical fiber cabling will be terminated at equipment racks with 72 port fiber terminations boxes. Fiber termination box assemblies will be complete with all needed connector adapter panels and ST type connectors. Each fiber termination box is to be provided with horizontal cable management.
- To facilitate the installation of backbone and horizontal cabling to and between MDF and IDF rooms, 12" x 4" basket type cable trays are to be installed within the corridors. In addition, 1.25" conduit will be installed between corridor cable trays and workstation outlets in order to facilitate the installation of horizontal cabling. Cable trays and conduits to workstation outlets and other termination devices/equipment will be installed concealed where possible. Boxes for workstations outlets will deep 4"x4" type with extension rings.

k. Communications System Cabling

- Design and installation of the communications systems cabling will be in accordance with applicable College standards.
- OSP and inside backbone cabling will consist of multi-strand single-mode air-blown fiber optic cables. OSP cables will have watertight jackets. Backbone cables will have plenum rated jackets. Colors of jackets per College standards.
- Horizontal cabling to workstation outlets and other applicable equipment will be 100-ohm, 4 pair, category 6 UTP type with plenum rated thermoplastic jackets. Color of jackets per College standards.
- All OSP, backbone and horizontal cabling will be provided with a 10' service loop prior to each termination location.
- Workstation outlets will consist of individual snap-in modular category 6, 100-ohm 4-pair RJ-45 jacks attached to white high-impact plastic face plates. Jack face colors to be per College standards. Face plates will have a minimum of 6 ports. Un-used ports will have blank snap-in filler plates (colors to match face plates). Face plates to have snap-on, clear label covers and machine printed paper inserts.
- Workstation outlet placement will be based on anticipated furniture or equipment locations. Workstation outlets will be within 6' of general power receptacles. At a minimum, two (2) communications drops will be provided for at each workstation outlet.
- Plenum rated "biscuit" style enclosures, complete with dual Cat 6 jacks, will be provided above ceilings and in anticipated locations of College provided and installed wireless transceivers. A 20' cable service loop is to be provided for at each "biscuit" location.
- Labeling will be provided for each OSP, backbone and horizontal cabling in accordance with College standards.
- Communications to emergency telephones will be accomplished by the installation of optical fiber cabling.

l. Audio-Visual (A/V) Systems

- The AV systems will provide for the presentation of computer-generated material, presentation of traditional video source material, presentation of audio program material, as well as live speech and live presentations. Digital signage displays for messaging, way-finding, etc. will be provided throughout the building. The installation of monitors will be the primary video display method within classrooms and collaboration spaces. The use of projectors and project screens will not be permitted. The source

devices for the AV systems may include computers, DVDs, CD's, document cameras and personal devices such as smartphones, tablets, and laptops.
- In locations in which enhanced audible input/output sound is required or determined needed by a spaces function/use, electronic based audio systems are to be installed and will include all required amplifiers, volume controls, mixers, loudspeakers, microphones, cables, etc. In those spaces that are determined necessary, both ceiling mounted, and portable wireless instructor microphones are to be installed. At a minimum, independent A/V systems (or provisions for), together with instructor presentation desks/podiums and/or racks are to be provided within each lab, classroom, conference, and meeting room.
- Audio outputs for A/V systems will interface with the building's fire alarm system. Upon activation of a general fire alarm condition, the audio outputs for A/V systems will be turned off.
- A/V systems will be installed completely with all interconnecting conductors/cables and in appropriately sized conduits or other cable pathways.
- The AV systems and the architecture will be coordinated to provide optimum viewing for all the viewers in each room type.

m. Electronic Security Systems

- The building's electronic security systems will comply with applicable standards, requirements, and desires of College with all wiring installed in dedicated raceways.
- The electronic security systems for the project will include IP based video surveillance and IP based access control. The video surveillance system will have the capability of interfacing with the building's data communications system to allow for remote camera image viewing and recording. Remote locations in which remote image viewing and recording by video surveillance cameras will be permitted is to be determined by the College.
- The access control system will have the capability of interfacing with the building's data communications system to allow for remote monitoring and system access programming. Locations in which remote control and programming of access control systems will be permitted is to be determined by the College.

n. Electronic Access Control

- An electronic PoE type access control system will be incorporated into the building to allow the entrance into the building and designated spaces. The access control system and equipment will comply with applicable standards, requirements, and desires of College. As applicable, new devices and equipment will match existing utilized throughout the campus. At a minimum, system will have the capability of controlling entrances into the building and designated spaces by time of day, days of the years and by personnel privileges.
- System card readers will be PoE type and will be the type that require Cat 6 cabling. At a minimum, entrances into the following spaces will be controlled by card readers:
  - All building entrance/exit doors (excluding fire exit only doors)
  - Classrooms
  - Lab Classrooms
  - Storage Rooms
  - IDF and MDF Rooms
  - Doors to Main Office Suite
- Locations and mounting heights of card readers will comply with the Americans with Disabilities Act (ADA). The systems will be coordinated with other aspects of the building design such as fire alarm, door hardware, electrical systems, etc.
- Access control system will interface with the building's fire alarm system. Upon activation of a general fire alarm condition, all electric locks/strikes will fail open.
- The system will include all required control equipment, power supplies, wiring, card readers, door contacts, electric strikes/locks, request to exit sensors, access cards, software licenses, etc.
- Initial programming of system passwords, personnel privileges and door access locations/times will be per the requirements of College.

o. Video Surveillance

- The building's video surveillance system and equipment will comply with applicable standards, requirements, and desires of the College. In general, video surveillance provided for the project will be accomplished by the installation of fixed PoE cameras that require Cat 6 communications cabling.
- At a minimum, interior cameras will be

- positioned to view all entry/exit doors. At a minimum, an exterior camera will be positioned to view the service yard. Refer to site electronic security requirements for other exterior camera locations.
- The equipment and cabling for the PoE cameras will be physically separated from the building's other IP based networks. This will require that there be separate switches, network storage units, patch panels, etc. in the MDF and IDF room equipment racks. The required quantity of storage provided will be dependent on the number of cameras installed as well as the compression algorithm used, camera resolution, amount of motion, and days of storage required.
- The video surveillance system will include all required equipment, cameras, cabling, raceways, and software licenses.

p. Emergency Telephones

- The project will incorporate the installation of wall mounted exterior and interior emergency phones in accordance with College requirements and standards.
- Both 120-volt branch circuits and data/communications wiring (in separate conduits) will be installed to each emergency telephone location.

Other Building Systems and Equipment Requirements

a. Building Commissioning

- The Commissioning Agent (CxA) will develop specifications and plans for the commissioning of the building in accordance with College and ASHRAE Commissioning Guidelines.
- The A/E will be responsible to integrate necessary elements of the commissioning plan into the A/E specifications.
- Project commissioning will include the design, construction, and start-up process as well as post commissioning, warranty related monitoring. The commissioning includes requirements for the level of detail required in the submittal process, equipment labeling, provisions for documentation for the College maintenance management system, requirements for documentation of equipment tests, and measurement, operator training, and submittal of maintenance manuals.
- The A/E is required to coordinate the provisions of this section with the Construction Manager and the Commissioning Agent.

b. Operation, Maintenance, Instructional Manuals, and Spare Parts

- Five (5) copies of suitable operation, maintenance and instructional manuals will be furnished with the equipment and systems. The following items and information are minimum requirements:
  - Manufacturer's catalog descriptions of specifics items of equipment.
  - Manufacturer's operating and maintenance instructions.
  - Wiring diagrams for inter- and intra-connections of components.
  - Schematics and location drawings of components and systems with "troubleshooting" guidance.
  - Component breakout lists for ordering replacement parts, etc.
- Operations and Maintenance Manuals will be provided to the College two weeks in advance of any testing or commissioning of any equipment.

c. Energy Incentives Program

The A/E will review with the College the current Commercial and Institutional Incentives Program offered by the campus utility service provider for opportunities to participate in financial incentive and rebate programs. If incentives are available, the A/E will meet with the Utility Service Provider Program Coordinator and complete and submit the necessary forms to obtain incentive payments

C. Instructions to Consultants

1. Project Scope

Duncan Hall, a 105,035 GSF, three story academic building with a partial basement. The building will undergo a comprehensive renovation, including moderate reconfiguration in some instructional areas. Mechanical systems will be replaced to convert the building to all-electric operation. Electrical distribution will be updated to allow additional receptacles

Relocation of current Duncan Hall activities to swing space will be an essential precursor to the construction phase. Coordination with HCC will be required to make transition to swing space as disruption-free as possible.

2. Qualifications of the Consultant

The Consultant (a team of professionals consisting of Architect(s), Engineering Disciplines, and Specialists) is to provide architectural and engineering design, energy and life cycle cost analysis, LEED documentation and preparation of appropriate plans and specifications for each aspect of the work as described in this Chapter, as well as the rest of this Part II program. HCC will not adjust fee for minor adjustments to the scope of the project. The specific programmatic requirements and design criteria provided in this Program are as complete and accurate as possible at this point in the project. It will be the responsibility of the Consultant to consult with the College to verify or make refinements to these requirements and criteria throughout the design process. This process will be coordinated through the College's Office of Facilities Planning/Campus Operations reviewed by the appropriate agencies at the conclusion of phases of the work as indicated in this chapter. The Consultant will be required to work with a project team comprised minimally of representatives from the College's Office of Facilities Planning/Campus Operations, who would interact with the Consultant and be active in the review, resolution, and approval of all design work.

Howard Community College (HCC) will conduct the Consultant selection and award process and then contract directly with the successful design team.

The Consultant is expected to utilize managers, designers, engineers, and technicians with the education and experience necessary for the design of the project. All contract documents shall be signed and sealed by licensed professionals, with State of Maryland licenses.

As a minimum, the following disciplines are expected for the Consultant's team:

- Basic Services Design Team:
  - Architect
  - Mechanical (HVAC & Plumbing) Engineer
  - Electrical Engineer, including Lighting
  - Structural Engineer
- Special Services Required for Design team:
  - Energy Analyst
  - LEED Consultant
  - Acoustical Engineer
  - Audio-Visual/Data/Telecommunications Specialist
  - Security Specialist
  - Cost Estimator
  - Interior Designer

3. Architect's Design Responsibility

This section provides a description of the project goals, objectives, and major tasks to be accomplished. The scope of services to be provided by the Consultant shall be divided into specific phases – General Design Requirements, Program Verification, Schematic Design Phase, Design Development Phase, Construction Documents Phase, Bidding, Construction Administration Phase, and Post Construction Phase. Work done under this section shall respond to the design criteria, space, and equipment requirements, spatial relationships, energy criteria, commissioning, and sustainability requirements contained in this Part II program. The design team is responsible for achieving a minimum LEED silver rating. The College will hire the commissioning authority, but the consultant will be responsible for preparing commissioning specifications and other documents necessary for bidding and shall be required to participate in the commissioning process.

The Consultant firm shall provide complete professional services for all aspects of the design process and the construction process. This shall include whatever is needed to complete the design, prepare contract drawings, obtain all permits, and all services necessary for successful bidding and project construction. Design services shall include all calculations, drawings, specifications, details, meetings, etc. required for a complete, accurate, biddable set of documents fully coordinated between all disciplines.

The Consultant is to provide Basic and Special Services which include, but are not limited to the following:

a. General Requirements

The Consultant is responsible for verifying all existing conditions, drawings, capacities, etc. on which the design relies or is based. The Consultant shall provide to the College all field investigations, surveys, record searches, and verifications that form the basis of design. The Consultant and design team shall perform final coordination of space features, equipment, adjacencies, and sizes with the College during the program verification phase. All existing conditions shall be documented and indicated on the Consultant's drawings. The Consultant is to provide appropriate presentation materials, for presentations to the College, Howard County, and any other presentation that may be required.

- The Consultant's design shall utilize accepted design practices, construction methods, and available equipment for the design. The use of unproven technologies, equipment or design methods is discouraged. All proposed systems and equipment are subject to the College's approval. Where any proposed design or equipment is questioned, it shall be the Consultant's responsibility to fully satisfy the College's requirements.
- The Consultant shall prepare a Space Tabulation, by room, of net assignable square footage (NASF) and total gross square footage (GSF) for the building, organized by departmental breakdown following the space allocations contained in this document. Indicate programmed net areas and resultant areas along with any difference. If the difference is greater than 5 percent, indicate the reason. Calculation of Gross and Net Areas shall be as per the DGS Procedure Manual for Professional Services. This tabulation shall be updated at each phase. The net assignable square feet in the design of the facility may not exceed the total net assignable square feet specified in the program. The aggregate net assignable square footage of the spaces identified in the program represents the maximum space allocation permitted for this facility. The Consultant must make every attempt to execute a design solution within this limitation. Exceptions to this requirement are allowed only under extreme circumstances and must be approved by Howard Community College.
- Prepare all documentation and obtain approval of all permits and licenses as required by city, county, state, and federal agencies.
- As set forth in the Maryland Department of General Services, Procedure Manual for Professional Services, the following design submissions are required.
  - Site Analysis/Program Verification
  - 100% Schematic Design
  - 100% Design Development
  - 50% Construction Documents
  - 95% Construction Documents
  - 100% Construction Documents
- At all submission phases noted above, the Consultant shall submit full-sized sets and half-sized sets of all drawings and hard copies of all specifications, booklets, studies and reports per HCC's stated needs in contract. In addition, at each submission, all drawings in PDF format and a PDF of all specifications, booklets, studies and reports shall be submitted to the College. In addition to these requirements, see BIM Requirements for additional submission information.
- The total design time shall be approximately 12 months from receipt of notice to proceed until final CD submission. This time is inclusive of time required for the College and State of Maryland reviews. Reviews will occur at the end of each phase.
- The total time for the bidding and award process is anticipated to be 6 months.
- The total time for the renovation of Duncan Hall and all associated utility work is anticipated to be 18 months from the date the Contractor is given notice to proceed until substantial completion.
- Design of security and safety are to be incorporated in the facility. The energy monitoring system and security and safety systems shall be Direct Digital Control (DDC) and ASHRAE BACNet compatible.
- Telecommunication and data communication systems are an integral part of the facility, and the Consultant shall coordinate with the College to ensure all standards and time lines for the project are met, including appropriate interfaces on- and off-campus.
- Prior to final completion, the Consultant shall review record drawings prepared by the Contractors. They shall then incorporate any of the information in the record drawings into their Building Information Model and then

update the PDF files and provide them to the College. During the first twelve months of the Post Construction Stage, extended architectural/engineering services will be required to assist the College to facilitate proper operation of all aspects of the project, especially the more sophisticated building systems. The Consultant shall include/provide at least two full team walk-through inspections at mutually established milestones.

- Provide Commissioning specifications in accordance with ASHRAE Commissioning Guidelines and the Howard County Energy Design Guidelines. The Consultant shall support the College's Commissioning Agent during the construction and commissioning of the project.

b. Code Requirements

- In all instances, the Consultant shall be responsible for developing the specifications and drawings in strict adherence to meet or exceed all code requirements and regulations impacting on the project whether or not it is so defined or listed in the Contract Documents. The Consultant is responsible to meet all local, county, regional, state, and federal codes, regulations, and requirements.
- The Consultant shall prepare all documentation needed and be responsible for obtaining all required permits needed to construct this project. The Consultant will be responsible for filing materials to obtain permits, but the College will assist in filling out applications and providing the College's signatures where required. The College will pay any permit fees. The Consultant shall meet with the Howard County Plans Reviewer and Fire Marshal at the design development phase for a preliminary review and then have follow-up meetings during the Construction Document Phase.
- Handicapped Access: In the preparation of all plans and specifications, the Consultant shall be responsive to the College's requirements for barrier-free design and comply with the latest version of the American with Disabilities Act and all other laws, applicable rules and regulations.
- Energy Consumption: In the preparation of all plans and specifications, the Consultant shall follow design criteria and performance standards that will minimize energy consumption. The Consultant shall use the most stringent requirements of the current versions of the codes and standards adopted by Howard County.
- Atrium Smoke Control: The Consultant is responsible for preparing all documentation needed for modifications to the atrium smoke control system. System modifications will require a comprehensive engineering evaluation including a rational analysis with specialized analytical techniques (fire/smoke modeling, etc.), calculations and accompanying report. The services of a qualified registered design professional with experience in smoke control design and analysis will be retained for the specialized analysis. The analysis will be performed jointly with mechanical design. Work shall conform to the requirements of the codes, laws and ordinances of Howard County, Howard Community College Standards, NFPA 92, insurance underwriter, and other authorities having jurisdiction.

c. Building Systems Requirements

- The building shall feature materials and systems that create an aesthetically pleasing and environmentally comfortable educational facility with quality interiors. All materials shall be durable, low maintenance, and vandal resistant.
- Mechanical System: The Consultant shall update the existing mechanical system so it is energy efficient, will require minimal maintenance, provides for thermal comfort of the occupants with a high level of controllability, and will have the best life-cycle cost.
- Electrical System: The Consultant shall update the electrical distribution system, as necessary, including conduit, conductors, switchgear, subpanel, switches, lighting, and emergency power. Lighting levels shall be in accordance with ASHRAE Standard 90.1.
- Plumbing System: A plumbing system shall be designed on a life-cycle basis and to comply with LEED credits for water use reduction.
- Telecommunications System: The Consultant shall upgrade the distribution in the building for voice, video and data cabling to tie into and be compatible with the existing central distribution system. The design shall include cable management. All cabling is to be shielded in conduit for protection. During the Schematic Design and Design Development phase of the project, the Consultant shall meet with the College's Offices of the Chief

Technology Officer, Office of Facilities Planning & Construction, and information Technology (IT) staff to review and discuss the incorporation of the College's requirements for telecommunications distribution systems into the project design. The College's Information Technology staff shall review the contract documents at each stage of the design.
- The building should be sub-metered for electrical (plug-load, lighting, mechanical), water, and gas (if proposed backup heating systems require gas).

d. 4. Sub-consultants' Design Responsibilities

All sub-consultants shall provide for periodic site inspections which should include a deficiency report with photographs and data as required to document conditions. All sub-consultants shall participate in the LEED process and shall produce required LEED documentation and submittals, and respond to LEED clarification requests, in a timely manner for project submission.

e. Mechanical Engineer

The Mechanical Engineer's design services shall include, but not be limited to:

- The Mechanical Engineer assigned to oversee the compliance with energy conservation guidelines must be a member of the design team at the onset of the project.
- Research of, and compliance with, all applicable building codes.
- Design for upgrading complete HVAC, plumbing, and fire protection systems suitable for the type and occupancy of the building.
- Prepare all required calculations and system analyses for selection and sizing of the systems for the building.
- Participate in all phases of design including site visits, interdisciplinary coordination, and meetings with the College, resulting in a complete set of construction documents, as well as, construction administration.
- The construction documents shall include a complete set of drawings containing floor plans, equipment room(s), enlarged plans and sections, installation and piping/ductwork details, all system piping and control diagrams, piping and duct risers, and equipment schedules.
- Coordinate and apply for any/all utility rebates that the project is eligible for, such as Baltimore Gas and Electric rebates.

f. Electrical Engineer

The Electrical Engineer's design services shall include, but not be limited to:

- Verify that existing incoming building electric power service, incoming services for telecommunications, data, and life safety are adequate for the proposed use of the building. Work shall include the performance of related system calculations and analyses.
- Participate in all phases of design including site visits, interdisciplinary coordination, and meetings with the College, resulting in a complete set of construction documents, as well as, construction administration. Provide design of lighting, emergency, critical, and normal power distribution, fire alarm, telecommunications cabling, and security systems.
- Conform to the guidelines of national, state, county, and local building codes, electrical codes, and energy conservation guidelines, as well as, the project guidelines set forth within.
- Specify products and general methods of installation that shall be used in the construction of the systems defined in this scope of work.
- Coordinate and apply for any/all utility rebates that the project is eligible for, such as Baltimore Gas and Electric rebates.

g. Structural Engineer

The Structural Engineer's design services shall include, but not be limited to:

- Review of the applicable codes and structural systems for the building, specifically the infill of the first floor lecture hall.
- Participate in all phases of design including site visits, interdisciplinary coordination, and meetings with the College, resulting in a complete set of construction documents, as well as, construction administration.
- Prepare calculations and structural drawings.
- Review of shop drawings and other submittals.
- Perform periodic site observations.

h. Acoustical Engineer

The Acoustical Engineer's design services shall include, but not be limited to:

- Design of room shapes and finishes insuring

appropriate reverberation times.
- Review of space adjacencies.
- Specify Sound Transmission Class requirements to maintain privacy.
- Analyze the HVAC systems to maintain low background noise levels.

i. Telecommunications/Audio-Visual Specialist

The Telecom/AV Specialist's design services shall include, but not be limited to:

- Coordinate with HCC and design team to develop an audio-visual systems narrative, including preliminary equipment lists with budget pricing.
- Coordinate with design team to provide details for infrastructure (power, conduit, floor boxes, etc.) requirements.
- Tie in telecommunication/audio-visual/ data communication systems to the existing Campus infrastructure.
- Integrate audio-visual systems in architecture to provide a pleasing appearance with good line of sight and viewing angles.
- Develop a complete and biddable specification based upon the design developed in the audio-visual systems narrative. Include detail drawings, as required.
- Assist in the bidding process to select an appropriate installation vendor.
- Provide construction administration services to support the College during the installation, including conducting Acceptance Testing at project completion.

j. Energy Analyst

The Energy Analyst's services shall include, but not be limited to:

- The Energy Analyst shall be responsible for creating and maintaining the energy model throughout the design process. Working together with the mechanical engineer, the Energy Analyst will perform life cycle cost analysis; document energy conformance; and assess the energy-performance and life-cycle cost impact of proposed designs of the building skin, roofing, and other MEP items. The Energy Analyst can be a separate consultant or be employed by the mechanical engineer.
- The energy analyst will issue a report at the end of each phase.

k. Sustainable Design Consultant

A sustainable design consultant may lead an integrative design process that helps maximize sustainable design outcomes. This individual may be a member of the design team. The College intends to use the LEED rating system to meet Code requirements. The scope of the sustainable design consultant's work shall include, but not be limited to:

- The consultant shall be a LEED AP BD+C with at least five completed LEED projects that earned Silver or above. One of these projects would be rated using LEED v5.
- Register the project with GBCI and oversee tracking of LEED documentation. Maintain LEED scorecard and manage communication between the design team and GBCI.
- Identify and recommend LEED Innovation in Design (ID) and Pilot Credits that the team should pursue.
- If LEED is not pursued, perform the same level of coordination to reach sustainable design requirements in another rating system or using the International Green Building Code.

l. Security Specialist

The scope of the Security Consultant's work shall include, but not be limited to:

- The design and documentation of the buildings access control systems and CCTV systems for both inside and outside the building.
- Coordinate with HCC and design team to develop a complete security narrative, including preliminary equipment lists with budget pricing.
- Coordinate detailed security requirements with HCC security staff and HCC Department of Public Safety.
- Develop complete biddable drawings and specifications coordinated with the rest of the construction documents for the security systems.

m. Cost Estimator

The scope of the Cost Estimator's work shall include, but not be limited to:

- The Cost Estimator shall follow the guidelines in the DGS Procedure Manual for Professional Services, July 2019 (interim revision January 2022) edition, Chapter 1, subsection 5.

n. Interior Designer

The scope of the Interior Designer's work shall include, but not be limited to:

- The Interior Designer may be a member of the Architect's firm provided they have appropriate experience.
- The Interior Designer shall include selection of the interior paint colors, finishes, and materials; wall, floor, and window treatments; architectural signage and graphics (interior and exterior), art work, and accessories. The package shall also provide for the inclusion of all furniture, fixtures, and equipment shown in plan and elevation as necessary to demonstrate that all programmed functions can be accommodated. They shall prepare color boards and make presentations to the College for approval.
- The selected Consultant will provide all furniture layouts and prepare a final list of equipment and furniture requirements during design. These requirements will be presented in two categories: (a) Fixed Equipment - Equipment that will be included in the construction contract; and (b) Movable Equipment – Either new equipment that will be purchased and installed via separate contracts, or existing equipment which will be reused. The consultant will be responsible for selecting the colors and fabrics for all the fixed and loose furniture and equipment. They shall prepare color boards and make presentations to the College for approval.
- The Consultant shall provide a project book containing the product specifications, cut sheets, photos and general installation instructions of furniture and equipment systems being proposed.

o. Fire Protection Specialist

The Fire Protection Consultant's work shall include, but not be limited to:

- The preparation of a comprehensive engineering analysis to support and validate the mechanical design efforts related to the atrium smoke control system.
- Prepare a rational analysis, including a formal report and all supporting documentation, to conform with the IBC, NFPA 92 and the requirements of the AHJ.
- Coordinate with design team to analyze smoke control system and develop recommendations for incorporation into the mechanical design documentation.
- Prepare calculations and utilize specialized analytical techniques, including fire/smoke modeling as needed, to analyze mechanical performance and fire behavior.

5. Sequence of Work

a. Existing Condition Analysis/Program Verification Phase

- The Consultant shall carefully review and verify or modify the program as determined necessary thru program verification meetings with the College. The purpose of this part of this phase is a get any questions, concerns, deficiencies or inconsistencies in the program resolved prior to start of design. The Consultant shall make the agreed upon changes to the program and keep this document updated throughout the project. At the end of the project this shall be submitted to the College with the other Record Documents.
- In this phase, the Consultant shall collect and review all existing documents and studies related to the site and verify locations and adequacy of all utilities.
- The Consultant shall attend meetings as necessary with the College's Office of Facilities & Capital Development and building user groups as part of the preparation of the Program Verification Documents.
- Submission for this phase shall include: (1) Verified/corrected program; (2) Existing conditions survey documents; and (3) Binder with copies of all gathered information.
- The Consultant shall submit to the College twelve (12) copies of all documents and one flash drive or CD as required for review and approval by the College.
- The Consultant shall complete all work in this phase based on the mutually agreed upon design schedule.

b. Schematic Design Phase

The Consultant shall review with the College the space program, concept floor plans, draft phasing plan, schedule, and budget furnished by the College to ascertain the requirements of the Project and shall arrive at a mutual understanding of such requirements with the College. In this phase, the Consultant shall:

- Verify the College's swing space plans to confirm quantity and configurations are appropriate to temporarily house activities diverted from Duncan Hall.

- Review with the College selections of materials, building systems and equipment; and methods of project delivery.
- Review with the College alternative approaches to design and construction of the project.
- Based on the mutually agreed upon program, schedule, and construction budget requirements, the Consultant shall prepare, for approval by the College, Schematic Design Documents consisting of drawings and other documents illustrating the scale and relationship of project components that meet Department of General Services (DGS) requirements.
- At intervals appropriate to the progress of the Schematic Design Phase and mutually agreeable to the College and the Consultant, the Consultant shall provide schematic design studies for the College's review and information. The Consultant shall provide a minimum of three different options for review by the College.
- The Consultant shall attend meetings on a regular basis with the College's Office of Facilities Planning & Construction and building user groups as part of the Schematic Design Phase. Meetings shall be biweekly during this phase.
- Develop a plan for achieving LEED silver rating (or approved equivalent) for this project.
- The Schematic Design Documents submission shall include: (1) schematic design drawings of building floor plans. Drawings shall also include elevations, and building sections, as appropriate; (2) narrative description of all engineering, architectural, civil and specialty systems and design criteria; (3) selection of major building systems and materials to meet design requirements; (4) HVAC life cycle cost analysis reviewing a minimum of four systems per DGS guidelines; and five submissions as contained herein.
- The Consultant shall submit for College's approval and information a preliminary estimate of construction costs based on current area, volume,or other unit costs as part of the Schematic Design Documents. The College and the Consultant shall mutually agree upon an assumed start of construction date and specific cost elements to be included in the project cost estimate. This phase of the project shall not be considered complete until the College and the Consultant agree as to the estimated probable construction costs and such estimate is within available funds.
- The Consultant shall submit to the College twelve copies of all drawings and Schematic Design booklet and one flash drive or CD required for review and approval by the College and by the Maryland State agencies, or digital delivery as specified by HCC in the consultant's contract.
- The Consultant shall complete all work in the Schematic Design Phase based on the mutually agreed upon design schedule. The Consultant shall work with the College in the review of the Schematic Design documents.

c. Design Development Phase

- Based on the approved Schematic Design Documents and any adjustments approved by the College to the design, schedule or construction budget, the Consultant shall prepare Design Development Documents consisting of drawings, outline specifications, and other documents to further refine and describe the size and character of the project as to the architectural/engineering, structural, mechanical, and electrical work systems, materials, and such other elements as may be appropriate, including furniture and equipment layouts of each space within the proposed building.
- The Consultant shall attend progress meetings on a biweekly basis with the representatives from HCC and user building groups to review the Design Development progress and documents.
- At intervals appropriate to the progress of the Design Development Phase and mutually agreeable to the College and the Consultant, the Consultant shall provide design development drawings and specifications for the College's review and information.
- At the end of the Design Development Phase, all design decisions shall be reviewed with and agreed to by the College.
- The Consultant shall further refine project cost estimates and shall keep the College informed of any adjustments in the estimated project construction costs. If the Consultant determines that there will be an increase in the estimated project construction costs, the Consultant shall notify the College in writing, specifying the reason for the increase, and shall halt work until the College reviews the estimate and the College authorizes work to proceed. If the project should be delayed for this reason, the performance date under this phase shall be extended by the commensurate

number of days of delay. This phase of the project shall not be considered complete until the College and Consultant agree as to the estimated probable construction costs and such estimate is within available funds.
- The Consultant shall structure the design documents with sufficient (10%+) alternates in order to avoid cost delays associated with re-bidding.
- The Consultant shall submit to the College twelve copies of all drawings and specifications required for review and approval by the College, and by the Maryland State agencies or digital delivery as specified by HCC in the consultant's contract.
- The Consultant shall complete all work in the Design Development Phase in accordance with the agreed upon design schedule. The Consultant shall work with the College in the review of the Design Development documents.

d. Construction Documents Phase

- Based on the approved Design Development Documents and any adjustments approved by the College to the design, schedule or construction budget, the Consultant shall prepare Construction Documents consisting of drawings, specifications, and other documents setting forth in detail the requirements for the construction, completion and acceptance of the project. The drawings shall cover the complete building, all utilities, and all built-in equipment in the building or requiring actual system's connection to the building. The construction documents shall include bidding information, the general conditions, and specifications.
- At intervals appropriate to the progress of the Construction Documents Phase and mutually agreeable to the College and the Consultant, but not less than 50% and 95% completion, the Consultant shall provide construction documents for the College review and information.
- The Consultant shall attend meetings as necessary with the College's Office of Facilities & Capital Development as part of the preparation of the Construction Documents. The Consultant shall develop and submit finish schedules and color schemes to the College for its approval.
- The Consultant shall be responsible for coordinating all construction documents that shall be prepared in accordance with best professional practice. Drawings and specifications shall determine quality of materials and workmanship, finishes, and shall contain such sufficient information as to enable the College and contractors to make accurate estimates of quantities of materials as a basis for bids, as well as construction and installation.
- The Consultant must specify by name several (at least three) materials or devices of approximate equality wherever possible, unless a sole source product is the only available product, or by performance specification, or by purchase description of a single item or approved equal.
- The Consultant shall provide cost estimates at 50% and 95% Construction Documents and shall further refine project costs and keep the College informed of any adjustments in the estimated project construction costs.
- The Consultant shall structure the bid package with sufficient (10%+) alternates in order to avoid cost delays associated with re-bidding.
- This phase of the project shall not be considered complete until the Consultant and the College agree as to the estimated probable construction costs and such estimate is within available funds.
- The Consultant shall submit to the College twelve copies of all drawings and specifications and one flash drive or CD required for review and approval by the College and the Maryland State agencies or digital delivery as specified by HCC in the consultant's contract.
- The Consultant shall perform all of the work required in the Construction Documents Phase after the College approves the Design Development documents. The Consultant shall submit all required drawings and specifications necessary for all permit reviews.
- The Consultant shall assist the College in connection with the College's responsibility for filing documents required for the approval of governmental authorities having jurisdiction over the Project. Should reviews by the College, Maryland State agencies, local, county, or regional agencies require changes to the drawings and specifications, at no additional cost to the College, the Consultant shall provide the necessary revisions or re-drawings to the Construction Documents in order that the necessary approvals and permits may be obtained.
- Complete documentation for all LEED design credits and submit to USGBC. Construction Documents shall not be deemed to be

complete unless this is done.

- Following the College's acceptance of the Construction Documents Phase drawings, the Consultant shall provide the College with the following in accordance with the BIM Requirements as indicated in part K of this chapter. In addition to that provide:
- One reproducible copy of all drawings.
- Provide one PDF of each sheet in the drawing set and one PDF of the complete project manual.
- Electronic file of specifications (on most current version of Microsoft Word and in PDF format)

e. Bidding and Negotiation Phase

- The Consultant, following the College's approval of the Construction documents, shall assist the College in the solicitation of competitive bids from construction contractors.
- The Consultant shall respond to all bidder's questions and prepare addenda clarifying any issues raised.
- The Consultant shall attend the pre-bid meeting and contractor interviews. The Consultant shall act as an evaluator of the technical proposals and at the contractor interviews.
- Should the low bid exceed the estimated probable construction cost the Consultant, at no additional cost to the College, shall provide the necessary revisions to the bid documents in order that the project may be rebid within the funds available. The College and the Consultant shall mutually agree on the timeframe to meet this redesign requirement.
- The Consultant shall provide the College with a reproducible copy of any and all Construction Contract Documents.

f. Construction Administration Phase

The Consultant shall provide administration of the Contracts for construction in cooperation with the College as set forth below:

- During the project construction phase, the Consultant shall attend progress, preconstruction, LEED and commissioning meetings with the contractors, subcontractors, and the College to discuss such matters as procedures, progress, problems, and scheduling. The Consultant shall review and approve all shop drawings, product data, material samples, schedules, substitutions, and other submittals prior to submission to the College for final approval.
- The Consultant is responsible for reviewing all submittals in a quick and timely manner and for ensuring that all materials conform to the Construction Documents. If a proposed substitution substantially changes the design intent, the Consultant shall present the change to the College and obtain approval before releasing the submittal for order or fabrication.
- The Consultant shall conduct project site observations to determine that the work of the contractor and its subcontractors is being performed in accordance with the requirements of the construction documents. Project site observations shall provide information on the general quality and progress of the project and to ensure that the general contractor is keeping adequate and accurate records of the construction. The Consultant shall guard the College against defects and deficiencies in the work. Subject to the review by the College, the Consultant shall reject work that does not conform to the requirements of the Construction Documents.
- The Consultant shall review and respond to requests for information or requests for interpretations of the meaning and intent of the project drawings and specifications, and assist in the resolution of questions, which may arise and prepare the response to such requests for information and interpretations.
- The Consultant shall coordinate with the College to obtain and review operation and maintenance manuals for all building systems required by the Contract Documents prior to final payment to the Contractors.
- The Consultant shall make site visit(s) to resolve conflicts due to design deficiencies in a prompt manner.
- The Consultant shall prepare, issue, and submit color schedules and color schemes to the College for its approval.
- The Consultant shall review and comment upon all tests, inspections, and laboratory reports prior to submission to the College.
- The Consultant shall review and codify the accuracy of each request submitted by the contractor for a progress payment. Recommendation for approval of the progress payments shall be based on site observation and the Consultant's professional judgment and supported by such data as the College may reasonably require.
- The Consultant shall review and recommend approval or disapproval of change orders prior

to submission of change orders to the College for final action and processing.

- In the event that change orders are executed as a result of an architectural/engineering omission or design error, the Consultant shall provide, at its sole expense, any related services which shall include site visitations necessary to implement the change order.
- The Consultant shall render written decisions within a reasonable time on all claims, disputes or other matters in question between the College and contractors relating to the execution or progress of the work as provided in the Contract Documents. The Consultant shall conduct inspections to determine the date or dates of Substantial Completions and the date of final completion. The Consultant shall forward to the College warranties and similar submittals required by the Contract Documents. The Consultant shall issue a final Project Certificate for Payment upon compliance with the requirements of the Contract Documents.
- The Consultant shall check monthly during construction that the Contractor is maintaining and keeping up to date, the record drawing set of documents.
- The Consultant shall review monthly the Contractor's documentation of all LEED (or approved equivalent rating system) construction credits to ensure that the documentation is being tracked.

g. Post Construction Phase

The Consultant shall provide the College with Post Construction Phase Services. Such services shall include but not be limited to:

- Review of record drawings submitted by the Contractor.
- From record drawings received from the contractor, update Consultant's BIM files and submit to the College record drawings in editable form and in PDF format along with one set of prints.
- Work with College and Commissioning agent to complete commissioning and correct any deficiencies noted by the Commissioning Authority or the College.
- Monitoring of guarantees and corrections.
- Facilitation of proper operation of systems.
- At 11 months from substantial completion, attend a warranty walk-through, with the College and contractor and issue a report on any issues or deficiencies discovered.

h. Information Furnished to the Consultant

- The Consultant shall collect all required information from Howard Community College, applicable utility owners and operators, and others as may be applicable. Contracting with required support services will be the responsibility of the Consultant.
- Master Plan – The College will provide the Consultant with a copy of the most recent master plan or update.
- Design Standards – The College will provide copies of their design standards to the Consultant.
- Bench Marks – The Consultant, with the approval of Howard Community College, shall establish sufficient bench marks for the development of the contract documents.
- Outages – No outage of services will be allowed during the design of the project by the Consultant, unless prior written notice (minimum of ten days) is received by the College.

i. Code Compliance

- All design work shall comply with accepted architectural and engineering practices and follow all applicable local, state and federal codes, including the latest versions of the building (IBC), life safety, mechanical, plumbing, and electrical codes as adopted by Howard County and the State of Maryland. As a minimum, but not limited to, the following codes and legislations shall be followed:

j. NASF/GSF

- The net assignable square feet (NASF) of the various spaces, and the total net area of these spaces, shall closely approximate the square footage specified in this program. The total gross square feet (GSF) identified in this program represents the maximum area that the budget will permit for this facility and shall not be exceeded, except as required by extraordinary circumstances, and only as approved by Howard Community College.

k. BIM Requirements

A coordinated Building Information Model (BIM) will be developed by the A/E team. The BIM will include architectural, structural, mechanical, plumbing, and electrical systems. The A/E team will complete AIA Document E202 – Building Information Modeling Protocol Exhibit, outlining the Level of Development (LOD) to be achieved at each project phase for each model element. LOD 300 is required for all architectural, structural, mechanical, plumbing, and electrical systems at the completion of the Construction Documents. The A/E team will perform clash detection at the DD and CD phase demonstrating a coordinated model. The model will be created in any 3D Object oriented BIM authoring software that is compatible with IFC (Industry Foundation Classes) format and Navisworks Manage software. All authoring software must be reviewed and approved by the owner. BIM Submission Requirements:

- Each discipline's model in the native file format
- A combined Model with all disciplines
- Each disciplines model in IFC format.
- Electronic files in a format editable by the College, including all external references and linked files required to ensure proper on-screen representation of graphics.
- PDF – Each sheet as a separate, scalable, PDF file

APPENDIX A

OFFICE SPACE STANDARDS

OFFICE TYPE	RECOMMENDED NASF
Cabinet Secretaries or Agency Executive Directors	300
Judges (200 NSF for office, 75 NSF for toilet and closet)	275
Deputy Secretaries or Agency Deputy Directors	250
Assistant Secretaries; Commissioners (full-time); Division Chiefs; Directors	200
Branch Heads; Assistant Division Chiefs; Assistant Directors	175
Attorneys; Doctors; Field Office Supervisors	150
Professionals (Supervisory, Private Office)	126
(Supervisory, Open Office)	120
Professionals (Non-supervisory, Private Office)	108
(Non-Supervisory, Open Office)	90
Secretaries; Drafting Stations (CAD) (Conventional Office)	90
(Open Office)	81
Word Processor and Clerical Stations (Conventional Office)	60
(Open Office)	56
Conference Rooms (Per Person)	22
Reception/Waiting Rooms (1-15 Persons, Per Person)	15
(over 15 Persons, Per Person)	10
COURTS	
Large Courtroom	2,000
Typical Courtroom	1,700
District Court Lobby (Per Person)	5
Detention Cells (Per Occupant)	15
Sally port	500

NOTES:

1. Space standards indicated above include normal furniture and equipment. Additional space may be allowed for unusual furniture and equipment requirements if justified.
2. Enclosed offices should be a minimum of 100 NASF regardless of classification of occupant.
3. The above standards do not apply to academic personnel in institutions of higher education. Refer to higher education space guidelines.
4. Allow an additional 7 NASF per file cabinet in open office areas.

APPENDIX B

Building Efficiency Factors

Various Building Types

Gross/Net Efficiency Rate & Net/Gross (%) Efficiency

Building Type	Efficiency Factor Range	Mid-Point
Office - non-University	1.35 (75%) - 1.50 (67%)	1.42 (70%)
Administration/Office - University	1.67 (60%) - 1.82 (55%)	1.74 (57%)
Library	1.52 (66%) - 1.67 (60%)	1.60 (62%)
Classroom	1.65 (61%) - 1.85 (54%)	1.75 (57%)
Science (Undergraduate)	1.65 (61%) - 1.85 (54%)	1.75 (57%)
Science (Research)	1.72 (58%) - 1.92 (52%)	1.82 (55%)
Medical (Teaching)	1.75 (57%) - 1.95 (51%)	1.85 (54%)
Dormitory	1.33 (75%) - 1.54 (65%)	1.43 (70%)
Dining Hall, Kitchen	1.40 (71%) - 1.60 (62%)	1.50 (67%)
Student Union	1.60 (62%) - 1.75 (57%)	1.67 (60%)
Performing Arts, Fine Arts	1.75 (57%) - 1.95 (51%)	1.85 (54%)
Theater, Concert Hall, Auditorium	1.45 (69%) - 1.60 (62%)	1.52 (66%)
Gymnasium	1.40 (71%) - 1.50 (67%)	1.45 (69%)
Patient Health Facility	1.70 (59%) - 1.85 (54%)	1.75 (57%)
Armory	1.25 (80%) - 1.35 (75%)	1.30 (77%)
District Court, MSC	1.70 (59%) - 1.85 (54%)	1.75 (57%)
State Police Barrack	1.50 (67%) - 1.60 (62%)	1.55 (64%)
Detention Facility	1.70 (59%) - 1.85 (54%)	1.75 (57%)
Maintenance Shop	1.25 (80%) - 1.35 (75%)	1.30 (77%)
Garage (Vehicle Support)	1.15 (85%) - 1.25 (80%)	1.20 (83%)
Park Comfort Sta, Shower Bldg	1.30 (77%) - 1.40 (71%)	1.35 (75%)
Visitor Center, Concession	1.40 (71%) - 1.50 (67%)	1.45 (69%)

APPENDIX C

Abbreviations Used In This Document

A/E	Architect/Engineer
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.
CAD	Computer Aided Design
COMAR	Code of Maryland Regulations
DBM	Department of Budget and Management
DGS	Department of General Services
EDP	Electronic Data Processing
FEMA	Federal Emergency Management Agency
GSF	Gross Square Feet
HEGIS	Higher Education General Information Survey
HVAC	Heating, Ventilation Air-Conditioning
IBC	International Building Code
MOSHA	Maryland Occupational Safety & Health Administration
MSC	Maryland State Courts
NASF	Net Assignable Square Feet
NSF	Net Square Feet
NCAA	National Collegiate Athletic Association
NFPA	National Fire Protection Association
PCB	Polychlorinated Biphenyl
SHA	State Highway Administration
USDA	United States Department of Agriculture
USGS	United States Geological Survey

APPENDIX D

New Building (Renovation) Project Checklist

Environmental Assessment Form

Project Consistency Report

Project Review Checklist

1. NEW BUILDING PROJECT CHECKLIST

Applied for Duncan Hall Renovation

The following checklist shall be completed for projects involving construction of a new structure and includes an addition, extension or replacement of an existing structure. Because a new building project may also require renovation and utility extension work and generally involves site improvements, the program-writer should also complete either or both of these checklists if they are appropriate to the project under consideration.

	Yes	No	N/A
a. Architectural style preferences (If yes, explain on separate sheet.)			x
b. Work schedules or phases — Swing Space needs and sequences described.	x		
c. Coordination with master development plan — Refer to Howard Community College Facilities Master Plan 2025, issued February 2025	x		
d. Funding constraints (If yes, what are they?)			x
e. Site selected			x
f. Preferred vistas (If yes, describe.)			x
g. Excavation, clearing, razing constraints (If yes, explain.)			x
h. Other construction in area			x
i. Utilities on site — Project-specific need for additional electrical infrastructure	x		
j. Special design features (Describe on separate sheet.)			x
k. Space needs: present and future			
Entire facility	x		
Functional areas	x		
Rooms	x		
l. Space needs: net sq. footage			
Entire facility	x		
Functional areas	x		
Rooms	x		
m. Special dimension and space requirements	x		
n. Nature of work and services described	x		
o. Functional and spatial layouts	x		
p. Workload projections — College enrollment projections	x		
q. Special working hours or shifts — College operating hours described.	x		
r. Work flow described — Implementation described.	x		
s. Clerical-professional ratio			x
t. Client - staff ratio — HCC student:faculty ratio preferences described	x		
u. Client - staff traffic preferences			x
v. Office layout preferences	x		
w. Special room/area features	x		
x. Climate control considerations	x		
y. Furniture and equipment needs	x		
z. Special lighting needs	x		
aa. Information technology needs (voice, video, data, & wireless)	x		
bb. Special access/egress requirements	x		

NEW BUILDING PROJECTS CHECKLIST (continued)

Applied for Duncan Hall Renovation

	Yes	No	N/A
cc. Preferred floor, wall or ceiling material	x		
dd. Security considerations			
Electrically controlled doors	x		
TV-monitoring system	x		
Secured utilities	x		
Secured windows			x
Motion Detectors	x		
Door and window alarm	x		
Alarm links to offsite locations			x
ee. Considerations to be given to:			
Equipment storage and maintenance	x		
Heat and sound insulation	x		
Linen and janitor closets	x		
Utility area	x		
Physical plant needs	x		
Trash removal	x		
Delivery dock			x
Escalator, elevator, stairways	x		
Fire protection and sprinklers	x		
Food preparation and delivery			x
Dining facilities			x
Client and staff transportation systems			x
Signage and entranceway needs	x		
Accommodations for youth, aged, and handicapped	x		
Restroom and shower facilities	x		
Special water supply or utility needs			x
Recreation/play areas			x

NOTE: For each item checked yes, ensure an explanatory narrative is included in the body of the program.

ENVIRONMENTAL ASSESSMENT FORM (EAF)

This form is to assist the reviewers in determining whether a proposed action could cause significant natural and socio-Economic environmental effects and thus require an Environmental Effects Report.

DEPARTMENT ________________ DIVISION ________________

OTHER ________________ PROJECT TITLE ________________

PREDICTED DATES: COMMENCEMENT Spring 2030 COMPLETION Spring 2032

PROJECTED COST $62,090,485 escalated from 2026 to midpoint

I BACKGROUND INFORMATION

1. Give a brief description of the proposed action/project(s)

   Comprehensive renovation and building systems replacement of an existing 105,035 GSF , three-story classroom and office building.

2. Describe the geographical area(s) which will be affected by the action/project(s). Specifically locate the project by using the Maryland Coordinate Grid System, include distinguishing natural and man-made features and a brief description of the present use of the area(s). Include a suitable location map (sketch map or copy of U.S. Geological Survey map, etc.).

   Site disruption related to this renovation will be limited to previously-developed areas of the Howard Community College Campus.

II ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL EFFECTS

The following questions should be answered by placing a check in the appropriate column(s). If desirable, the “comments attached” column can be checked by itself or in combination with an answer of “yes” or “no” to provide additional information or to overcome an affirmative presumption.

In answering the questions, the significant beneficial and adverse, short and long term, effects of the propose action, on-site and off-site, during construction and operation should be considered.

All questions should be answered as if the agency is subject to the same requirements as a private person requesting a license or permit from the State or Federal Government.

A. LAND USE CONSIDERATIONS	Yes	No	Comments Attached
1. Will the action be within the 100 year flood plain?		x	
2. Will the action require a permit for construction or alteration within the 50 flood plain?			
3. Will the action require a permit for dredging, filling, draining or alteration of a wetland?			
4. Will the action require a permit for the facilities for solid waste disposal including dredge and excavation spoil?			
5. Will the action occur on slopes exceeding 50%?			
6. Will the action require a grading plan or a sediment control permit?			
7. Will the action require a mining permit for deep or surface mining?			
8. Will the action require a permit for drilling a gas or oil well?			
9. Will the action require a permit for airport Construction?			
10. Will the action require a permit for the crossing of the Potomac River by conduits, cables or other like devices?			
11. Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic river or wild land?			
12. Will the action affect the use of any natural or man-made features that are unique to the county, state or nation?			
13. Will the action affect the use of an archaeological or historical site or structure?			

B. WATER USE CONSIDERATIONS	Yes	No	Comments Attached
14. Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?		x	

	Yes	No	Comments Attached
15. Will the action require the construction, alteration or removal of a dam, reservoir or waterway obstruction?		x	
16. Will the action change the overland flow of storm water or reduce the absorption capacity of the ground?			
17. Will the action require a permit for the drilling of a water well?			
18. Will the action require a permit for water appropriation?			
19. Will the action require a permit for the construction and operation of facilities for treatment or distribution of water?			
20. Will the project require a permit for the construction and operation of facilities for sewage treatment and/or land disposal of liquid waste derivatives?			
21. Will the action result in any discharge into surface or sub-surface water?			
22. If so, will the discharge affect ambient water quality parameters and/or require a discharge permit?			

C. AIR USE CONSIDERATIONS

	Yes	No	Comments Attached
23. Will the action result in any discharge into the air?		x	
24. If so, will the discharge affect ambient air quality parameters or produce a disagreeable odor?			
25. Will the action generate additional noise which differs in character or level from present conditions?			
26. Will the action preclude future use of related air space?			
27. Will the action generate any radiological, electrical, magnetic, or light influences?			

D. PLANTS AND ANIMALS

	Yes	No	Comments Attached
28. Will the action cause the disturbance, reduction or loss of any rare, unique or valuable plant or animal?		x	
29. Will the action result in the significant reduction or loss of any fish or wildlife habitats?			
30. Will the action require a permit for the use of pesticides, herbicides or other biological, chemical or radiological control agents?			

E. SOCIO-ECONOMIC

	Yes	No	Comments Attached
31. Will the action result in a preemption or division of properties or impair their economic use?		x	
32. Will the action cause relocation of activities, structures or result in a change in the population density or distribution?			
33. Will the action alter land values?			
34. Will the action affect traffic flow and volume?			
35. Will the action affect the production, extraction, harvest or potential use of a scarce or economically important resource?			
36. Will the action require a license to construct a sawmill or other plant for the manufacture of forest products?			
37. Is the action in accord with federal, state, regional and local comprehensive or functional plans – including zoning?	x		
38. Will the action affect the employment opportunities for persons in the area?		x	
39. Will the action affect the ability of the area to attract new sources of tax revenue?			
40. Will the action discourage present sources of tax revenue from remaining in the area, or affirmatively encourage them to relocate elsewhere?			
41. Will the action affect the ability of the area to attract tourism?			

F. OTHER CONSIDERATIONS

	Yes	No	Comments Attached
42. Could the action endanger the public health, safety or welfare?		x	
43. Could the action be eliminated without deleterious effects to the public health, safety, welfare or the natural environment?		x	A
44. Will the action be of statewide significance?		x	
45. Are there any other plans or actions (federal, state, county or private) that, in conjunction with the subject action, could result in a cumulative or synergistic impact on the public health, safety, welfare or environment?	x		B
46. Will the action require additional power generation or transmission capacity?		x	C

G. CONCLUSION

	Yes	No	Comments Attached
47. This agency will develop a complete environmental effects report on the proposed action.		x	

A. Prolonged delay of renovation could cause the building to fall behind in ADA and code compliance.
B. The proposed renovation is intended to comply with the Maryland Climate Solutions Now Act. The renovation is also intended to prompt greater efficiency of space use on the HCC campus. The space use efficiency improvement allows HCC to accommodate academic initiatives without building or acquiring new facilities.
C. Page 105 of report: The existing BGE services for the campus and the existing 13.2 kV loop 1 will not have the capacity to accommodate all electric power for Duncan Hall. We recommend replacing the system, including the pad mounted transformer and 3200A switchgear. We also recommend providing a dedicated BGE 15 KV service from Little Patuxent Parkway to a new 2500 KVA pad mounted transformer and new 3200A switchgear fed separately from a new BGE feeder to accommodate Duncan Hall.

PROJECT CONSISTENCY REPORT
(File with Department of Planning)

This review is undertaken by the State of Maryland pursuant to § 5-7A-02 of the State Finance and Procurement Article. Projects or actions are evaluated for consistency with the State's Economic Growth, Resource Protection, and Planning Policy.

Project Title: Duncan Hall Renovation

Project Location: Howard Community College, 10901 Little Patuxent Parkway, Columbia, MD 21044

Howard County, Southeast of intersection of Little Patuxent Parkway and Harpers Farm Road

Project Description: Comprehensive renovation of a three-story, 105,035 GSF/61,820 NSF classroom and office building with a partial basement. Building construction is concrete masonry unit cavity wall over steel structure. Existing fossil-fuel heating equipment will be replaced with electric equipment.

Cost Estimate Information: Construction cost below includes construction contingency, inspection and testing, and design fees.

Approximate Funding Share

LOCAL	STATE	FEDERAL	TOTAL
$34,833,813	$34,833,813		

Determination X Consistent

_ Inconsistent with extraordinary circumstances

Brief description of extraordinary circumstances:

____

____

Sponsor Agency: **Howard Community College** Date: **February 27, 2026**

Sponsor Agency Contact: **Ms. Michele Bilello** Phone: **(443) 518-4667**

Return to: State Clearinghouse
Department of Planning
301 West Preston Street
Baltimore, Maryland 21201-2365
(410) 767-4490; Fax (410) 767-4480

PROJECT REVIEW CHECKLIST

(For agency internal use only. Record determination on Project Consistency Report.)

Project Title: Duncan Hall Renovation

Project Location: Howard Community College, 10901 Little Patuxent Parkway, Columbia, MD 21044 -

Howard County, Southeast of intersection of Little Patuxent Parkway and Harpers Farm Road

Project Description: Comprehensive renovation of a three-story, 105,035 GSF/61,820 NSF classroom and office building with a partial basement. Building construction is concrete masonry unit cavity wall over steel structure. Existing fossil-fuel heating equipment will be replaced with electric equipment.

Cost Estimate Information: Construction cost below includes construction contingency, inspection and testing, and design fees.

STATE	LOCAL	FEDERAL	OTHER
$34,833,813	$34,833,813	$	$

TIER I

Yes	No	
	X	1. Does the project add capacity to an existing facility or provide new capacity for an area not currently served by the facility?
	X	2. Does the project facilitate changes in the existing pattern of growth?

If the answer to either question is "yes," proceed to Tier 2.

TIER 2

Yes	No	
		1. Is the project consistent with the local comprehensive plan?
		2. Does the project support development in a suitable area, a designated development area, or a redevelopment area?
		3. Can the project be designed to prevent adverse impacts to sensitive areas?
		4. If in a rural area, does the project promote compact growth in existing population centers?
		5. Does the project provide opportunities to conserve resources?
		6. Does the project promote economic growth and development in accord with the other elements of the State's Growth Policy?

Explain "no" answer on reverse. If determination is that project is "inconsistent," proceed to Tier 3.

TIER 3

Yes	No	
		1. Do extraordinary circumstances exist which make the project or action necessary to construct despite a finding of inconsistency in Tier 2? If so, document.
		2. Is there no reasonably feasible alternative to the project? If so, document.

Determination: __ **Consistent** __ **Inconsistent with extraordinary circumstances**

Sponsor Agency Contact Ms. Michele Bilello Phone: (443) 518-4667