Farmingdale State College

State University of New York

Facilities Master Plan Update

Phase IV - Concept Alternatives

Phase V - Final Recommendations

October 2024

JMZ architects | planners

Farmingdale State College

Facilities Master Plan Update

Phase IV - Concept Alternatives

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October 2024

2350 Broadhollow Road

Farmingdale, NY 11735

The following individuals served on the Steering Committee:

Dr. Robert Prezant.....President
Dr. John Nader.....Former President
Dr. Laura Joseph.....Senior Vice President, Provost
Greg O'Connor.....Executive Vice President, Chief Financial Officer
Dorothy Hughes.....Asst. Vice President for Administration and Finance
Timothy McDermott.....Director of Capital Projects and Construction
Mark Orlich.....Director of Facilities Operations

State University Construction Fund
353 Broadway
Albany, New York 12246
(518) 320-1774

Evan Moon, Capital Program Manager

Prepared by:

JMZ Architects and Planners, P.C.
190 Glen Street - P.O. Box 725
Glens Falls, New York 12801
(518) 793-0786
Jason Henault, AIA, Principal
Beth Devine, Planner

SETTY & Associates
149 W 36th Street
New York, New York 10018
(646) 253-9000

Danny Kang, Associate Technical Director - Mechanical

NV5
32 Old Slip, Suite 401
New York, New York 10005
(718) 509-4142

Mark Grassi, Vice President

VHB
100 Motor Parkway, Suite 350
Hauppauge, New York 11788
(631) 787-3489

Ankita Rathi, AICP, ENV SP, Transportation Planning Manager

Wendel
100 Motor Parkway, Suite 410
Hauppauge, New York 11788
(631) 234-1792

Dan Audette, PE, CEM

R.L. Young, LLC dba Trophy Point
4588 South Park Avenue
Blasdell, New York 14219
(716) 823-0006

Rich Chudzik, President

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Concept Alternatives

Introduction

The planning team worked with the State University Construction Fund (SUCF) and Farmingdale State College to develop master plan concepts based on the results of the building condition assessments, programming interviews, space allocation study, and instructional space utilization study. Working with the Steering Committee, the planning team established master plan goals to help guide concept development and tie master plan recommendations to the strategic priorities of the College.

Large capital projects already underway were integrated into the plan and can be found starting on the following page. The tables for each project show the pre and post renovation net assignable square feet (NASF) within each building divided into categories defined by the Facilities Inventory and Classification Manual (FICM).

Renovation Projects

- Roosevelt Hall: Full renovation to provide updated space for the Small Business Development Center (SBDC), Auxiliary Services Corporation (ASC), University in the High School (UHS), and Institute for Learning in Retirement (ILR). The renovation will include additional classrooms, and updated assembly space.
- University Police: Partial renovation of the current facility as well as construction of a garage/storage building.
- Sinclair Hall: Full renovation to consolidate Criminal Justice and provide additional instructional space.
- Campus Commons: Full renovation to consolidate administrative functions close to the main administration building (Horton Hall).
- Laffin Hall: Partial renovation (first floor) to serve as a hub for welcoming students.
- Service Building: Partial renovation to consolidate facility offices and enable the removal of the Capital Projects and Construction Trailer.
- Thompson Hall: Full renovation to address deferred maintenance, improve accessibility, and provide updated space for Psychology, Horticulture, and Anthropology and Sociology.
- Greenhouse: Full renovation of the headhouse and new greenhouse facilities.

New Construction

- Computer Sciences Center: Construction of a three-story 51,912 gross square feet (GSF) building with a partial basement to create a home for Computer Systems, Computer Security, and Science, Technology, and Society.

Site Improvements

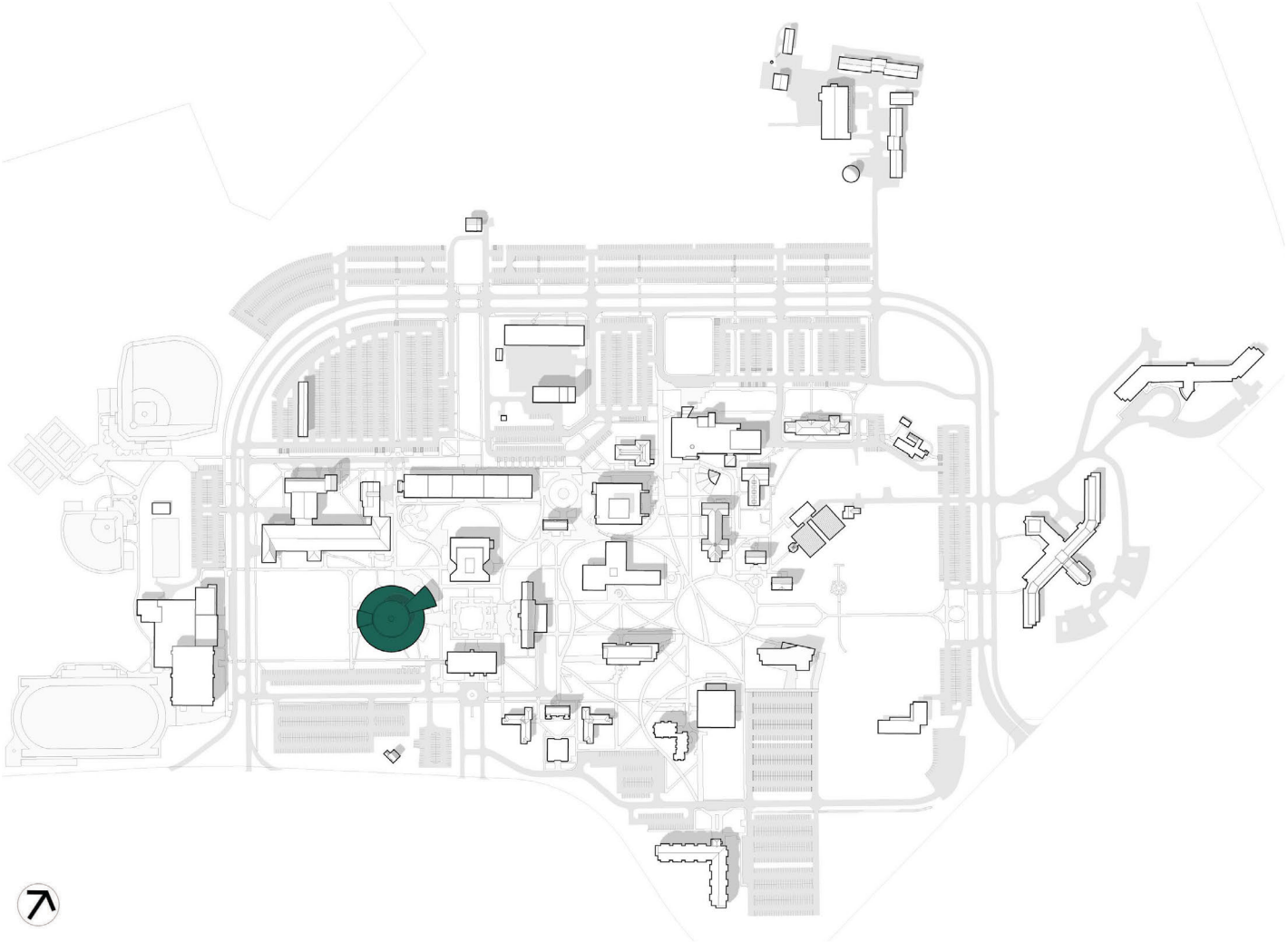
- Site Infrastructure: Improve accessibility and create additional outdoor gathering spaces around Lupton Hall, Hale Hall, Greenley Library, Knapp Hall, and Horton Hall.
- Steam Distribution: Upgrade steam distribution and associated equipment in 15 campus buildings.

Master Plan Goals

The master plan goals used to develop the concept alternatives were based on the strategic priorities of the College. These goals were used to guide decision-making, prioritize initiatives, and ensure that the campus evolves in a way that supports the academic mission, enhances the student experience, and fosters sustainability. The eight goals devised by the planning team are:

- ***Enhance*** the learning environment for traditional, hybrid, and online courses.
- Design facilities that are ***welcoming*** to a diverse group of students.
- Identify opportunities to ***engage*** students in and out of the classroom.
- Create spaces that ***support*** the professional development of faculty and staff.
- ***Integrate*** new and emerging technologies into the campus environment.
- ***Promote*** the use of renewable energy and sustainable practices.
- Continue to ***expand*** partnerships and programming with community organizations.
- ***Explore*** opportunities to utilize space for civic and entrepreneurial pursuits.

Roosevelt Hall Renovations



Space Type	Existing	New
Classrooms	-	4,652
Class Labs	1,152	-
Open Labs	-	-
Research	-	-
Office Space	5,877	7,296
Study Space	-	-
Special Use	-	11,705
General Use	31,384	9,268
Support Space	-	-
Health Care	-	-
Residential	-	-
Unclassified	10,904	-

Figure 1 - Pre and Post Renovation NASF by FICM

Proposed Moves

Small Business Development Center (SBDC)

Campus Commons to Roosevelt Hall

Auxiliary Services Corporation (ASC)

Laffin Hall to Roosevelt Hall

University in the High School (UHS)

Institute for Learning in Retirement (ILR)

Thompson Hall to Roosevelt Hall

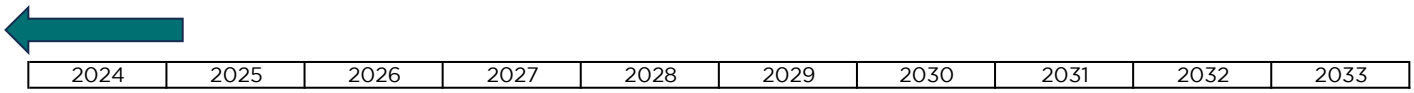
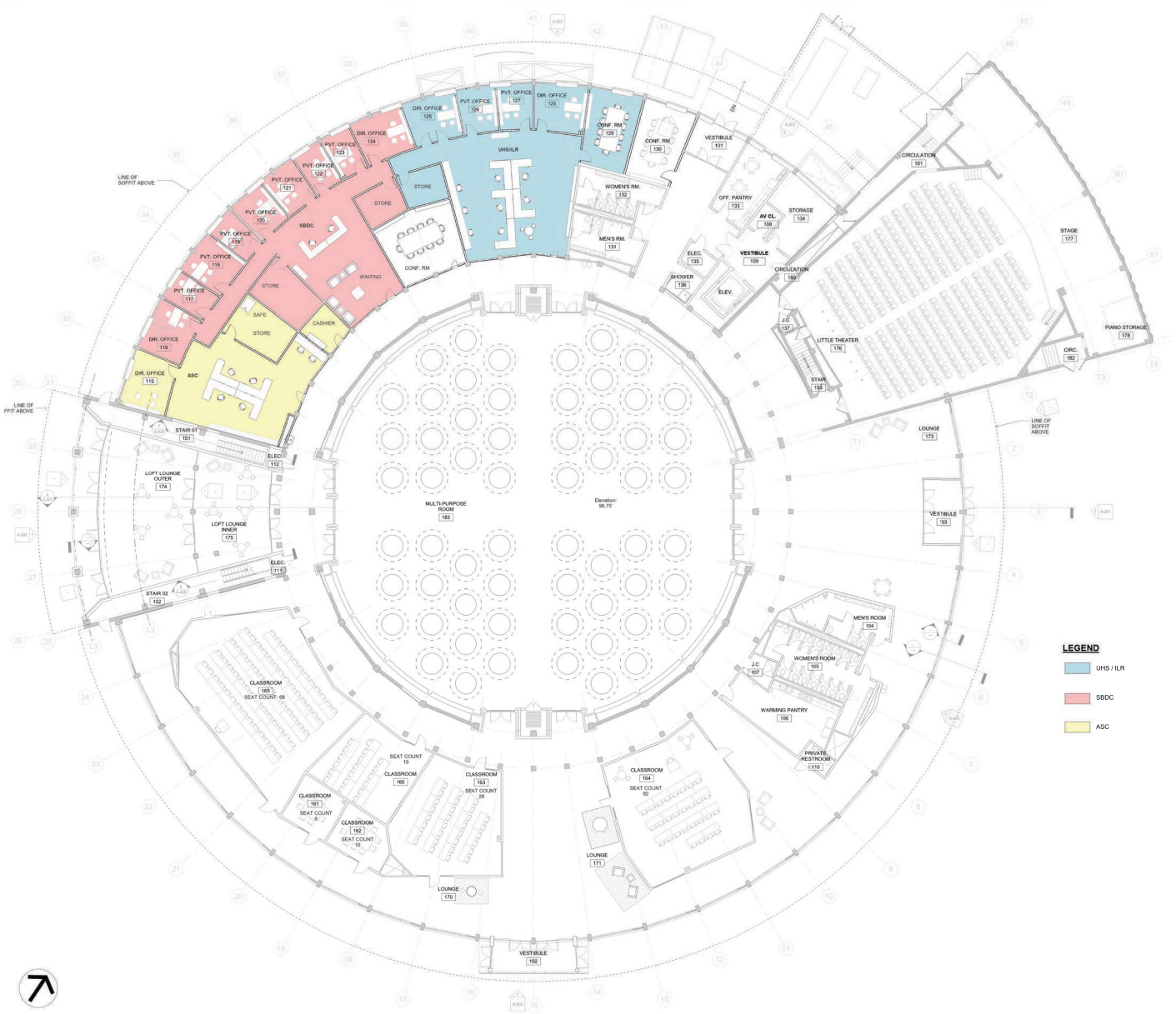


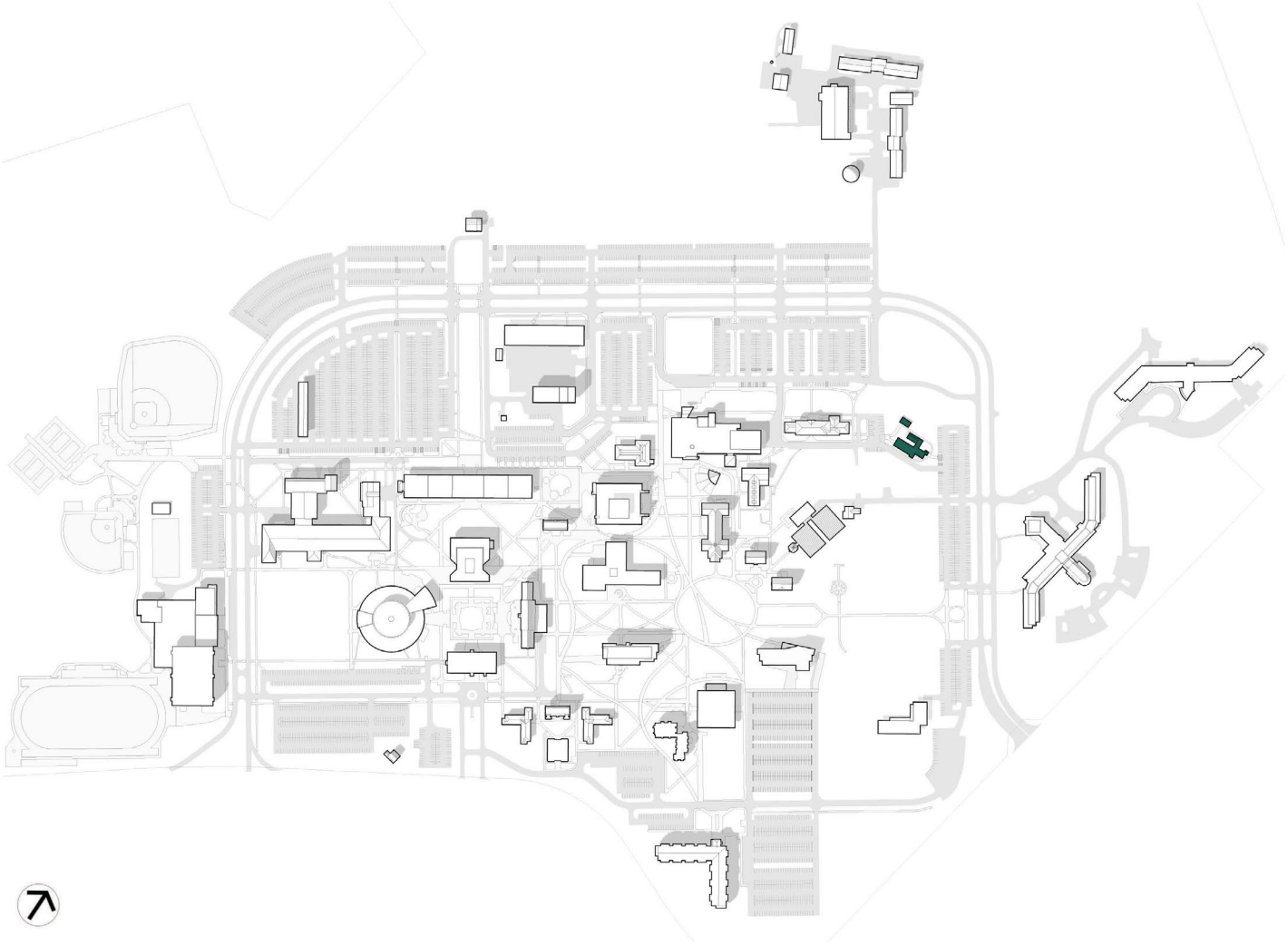
Figure 2 - Renovation Timeline



Not to Scale

First Floor
Architect: Plan A

University Police Department Renovations



Space Type	Existing	New
Classrooms	-	-
Class Labs	-	-
Open Labs	-	-
Research	-	-
Office Space	3,011	3,311
Study Space	-	-
Special Use	-	-
General Use	-	-
Support Space	-	336
Health Care	-	-
Residential	-	-
Unclassified	-	-

Proposed Scope of Work: Renovation

Training Room

Evidence Room

Ammunition Storage

Toilet Room

Proposed Scope of Work: Addition

Garage

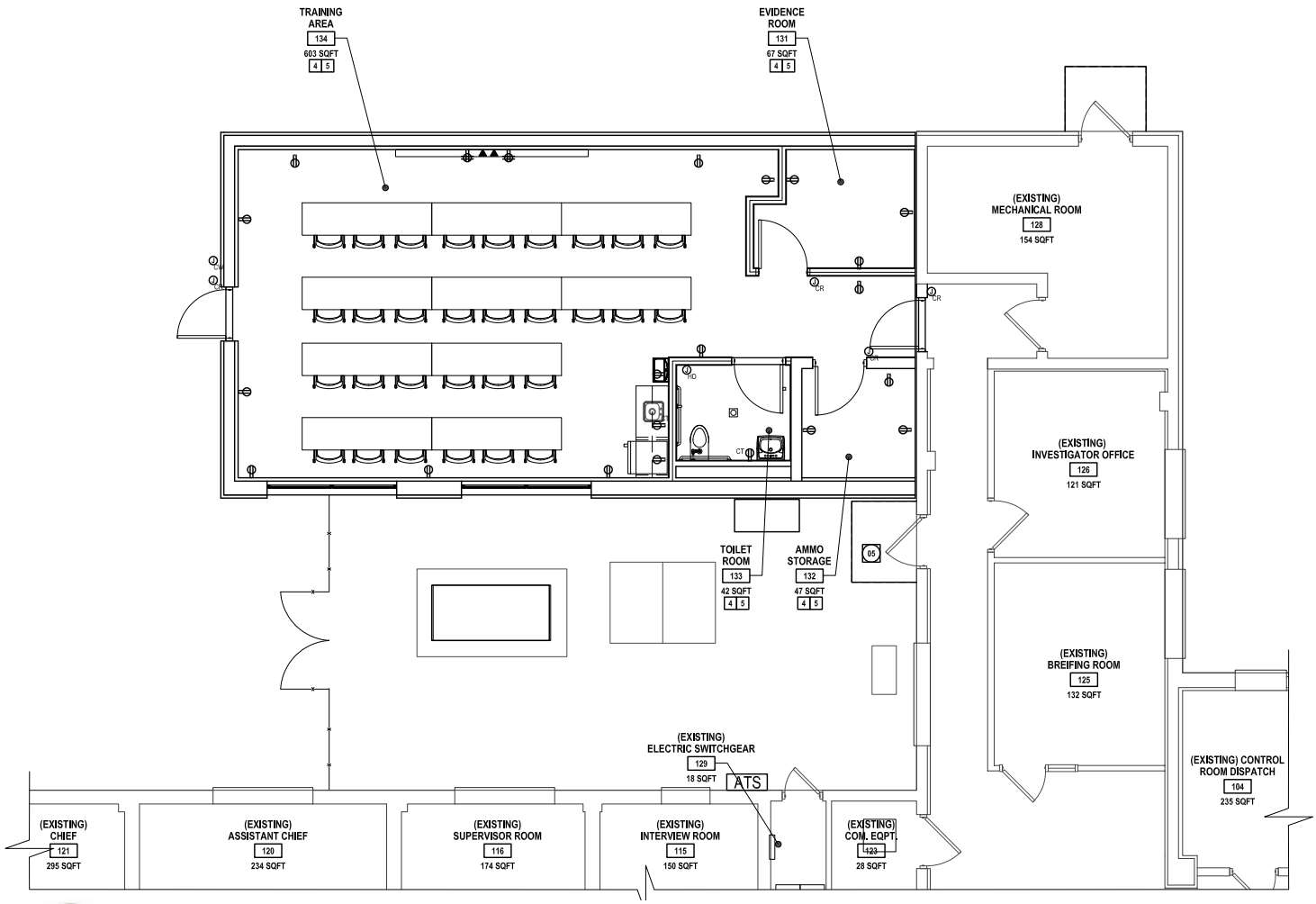
Uniform Storage

Record Room

Figure 3 - Pre and Post Renovation NASF by FICM

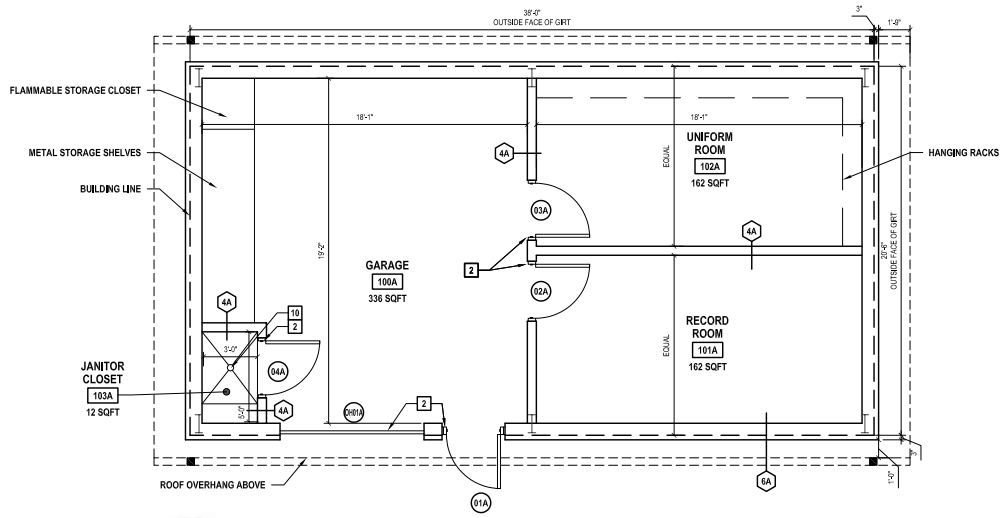
2024	2025	2026	2027	2028	2029	2030	2031	2032	2033

Figure 4 - Renovation Timeline



First Floor
Architect: H2M Architects and Engineers

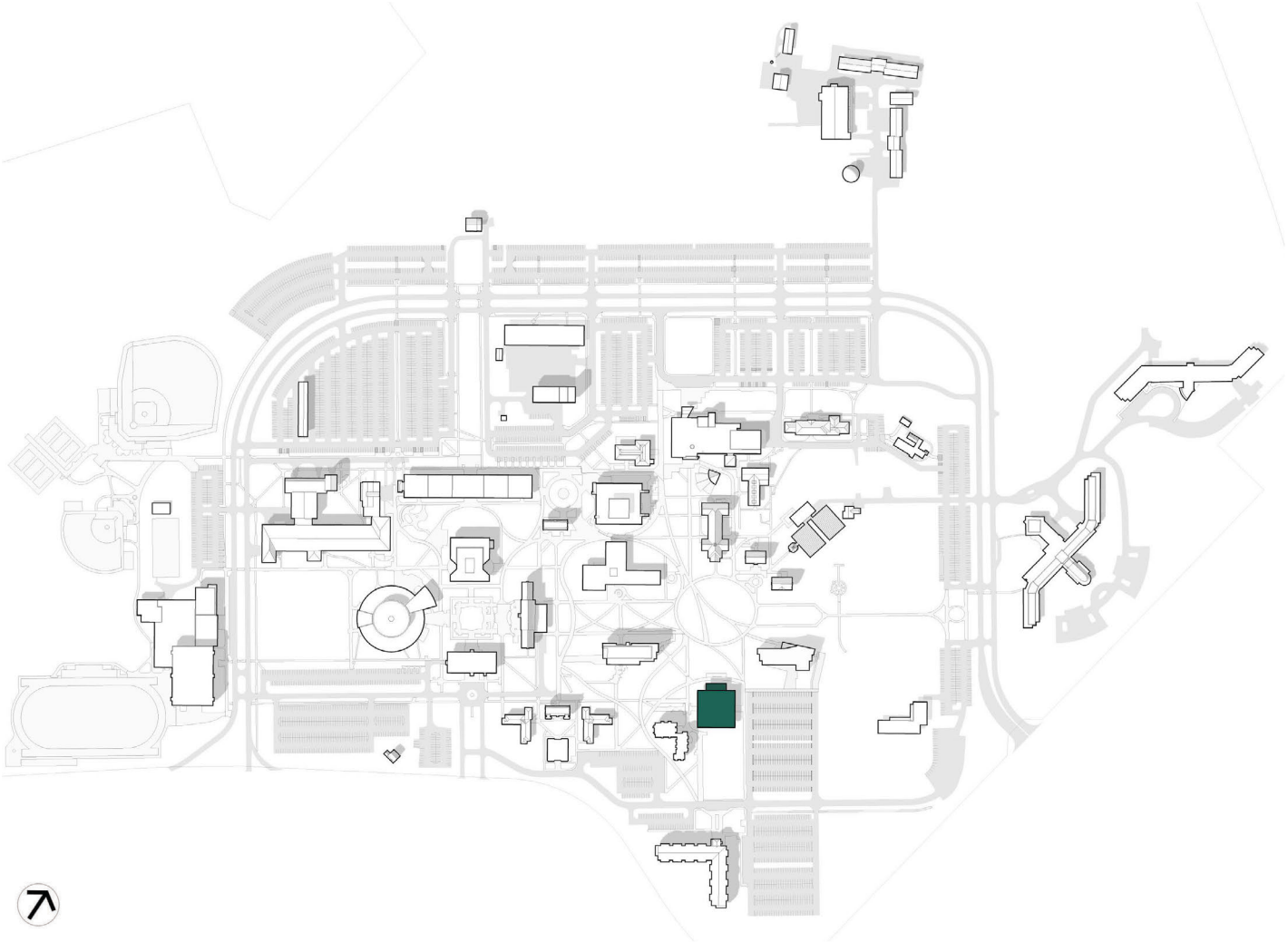
Not to Scale



Garage/Storage Building
Architect: H2M Architects and Engineers

Not to Scale

Sinclair Hall Renovations



Space Type	Existing	New
Classrooms	6,529	13,123
Class Labs	1,884	4,626
Open Labs	1,585	-
Research	-	-
Office Space	6,657	2,563
Study Space	-	208
Special Use	-	-
General Use	1,495	1,724
Support Space	174	-
Health Care	-	-
Residential	140	-
Unclassified	1,660	-

Figure 5 - Pre and Post Renovation NASF by FICM

Proposed Moves

Criminal Justice

Gleeson Hall to Sinclair Hall

Whitman Hall to Sinclair Hall

Swing Space

Criminal Justice

Temporarily Located in Ward Hall

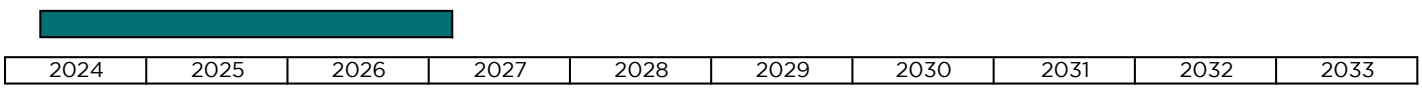
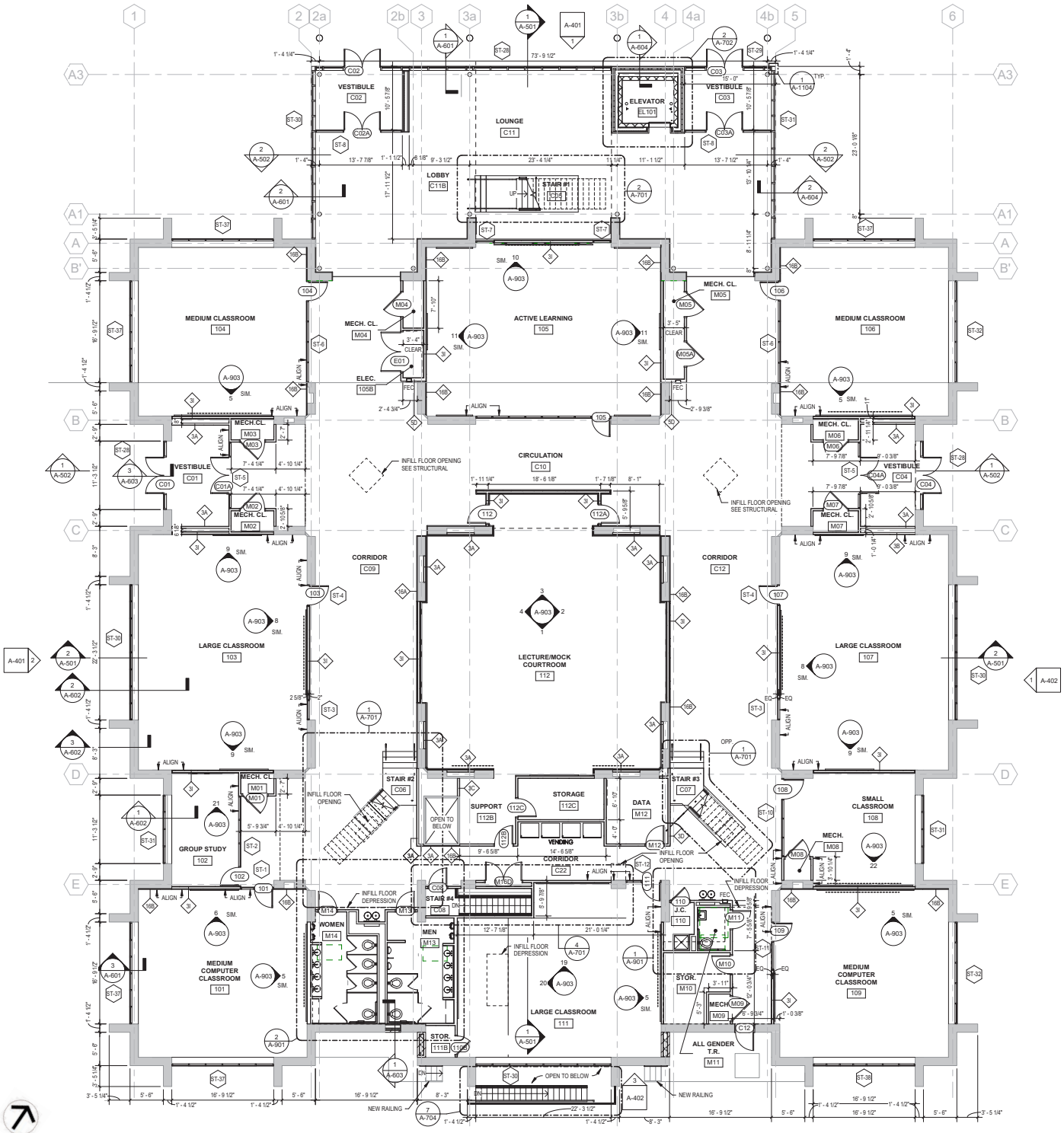


Figure 6 - Renovation Timeline

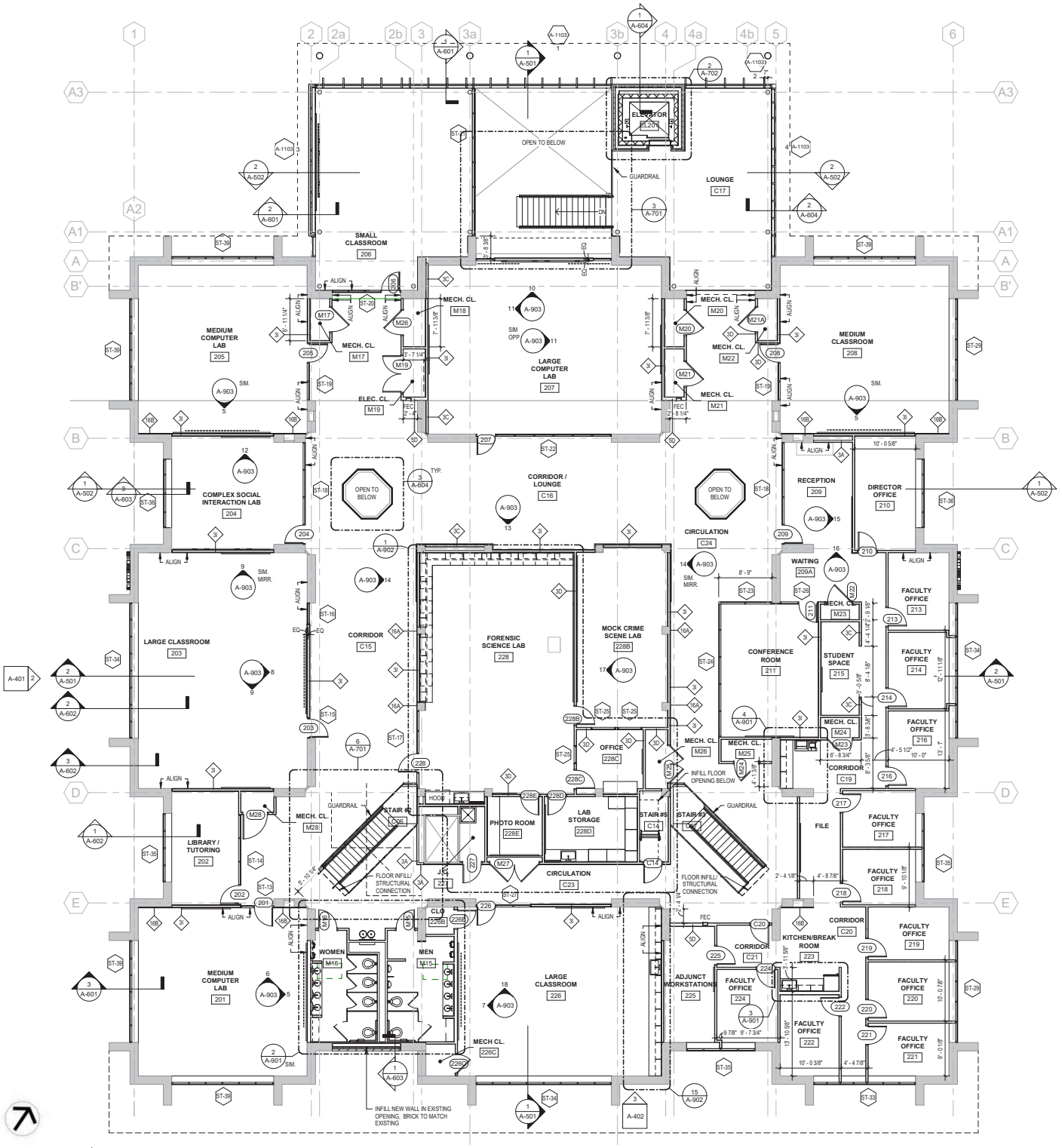
First Floor Rendering
Architect: JMZ Architects and Planners

Exterior Rendering
Architect: JMZ Architects and Planners



Not to Scale

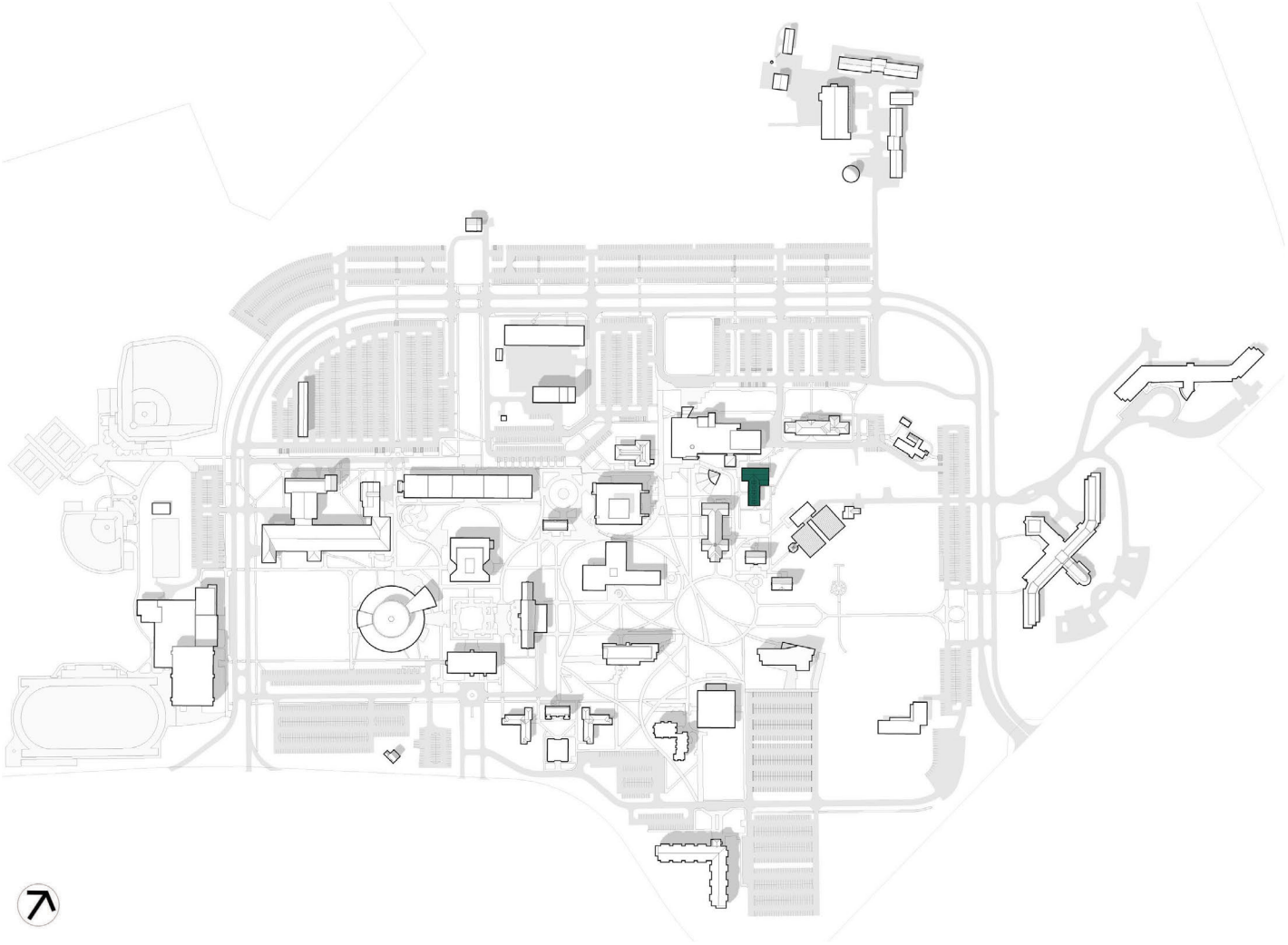
First Floor
Architect: JMZ Architects and Planners



Not to Scale

Second Floor
Architect: JMZ Architects and Planners

Campus Commons Renovations



Space Type	Existing	New
Classrooms	-	-
Class Labs	-	-
Open Labs	-	-
Research	-	-
Office Space	3,877	6,750
Study Space	-	-
Special Use	95	-
General Use	2,745	-
Support Space	-	-
Health Care	-	-
Residential	-	-
Unclassified	1,402	-

Figure 7 - Pre and Post Renovation NASF by FICM

Proposed Moves

Accounts Payable

Human Resources

Payroll

Purchasing

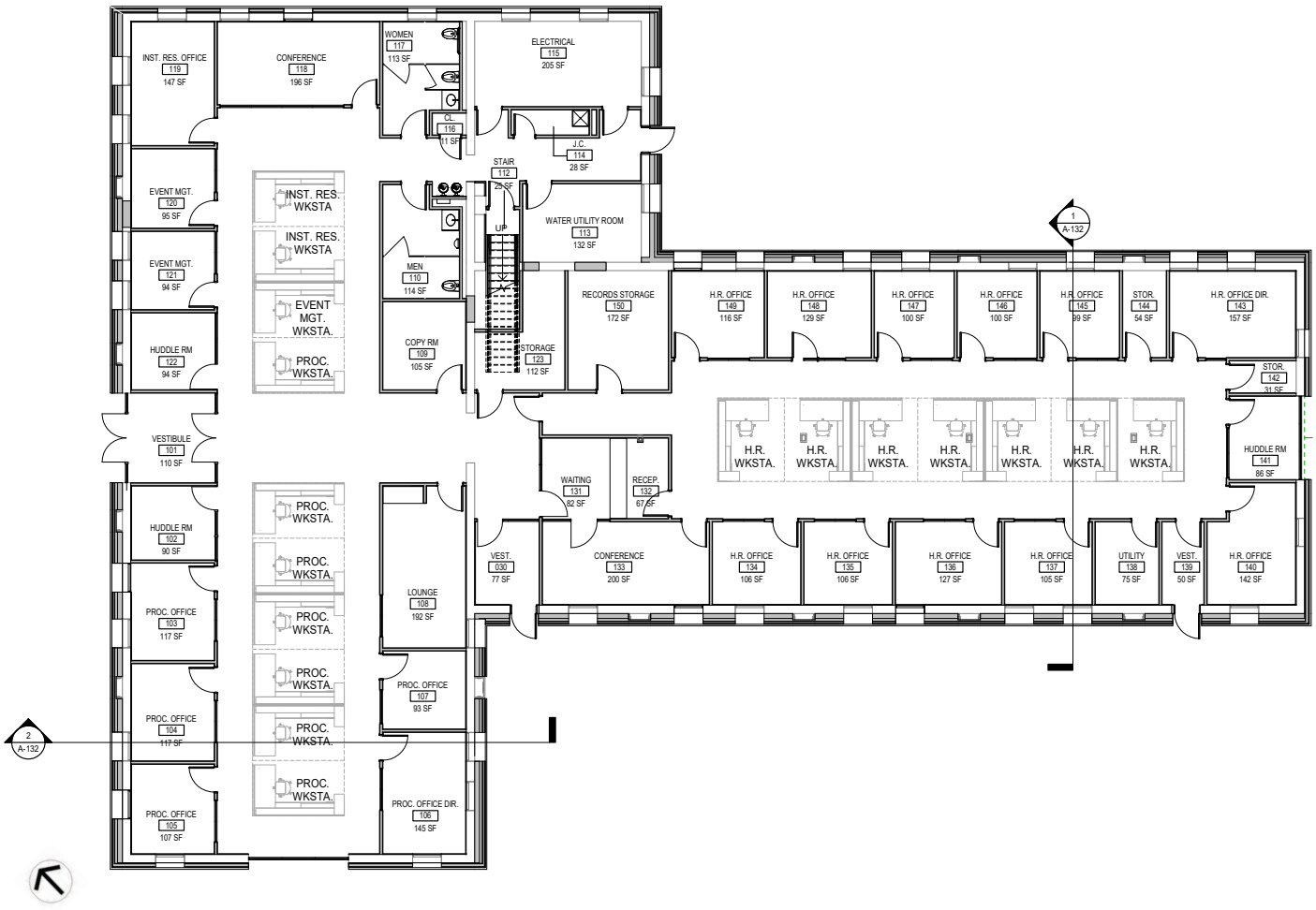
Whitman Hall to Campus Commons

Enabling Projects

Roosevelt Hall

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033

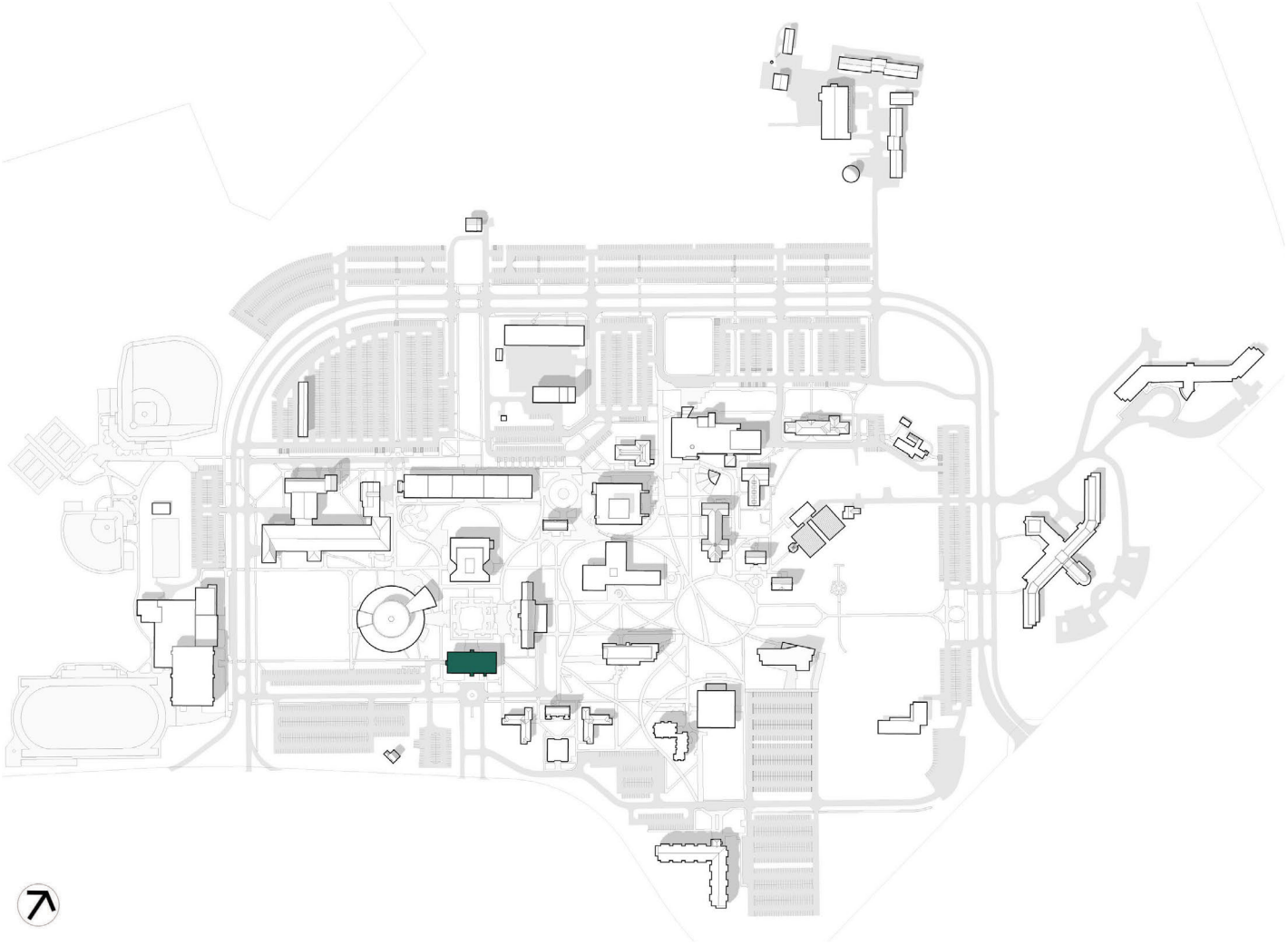
Figure 8 - Renovation Timeline



Not to Scale

First Floor
Architect: FCA

Laffin Hall Renovations



Space Type	Existing	New
Classrooms	-	-
Class Labs	-	-
Open Labs	-	-
Research	-	-
Office Space	19,719	18,443
Study Space	-	-
Special Use	-	-
General Use	2,445	3,116
Support Space	-	-
Health Care	-	-
Residential	-	-
Unclassified	-	-

Figure 9 - Pre and Post Renovation NASF by FICM

Proposed Moves

Disability Services Center

Whitman Hall to Laffin Hall

Enabling Projects

Roosevelt Hall

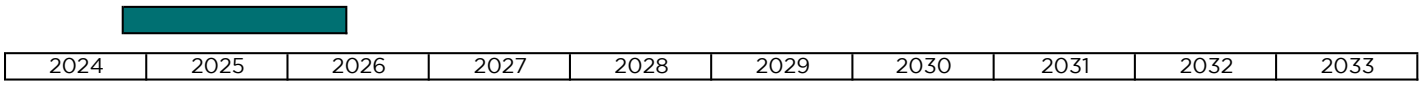
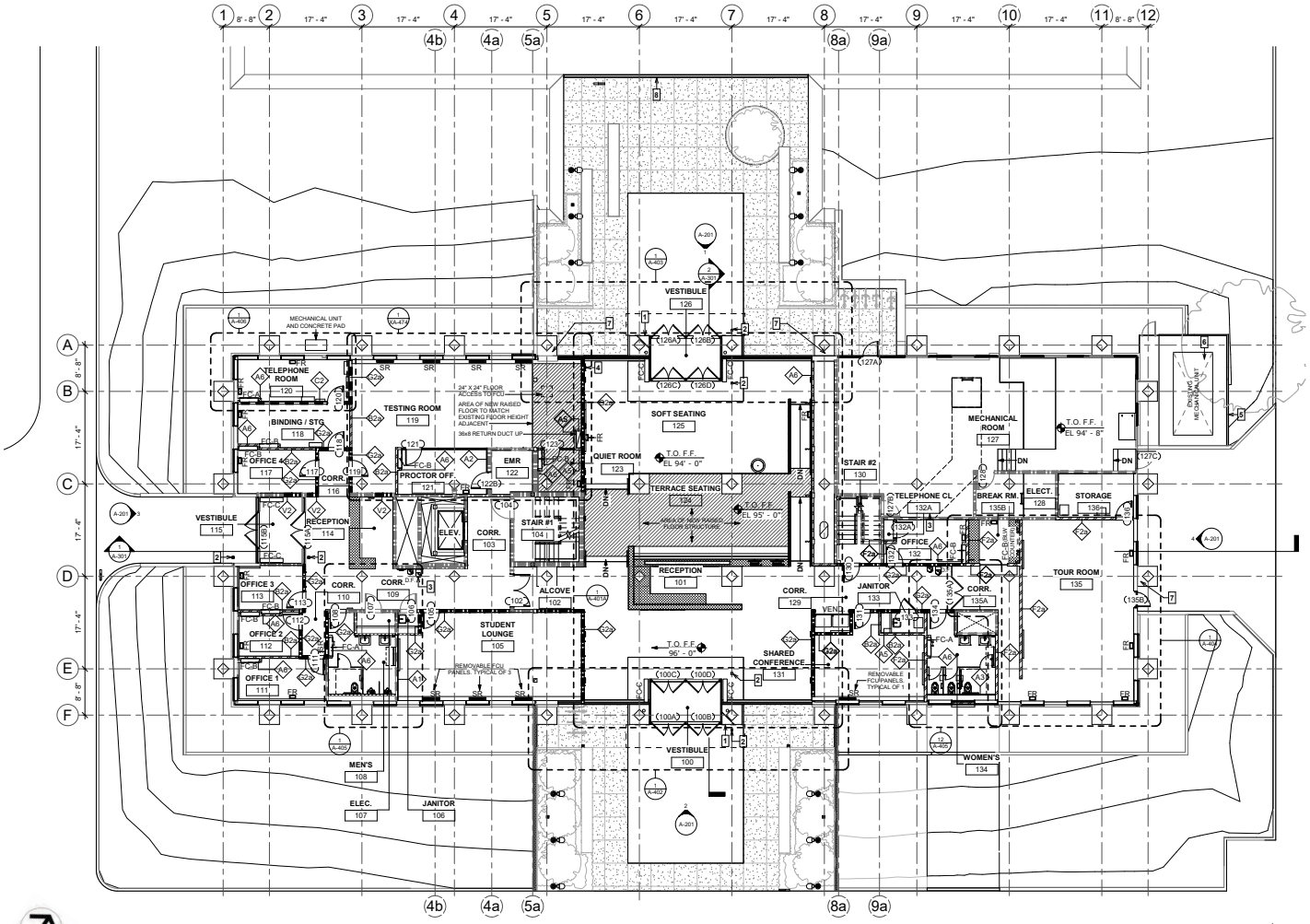


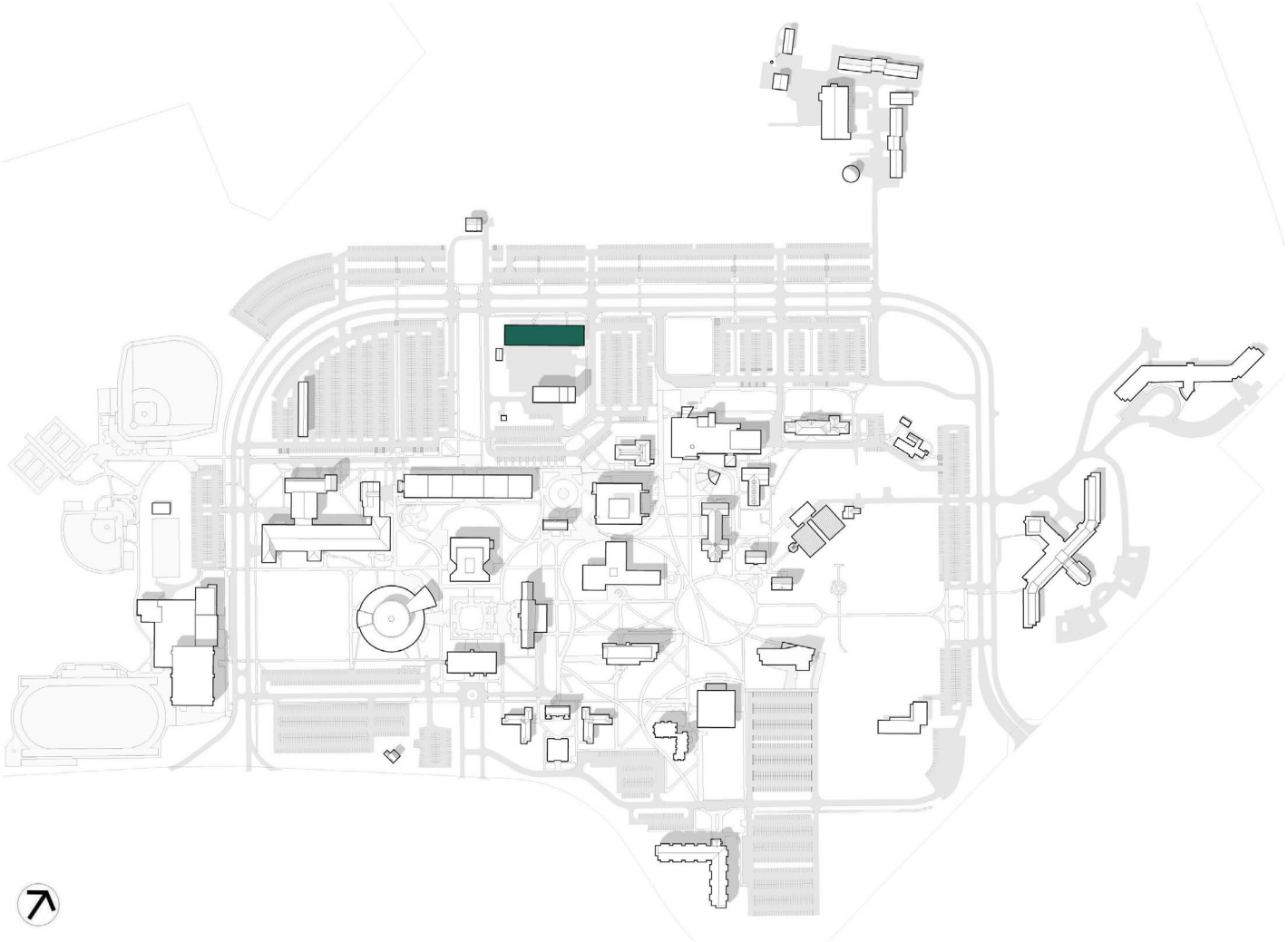
Figure 10 - Renovation Timeline



First Floor
Architect: Richard McElhiney Architects LLC

Not to Scale

Service Building Renovation



Space Type	Existing	New
Classrooms	-	-
Class Labs	-	-
Open Labs	-	-
Research	-	-
Office Space	3,627	>3,627
Study Space	-	-
Special Use	-	-
General Use	456	-
Support Space	9,479	<9,479
Health Care	-	-
Residential	-	-
Unclassified	-	-

Figure 11 - Pre and Post Renovation NASF by FICM

Proposed Moves

Capital Projects and Construction

Capital Projects and Construction Trailer to Service Building

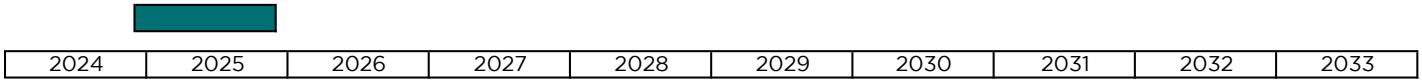
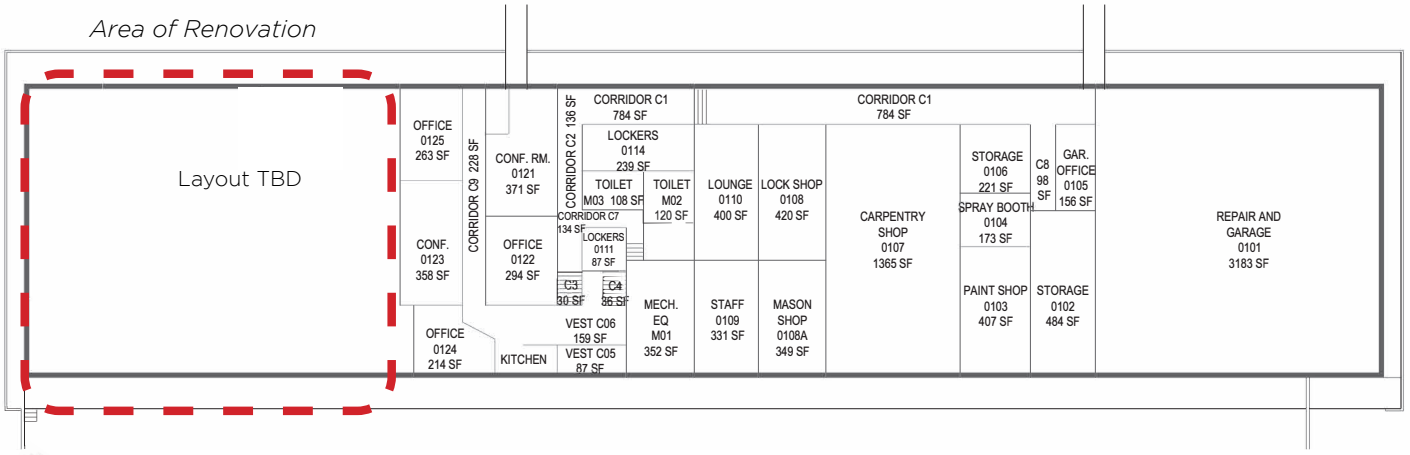


Figure 12 - Renovation Timeline

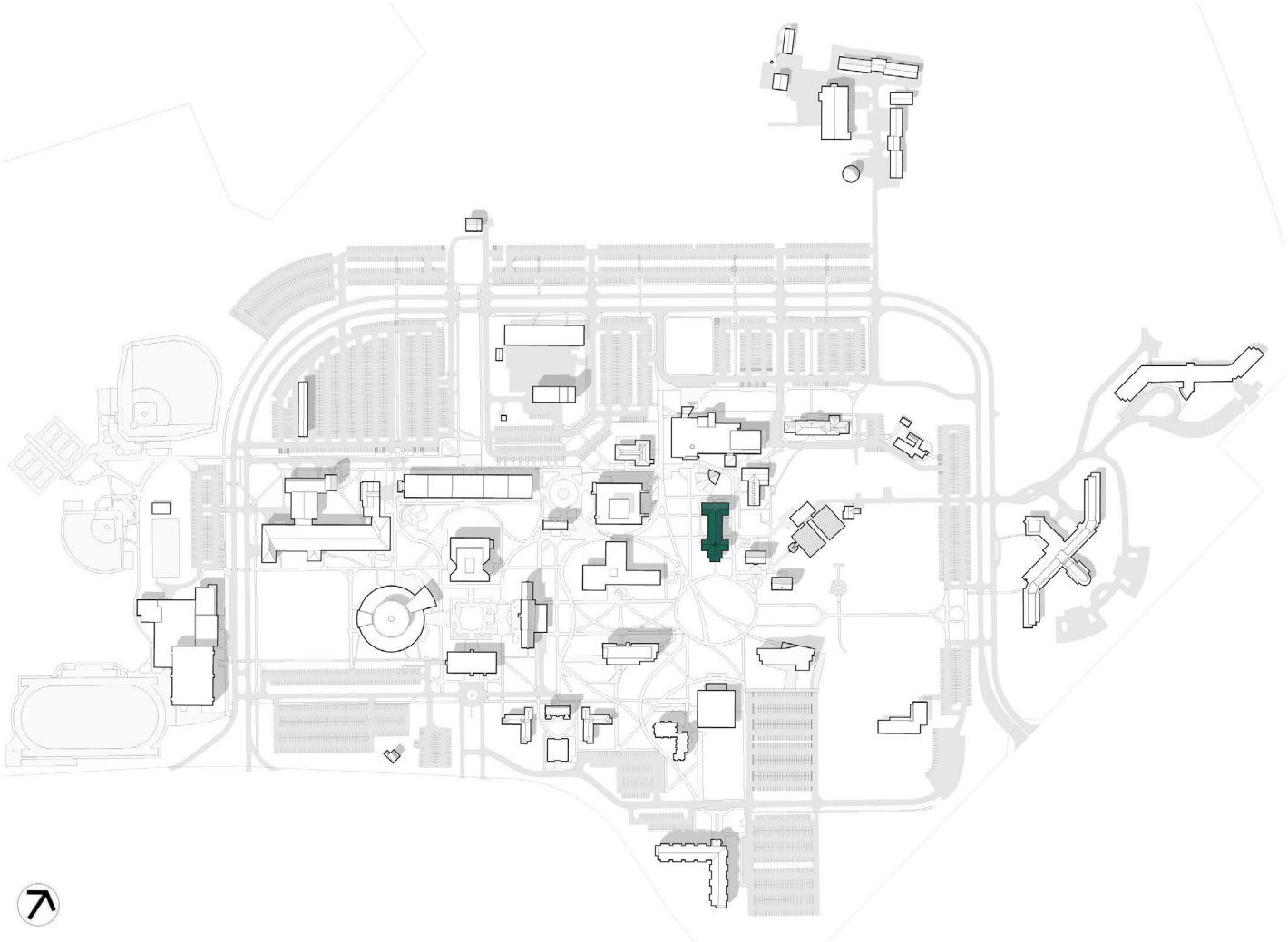


First Floor

Not to Scale

Exterior Facing Cipriani Drive

Thompson Hall Renovations



Space Type	Existing	New
Classrooms	4,756	5,234
Class Labs	2,241	4,009
Open Labs	935	-
Research	-	-
Office Space	7,032	5,405
Study Space	-	-
Special Use	-	-
General Use	338	902
Support Space	2,064	-
Health Care	-	-
Residential	-	-
Unclassified	780	-

Figure 13 - Pre and Post Renovation NASF by FICM

Proposed Moves

Sociology

Memorial Hall to Thompson Hall

Psychology

Knapp Hall to Thompson Hall

Enabling Projects

Roosevelt Hall

Swing Space

Horticulture

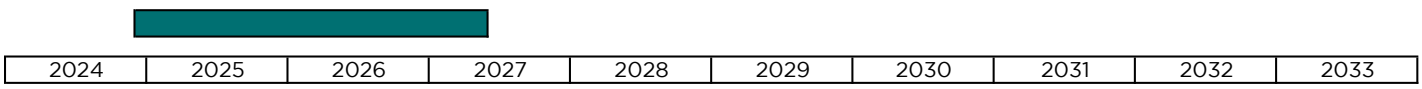


Figure 14 - Renovation Timeline

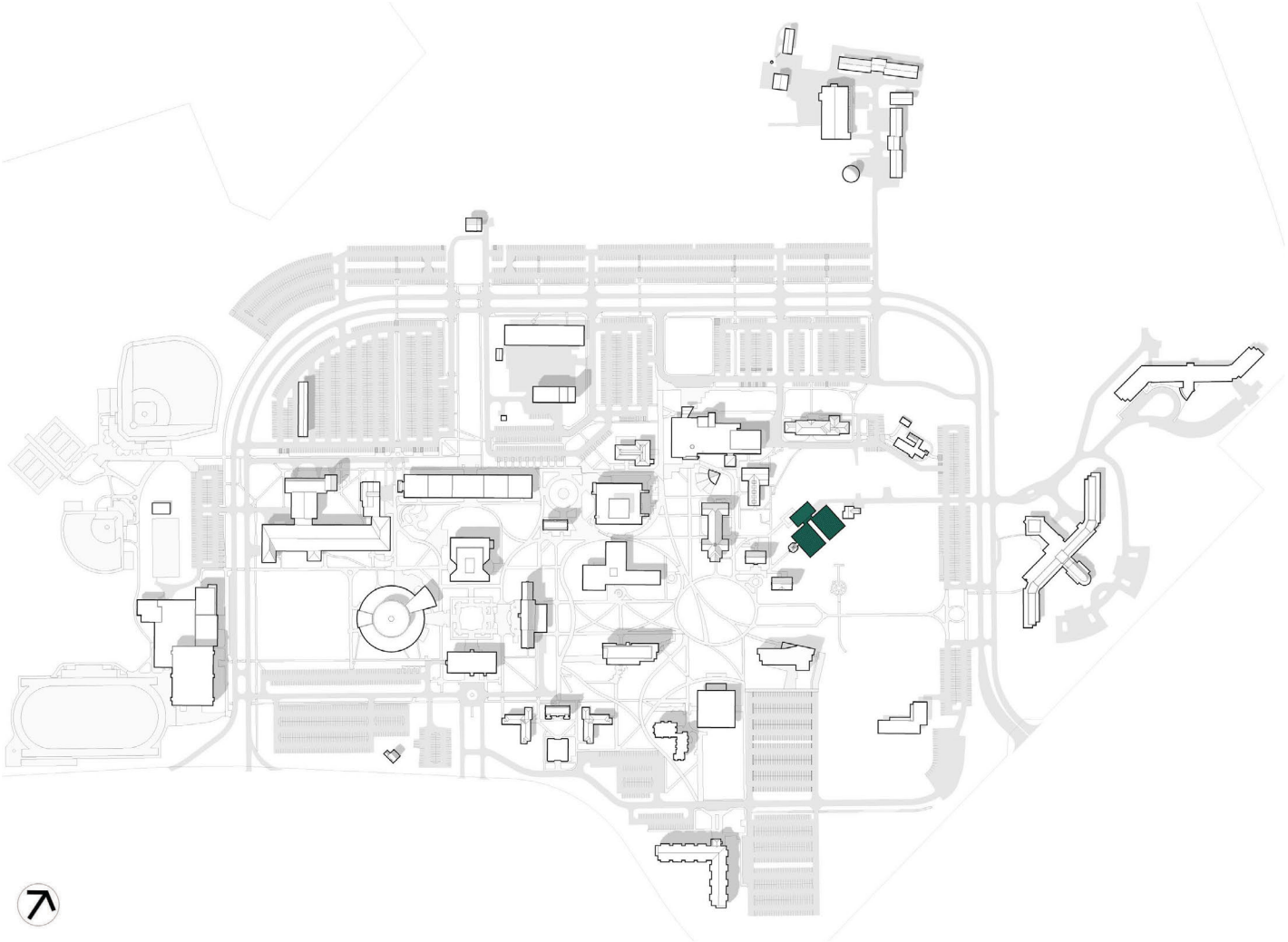
First Floor
Architect: Francis Cauffman Architects

Not to Scale

Second Floor
Architect: Francis Cauffman Architects

Not to Scale

Greenhouse Renovations



Swing Space

Horticulture

Space Type	Existing	New
Classrooms	-	-
Class Labs	-	1,940
Open Labs	-	-
Research	-	-
Office Space	120	90
Study Space	-	-
Special Use	19,030	15,060
General Use	-	-
Support Space	-	-
Health Care	-	-
Residential	-	-
Unclassified	-	-

Figure 15 - Pre and Post Renovation NASF by FICM

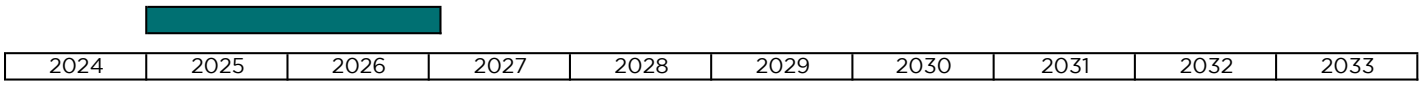
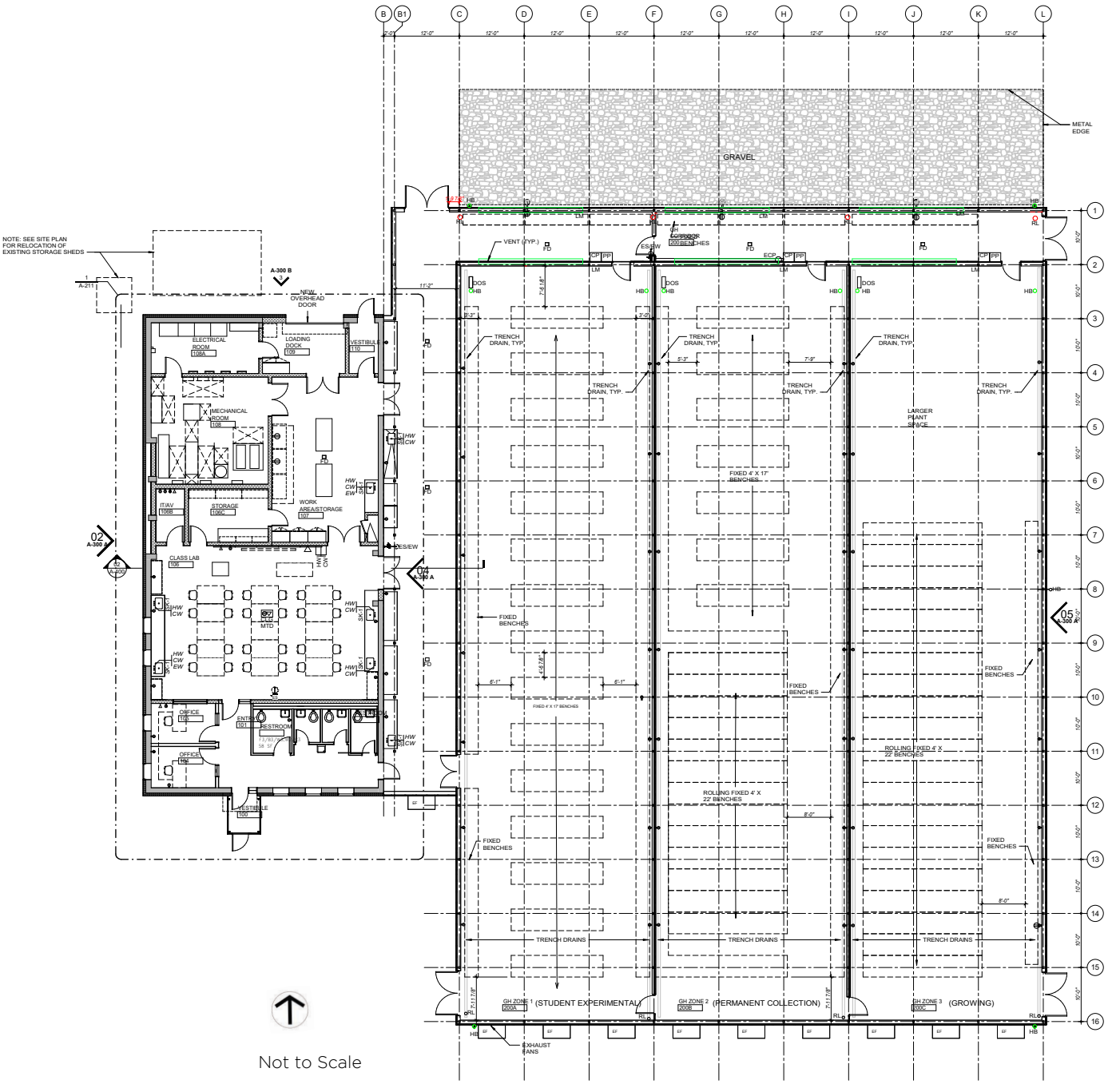


Figure 16 - Renovation Timeline

Exterior Headhouse Rendering
Architect: Mitchell Giurgola Architects LLP

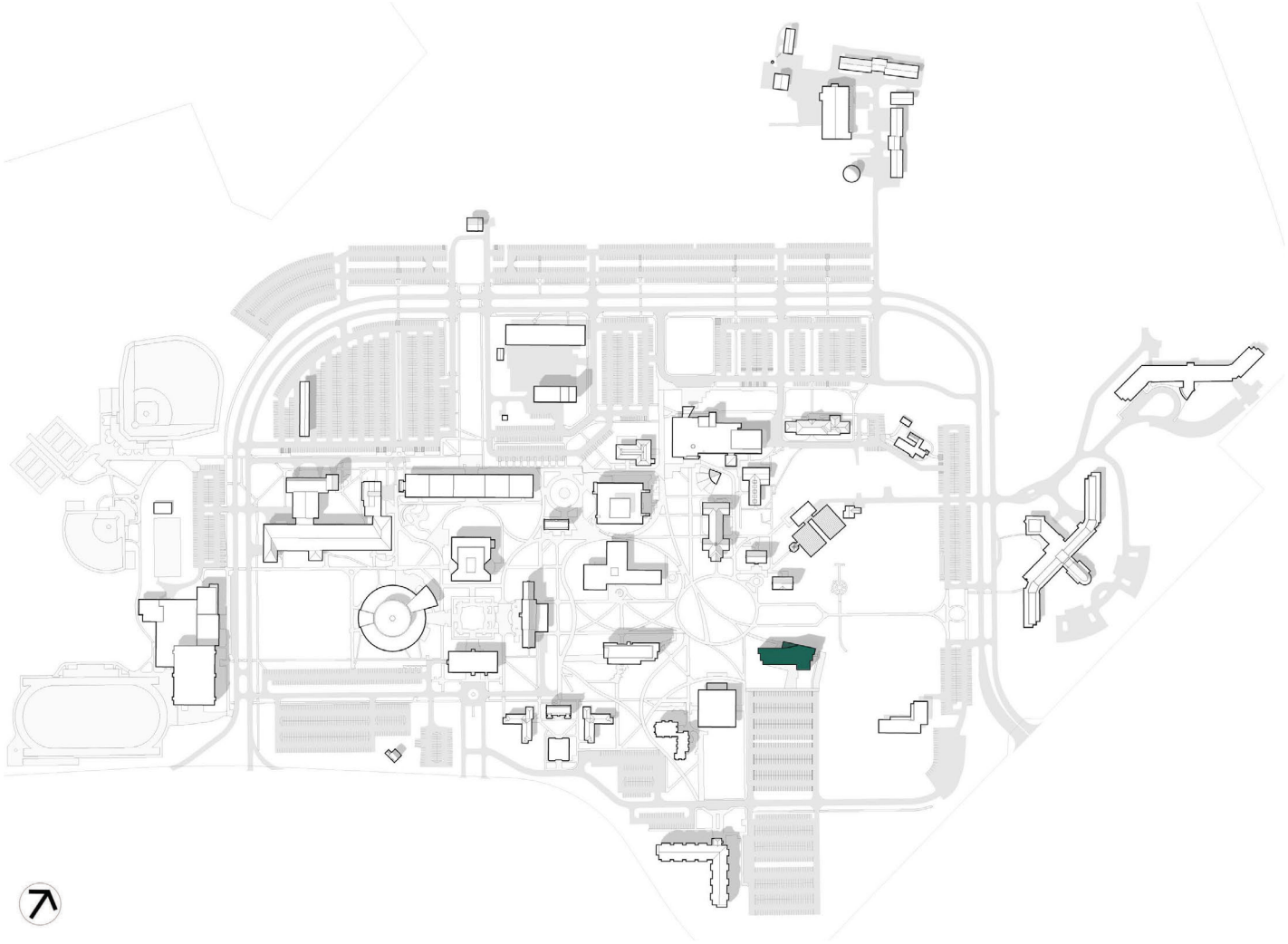
Exterior Rendering
Architect: Mitchell Giurgola Architects LLP



Not to Scale

First Floor
Architect: Mitchell Giurgola Architects LLP

New Computer Sciences Center



Space Type	Existing	New
Classrooms	-	6,518
Class Labs	-	8,096
Open Labs	-	1,870
Research	-	-
Office Space	-	7,520
Study Space	-	-
Special Use	-	-
General Use	-	1,605
Support Space	-	1,870
Health Care	-	-
Residential	-	-
Unclassified	-	-

Figure 17 - Pre and Post Renovation NASF by FICM

Proposed Moves

Computer Systems

Whitman Hall to Computer Sciences Center

Computer Security

Whitman Hall to Computer Sciences Center

Lupton Hall to Computer Sciences Center

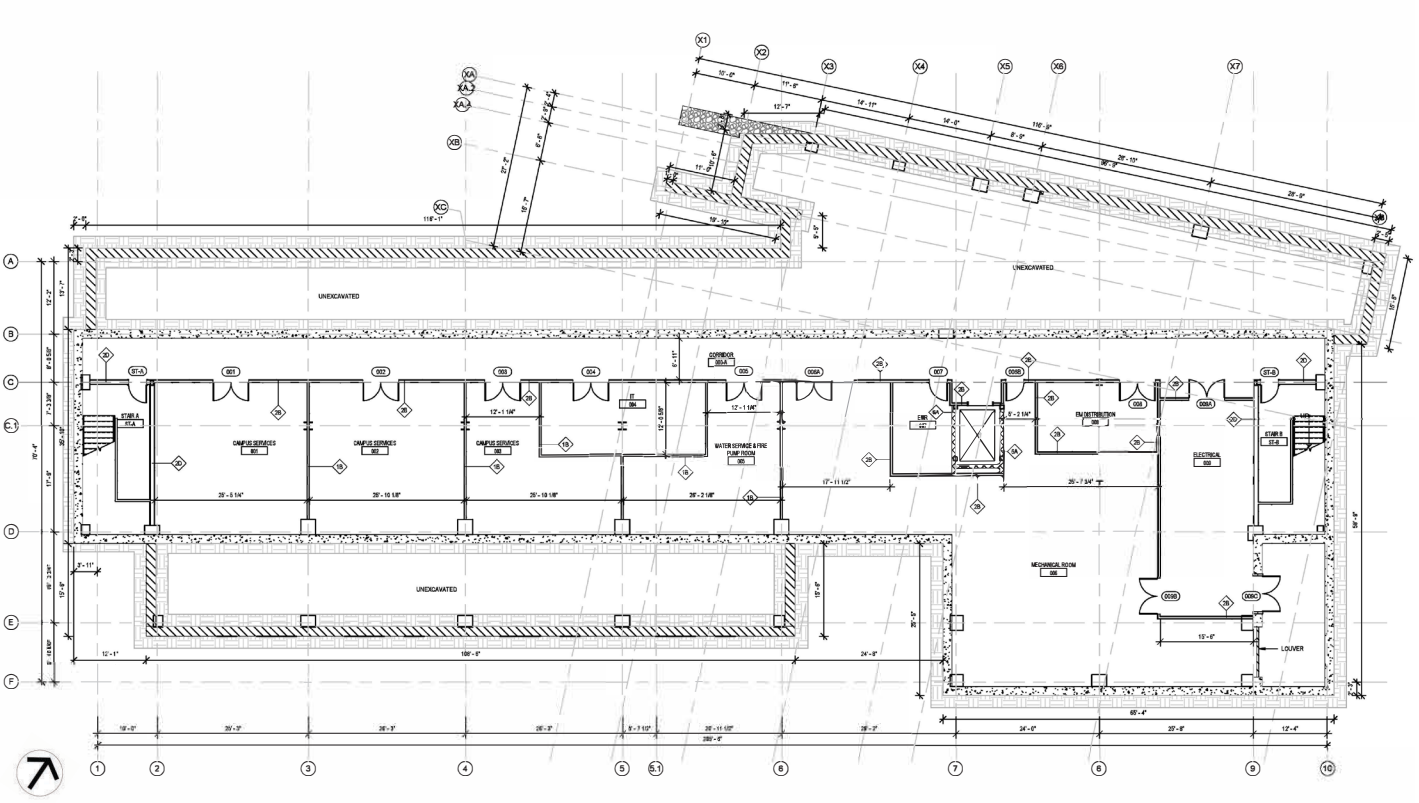
Science, Technology, and Society

Memorial Hall to Computer Sciences Center

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033

Figure 18 - Renovation Timeline

Exterior Rendering
Architect: Urbahn Architects



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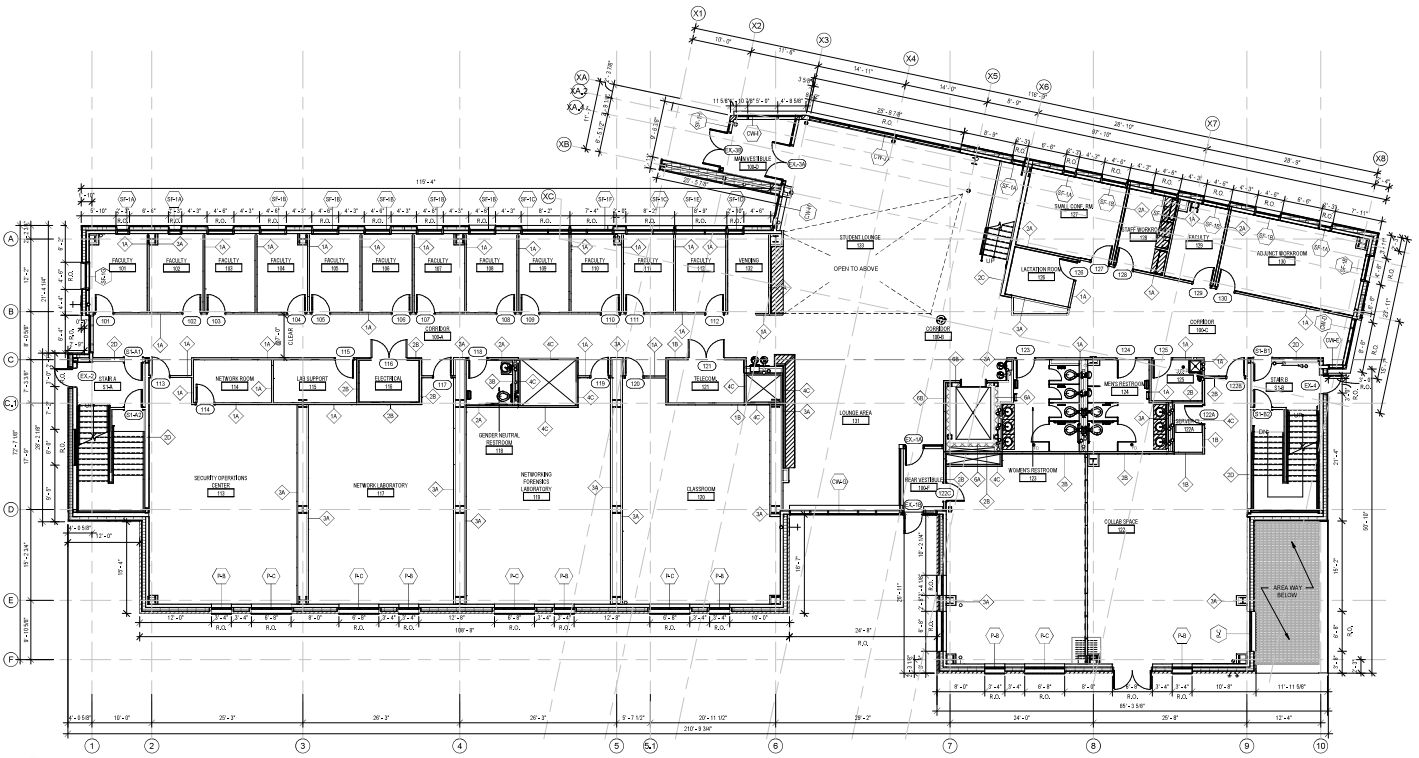
Lower Level
Architect: Urbahn Architects



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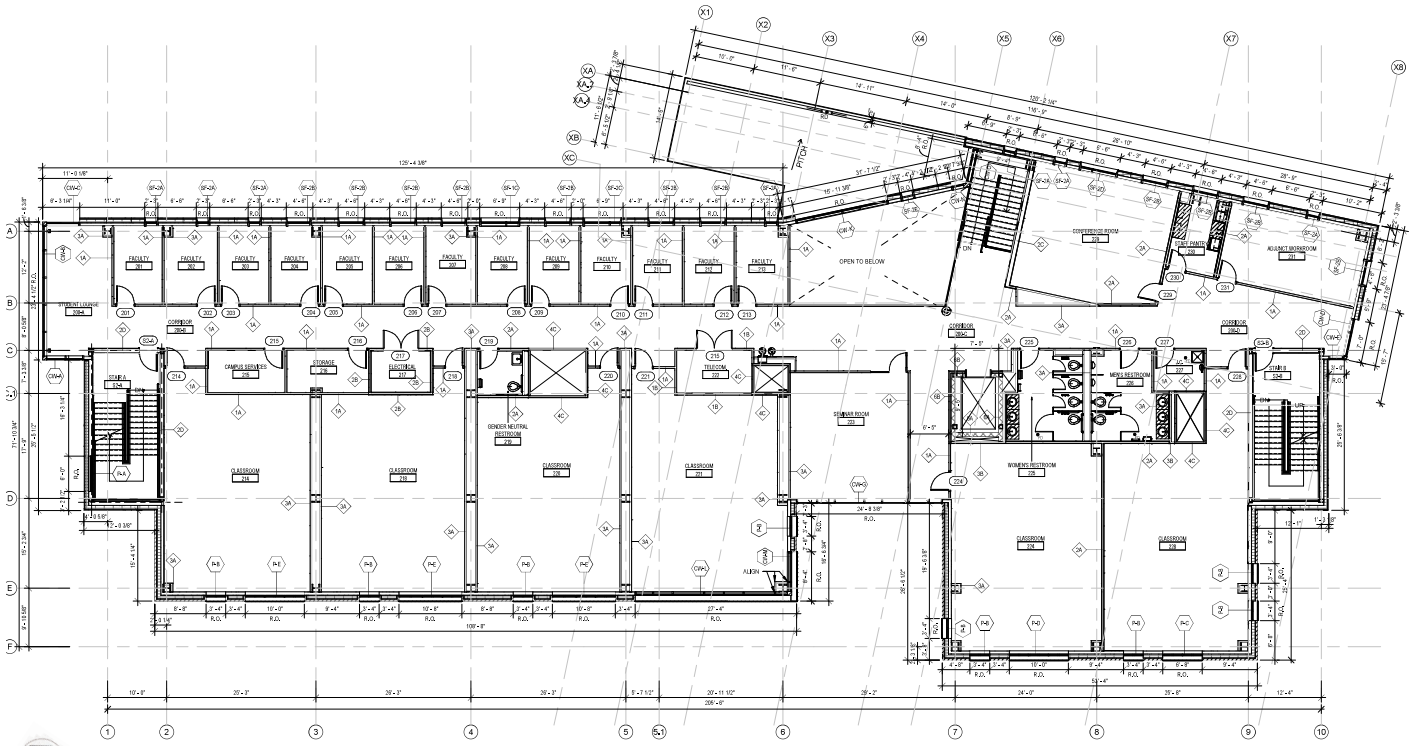
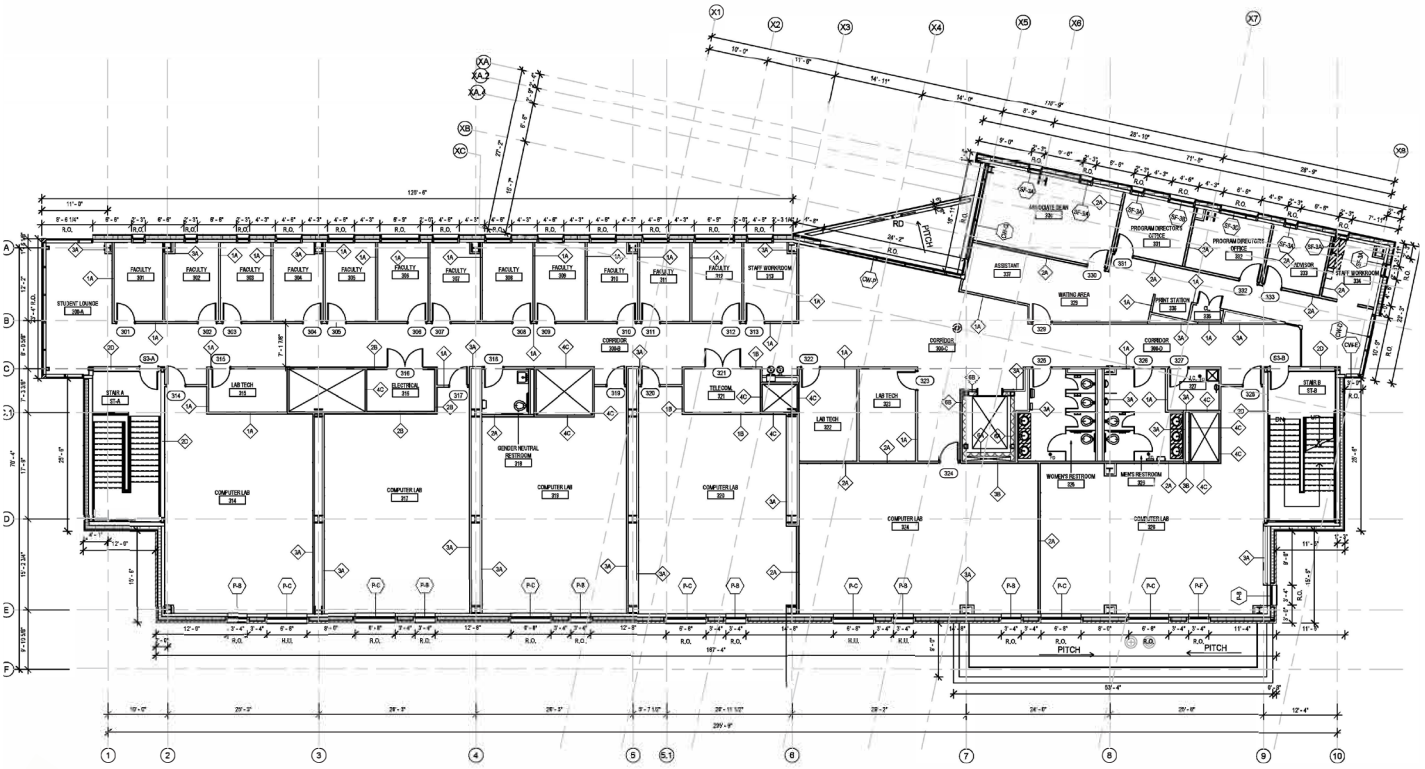
First Floor
Architect: Urbahn Architects



Not to Scale

Second Floor
Architect: Urbahn Architects



Not to Scale

Third Floor
Architect: Urbahn Architects

Site Recommendations

The site recommendations listed below and on the following page were included in all master plan concepts. The recommendations were divided into two categories, placemaking and connectivity.

Placemaking aims to enhance the sense of identity and belonging by leveraging the rich history of Farmingdale State College, extensive open spaces, and unique architectural features. The goal is to foster a vibrant, community of students on a campus with a significant commuter population. By creating meaningful spaces for social interaction and campus engagement, these efforts will encourage students, faculty, staff, and visitors to feel more connected to the College's mission and spirit.

The campus map below shows major campus gateways, pedestrian nodes, and access points. Campus visitors that park in the northern parking lot access the main campus at four pedestrian gateways

The following site improvement projects were included in the concepts and detailed in Phase V - Final Recommendations:

- Formalize and Enhance Campus Gateways
- Create Landscape Management Plan
- Develop Green Infrastructure
- Establish Hardscape Plan

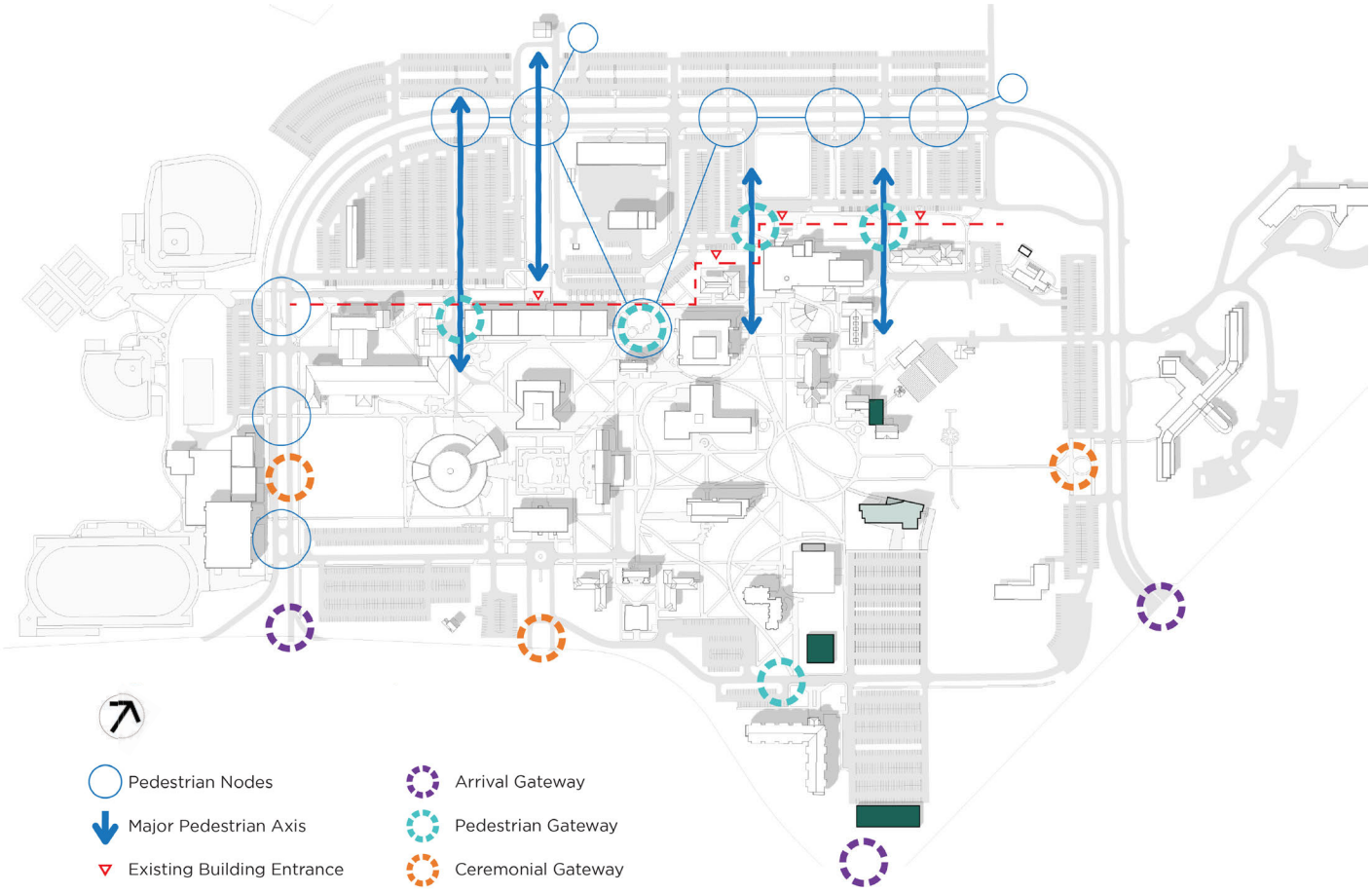


Figure 19 - Campus Arrival

Connectivity improvements are vital to ensure safe, efficient, and equitable access for all users of the campus. As a predominantly commuter campus, it is essential to address vehicular and pedestrian circulation, as well as public transportation networks. Enhancing these pathways will foster stronger connections between campus areas and improve overall accessibility. Proposed initiatives focus on creating shared-use paths, enhancing pedestrian safety at critical crossings, and formalizing connections to informal walking paths.

Existing and proposed campus nodes and connection points are shown on the campus map below. Master plan recommendations will reinforce major pedestrian routes.

The following site improvement projects were included in the concepts and detailed in Phase V - Final Recommendations:

- Redesign of Cipriani Drive
- Enhance Parking Lot Pedestrian Connectivity
- Improve FSC Shuttle System
- Create Plaza/Walkway Along NYS Route 110 and Melville Road
- Trail Access Improvements

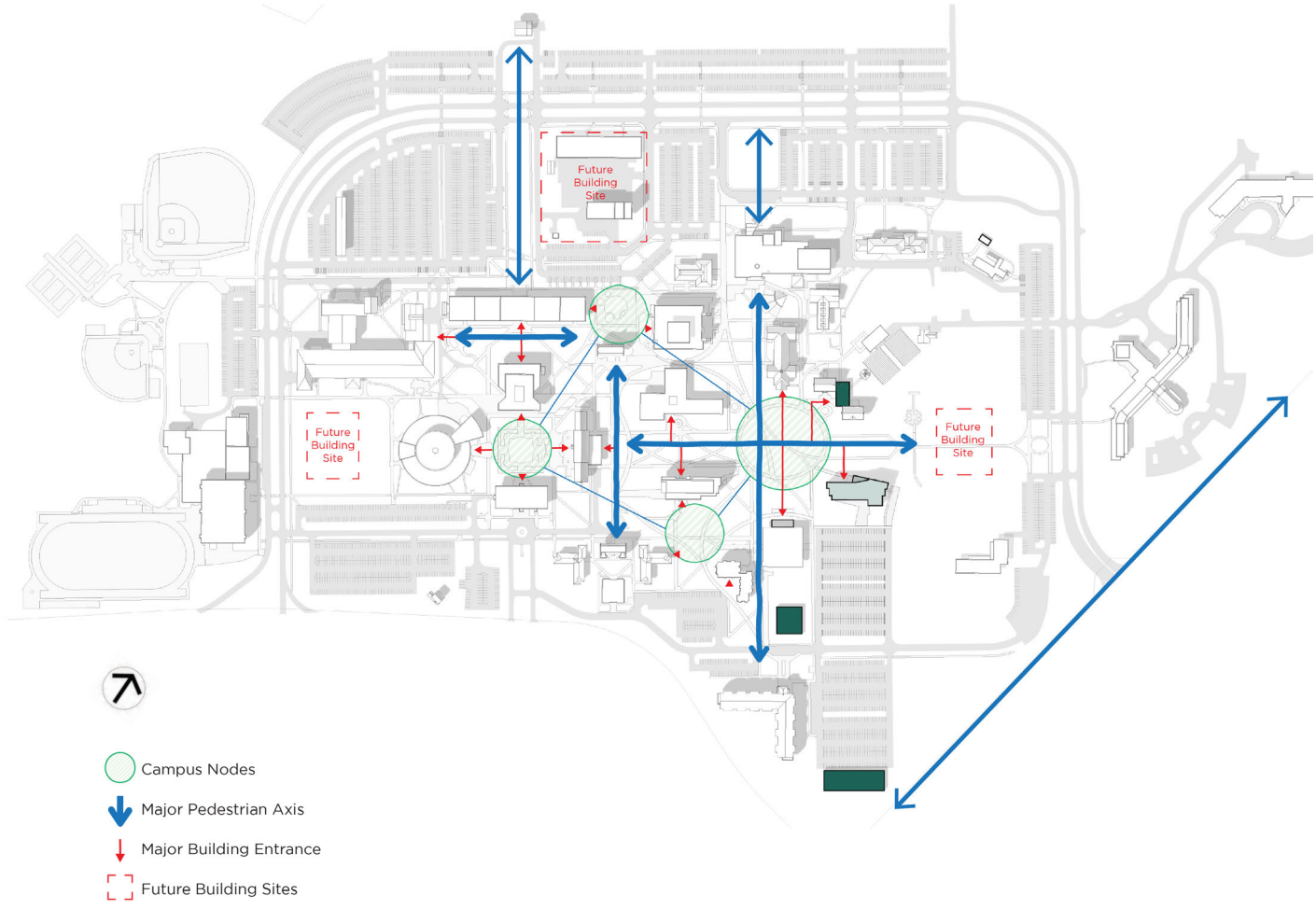


Figure 20 - Campus Organization

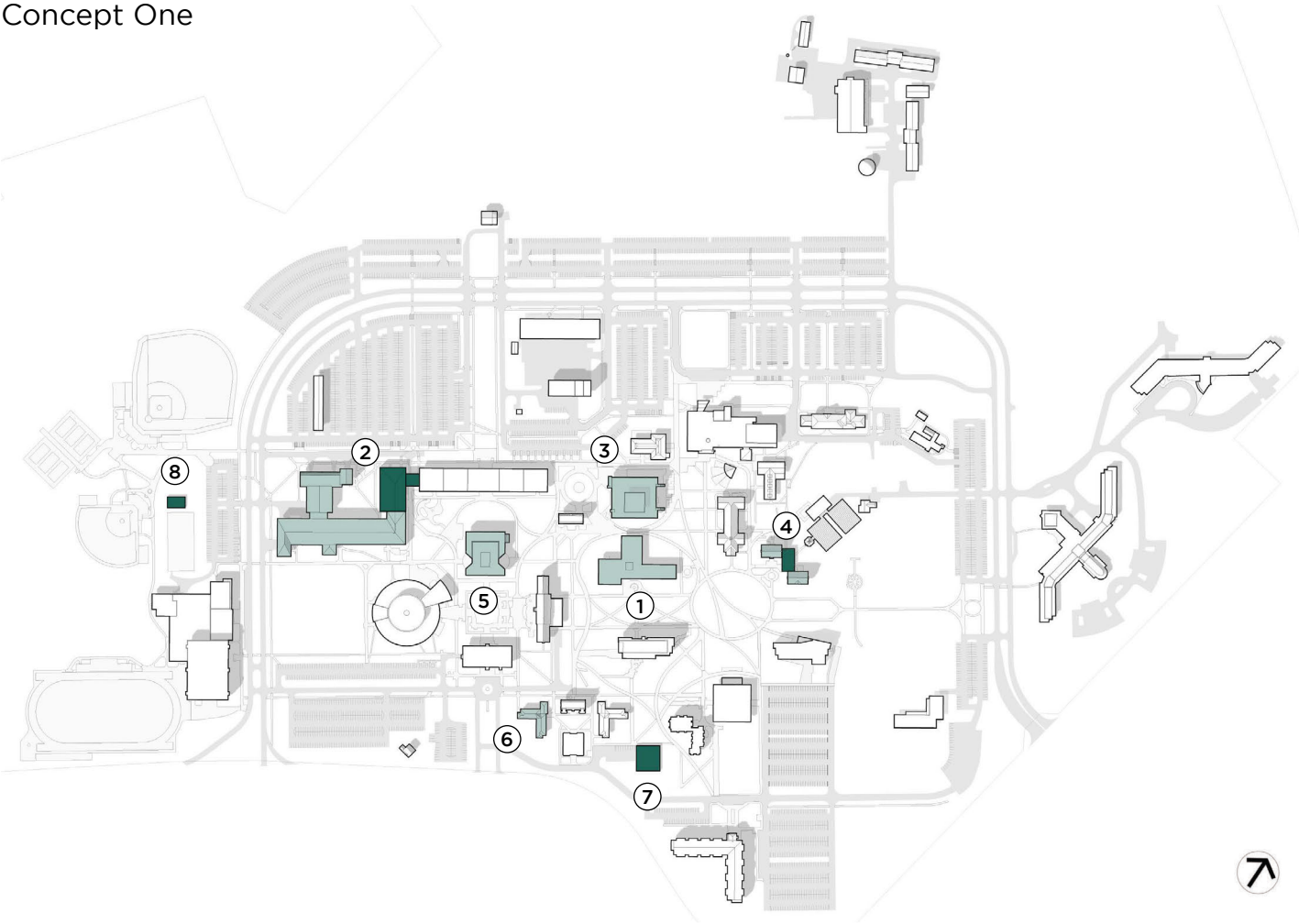
Master Plan Concepts

The planning team developed three master plan concepts for the main campus to meet current and anticipated space demand. Due to the condition of existing facilities, emphasis on sustainability, and availability of funding for new construction, the concepts focus on the renovation of existing facilities rather than construction of new buildings.

All options include renovations to Whitman Hall, Lupton Hall, Gleeson Hall, Hicks Hall, Cutler Hall, and Greenley Library, along with construction of a new student center and athletic support building. While the renovation of these buildings is consistent across options, the scope of work and building occupants vary by concept. Each option proposes an addition between Hicks and Cutler Hall for vertical circulation and mechanical systems, minimizing disruptions to these historic structures.

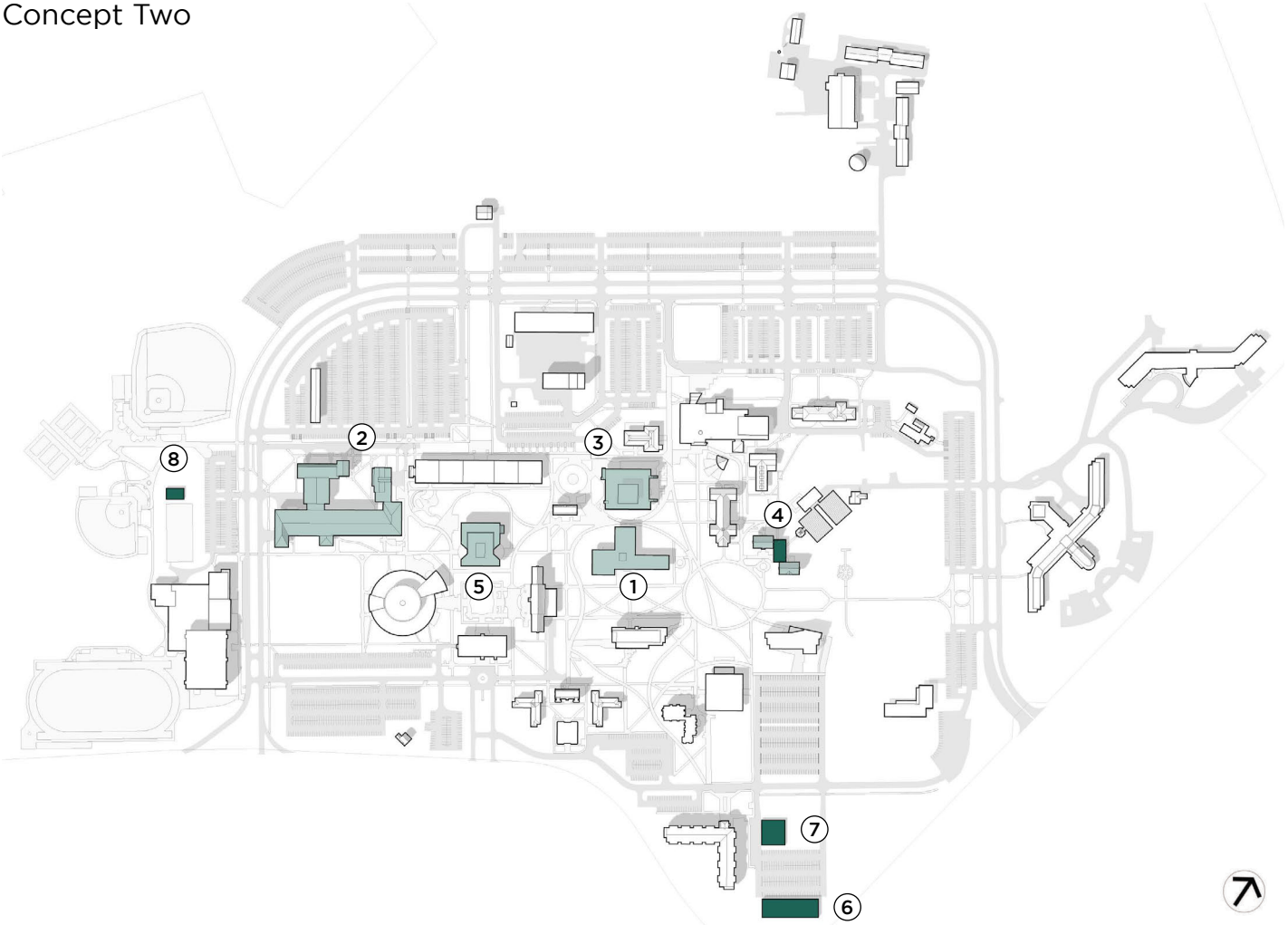
Option one converts Memorial Hall back to a residence hall, while options two and three propose the new student housing. Options one and two relocate the data center and associated offices from the lower level of Greenley Library to Whitman Hall. Option three leaves the data center in place and only moves offices that do not require access to the data center to Whitman Hall.

Concept One



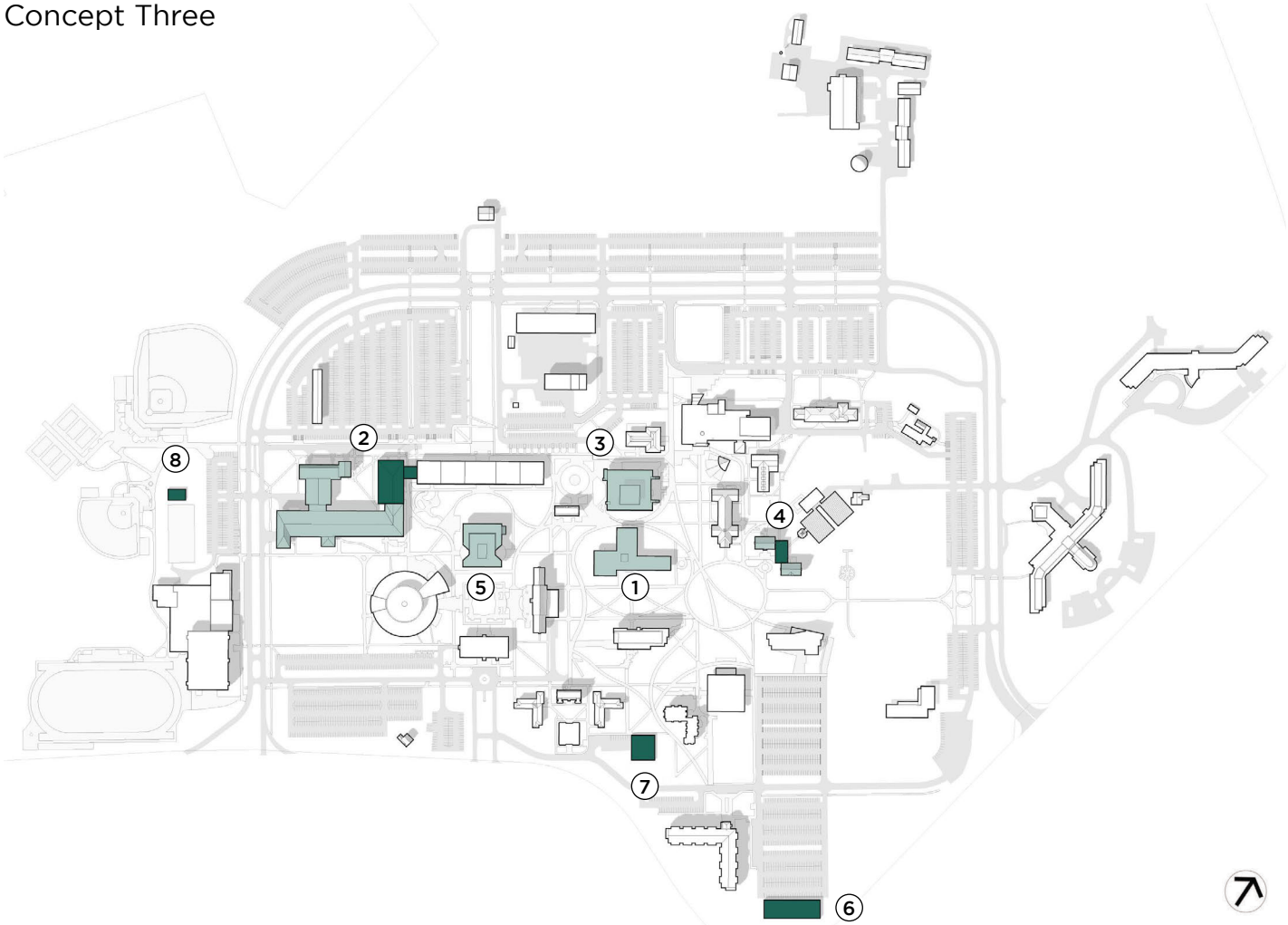
1. **Whitman Hall**
   - Renovate lower level for Data Center, Computer Services, and Educational Media
   - Renovate first and second floors for History, Liberal Arts, Mathematics, and Modern Languages
   - Create new Math Center and GIS Lab
2. **Lupton Hall**
   - Relocate Nutrition Science and Wellness to Gleeson Hall
   - Construct addition for Chemistry Labs, Physics Labs, and Shared Research Space
   - Phased renovation of the first and second floors for Chemistry, Physics, Engineering Technology Programs, Aviation, and Architecture and Construction
   - Update general classrooms and computer classrooms
3. **Gleeson Hall**
   - Relocate Biology Research to Lupton Hall
   - Relocate Educational Media to Whitman Hall
   - Renovate lower level for Nutrition Science and Wellness
   - Renovate third floor for Nursing labs, offices, and a new Simulation Suite
4. **Hicks Hall & Cutler Hall**
   - Construct addition to provide vertical circulation and building services
   - Renovate for Veterans Services, RAM, AAIC, and Honors Program
5. **Greenley Library**
   - Relocate Data Center and Computer Services to Whitman Hall
   - Relocate AAIC, RAM, and Honors Program to Hicks/Cutler Halls
   - Renovate lower level for additional study space and a Testing Center
6. **Memorial Hall**
   - Relocate History, Liberal Arts, and Modern Languages to Whitman Hall
   - Relocate STS to Computer Sciences Center
   - Renovate for suite style student housing
7. **Student Center**
   - Construct a student center to provide student amenities closer to the residential area of campus
   - New building will include food service, multipurpose room, fitness center, game room, and club space
8. **Athletic Support Building**
   - Construct a support building near the athletic fields to provide concessions, toilet rooms, athletic storage, and satellite offices for Athletic Training, UPD, and AV Services

Concept Two



1. Whitman Hall
   - Renovate lower level for Data Center, Computer Services, and Educational Media
   - Renovate first and second floors for Chemistry, Physics, Nutrition Science and Wellness, and Shared Research Space
   - Update general classrooms and computer classrooms
2. Lupton Hall
   - Relocate Chemistry, Physics, and Nutrition Science and Wellness to Whitman Hall
   - Renovate IRTT for Shared Research Space
   - Phased renovation of the first and second floors for Engineering Technology Programs, Aviation, Architecture and Construction, and Mathematics
   - Update general classrooms and computer classrooms
3. Gleeson Hall
   - Relocate Biology Research to Lupton Hall
   - Relocate Educational Media to Whitman Hall
   - Renovate Third Floor for Nursing Labs, Offices, and a New Simulation Lab
4. Hicks Hall & Cutler Hall
   - Construct addition to provide vertical circulation and building services
   - Renovate for Veterans Services, RAM, AAIC, and Honors Program
5. Greenley Library
   - Relocate Data Center and Computer Services to Whitman Hall
   - Relocate AAIC, RAM, and Honors Program to Hicks/Cutler Halls
   - Renovate lower level for additional study space and a Testing Center
6. Residence Hall
   - Construct a Residence Hall for 100 beds
7. Student Center
   - Construct a student center to provide student amenities closer to the residential area of campus
   - New building will include food service, multipurpose room, fitness center, game room, and club space
8. Athletic Support Building
   - Construct a support building near the athletic fields to provide concessions, toilet rooms, athletic storage, and satellite offices for Athletic Training, UPD, and AV Services

Concept Three



1. Whitman Hall
   - Renovate lower level for Data Center, Computer Services, and Educational Media
   - Renovate first and second floors for AAIC, RAM, general classrooms, and computer classrooms
   - Renovate Math offices and create new Math Center
2. Lupton Hall
   - Relocate Nutrition Science and Wellness to Gleeson Hall
   - Construct addition for Chemistry Labs, Physics Labs, and Shared Research Space
   - Phased renovation of the first and second floors for Chemistry, Physics, Engineering Technology Programs, Aviation, and Architecture and Construction
   - Update general classrooms and computer classrooms
3. Gleeson Hall
   - Relocate Biology Research to Lupton Hall
   - Relocate Educational Media to Whitman Hall
   - Renovate lower level for Nutrition Science and Wellness
   - Renovate third floor for Nursing labs, offices, and a new Simulation Suite
4. Hicks Hall & Cutler Hall
   - Construct addition to provide vertical circulation and building services
   - Renovate for Veterans Services, Business Analytics, and GIS
5. Greenley Library
   - Relocate AAIC, RAM, and Honors Program to Hicks/Cutler Halls
   - Renovate lower level for additional study space and a Testing Center
6. Residence Hall
   - Construct a Residence Hall for 100 beds
7. Student Center
   - Construct a student center to provide student amenities closer to the residential area of campus
   - New building will include food service, multipurpose room, fitness center, game room, and club space
8. Athletic Support Building
   - Construct a support building near the athletic fields to provide concessions, toilet rooms, athletic storage, and satellite offices for Athletic Training, UPD, and AV Services

Final Recommendations

Introduction

Farmingdale State College has already invested in current and future programs with the planned renovations of Roosevelt Hall, Sinclair Hall, and Thompson Hall, as well as the construction of the new Computer Sciences Center. The final recommendations in this section build on the work the College has already done and identify priority and long-range projects that will advance the strategic goals of the institution.

The final recommendations are based on the needs and opportunities identified during the master planning process:

- Phase I: The *Campus Profile* outlined the history, mission, and strategic goals of the College. The Phase I Report provided an overview of academic, research, athletic, and student life programs.
- Phase II: The *Assessment of Conditions* evaluated existing facilities, infrastructure, accessibility, and sustainability.
- Phase III: An *Analysis of Space Needs* was completed based on campus interviews, enrollment trends, instructional space utilization, and SUNY Space Guidelines.
- Phase IV: *Concept Alternatives* that satisfied the projected space needs were developed and presented to the Steering Committee.

Based on feedback from the Steering Committee, a preferred concept was selected and further developed by the planning team. The *Final Recommendations* in Phase V include priority projects, building system upgrades, and long-range projects. Priority projects advance the strategic goals of the College and were included within the master plan timeline. Each project description includes a detailed scope of work, space program, concept plans, enabling projects, swing space requirements, and estimates of probable cost.

Building system upgrades were identified for facilities that will not be renovated within the master plan timeline, but are in need of upgrades to address deferred maintenance, improve accessibility, and enhance energy efficiency.

Long-range projects are outside the master plan timeline, but could be completed in the next ten years if priorities shift, academic needs change, or funding becomes available for a particular project.

The final recommendations in this section identify projects that will provide additional space for growing programs; enhance the learning environment; support a more diverse student body; create a campus that reflects the rich history of Farmingdale State College; and prepares the institution for the future.

Master Plan Goals

The master plan goals provided a framework for the concept alternatives and final recommendations. They were developed by the planning team to ensure that strategic investments in campus facilities contribute to the long-term vision of the campus. The matrix on the following page provides an overview of the proposed master plan projects and how they align with the master plan goals.

The goals outlined in the matrix include:

1. Enhance the learning environment for traditional, hybrid, and online courses.
2. Design facilities that are welcoming to a diverse group of students.
3. Identify opportunities to engage students both inside and outside of the classroom.
4. Create spaces that Support the professional development of faculty and staff.
5. Integrate new and emerging technologies into the campus environment.
6. Promote the use of renewable energy and sustainable practices.
7. Continue to expand partnerships and programming with community organizations.
8. Explore opportunities to utilize space for civic and entrepreneurial pursuits.

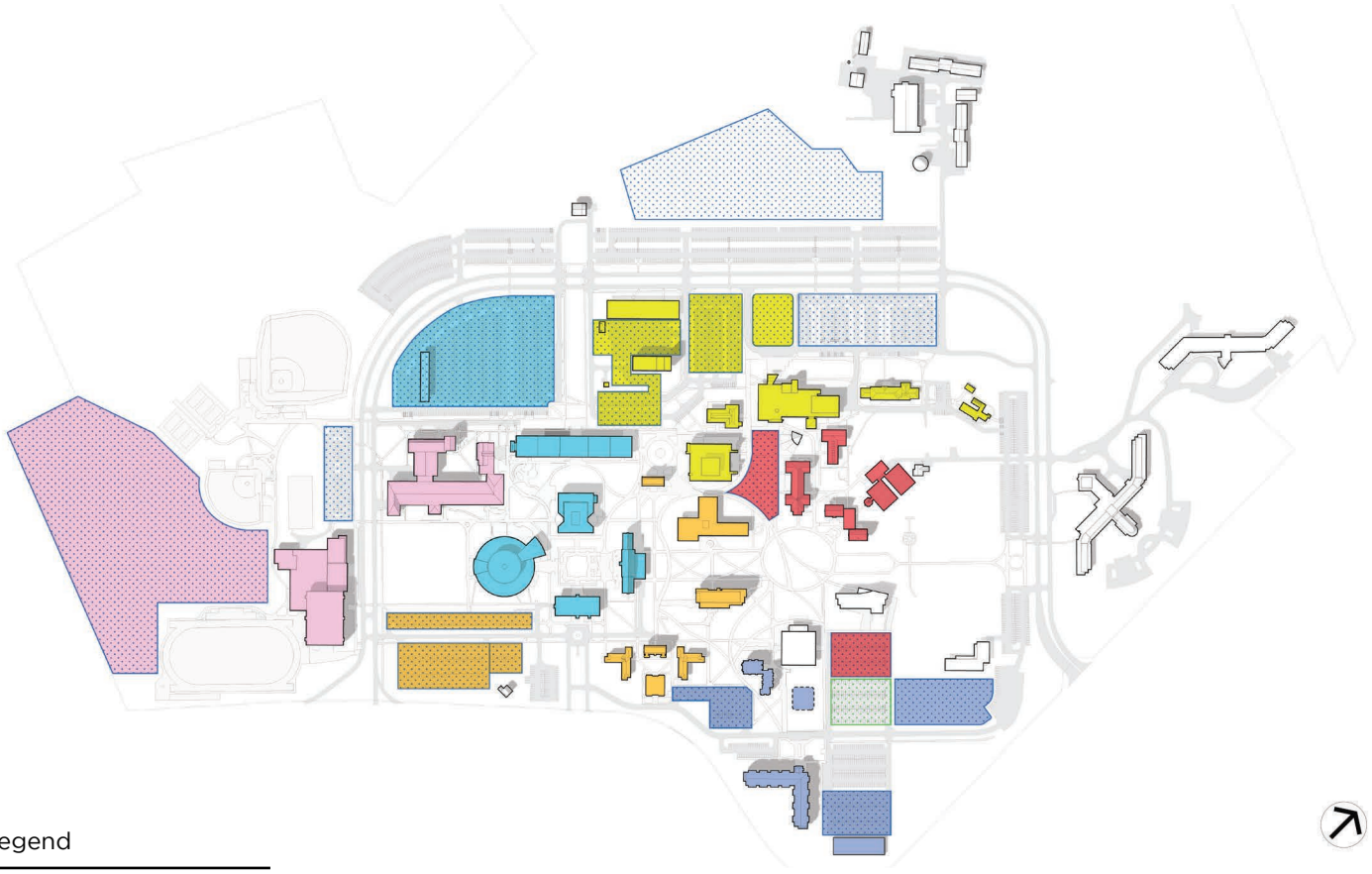
	Master Plan Goals							
	Goal #1	**Goal #2**	**Goal #3**	**Goal #4**	**Goal #5**	**Goal #6**	**Goal #7**	**Goal #8**
Priority Projects								
Whitman Hall Renovations	●	●	●	●	●	●		
Gleeson Hall Renovations	●	●	●	●	●	●	●	●
Lupton Hall Renovations	●	●	●	●	●	●	●	●
Hicks/Cutler Hall Renovations & Addition		●	●		●	●		
Greenley Library Renovations	●	●	●		●	●		
Cipriani Drive Improvements		●				●		●
Parking Lot Pedestrian Connectivity		●				●		
FSC Shuttle System Redesign		●				●		●
Melville Entrance Plaza & Orchard Walkway		●	●			●		
Trail Access Improvements		●	●			●		●
Building System Upgrades								
All Buildings	●	●			●	●		
Long-Range Projects								
Hooper Hall	●	●			●	●	●	
Knapp Hall	●	●			●	●	●	
Ward Hall		●			●	●	●	
Student Housing		●	●		●	●		●
Student Center		●	●		●	●	●	●
Landscape Management Plan		●				●		
Green Infrastructure Plan		●				●		
Hardscape Plan		●				●		

Figure 21 - Master Plan Matrix

Integration with Clean Energy Master Plan

A Clean Energy Master Plan (CEMP) was developed by Wendel in October 2023. The purpose of the CEMP was to create a framework for improving system efficiency, transitioning from fossil fuels, and achieving the net zero emission goals set forth in NYS CLCPA, BuildSmart 2025, and SUNY Directive 1B-2. Wendel worked with JMZ Architects and Setty & Associates to ensure that the scenarios identified in the CEMP work hand-in-hand with master plan recommendations. Energy Efficiency Measures (EEM) included in the CEMP will be incorporated into major renovation projects identified in this Facilities Master Plan Update.

In addition to building system upgrades, major renovation projects include geothermal wellfields and associated equipment that serve multiple campus buildings. The proposed geothermal wellfields are shown in Figure 22 (below). This conversion to geothermal energy will assist the College in meeting the requirements of SUNY Directive 1B-2 and Executive Order 22, both of which emphasize energy efficiency and the reduction of carbon emissions. These efforts align with the broader goals of the Climate Leadership and Community Protection Act (CLCPA), ensuring that the College contributes to New York State's sustainability initiatives.



Legend

- Cluster 2: Heat Pumps Located in Gleeson Hall
- Cluster 3: Heat Pumps Located in Greenley Library
- Cluster 4: Heat Pumps Located in Lupton Hall
- Cluster 5: Heat Pumps Located in Whitman Hall
- Cluster 6: Heat Pumps Located in New Student Center
- Cluster 7: Heat Pumps Located in Hicks/Cutler Hall
- Potential Additional Wellfield Locations
- Wellfield Under Construction (Sinclair Hall)

Figure 22 - Proposed Geothermal Wellfield Locations

A major component of the Clean Energy Master Plan was developing a long-term path to decarbonization of systems that currently use fossil fuels, which is the majority of heating, domestic hot water, humidification, and process loads on the campus. Five technical scenarios were developed with different approaches to removing these fossil fuel energy sources:

- Scenario 1: Electric Steam Boilers to Replace Existing Dual Fuel Steam Boilers at the Boiler Plant
- Scenario 2: Geothermal Heat Pump Plant | Central Hot/Chilled Water Heat Pump Plant
- Scenario 3: Geothermal Heat Pump Plant | Building Hot/Chilled Water Heat Pumps
- Scenario 4A: Clustered Air Source Heat Pump Plants
- Scenario 4B: Clustered Geothermal Heat Pump Plants

Scenario 4B was selected by the project team, which includes SUCF and Farmingdale State College stakeholders, as the recommended strategy for pursuing long-term decarbonization.

Recommended Scenario

- Cluster Plants with a central neutral temperature water loop
- Install distributed Geothermal Wellfields
- Distribute chilled water and 140F hot water
- Re-use as many of the existing building systems after stress testing

The recommended scenario includes seven clusters, or groups of buildings, with centrally located ground-source heat pumps that provide hot and chilled water to the clusters. The concept of district heat pump clusters, instead of individual building heat pumps or a campus level district heat pump plant, allows the campus to transition to an electrified heating system in phases or stages. With this type of system, the College will be able to methodically upgrade building systems in a manner that minimizes disruption to campus activities and provide the necessary upgrades to aging infrastructure. Grouping nearby buildings allows for simultaneous loads to be shared between buildings, particularly in circumstances where there may not be simultaneous loads within an individual building. By interconnecting multiple buildings, loads may be shared between them instead of operating independently and requiring heat rejection/injection.

The clusters are comprised of the following grouping of buildings:

- Cluster 1: Child Care Building
- Cluster 2: Heating Plant, Service Building, Gleeson Hall, Campus Center, Horton Hall, Quintyne Hall, and University Police
- Cluster 3: Hale Hall, Greenley Library, Roosevelt Hall, Knapp Hall, and Laffin Hall
- Cluster 4: Lupton Hall and Nold Hall
- Cluster 5: Ward Hall, Whitman Hall, School of Business, Hooper Hall, Health and Wellness, Memorial Hall, and Alumni Hall
- Cluster 6: Orchard Hall and Dewey Hall; the Master Plan Update added the new Student Center and Student Housing
- Cluster 7: Thompson Hall, Campus Commons, and Greenhouse; the Master Plan Update added Hicks and Cutler Halls
- Sinclair Hall and Computer Science Building are currently in construction

Buildings not connected to the main campus steam loop, including the Aviation Center, President's Residence, and Maintenance Cluster are recommended to utilize Variable Refrigerant Flow (VRF) systems to replace gas-fired/DX equipment and electric infrared unit heaters to replace gas-fired unit heaters as means of removing fossil-fuel energy sources from operations.

Figures 23 through Figure 26 on the following pages illustrate the proposed shift from fossil fuel energy source end uses to electric source end uses.

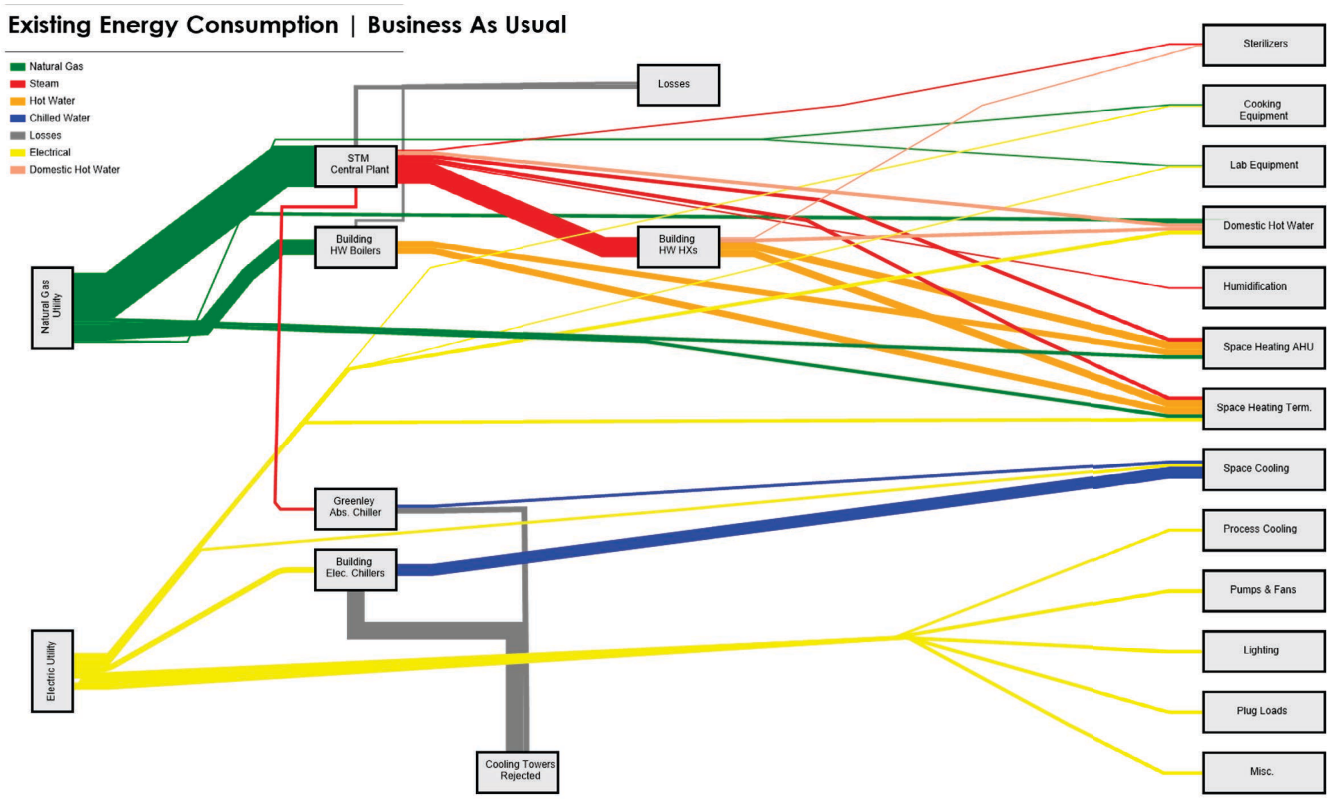


Figure 23 - Existing Energy Consumption

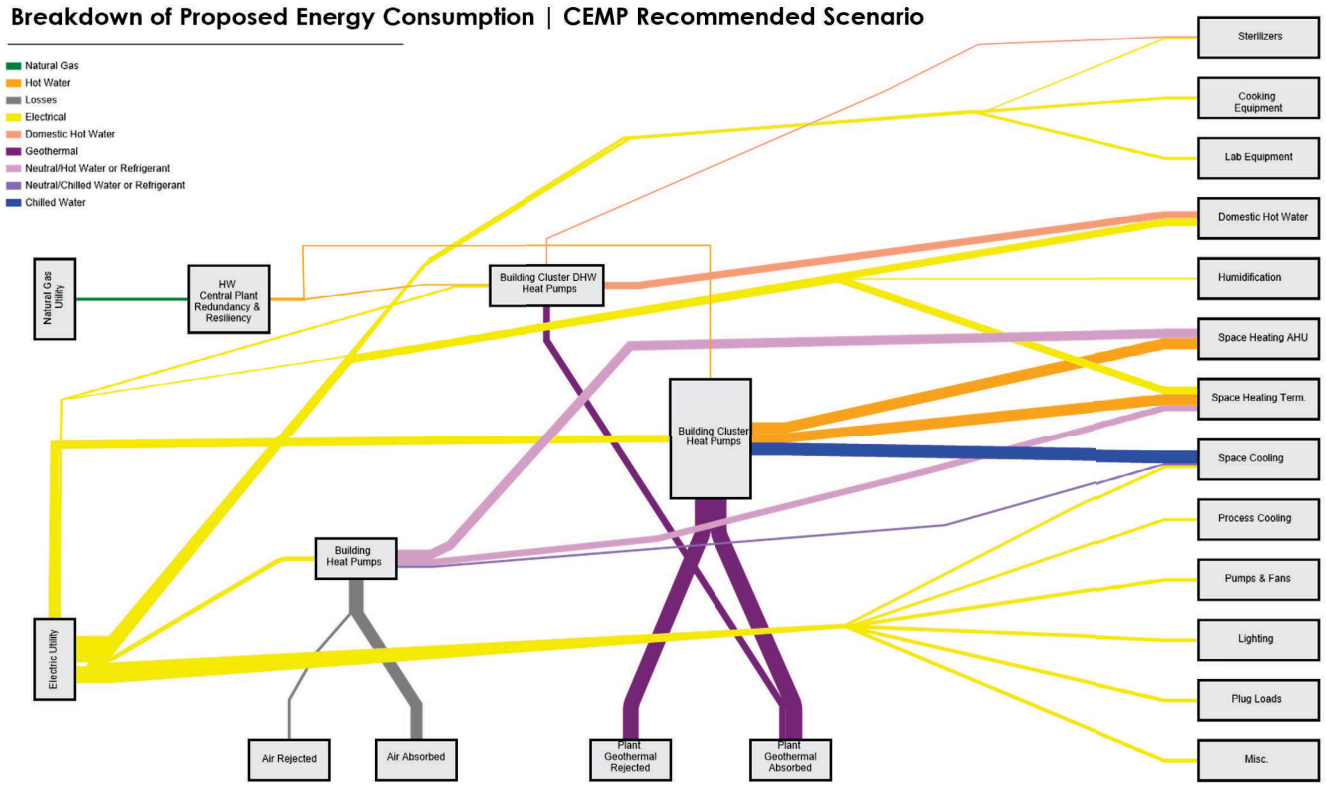


Figure 24 - Proposed Energy Consumption

Resiliency

For resiliency purposes, the central steam plant is recommended to be repurposed over time to a new gas-fired condensing hot water boiler plant. The new condensing hot water boilers will be connected to the new neutral temperature loop, which will allow the boilers to feed heating hot water directly to the buildings in the event of power loss. In the near term, the existing steam connections to each building will serve as emergency backup.

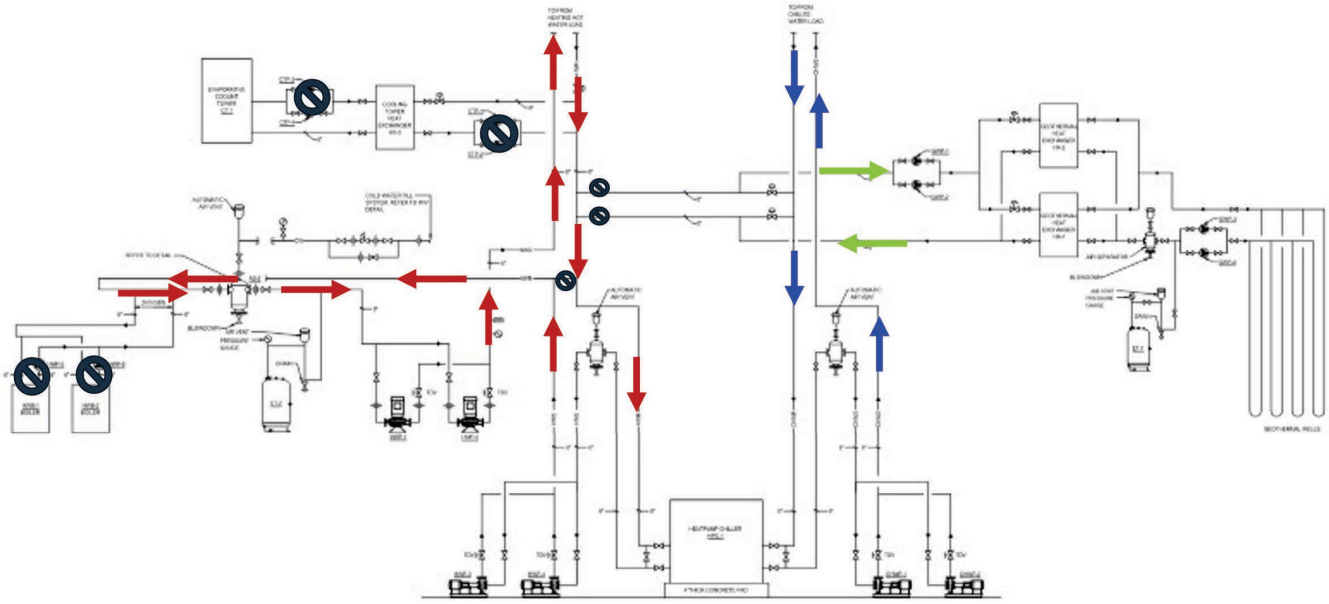


Figure 25 - Operation of Backup Boiler Equipment During Typical Operation

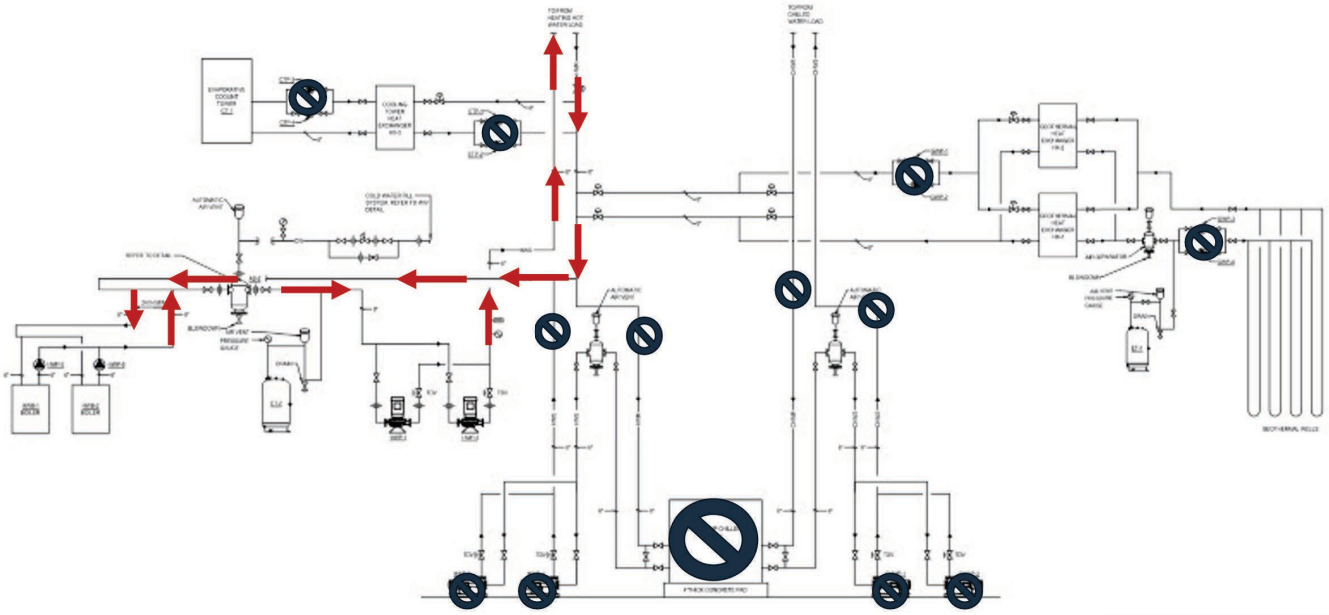


Figure 26 - Operation of Backup Boiler Equipment During Emergency Operation

Implementation Plan

The implementation plan on the following page was developed by the planning team to align capital funding with campus priorities. The first five years of the master plan timeline include planned renovation and new construction projects. Anticipated timelines for these projects were provided by Farmingdale State College. Additional information on the planned projects is included in *Phase IV: Concept Alternatives*.

Priority projects identified by the planning team are included in the next five years. Anticipated timelines were developed for each project to maximize the required investment, minimize the amount of swing space, and reduce the number of moves for each department. Site improvement projects will be completed incrementally over the ten year master plan timeline.

Few institutions complete all projects identified as part of a comprehensive plan within the anticipated timeline. The implementation plan should, therefore, be periodically reviewed and adjusted to reflect the evolving needs of the institution.

Estimates of Probable Cost

Estimates of probable cost were developed for priority projects based on square foot costs for each space type and building system. Cost estimates incorporate prevailing wage rates for Suffolk County and assume normal working hours and conditions. They include construction costs, general conditions, overhead and profit, design contingencies, escalation, and soft costs (design fees, contingencies, furnishings, fixtures, and equipment). Escalation was calculated based on the anticipated midpoint of construction. Since most priority projects will begin in the second half of the master plan timeline, escalation had a significant impact on total project costs.

To align the master plan recommendations with the Clean Energy Master Plan, SUNY Directive 1B-2, and Executive Order 22, priority projects include the installation of geothermal wellfields that are sized to serve multiple buildings (see Figure 22). Cost estimates include bore holes and equipment that will eventually serve up to 30 campus buildings.

Due to the volatility of the construction market, particularly after the pandemic, it is difficult to predict costs several years into the future. All cost estimates should, therefore, be reviewed and adjusted prior to obtaining funding for each project. Detailed cost estimates can be found in Appendix B.

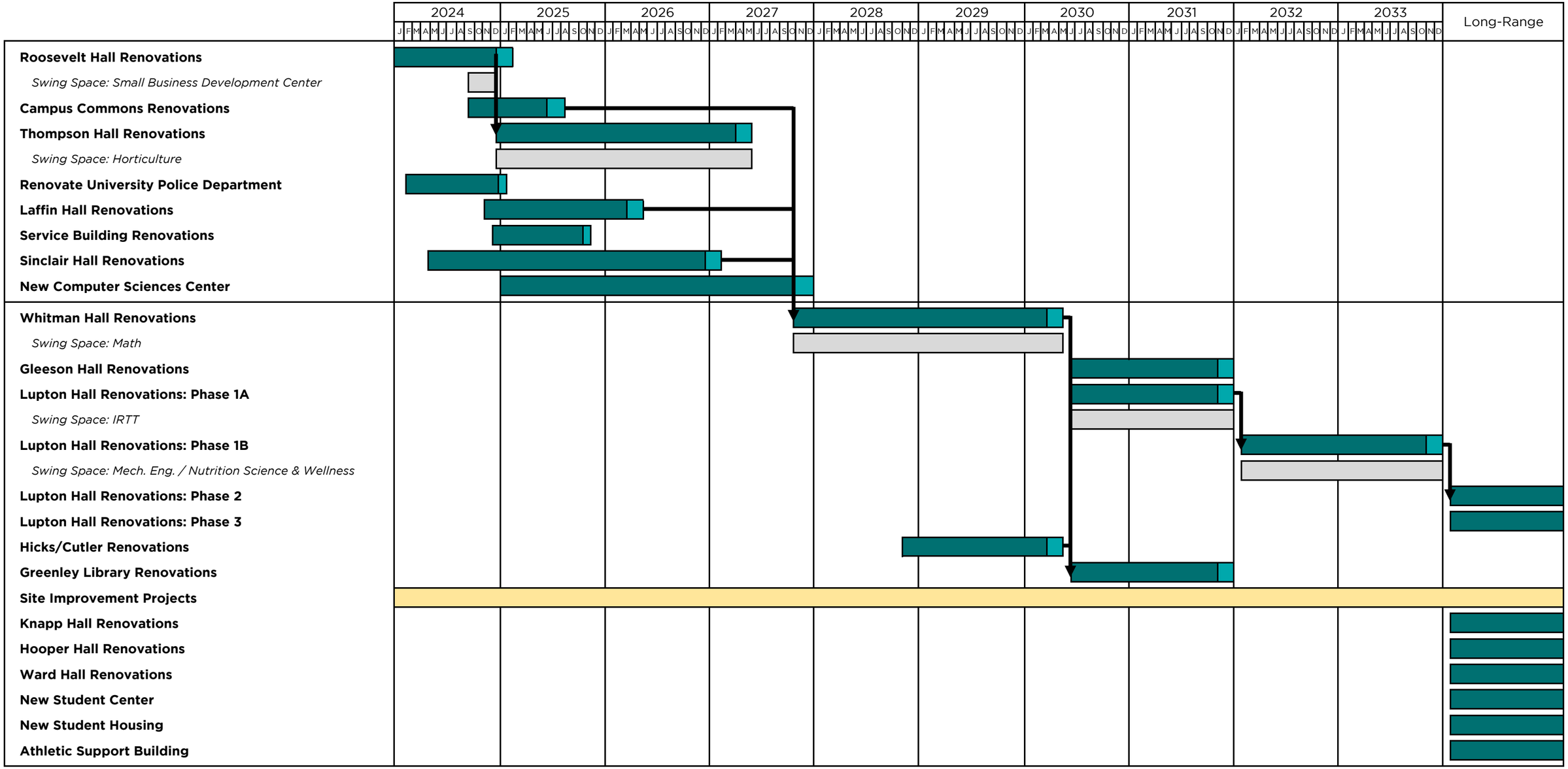


Figure 27 - Implementation Plan

	Construction Costs									
Project Description	Addition	Renovations	Swing Space	Geothermal Wellfield	Sitework	**Construction Cost Total**	Escalation	Soft Costs	**Project Cost Total**	Comments
Whitman Hall Renovations	*N/A*	$68,052,552	*N/A*	$7,567,000	*N/A*	**$75,619,552**	$14,012,303	$31,371,149	**$121,004,000**	Geothermal Wellfield Serves Alumni Hall, Health and Wellness Center, Hooper Hall, Memorial Hall, School of Business, Ward Hall, and Whitman Hall
Gleeson Hall - Renovations	*N/A*	$27,162,872	*N/A*	$6,380,000	*N/A*	**$66,096,228**	$19,195,006	$29,851,932	**$115,144,000**	Geothermal Wellfield Serves Campus Center, Gleeson Hall, Heating Plant, Horton Hall, Service Building, University Police, and Quintyne Hall
Gleeson Hall - Update Building Systems		$32,553,356								
Lupton Hall Renovations	*N/A*	$108,046,089	$10,376,800	$12,343,000	$3,501,500	**$134,267,389**	$60,621,726	$68,211,190	**$263,101,000**	Geothermal Wellfield Serves Lupton Hall and Nold Hall
Hicks and Cutler Hall Renovations	$10,329,600	$18,060,454	*N/A*	$4,002,000	$2,761,000	**$35,153,054**	$7,336,442	$14,871,324	**$57,361,000**	Geothermal Wellfield Serves Cutler Hall, Greenhouse, Hicks Hall, Campus Commons, and Thompson Hall
Greenley Library - Renovations	*N/A*	$9,215,943	*N/A*	$9,964,000	*N/A*	**$37,688,752**	$10,945,190	$17,021,880	**$65,656,000**	Geothermal Wellfield Serves Greenley Library, Hale Hall, Knapp Hall, Laffin Hall, and Roosevelt Hall
Greenley Library - Update Building Systems		$18,508,809								
Building Subtotal						**$348,824,975**			**$622,266,000**	
Cipriani Drive Improvements	*N/A*	*N/A*	*N/A*	*N/A*	$8,238,200	**$8,238,200**	$1,655,054	$2,275,448	**$12,169,000**	
Parking Lot Pedestrian Connectivity	*N/A*	*N/A*	*N/A*	*N/A*	$2,438,122	**$2,438,122**	$489,819	$673,426	**$3,602,000**	
FSC Shuttle System Redesign	*N/A*	*N/A*	*N/A*	*N/A*	$194,450	**$194,450**	$39,065	$53,708	**$288,000**	
Orchard Hall Walkway	*N/A*	*N/A*	*N/A*	*N/A*	$3,695,000	**$3,695,000**	$742,326	$1,020,585	**$5,458,000**	
Melville Entrance Plaza	*N/A*	*N/A*	*N/A*	*N/A*	$865,900	**$865,900**	$173,959	$239,168	**$1,280,000**	
Trail Access Improvements	*N/A*	*N/A*	*N/A*	*N/A*	$2,331,000	**$2,331,000**	$468,298	$643,839	**$3,444,000**	
Sitework Subtotal						**$17,762,672**			**$26,241,000**	
Master Plan Total						**$366,587,647**			**$648,507,000**	

Figure 28 - Cost Estimate Summary

Building Summaries

The diagrams below provide a visual breakdown of the estimated project cost for each building targeted for renovation within the master plan timeline. As shown in the diagrams, construction cost will only account for a portion of the overall project cost for these projects.

Since only a portion of Gleeson Hall and Greenley Library will be fully renovated, a significant portion of the project cost in these buildings will be allocated to system upgrades. This emphasizes the critical need for infrastructure improvements in these buildings.

Whitman Hall, Lupton Hall, Hicks Hall, and Cutler Hall show a more significant investment in renovations, highlighting the comprehensive nature of the work planned for these facilities. The addition to Hicks and Cutler accounts for 18 percent of the overall project cost.

The planning team recommended a phased renovation of Lupton Hall to reduce the amount of swing space needed for the project. As a result, swing space was reduced to only 4 percent of the overall project cost.

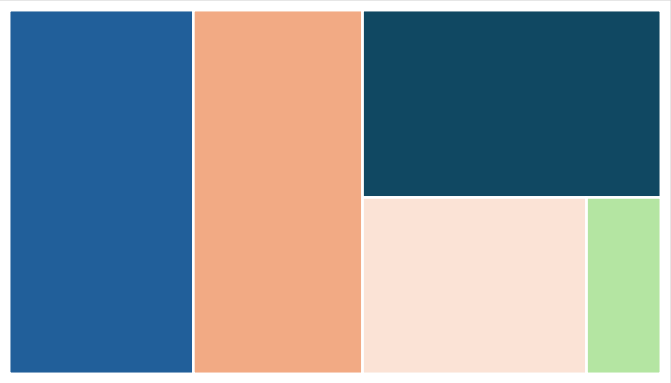


Figure 29 - Gleeson Hall Summary

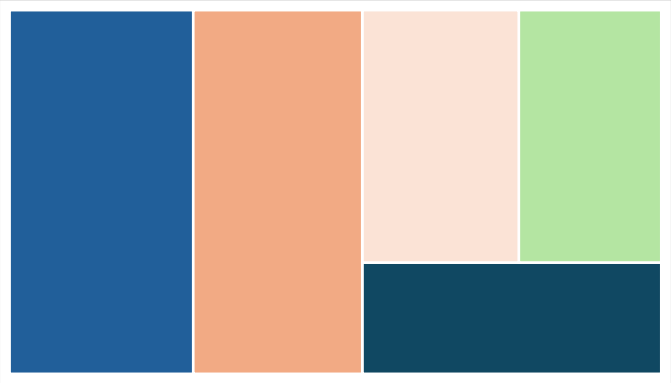


Figure 30 - Greenley Library Summary

Figure 31 - Whitman Hall Summary

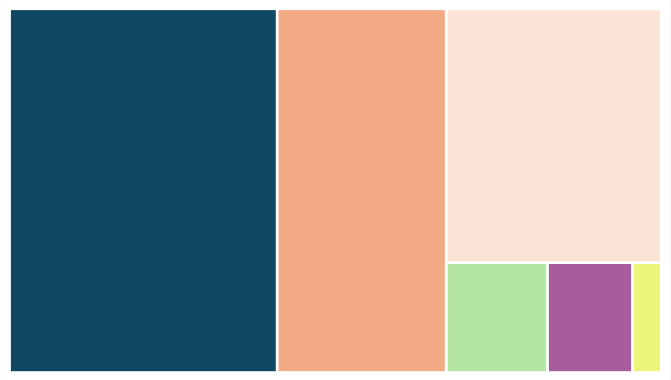


Figure 32 - Lupton Hall Summary

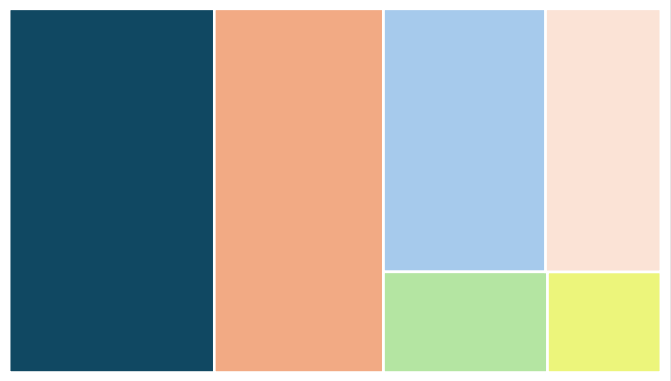


Figure 33 - Hicks/Cutler Hall Summary

Legend

- Addition
- Renovation
- System Upgrades
- Swing Space
- Geothermal
- Sitework
- Escalation
- Soft Costs


HICKS HALL

Priority Projects

The focus of this master plan is campus renewal. Priority projects include a full renovation of Whitman Hall and Lupton Hall, as well as partial renovations to Gleeson Hall and Greenley Library. Hicks and Cutler Halls will also be fully renovated and an addition will be constructed for vertical accessibility and building services.

Site improvement projects include the redesign of Cipriani Drive; installation of pedestrian infrastructure in select parking lots; shuttle system improvements; creation of a pedestrian walkway along Melville Road and Route 110; and trail access improvements.

All priority projects advance the master plan goals and support the strategic direction of the College. Priority projects are detailed in this section and include a project description, proposed scope of work, space program, concept plans, enabling projects, concurrent construction, swing space requirements, and estimates of probable cost.

Enabling Projects

Enabling projects have been identified for priority projects and should be completed prior to the proposed work to reduce project costs and minimize the need for swing space.

Concurrent Construction

Concurrent construction projects have been identified for each priority project to help align capital funding with anticipated project timelines.

Swing Space

In order to transform existing space, it may be necessary to relocate building occupants to temporary space during the renovations. Every effort has been made to phase projects so that occupants only move once, from their current space to their final location. However, swing space will be needed for the renovations to Whitman Hall and Lupton Hall, as well as for planned building system upgrades in several buildings.

Clean Energy Master Plan

The Clean Energy Master Plan provides a framework to help the College improve system efficiency, transition from carbon-based fossil fuels, and achieve sustainability goals. Each project description includes the Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan that will be addressed by the proposed work.

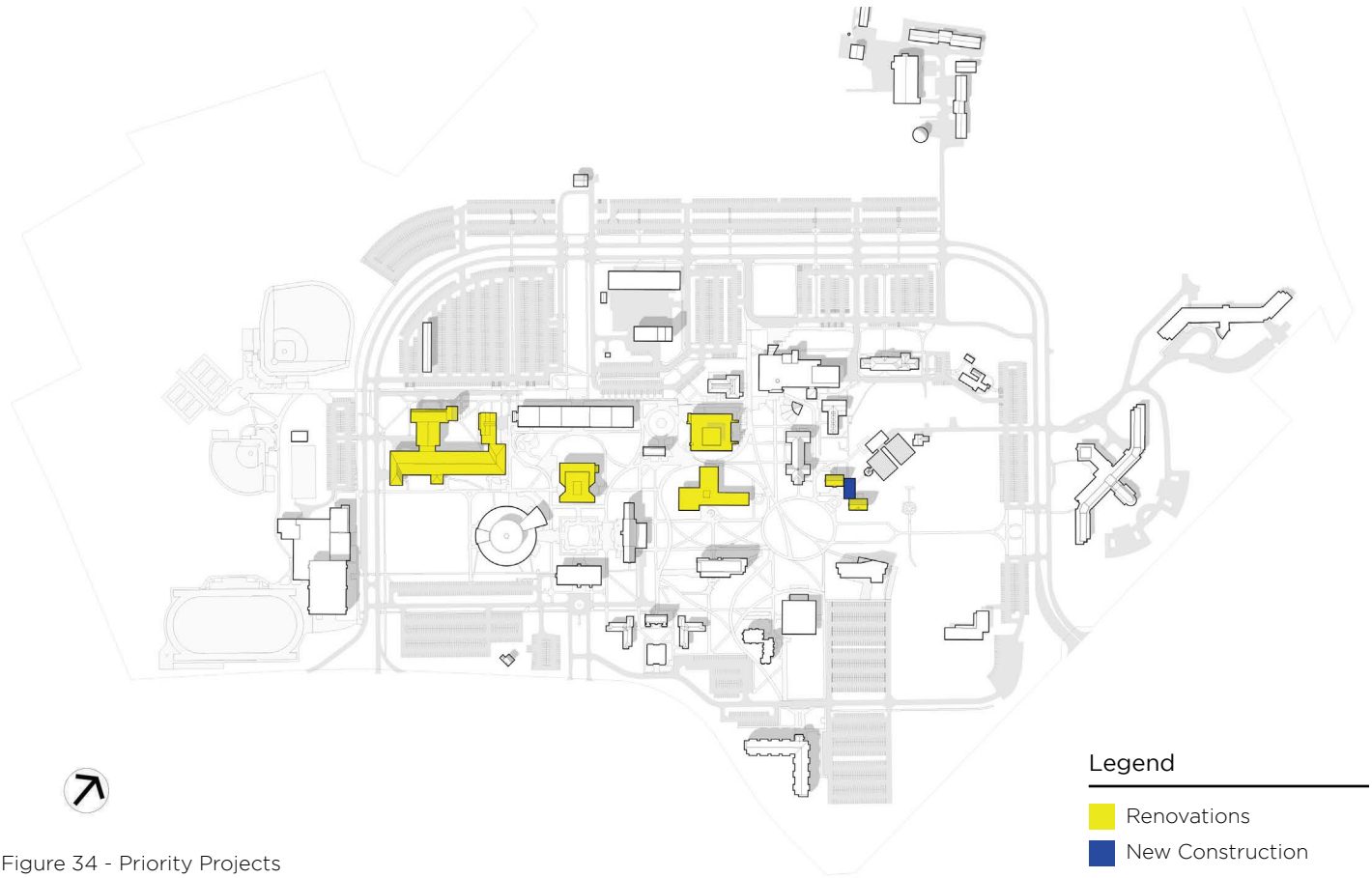
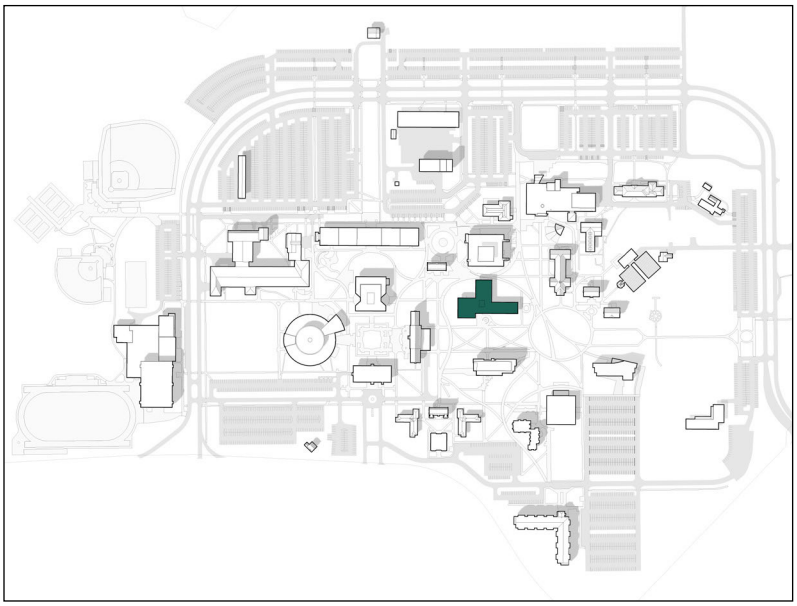


Figure 34 - Priority Projects

Whitman Hall Renovations



Project Description

As part of the master plan recommendations, Whitman Hall will be fully renovated to support current and future academic programs. A portion of the lower level will be reconfigured to create state-of-the-art facilities for the new data center. Office and support space for Educational Media and Computer Services will also be located on the lower level.

The first floor lecture hall will be updated with new seating and instructional technology. An IT Help Desk will be created adjacent to the main lobby, so that it is visible and easily accessible for students.

The first and second floors will be renovated for academic programs. Updated laboratory and support space will be created for Chemistry and Physics to enhance both academic and research capabilities. Faculty offices will be configured to maximize access to natural light and views.

Mathematics faculty will remain in the building, but will move to new office space adjacent to the Math Center. History faculty will move from their current space in Memorial Hall and have access to a new GIS Lab outfitted to support advanced research. The renovated building will also include shared research space for all faculty in the building.

Building Statistics

Major Use: Academic
Construction Year: 1964
Building Area: 81,871 GSF
FCI Condition: 20%

Move Out

Computer Security (CSC)
Computer Systems (CSC)
Criminal Justice (Sinclair)
Human Resources (Campus Commons)
Procurement (Campus Commons)
Disability Services (Laffin)

Move In

Computer Services (Greenley)
Data Center (Greenley)
Educational Media (Greenley)
Chemistry (Lupton)
Physics (Lupton)

Enabling Projects

Campus Commons
Computer Sciences Center (CSC)
Sinclair Hall
Laffin Hall

Concurrent Construction

Hicks/Cutler Renovations

Swing Space Needs

Math (Ward)

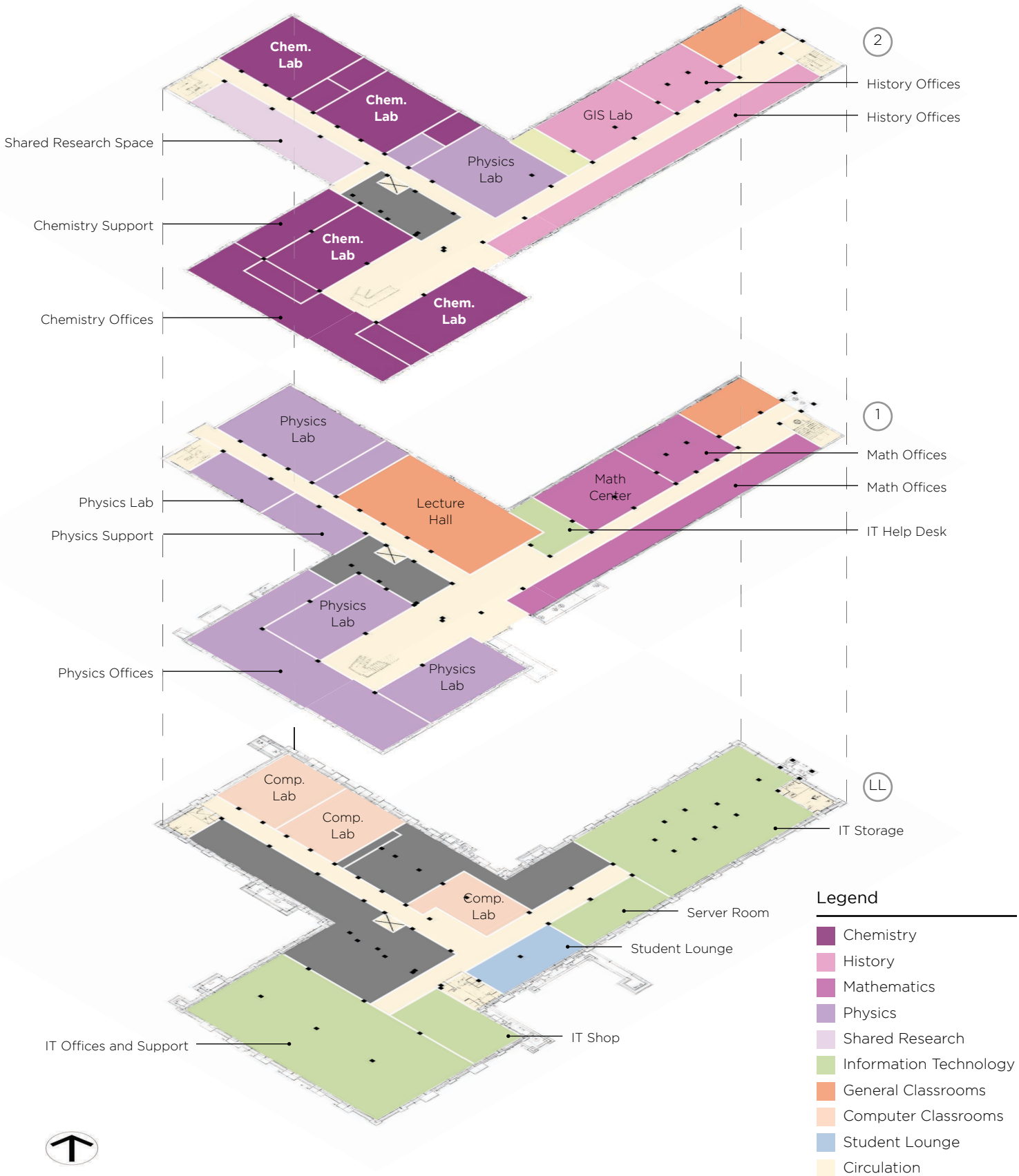


Figure 35 - Whitman Hall Proposed Floor Plan

Proposed Scope of Work

Full Renovation
Work Area: 76,728 GSF
Project Timeline: November 2027 - May 2030
Cost Estimate: $121,004,000

Building Exterior

The College completed an exterior rehabilitation project in 2011. As a result, the exterior envelope is in good condition. No additional exterior improvements are anticipated.

Building Interior

The building will be fully renovated to provide updated space for the Chemistry, Physics, History, and Mathematics programs. A new data center will be constructed on the lower level. Due to the age of the building, an allowance should be included for abatement of hazardous materials.

- Classroom Space: 4,628 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, overhead projectors, projection screens, and ceiling-mounted speakers
- Lecture Hall Space: 3,050 GSF
  - Medium-Intensity Renovations: No Reconfiguration
  - Floors: Carpet; Vinyl Base; Vinyl Stair Nosings
  - Walls: Remove Wood Panels; Prime and Paint Existing Walls; Install Acoustic Wall Panels
  - Ceilings: Remove Acoustic Ceiling Tiles; Patch, Prime, and Paint Existing Ceiling
  - Provide new fixed seating and seminar tables with modesty panels, power, and data
  - Provide whiteboards, overhead projector, projection screen, and ceiling-mounted speakers
- Laboratory Space: 18,135 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Floor Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide lab benches, lab casework, whiteboards, flat panel displays, and ceiling-mounted speakers
- Data Center: 1,123 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide raised floor system in server room
- Office and Support Space: 25,943 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms
- Student Lounge Space: 1,086 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Circulation Space: 12,526 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 8,580 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Provide building signage and window treatments throughout work area

Main Lobby

Data Center

Moving the Data Center from Greenley Library to Whitman Hall will require careful planning and should be done in several phases to ensure service is not disrupted.

- Create Data Center Transition Plan that includes budget, timeline, planned outages, risks, and required personnel.
- Design the Data Center to include the appropriate power and cooling to accommodate the current and future needs of the campus. UPS and generator power should be considered during the design.
- Survey the existing Outside Plant (OSP) campus infrastructure to ensure that each building has a proper pathway to Whitman Hall. Design any new pathways required to connect buildings to the new Data Center.
- Construct the new Data Center and necessary OSP infrastructure and cabling.
- Purchase, install, and commission new network electronics for the Data Center.
- Transition one building at a time from the existing Data Center in Greenley Library to the new Data Center in Whitman Hall. The transition periods should happen on nights, weekends, or holidays to ensure no compromise to service.
- Once all buildings have transitioned from Greenley Library, decommission existing Data Center. Some hardware may be recycled, while others may have to move to the new Data Center.

Technology Infrastructure

Provide the following systems throughout the work area as part of the renovations. Other floors or spaces may be affected by the renovations since many buildings on campus are currently fed from a single IDF that may be disrupted during construction.

- IT IDF/MDF spaces that meet current industry standards
- Horizontal and backbone telecommunications cabling
- Wireless access points (Wireless Networking)
- OSP cabling in existing pathways
- Electronic security systems (Cameras, Access Control, Intrusion, Blue Phones) for both inside and outside the building
- Public safety DAS and cell phone DAS systems as required for proper coverage of services

Mechanical Systems

- Remove and replace the (3) existing AC units and the AHU-1 serving the lower level.
- Replace the building's hot water heating system and PRV station; retain steam service for backup.
- Install a new HVAC system aligned with the campus energy master plan, including a hybrid system with cluster plants and a central neutral temperature water loop.
- Install a shared geothermal wellfield (8" diameter, 500 feet deep) for Ward Hall, School of Business, Hooper Hall, Health and Wellness, Memorial Hall, and Alumni Hall.
- Install geothermal wellfield pumps and (6) 70-ton heat recovery heat pumps in Whitman Hall.
- Install primary chilled and hot water loops (45/55°F and 140/120°F) and secondary loops for each building. Install dedicated CRAC units (2N setup) for the server room in Whitman Hall.
- Equip chemistry and physics labs with 100% outdoor air units, laboratory exhaust fans, and air valves with N+1 redundancy.
- Provide exhaust systems for electric autoclaves and glasswashers in labs.
- Install a Dedicated Outdoor Air System (DOAS) with fan coil units (FCU) for ventilation and temperature control in other spaces.
- Install VAV boxes with CO2 sensors for ventilation in densely occupied spaces.
- Implement DDC controls compatible with the JCI BMS system and flow meters for energy monitoring.

Lecture Hall to Remain

Electrical Systems

- Upgrade the building's electrical service with a 1,500 kVA step-down transformer and 2,000 Amps 277/480V switchboard.
- Provide additional step-down transformer for 120/208V distribution and install plug load controllers in offices and labs.
- Install a new generator for emergency power to support the fire pump, lighting, elevator, server rooms, and optional standby.
- Replace existing T8 fluorescent lights with LED fixtures and install controls compliant with energy codes and daylight dimming.
- Install a central lighting management system for enhanced control of lighting fixtures.
- Install electrical sub-meters for monitoring energy use by type (heating, cooling, lighting, etc.).
- Modify the fire alarm system to fit the new space program and renovation.

Plumbing Systems

- Replace the existing 3" cold water service with a new service, including code-compliant backflow prevention.
- Disconnect the existing hot water service and install a new hot water system connected to geothermal heat recovery chillers with a heat pump-type water heater for temperature boost.
- Provide new cold and hot water distribution piping with compliant insulation.
- Assess the existing 1725 GPM sewage ejector pump and replace if needed based on the new program layout.
- Install new specialty plumbing systems (central vacuum, compressed air, reverse osmosis, deionized water, acid neutralization) for the chemistry and physics programs.
- Install low-flow, automatic sensor-type restroom flush valves and faucets.

Fire Protection Systems

- Assess existing fire protection service for code compliance and install an RPZ BFP if required.
- Modify the sprinkler system to accommodate the renovated spaces, meeting hazard occupancy requirements.
- Install a pre-action sprinkler system in the server room to minimize accidental discharges.

Clean Energy Master Plan

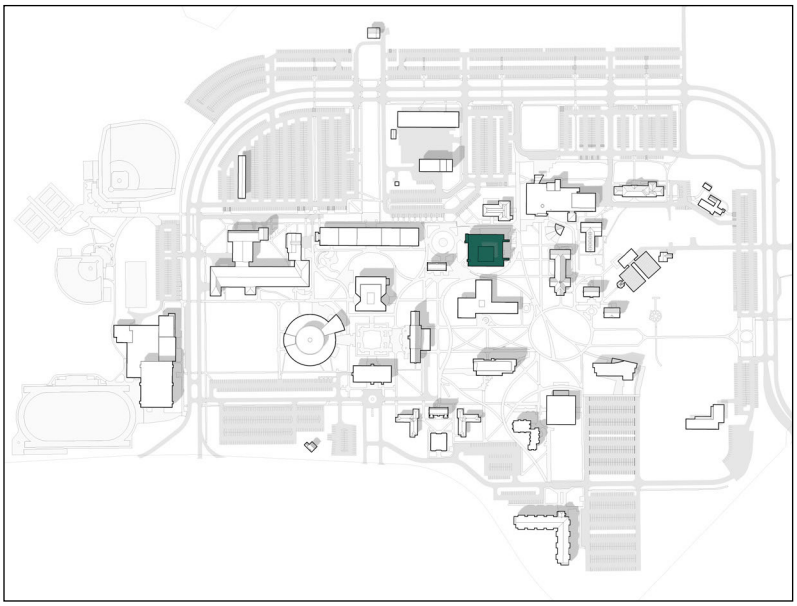
The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1C: Lighting Upgrades (Fixture Replacements with Advanced Lighting Controls)
- EEM 5.1: Submetering
- EEM 6.2A: AHU Replacements
- EEM 6.6: Demand Controlled Ventilation
- EEM 7.4B: Water-to-Water Heat Pumps w/ Geothermal (Scenario 4B)
- EEM 11.1: VFDs on Pumps
- EEM 12C: Tie in Domestic Hot Water to HRC Loops

	Existing			JMZ Program		
	Building	**# of Workstations**	**NASF**	**Building**	**# of Workstations**	**NASF**
Chemistry						
Office Suite	Lupton	10	1,700	Whitman	10	1,900
Labs & Support Space	Lupton	4	8,475	Whitman	4	8,200
Computer Services & Educational Media						
Office Suite	Whitman	6	1,557	Whitman	28	5,334
Office Suite	Greenley	12	3,067			
Office Suite	Gleeson	7	1,714			
Shop & Support Space	Gleeson		4,309	Whitman		1,025
Storage	Whitman		745	Whitman		4,136
Storage	Greenley		268			
Server Room	Greenley		990	Whitman		950
IT Help Desk				Whitman		430
History, Politics, & Geography						
Office Suite	Memorial	16	1,872	Whitman	16	2,820
Labs & Support Space	Memorial	6	117	Whitman	40	1,408
Mathematics						
Office Suite	Whitman	15	2,530	Whitman	15	3,170
Math Center	Whitman		1,085	Whitman		1,025
Physics						
Office Suite	Lupton	14	2,400	Whitman	14	2,975
Labs & Support Space	Lupton	4	5,445	Whitman	5	8,360
Shared Spaces						
General Classrooms	Whitman	19	13,165	Whitman	5	4,371
Lecture Hall	Whitman	88	2,165	Whitman	88	2,165
Student Lounge	Whitman		460	Whitman		850
Shared Support Space				Whitman		400
Shared Research				Whitman		1,657
Total ASF			***52,064***			***51,176***

Figure 36 - Whitman Hall Space Program

Gleeson Hall Renovations



Project Description

The Nutrition Science and Wellness Program, currently located in Lupton Hall, will be relocated and expanded in Gleeson Hall. Faculty offices will be created on the first floor and new laboratory space on the lower level will be tailored to meet the specific needs of the curriculum. The IT shop and storage space currently located on the lower level will move to Whitman Hall.

The Nursing Program, already located in Gleeson Hall, will benefit from significant upgrades to the third floor. Laboratory space will be updated and a new simulation suite will be created that offers students practical experience in a controlled, realistic environment. Classrooms displaced by the simulation suite will be recreated on the lower level. Space on the third floor currently used for Biology research will be repurposed. Active research programs will be moved to the newly constructed shared research space in Whitman Hall or consolidated with other Biology research in Hale Hall.

To accommodate the anticipated growth in health sciences, additional offices will be provided on the third floor. The new laboratory and office space will ensure that resources are available to meet the future demands of the programs. Once the renovations are complete, all health science programs will be consolidated in the building. This strategic reallocation of space within Gleeson Hall will help to optimize existing resources; promote collaboration among faculty and students; and support the long-term success of the health sciences.

Building Statistics

Major Use: Academic

Construction Year: 1983

Building Area: 115.869 GSF

FCI Condition: 19%

Move Out

Educational Media (Whitman)

Biology Research

Computer Security (CSC)

Move In

Nutrition Science & Wellness (Lupton)

Enabling Projects

Computer Sciences Center (CSC)

Whitman Hall

Concurrent Construction

Lupton Hall Renovations

Greenley Library Renovations

Swing Space Needs

N/A

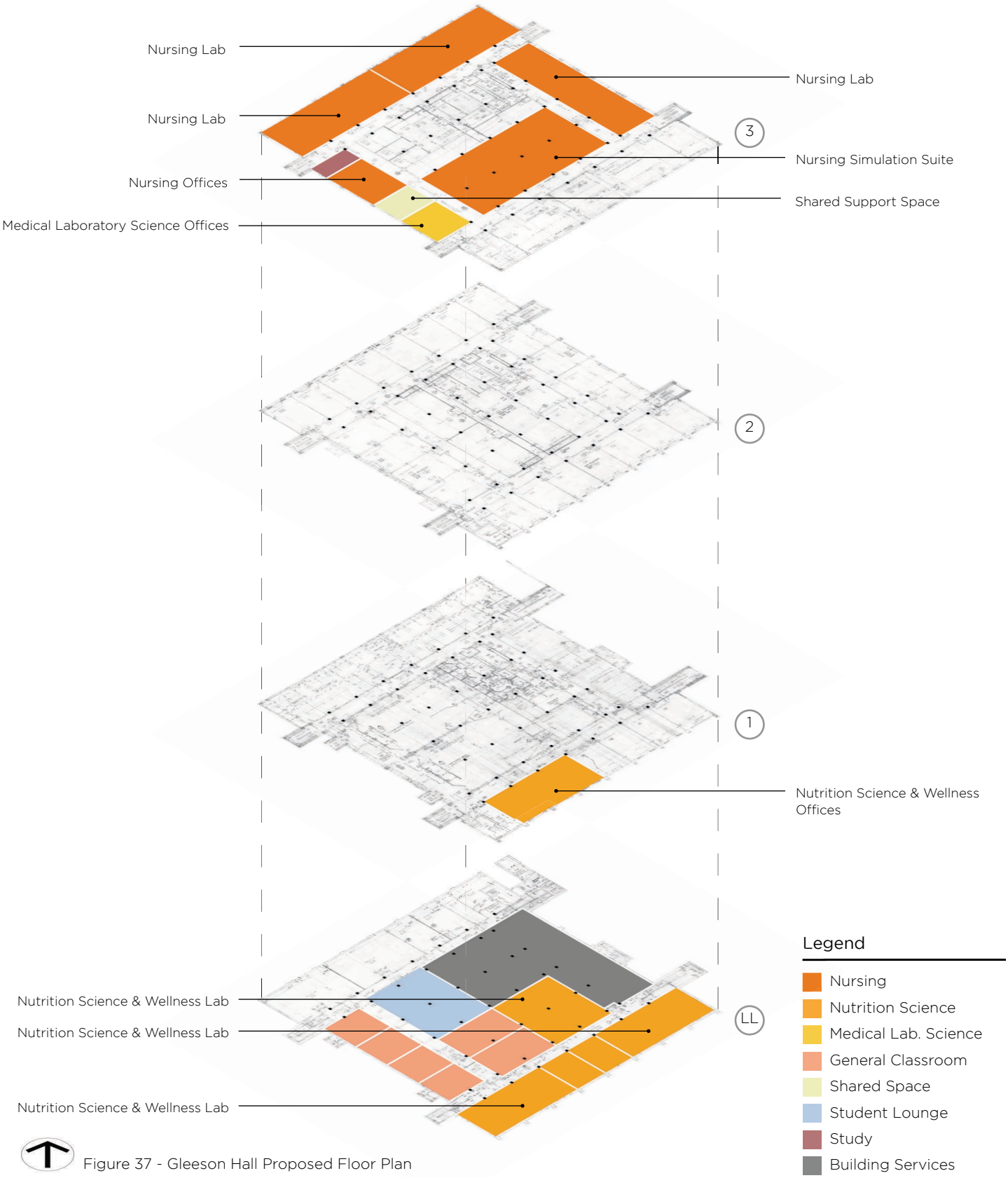


Figure 37 - Gleeson Hall Proposed Floor Plan

Proposed Scope of Work

Partial Renovation
Work Area: 36,856 GSF
Project Timeline: June 2030 - January 2032
Cost Estimate: $115,144,000

Building Exterior

The College recently completed a project to repair the facade and replace the windows. No additional exterior improvements are anticipated.

Building Interior

Portions of the lower level and first floor will be renovated for the Nutrition Science and Wellness Program. Three instructional labs and a new simulation suite for the Nursing Program will be created on the third floor.

- Classroom Space: 4,054 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, overhead projectors, projection screens, and ceiling-mounted speakers
- Laboratory Space: 17,423 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers
- Office and Support Space: 4,470 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms
- Student Lounge Space: 1,793 GSF
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Circulation Space: 4,303 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 4,813 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Install appropriate acoustical treatments throughout the building to ensure comfortable learning, research, and work environments.
- Provide building signage and window treatments throughout work area

Technology Infrastructure

- Install IT IDF/MDF spaces which meet current industry standards as required.
- Install horizontal and backbone telecommunications cabling where needed.
- Install wireless access points (wireless networking) where needed.
- Install new OSP Cabling if the building has not already been connected to the campus via the Data Center Project.
- Install electronic security systems (Cameras, Access Control) where needed.
- Install Public Safety DAS and Cell Phone DAS systems as required for proper coverage of services.

Mechanical Systems

- Remove and replace (5) AC units and (1) HV unit in the penthouse MER.
- Replace the building's hot water heating system and PRV station; retain steam service as a backup for resiliency.
- Install a new HVAC system aligned with the campus energy master plan.
- Install a hybrid system with cluster plants and a central neutral temperature water loop.
- Share geothermal wellfields and heat recovery heat pumps with Heating Plant, Service Building, Gleeson Hall, Campus Center, Horton Hall, Quintyne Hall, and University Police.
- Install a closed-loop geothermal wellfield with 8" diameter and 500 feet depth boreholes.
- Install geothermal wellfield pumps and (5) 70-ton modular heat recovery heat pumps in Gleeson Hall.

- Install primary chilled (45/55°F) and hot water (140/120°F) loops for each building, and heat exchangers for secondary loops.
- Provide dedicated make-up air units, kitchen hood exhaust fans, grease ducts, and kitchen hood control systems for the Nutrition Science Lab.
- Replace perimeter terminal heaters with new heaters sized for low-temperature hot water from heat recovery heat pumps.
- Replace existing pneumatic controls with DDC controls compatible with the campus JCI BMS system.
- Install flow meters on chilled and hot water piping loops for energy monitoring.

Electrical Systems

- Retain the existing 1500 kVA step-down transformer and 4,000 Amps 120/208V switchboard; replace panelboards and motor control center (MCC).
- Install plug load controllers in offices and spaces where required.
- Provide dedicated electrical panels for each laboratory space.
- Retain the Quintyne Hall generator for Gleeson Hall fire pump.
- Replace T8 fluorescent lighting with LED fixtures and install controls compliant with energy codes and daylight dimming requirements.
- Consider installing a central lighting management system.
- Install electrical sub-meters for monitoring energy use by type (heating, cooling, lighting, etc.).
- Revise the existing fire alarm system to fit the new space program and renovation.

Plumbing Systems

- Replace the existing cold water service with new piping and install code-compliant backflow prevention.
- Install a new hot water system tied to geothermal heat recovery chillers with heat pump supplemental heating for domestic hot water.
- Replace or retain the existing domestic hot water heating system based on condition.
- Install new hot water distribution piping with compliant insulation and circulating pumps for hot water maintenance.
- Remove and adjust the size of the house trap based on new sanitary loads.
- Assess and upgrade the capacity of sewage ejector pumps as needed.
  Install new specialty plumbing systems (central vacuum, compressed air, reverse osmosis, deionized water, acid neutralization) based on program requirements.
- Install low-flow, automatic sensor-type restroom flush valves and faucets.

Fire Protection Systems

- Assess the existing 750 GPM fire pump's capacity for new programming requirements.
- Provide a sprinkler system for offices/classrooms (light hazard occupancy) and wet labs/classrooms (ordinary hazard II).

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1C: Lighting Upgrades (Fixture Replacements with Advanced Lighting Controls)
- EEM 5.1: Submetering
- EEM 6.6: Demand Controlled Ventilation
- EEM 7.4B: Water-to-Water Heat Pumps w/ Geothermal (Scenario 4B)
- EEM 12C: Tie in Domestic Hot Water to HRC Loops

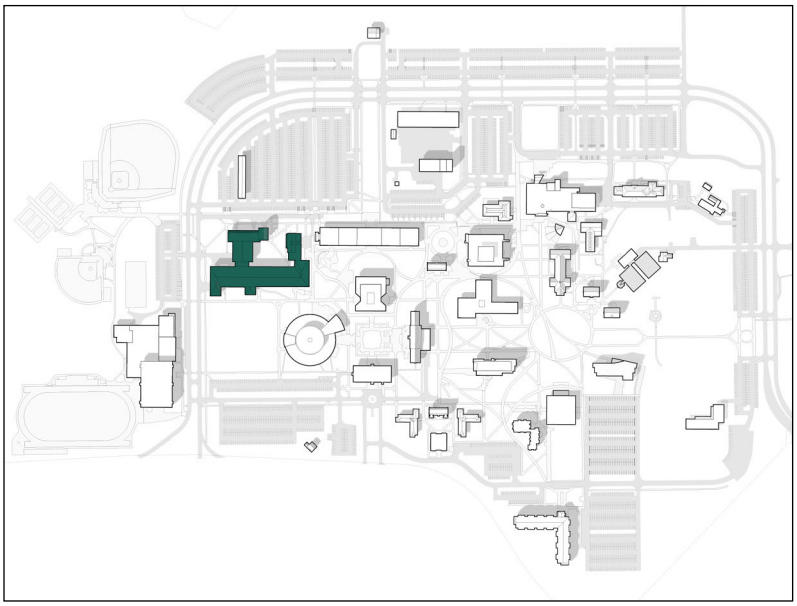
	Existing			JMZ Program		
	Building	# of Workstations	NASF	Building	#	NASF
Medical Laboratory Science						
Office Suite	Gleeson	2	306	Gleeson	4	640
Nursing						
Office Suite	Gleeson	3	311	Gleeson	5	931
Labs & Support Space	Gleeson	4	4,108	Gleeson	4	10,200
Nutrition Science & Wellness						
Office Suite	Lupton	5	1,312	Gleeson	5	1,625
Labs & Support Space				Gleeson	3	6,713
Shared Spaces						
General Classrooms	Gleeson	9	5,674	Gleeson	6	3,771
Study Area	Gleeson		320	Gleeson		309
Student Lounge				Gleeson		1,700
Shared Support Space				Gleeson		640
Total ASF			***12,031***			***26,529***

Figure 38 - Gleeson Hall Space Program

Nursing Lab Targeted for Renovation

Computer Security Lab to be Relocated

Lupton Hall Renovations



Project Description

As part of the master plan recommendations, Lupton Hall will be fully renovated to create updated engineering and technology space on campus. Due to the complexity of the renovations and desire to minimize the amount of swing space required, the work will be phased. Moving Chemistry, Physics, and Nutrition Science and Wellness out of the building will provide the space needed for the phased renovations, as well as additional engineering and technology labs.

Once the renovations are complete, each academic program will be consolidated in a wing of the building to enhance departmental identity and improve wayfinding. Mechanical and Civil Engineering will be located on the first floor. Space for Electrical Engineering and Architecture and Construction will be consolidated on the second floor. The former airplane hanger will be renovated for the Aviation Program. The renovated space will include a flight simulator and lab for the Unmanned Aerial Aircrafts Program.

To encourage collaboration and creativity, the main entrance will be flanked by a student lounge and shared maker space. The student lounge will provide direct access to the new exterior plaza on the south side of the building (see page 67). A large shared research lab on the west side of the building will provide space for the researchers that currently use the IRTT, as well as future researchers. General classrooms and group study rooms will also be created on both floors.

The transformation of Lupton Hall and creation of updated facilities will position Farmingdale State College to continue to be a leader in engineering technology programs.

Building Statistics

Major Use: Academic

Construction Year: 1952

Building Area: 166,175 GSF

FCI Condition: 32%

Move Out

Chemistry (Whitman)

Physics (Whitman)

Nutrition Science & Wellness (Gleeson)

Move In

None

Enabling Projects

Whitman Hall

Concurrent Construction

Gleeson Hall

Greenley Library

Swing Space Needs

Nutrition Science & Wellness Offices

Mechanical Engineering Labs

Mechanical Engineering Offices

Shared Research Space (if needed)

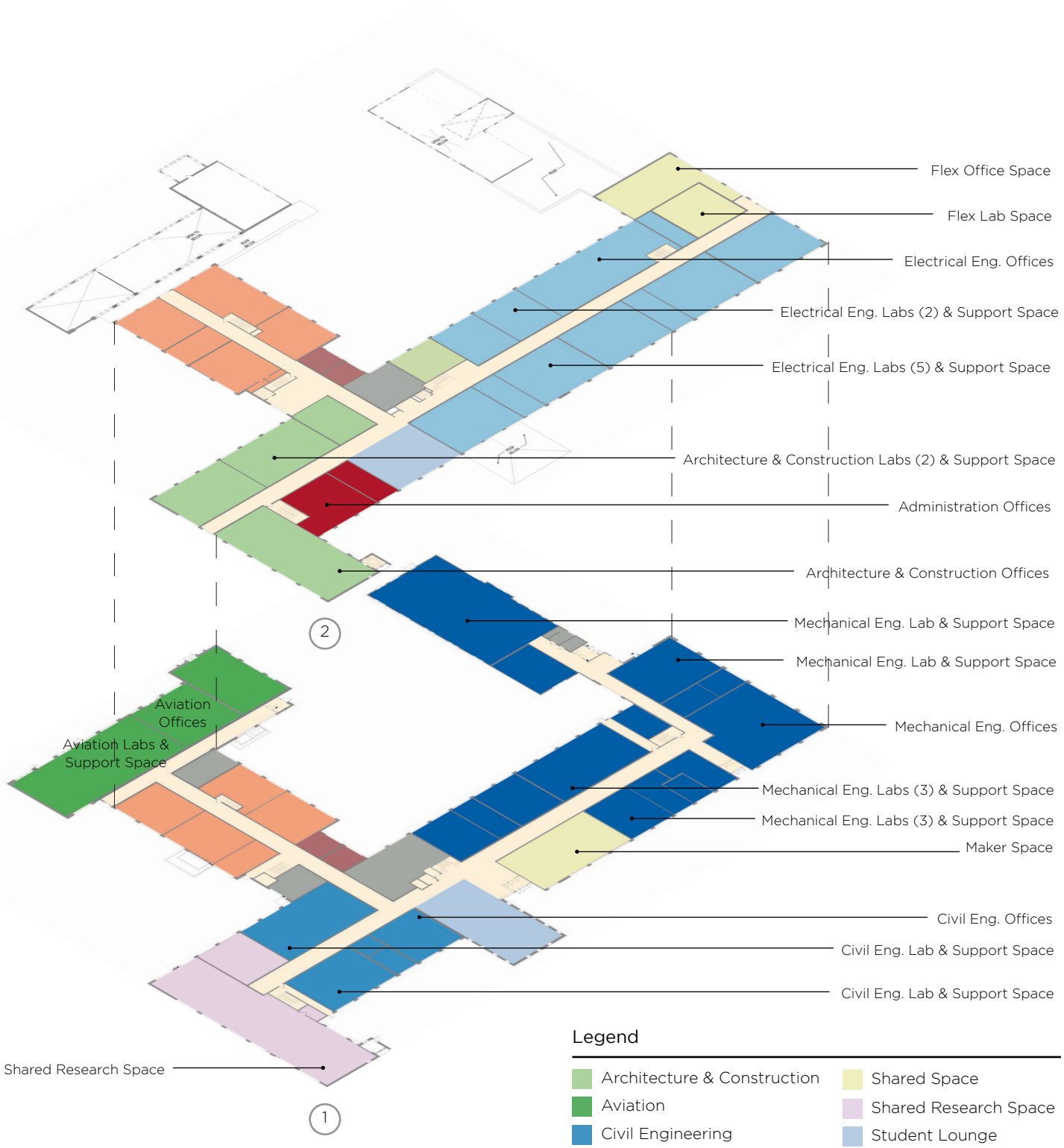


Figure 39 - Lupton Hall Proposed Floor Plan

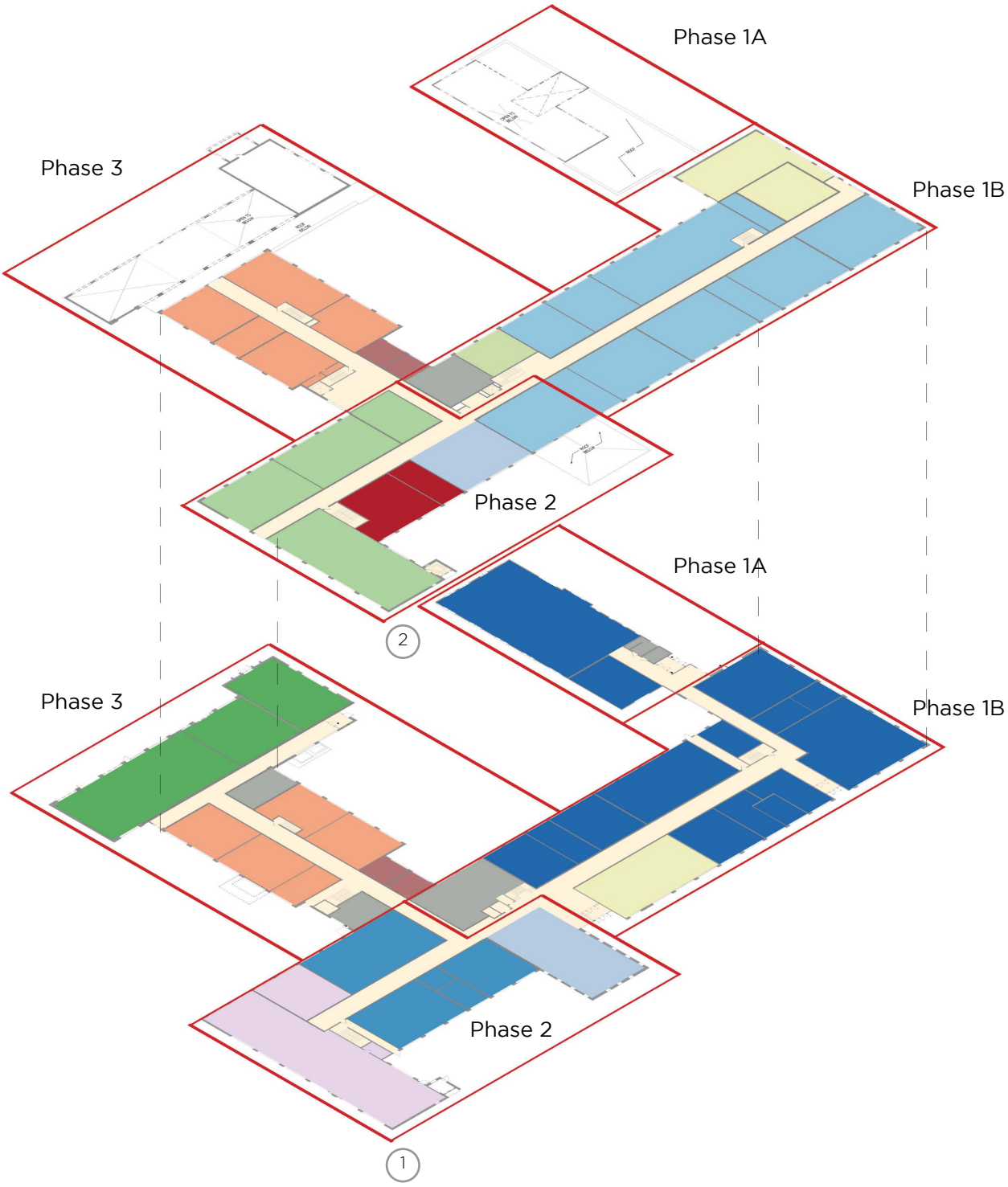


Figure 40 - Lupton Hall Phasing Floor Plan

Phase 1A

Full Renovation
Work Area: 9,409 GSF
Project Timeline: June 2030 - January 2032

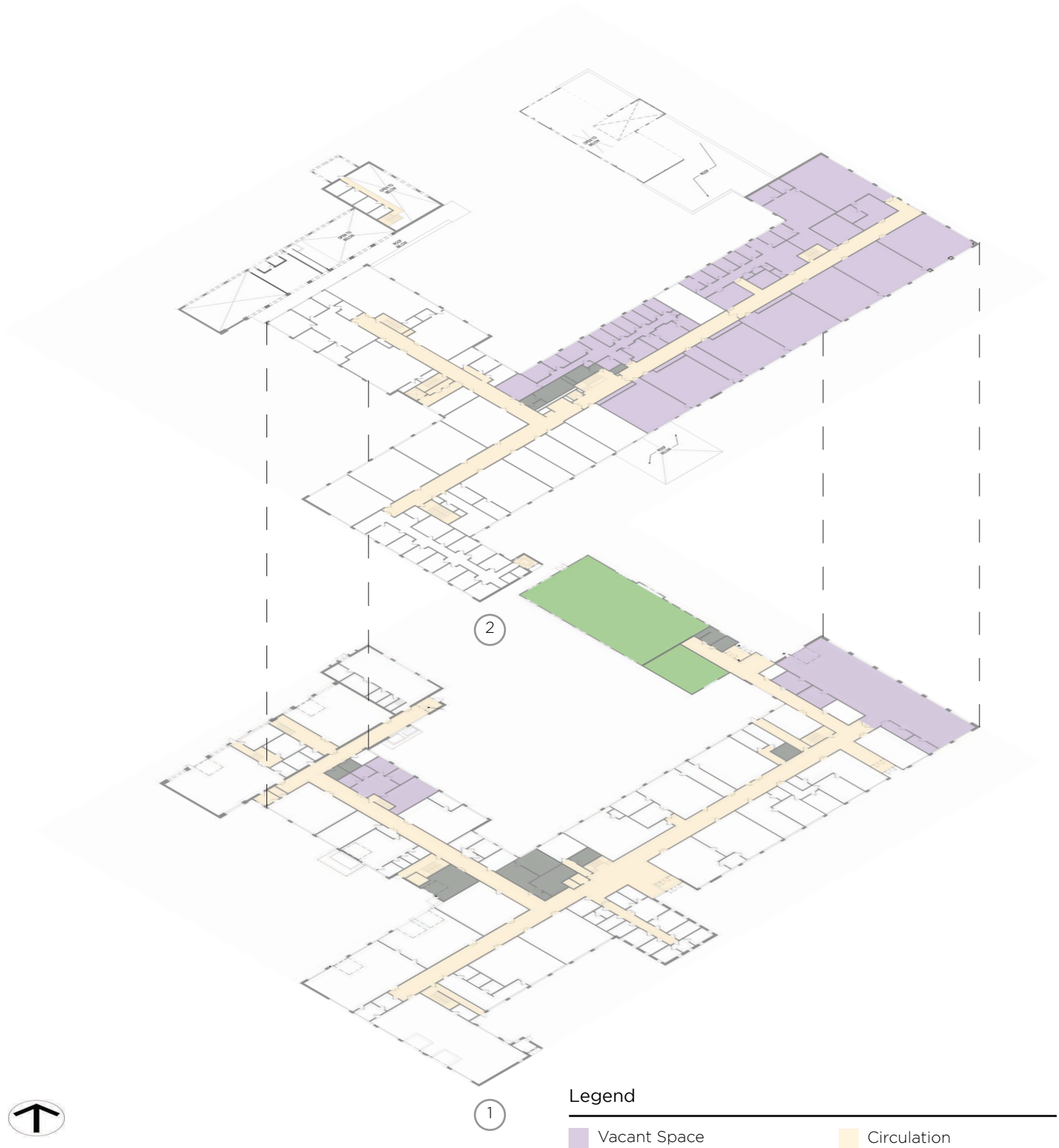


Figure 41 - Lupton Hall Phase 1A Floor Plan

Phase 1B

Full Renovation
Work Area: 53,065 GSF
Project Timeline: January 2032 - January 2034

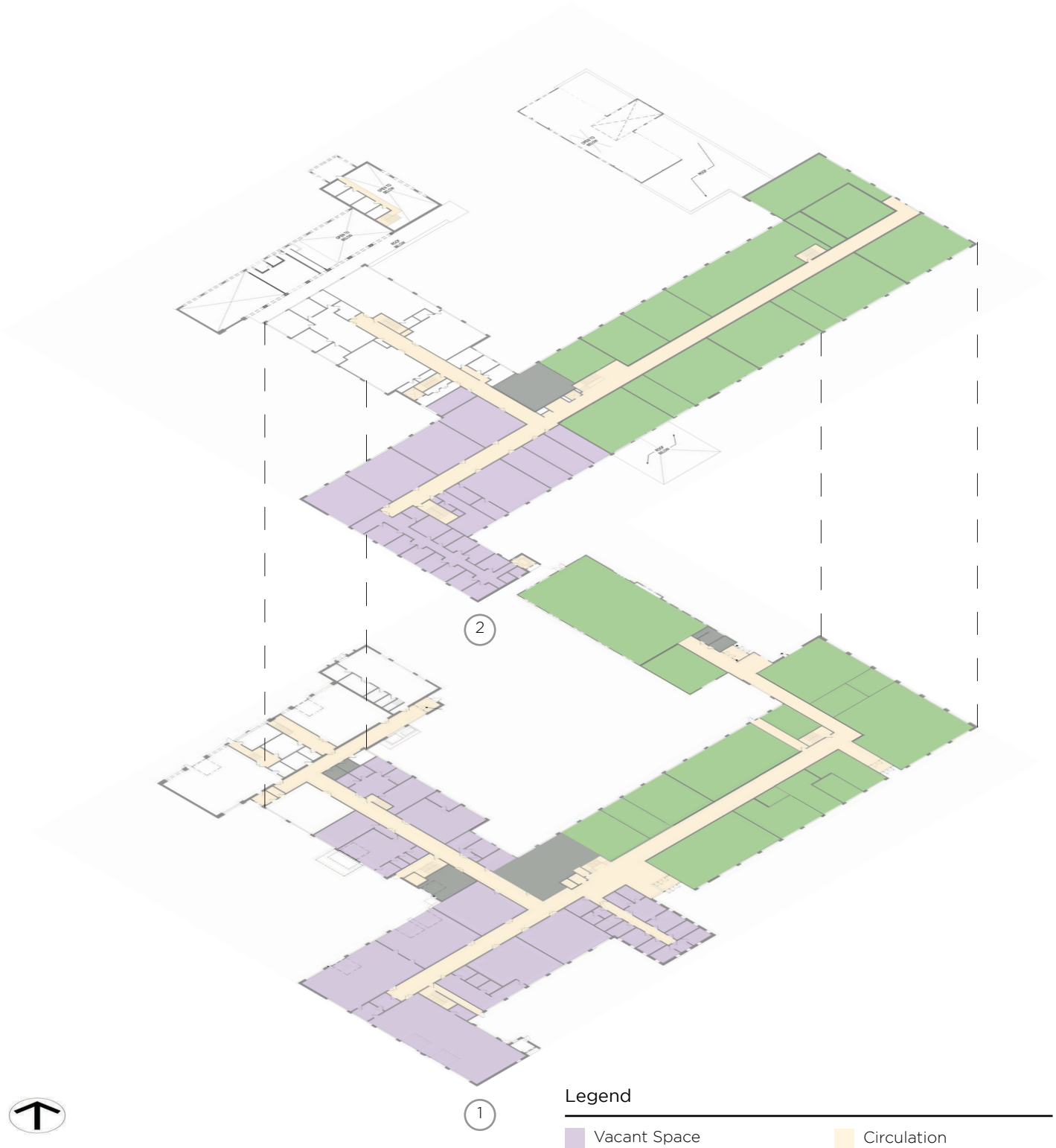


Figure 42 - Lupton Hall Phase 1B Floor Plan

Phase 2

Full Renovation
Work Area: 39,114 GSF
Project Timeline: January 2034 - January 2036

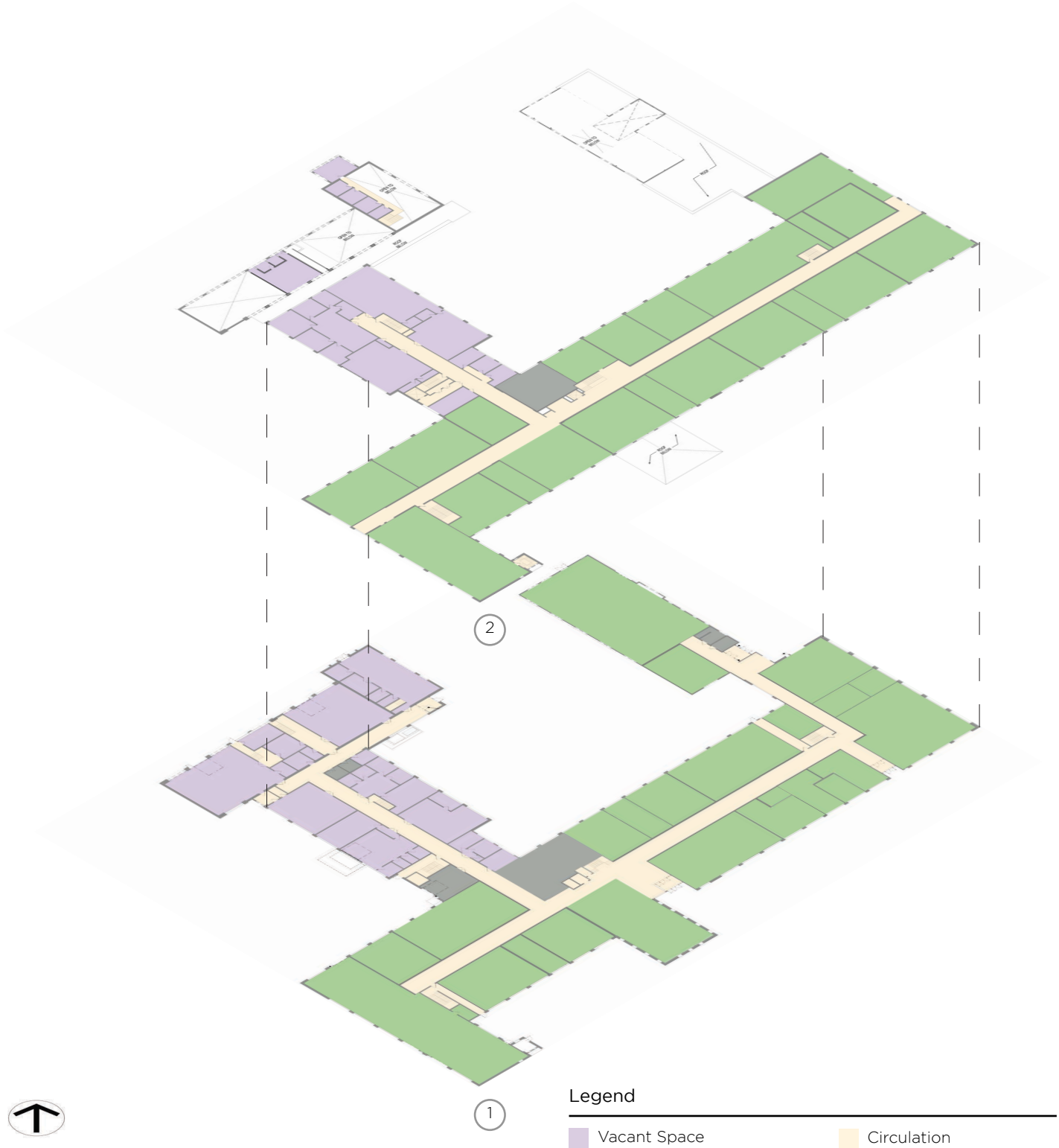


Figure 43 - Lupton Hall Phase 2 Floor Plan

Phase 3

Full Renovation
Work Area: 33,301 GSF
Project Timeline: January 2036 - January 2038

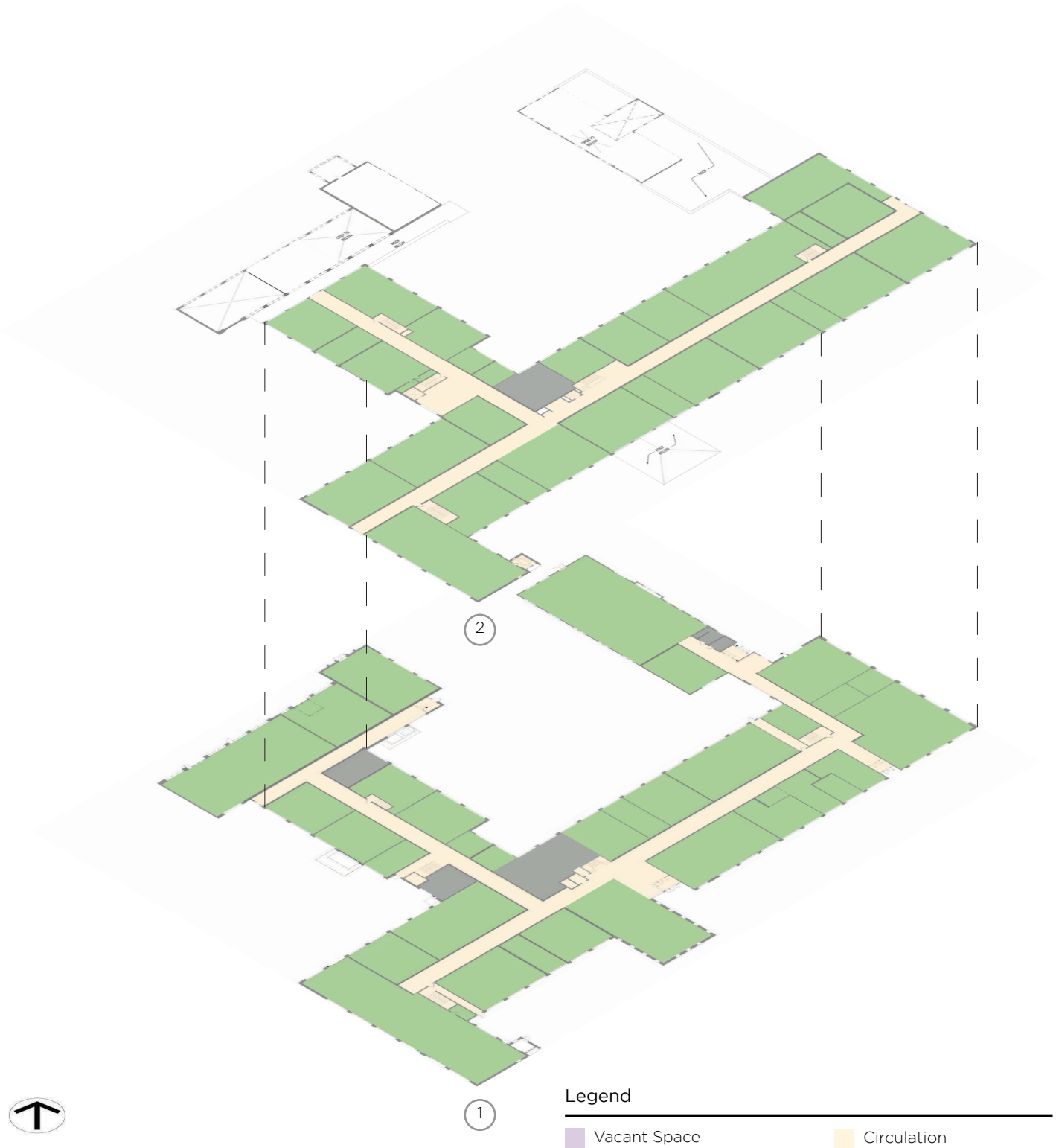


Figure 44 - Lupton Hall Phase 3 Floor Plan

Proposed Site Plan

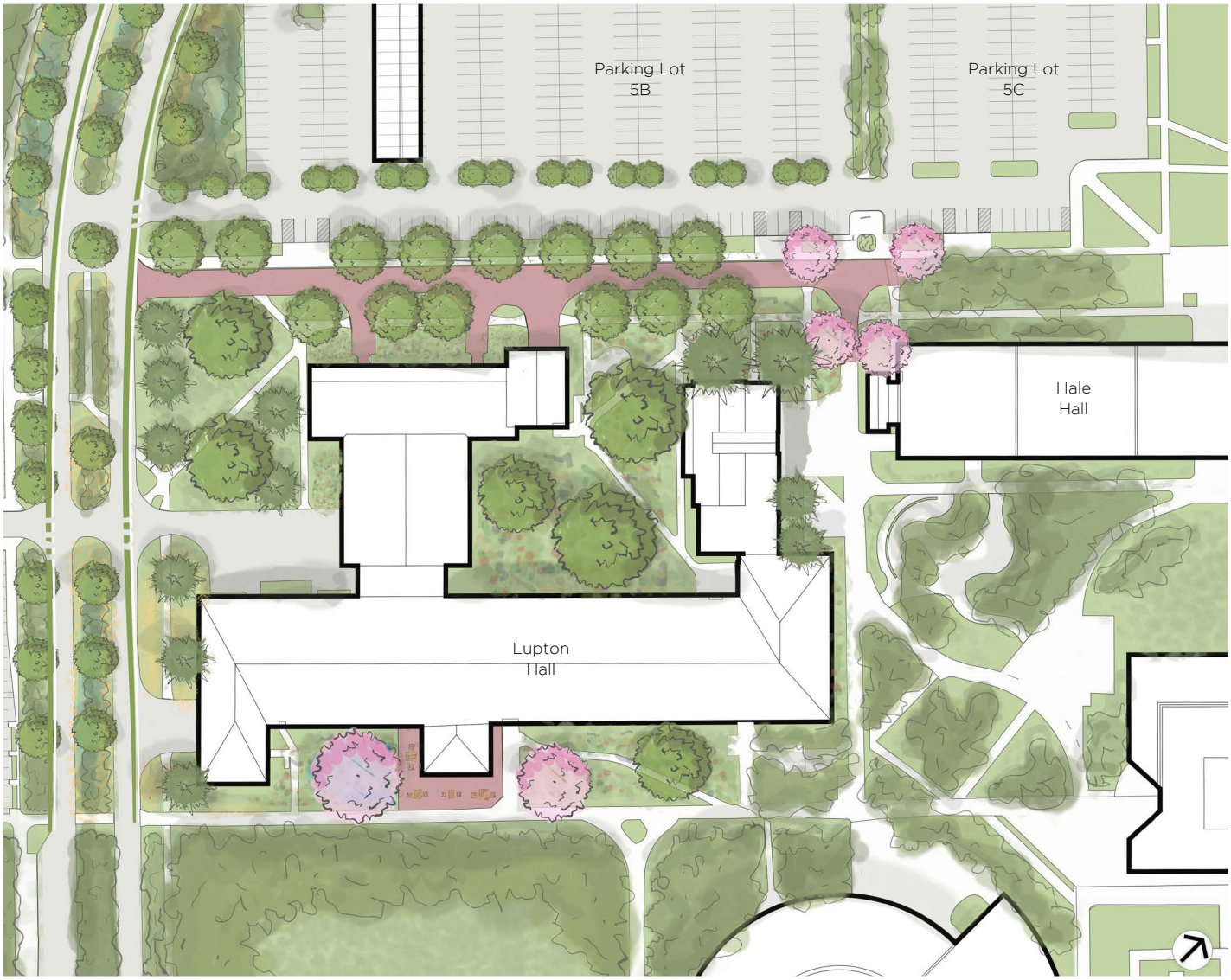


Figure 45 - Lupton Hall Proposed Site Plan

Associated Sitework

As part of the work, two new plazas will be created for the campus community. The first plaza will be located adjacent to the newly created student lounge and will feature a variety of outdoor furnishings, landscaping, and opportunities for green infrastructure. This inviting area will serve as a vibrant gathering spot for students to relax, socialize, and engage with their surroundings as they transition between indoor and outdoor spaces. It will also improve the connection to the newly renovated Roosevelt Hall.

The second plaza will be strategically positioned to provide access to both Lupton and Hale Halls. The existing service drive offers a unique opportunity to create a pedestrian-centric corridor that includes additional seating, pedestrian-level lighting, and improved accessible connectivity from Parking Lots #5B and #5C. The new plaza emphasizes the pedestrian gateway between Lupton and Hale Halls, highlighting the importance of placemaking and connectivity on the campus

Proposed Scope of Work

Full Renovation
Work Area: 134,889 GSF
Project Timeline: June 2030 - January 2038
Cost Estimate: $263,101,000

Sitework

- Hardscape Materials
  - Install 5,000 square feet of concrete pavers on a 2-inch sand setting bed with a 6-inch reinforced concrete base.
  - Install an additional 20,000 square feet of concrete pavers for shared street scape on a 1-inch sand setting bed and 6-inch reinforced concrete base.
- Landscaping
  - Plant 30 shade trees spaced 40 feet apart along 650 feet of roadway on both sides, including removal of existing turf, tree installation, and 3-inch mulch.
  - Plant six flowering trees spaced 120 feet apart along 1,000 feet of roadway on both sides, including removal of turf, tree installation, and 3-inch mulch.
  - Install 57,000 square feet of native perennial and shrub understory with a 10-foot width along the length of the roadway, using 3-inch mulch. Assume 12-inch spacing for perennials and 5-foot spacing for shrubs.
  - Install a 5,000-square-foot rain garden with bioretention soil mix, 3-inch mulch, and perennial and shrub planting. Assume 12-inch spacing for perennials and 5-foot spacing for shrubs.
- Pedestrian Scale Lighting
  - Install 30 pedestrian-level light poles (15-foot columns), spaced approximately 45 feet apart along a 1,000-foot length.
- Site Furnishing
  - Install 10 metal benches, each 8 feet wide.
  - Add eight pre-fabricated concrete planters (36 inches tall and 4 feet wide).
  - Install 10 outdoor tables with seating to encourage social interaction.
  - Install one art piece to enhance the aesthetic of the plaza space.
- Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations

Building Exterior

The College has made a significant investment to replace the roof and windows. As a result, no additional exterior improvements are anticipated at this time.

Building Interior

The building will be fully renovated for current and future engineering technology programs. The renovated building will include space for Aviation, Mechanical Engineering, Civil Engineering, Electrical Engineering, and Architecture and Construction. Due to the age of the building, an allowance should be included for abatement of hazardous materials.

Phase 1A - Machine Lab

- Laboratory Space: 6,568 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Concrete
  - Walls: Concrete Masonry Units
  - Ceilings: None; Prime and Paint Structure
  - Provide overhead doors to exterior
- Circulation Space: 291 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 305 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Demo Second Floor: 2,245 GSF
  - Concrete and Steel Structure
- Provide building signage and window treatments throughout work area

Phase 1B - Mechanical and Electrical Engineering

- Laboratory Space: 29,329 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Floor Tile; Vinyl Base
  - Walls: Concrete Masonry Units
  - Ceilings: Acoustic Ceiling Tile
  - Provide lab casework, whiteboards, flat panel displays, and ceiling-mounted speakers
- Office and Support Space: 11,356 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms
- Circulation Space: 9,250 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 3,130 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Provide building signage and window treatments throughout work area

Phase 2 - Architecture and Civil Engineering

- Laboratory Space: 19,716 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Floor Tile; Vinyl Base
  - Walls: Concrete Masonry Units
  - Ceilings: Acoustic Ceiling Tile
  - Provide lab casework, whiteboards, flat panel displays, and ceiling-mounted speakers
- Office and Support Space: 7,867 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms
- Student Lounge Space: 5,375 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Circulation Space: 6,156 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Provide building signage and window treatments throughout work area

Phase 3 - Aviation and General Classrooms

- Classroom Space: 14,041 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, overhead projectors, projection screens, and ceiling-mounted speakers
- Laboratory Space: 6,764 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Floor Tile; Vinyl Base
  - Walls: Concrete Masonry Units
  - Ceilings: Acoustic Ceiling Tile
  - Provide lab casework, whiteboards, flat panel displays, and ceiling-mounted speakers
- Office and Support Space: 2,020 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms
- Circulation Space: 6,474 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 1,309 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Demo Second Floor: 2,693 GSF
  - Concrete and Steel Structure
- Install appropriate acoustical treatments throughout the building to ensure comfortable learning, research, and work environments.
- Provide building signage and window treatments throughout work area

Technology Infrastructure

- Install new IT IDF/MDF spaces which meet current industry standards
- Install horizontal and backbone telecommunications cabling.
- Install wireless access points (wireless networking).
- Install new OSP Cabling if the building has not already been connected to the campus via the Data Center Project.
- Install new electronic security systems (Cameras, Access Control, Blue Phones) for both inside and the immediate exterior as needed.
- Install Public Safety DAS and Cell Phone DAS systems as required for proper coverage of services.

Mechanical Systems

- Replace (3) AHUs serving the robotics lab; retain (16) in good condition.
- Replace the existing PRV and heating system, maintaining steam service as a backup.
  Install a new HVAC system aligned with the campus energy master plan.
- Install a hybrid system with cluster plants and a central neutral temperature water loop.
- Share geothermal wellfields and heat recovery heat pumps with Lupton Hall and Nold Hall.
- Install a closed-loop geothermal wellfield (8" diameter, 500 feet depth) with "U" bends.
- Install geothermal wellfield pumps and (10) 70-ton modular heat recovery heat pumps in Lupton Hall.
- Install primary chilled water (45/55°F) and hot water (140/120°F) loops and secondary loops for each building.
- Install dedicated 100% outdoor air units and laboratory exhaust fans for wet labs.
- Provide N+1 setup for outdoor air units and lab exhaust fans, with airflow optimization control for labs.
- Provide dedicated exhaust systems for new electric autoclaves and glasswashers in labs.
- Install a Dedicated Outdoor Air System (DOAS) with fan coil units (FCUs) for ventilation, cooling, and heating.
- Install VAV boxes with CO2 sensors for ventilation control in densely occupied spaces.
- Install DDC controls compatible with the campus JCI BMS system, and flow meters for energy monitoring.

Electrical Systems

- Upgrade the building's electrical service with new step-down transformers and switchboards.
- Install plug load controllers for electrical outlets in offices and labs.
- Provide dedicated electrical panels for each laboratory unit.
- Install a new generator to support emergency power (fire pump, lighting, elevator, and standby power) via Automatic Transfer Switches (ATS).
- Replace T8 fluorescent lighting with LED fixtures and controls compliant with energy codes and daylight dimming requirements.
- Consider installing a central lighting management system.
- Install electrical sub-meters for monitoring energy use (heating, cooling, lighting, etc.).
- Remove outdated fire alarm devices and revise the system to meet new space program requirements.

Plumbing Systems

- Replace the existing 6" cold water service and install code-compliant backflow prevention.
- Install new cold water distribution piping with compliant insulation.
- Disconnect the existing hot water service and install a new hot water system connected to geothermal heat recovery chillers, supplemented by a heat pump water heater.
- Install new hot water distribution piping with compliant insulation and circulating pumps.
- Assess and upgrade the existing sanitary service based on new layout requirements.
- Provide new specialty plumbing systems (compressed air) for aviation and engineering programs.
- Install low-flow, automatic sensor-type restroom flush valves and faucets.

Fire Protection Systems

- Install a new fire protection service with a double check valve assembly.
- Fully sprinkler the building according to NFPA 13, zoned by floor.
- Install light hazard occupancy sprinklers in offices/ classrooms and ordinary hazard II systems in wet labs/ classrooms/machine shops.

Clean Energy Master Plan

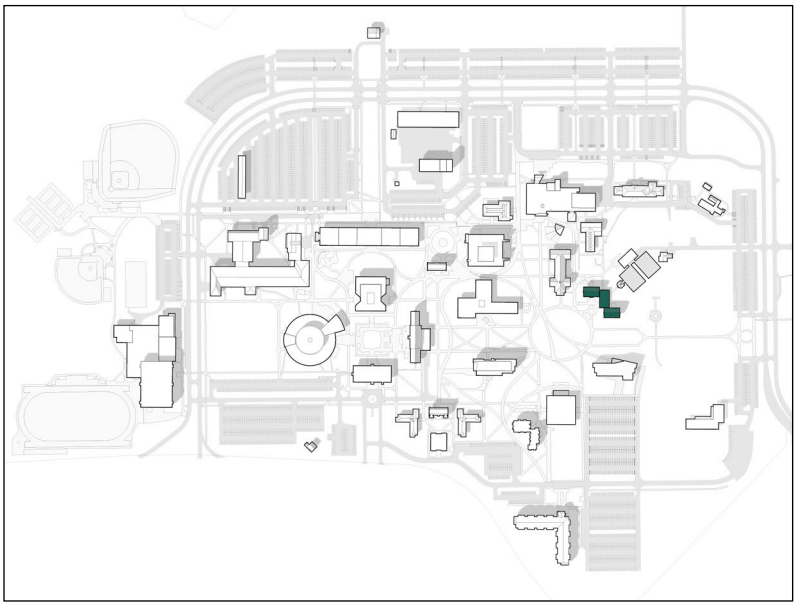
The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1C: Lighting Upgrades (Fixture Replacements with Advanced Lighting Controls)
- EEM 5.1: Submetering
- EEM 6.2A: AHU Replacements
- EEM 6.4: ERV/Heat Recovery Run Around Loop
- EEM 6.5: Lab Airflow Optimization
- EEM 6.6: Demand Controlled Ventilation
- EEM 7.4B: Water-to-Water Heat Pumps w/ Geothermal (Scenario 4B)
- EEM 11.1: VFDs on Pumps
- EEM 12C: Tie in Domestic Hot Water to HRC Loops

	Existing			JMZ Program		
	Building	**# of Workstations**	**NASF**	**Building**	**# of Workstations**	**NASF**
Academic Administration						
Office Suite	Lupton	5	3,156	Lupton	5	2,299
Architecture & Construction						
Office Suite	Lupton	7	2,512	Lupton	12	3,541
Labs & Support Space	Lupton	3	3,818	Lupton	2	5,194
Aviation						
Office Suite	Lupton	8	1,403	Lupton	8	1,897
Labs & Support Space	Lupton	1	1,500	Lupton	2	6,114
Civil Engineering						
Office Suite	Lupton	7	1,664	Lupton	7	1,586
Labs & Support Space	Lupton	2	4,111	Lupton	2	4,996
Electrical Engineering						
Office Suite	Lupton	15	3,108	Lupton	16	3,302
Labs & Support Space	Lupton	7	8,553	Lupton	7	14,666
Mechanical Engineering						
Office Suite	Lupton	13	3,967	Lupton	18	4,012
Labs & Support Space	Lupton	8	12,919	Lupton	8	17,642
Shared Spaces						
General Classrooms	Lupton	7	5,680	Lupton	10	11,777
Student Lounge	Lupton		558	Lupton	2	4,957
Maker Space	Lupton			Lupton	1	2,618
Study Space				Lupton	4	1,335
Shared Research				Lupton	2	6,558
Flex Office Space				Lupton	1	2,000
Flex Lab Space				Lupton	1	1,392
Total ASF			***52,949***			***95,886***

Figure 46 - Lupton Hall Space Program

Hicks Hall and Cutler Hall Renovations and Addition



Project Description

Hicks and Cutler Halls, two of the original buildings on the New York State School of Agriculture Campus, are slated for a full renovation. Both buildings were constructed in 1914 and access is barred due to their current state of disrepair.

As part of the master plan recommendations, both buildings will be fully renovated to provide updated office and support space for the Academic Advisement Information Center (AAIC), Research Aligned Mentorship (RAM) Program, Honors Program, and Veteran's Services. Seminar rooms, meeting rooms, and lounge space will be provided for all programs. Building systems will be replaced as part of the work.

An addition will be constructed between the buildings to provide vertical accessibility and building services to both buildings. The second floor of the addition will feature views of the ellipse (to the south) and adjacent teaching gardens (to the north). This approach allows for modernization without altering the historical character of the original buildings.

Once the renovations and addition are complete, Hicks and Cutler Halls will become an integral part of the campus fabric and a destination for students. This project will also allow E-Sports to expand on the lower level of Quintyne Hall (in the former location of Veteran's Services) and enable the future renovation of Greenley Library.

Due to the estimated cost of the work, alternate locations for AAIC, RAM, Honors Program, and Veterans Services should be considered.

Building Statistics

Major Use: Vacant

Construction Year: 1914

Building Area: 11,579 GSF

FCI Condition: 71%

Move Out

N/A

Move In

AAIC (Greenley)

RAM (Greenley)

Honors Program (Greenley)

Veterans Services (Quintyne)

Enabling Projects

N/A

Concurrent Construction

Whitman Hall Renovations

Swing Space Needs

N/A

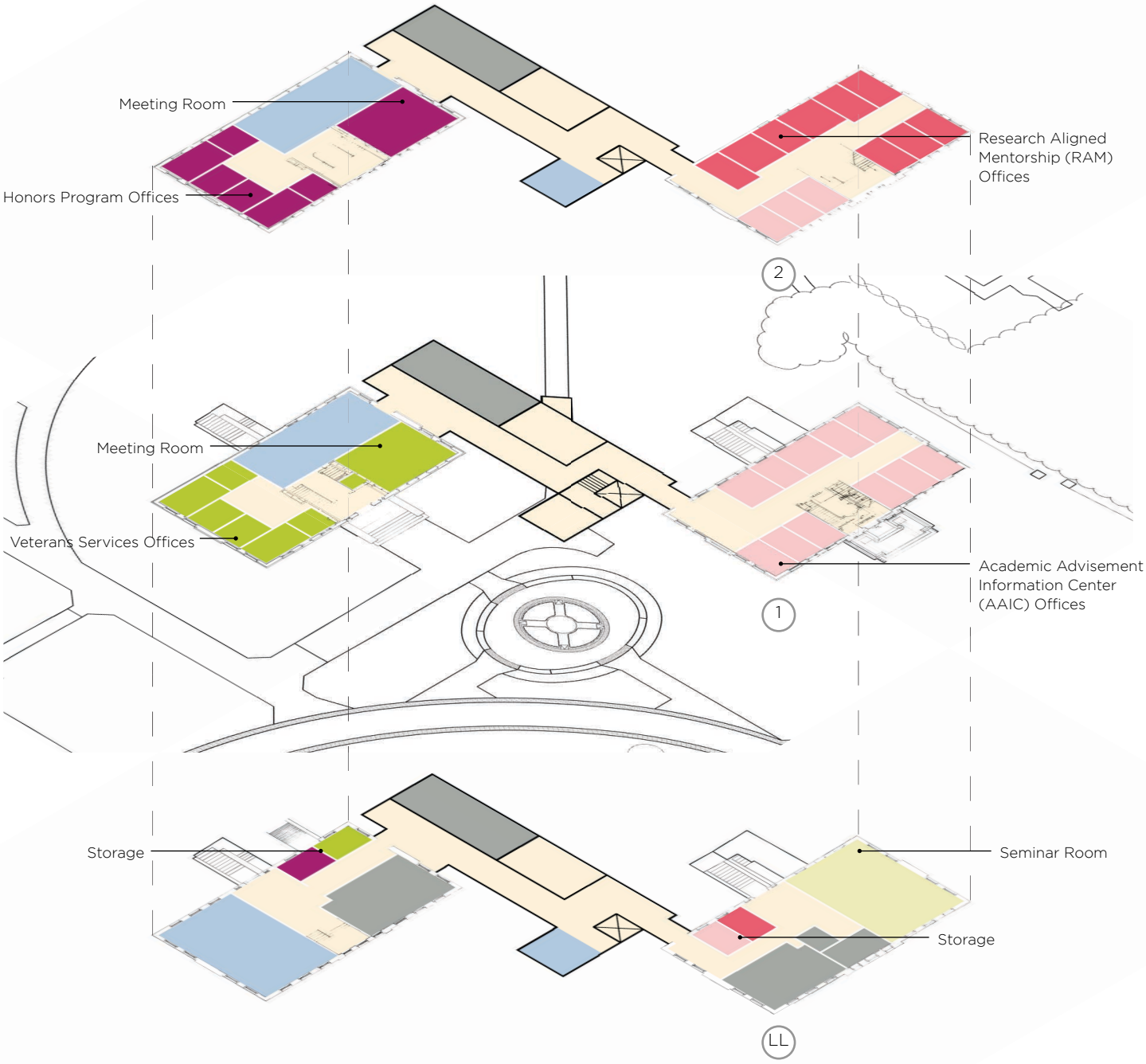


Figure 47 - Hicks and Cutler Proposed Floor Plan

Legend

- Honors Program
- RAM
- AAIC
- Veterans Services
- Shared Space
- Student Lounge
- Circulation
- Building Services

Proposed Site Plan

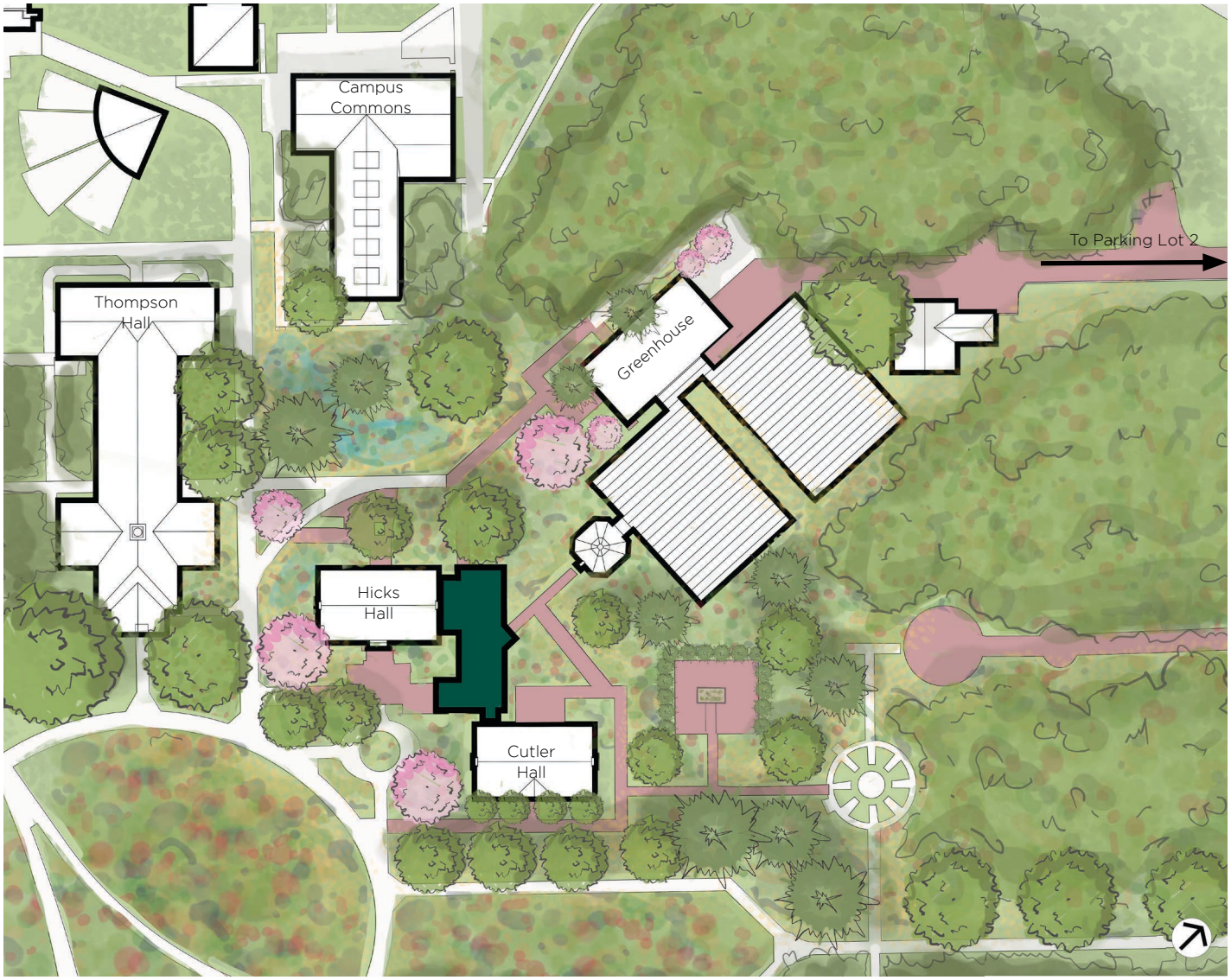


Figure 48 - Hicks and Cutler Proposed Site Plan

Associated Sitework

Sitework will focus on maintaining and enhancing pedestrian access to key outdoor spaces. A pedestrian-friendly paver corridor will be installed adjacent to the Teaching Gardens that connects Parking Lot 2, to the main campus. This corridor will foster a sense of place in the approach to Hicks and Cutler Halls while introducing opportunities for green infrastructure and improved accessibility.

The addition of shade and accent trees, along with the removal of the internal section of the parking lot north of Thompson Hall, will make way for landscape features such as a native vegetated bioswale for stormwater management and increased biodiversity. These features will be combined with revised sidewalks, pedestrian-scale lighting, benches, outdoor seating, and planters to create a pedestrian-centric experience.

All material selections and functional elements will be coordinated to complement the historic character of Hicks Hall, Cutler Hall, and the Conservatory. Collectively, these sitework improvements will create an attractive, functional, and sustainable landscape that enhances the renovation and addition to these historic buildings while providing improved amenities for the campus community.

Proposed Scope of Work

Full Renovation and Addition
Work Area: 23,158 GSF + 8,608 GSF Addition
Project Timeline: November 2028 - May 2030
Cost Estimate: $57,361,000

Sitework

- Install 22,000 square feet of concrete pavers to create a shared streetscape, set on a 2-inch sand setting bed and a 6-inch reinforced concrete base for durability.
- Install 16 pedestrian-level light poles, each 15 feet tall, spaced approximately 45 feet apart along the 10,000-foot length.
- Landscaping
  - Plant 20 shade trees spaced 40 feet apart, including removal of existing turf, tree installation, and application of a 3-inch mulch layer.
  - Add 6 flowering accent trees spaced 120 feet apart, with similar turf removal, installation, and mulch.
  - Excavate and remove 10,000 square feet of the existing parking lot.
  - Construct a 3,000-square-foot bioswale for stormwater management.
  - Install 2.3 acres of native perennial and shrub understory plantings with a minimum 10-foot width along the length of the roadway. Apply 3-inch mulch and include irrigation to ensure healthy growth.
- Site Furnishing
  - Install 3 metal benches, each 8 feet wide.
  - Place 10 outdoor tables with seats throughout the plaza area.
  - Add 5 permanent planters, each 36 inches tall and 4 feet wide
- Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations.

Addition

Construct an addition between Hicks and Cutler Hall to provide vertical accessibility and building services to both buildings. The addition will include an elevator, stair, toilet rooms, and data closets. A small student lounge that overlooks the ellipse will be created on the second floor.

- Roof System
  - Membrane and Rigid Insulation on Metal Deck
- Exterior Wall Assembly
  - Masonry Veneer on Metal Framing
  - Rigid Insulation
  - Aluminum Curtainwall System
- Circulation Space: 5,878 GSF
  - Floors: Ceramic Tile; Ceramic Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Student Lounge Space: 512 GSF
  - Floors: Vinyl Tile; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 1,650 GSF
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure

Building Exterior (Both Buildings)

The asphalt shingle roofs, exterior doors, and exterior windows are in poor condition and will be replaced when the buildings are renovated. Exterior masonry is in good condition, but should be cleaned and repointed.

- Install new roof sheathing, underlayment, asphalt shingles, and accessories (6,400 SF)
- Replace exterior doors with new aluminum doors in aluminum frames; provide access control (196 SF)
- Replace single-glazed windows with double-glazed, energy-efficient units (Assume 4,100 SF)

Building Interior (Both Buildings)

Renovate the buildings to provide office space for the Academic Advisement Information Center (AAIC), Research Aligned Mentorship (RAM) Program, Honors Program, and Veteran's Services. Abatement will occur prior to the renovations and is excluded from the scope of work.

- Office and Support Space: 14,725 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
  - Provide whiteboards, flat panel displays, and ceiling-mounted speakers in meeting rooms (2)
- Circulation Space: 6,971 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
  - Ceilings: Acoustic Ceiling Tile
- Building Services: 1,462 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Toilet Rooms: Ceramic Floor Tile; Ceramic Wall Tile and Cementitious Backer Board on Metal Framing; Acoustic Ceiling Tile
  - Other Spaces: Concrete Floors; Concrete Masonry Unit Walls; Prime and Paint Ceiling Structure
- Provide building signage and window treatments throughout work area
- Protect and restore the Works Progress Administration (WPA) Murals painted by Frederick Marshall.

Technology Infrastructure

- Install new IT IDF/MDF spaces which meet current industry standards
- Install horizontal and backbone telecommunications cabling.
- Install wireless access points (wireless networking).
- Install new OSP Cabling if the building has not already been connected to the campus via the Data Center Project.
- Install new electronic security systems (Cameras, Access Control, Blue Phones) for both inside and the immediate exterior as needed.
- Install Public Safety DAS and Cell Phone DAS systems as required for proper coverage of services.

Mechanical Systems

- Remove the existing non-working heating system in both Cutler and Hicks buildings.
- Install a new HVAC system aligned with the campus energy master plan.
- Provide a hybrid HVAC system with cluster plants and a central neutral temperature water loop.
- Share a large geothermal wellfield between Orchard Hall, Dewey Hall, the new student center, and new student housing (8" diameter, 500 feet depth boreholes).
- Install geothermal wellfield pumps and (3) 70-ton modular heat recovery heat pumps in the mechanical room of the new student center.
- Provide primary chilled water (45/55°F) and hot water (140/120°F) loops for Thompson Hall, Student Commons, and Greenhouse.
- Install a gas-fired boiler for redundancy if required by the campus.
- Install a Dedicated Outdoor Air System (DOAS) located in the MER with fan coil units (FCUs) for cooling and heating.
- Provide ventilation with the DOAS unit using chilled and hot water coils and energy recovery wheels (ERWs).
- Use VAV boxes with CO2 sensors in densely occupied spaces for modulated ventilation.
- Install DDC controls compatible with the campus JCI BMS system.
- Provide flow meters on the chilled and hot water piping loops for energy consumption monitoring.

Electrical Systems

- Replace the old electric service and connect the building to the campus 13.2 kV electrical distribution loop.
- Install a new 1,000 kVA step-down transformer to 277/480V and a new 1,600 Amps switchboard in the electrical room.
- Install a separate step-down transformer from 277/480V to 120/208V for electrical distribution to outlets.
- Provide plug load controllers for electrical outlets where required.
- Install a generator for emergency power to support the fire pump, emergency lighting, and optional standby power via ATS.
- Install new LED light fixtures with controls that comply with energy codes and daylight dimming requirements.
- Consider a central lighting management system for enhanced control.
- Meter electrical power at the building level and provide electrical sub-meters for energy monitoring by use type.
- Install a new addressable fire alarm system that meets state, local, and ADA requirements, interconnected with the campus fire alarm system.

Plumbing Systems

- Replace the existing cold water service and install code-compliant backflow prevention.
- Install new cold water distribution piping with code-compliant insulation.
- Install a new hot water system tied to the geothermal heat recovery chillers with a supplemental heat pump domestic water heater.
- Provide new hot water distribution piping with compliant insulation and circulating pumps for hot water maintenance.
- Install a new sanitary service for the building, sized for new restrooms and programs, potentially including a new sewage ejector based on programming requirements.
- Install low-flow, automatic sensor-type restroom flush valves and faucets.

Fire Protection Systems

- Install a new fire service with a double check valve assembly in the MER of the new addition.
- Assess the need for a fire pump based on water pressure requirements.
- Fully sprinkler the building in accordance with NFPA 13, with zoning by floor.

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

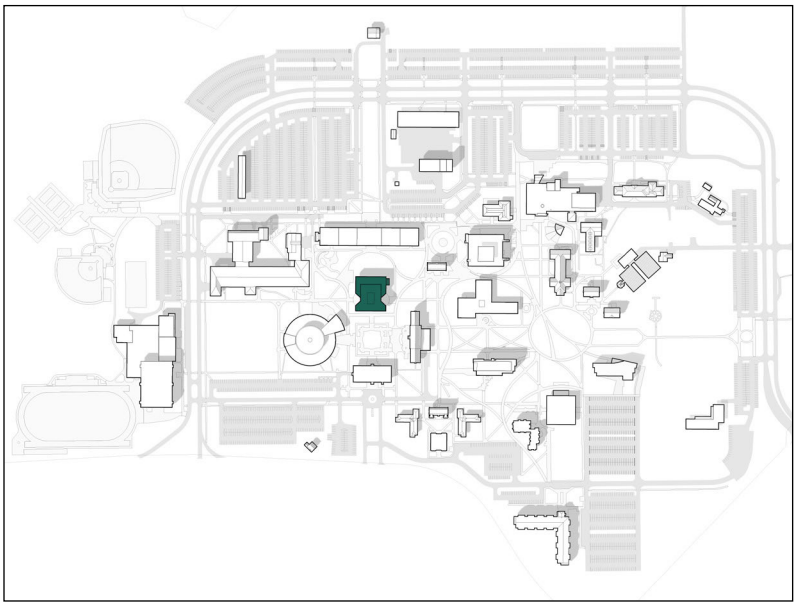
- EEM 1C: Lighting Upgrades (Fixture Replacements with Advanced Lighting Controls)
- EEM 2.1: Window Replacement
- EEM 2.2: Roof Replacement
- EEM 5.1: Submetering
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 6.4: ERV/Heat Recovery Run Around Loop
- EEM 6.6: Demand Controlled Ventilation
- EEM 7.4B: Water-to-Water Heat Pumps w/ Geothermal (Scenario 4B)
- EEM 8.1: Plumbing Fixtures
- EEM 12B: Heat Pump Domestic Hot Water
- EEM 12C: Tie in Domestic Hot Water to HRC Loops

	Existing			JMZ Program		
	Building	**# of Workstations**	**NASF**	**Building**	**# of Workstations**	**NASF**
AAIC						
Reception				Cutler		110
Offices	Greenley	11	1,324	Cutler	12	1,565
Conference Room	Greenley	8	244	Cutler	9	180
Storage				Cutler		120
RAM						
Reception			288	Cutler		110
Offices	Greenley	6	714	Cutler	6	820
Conference Room	Greenley	8	244	Cutler	9	180
Storage			115	Cutler		120
Honors Program						
Offices				Hicks	3	416
Student Lounge				Hicks	42	842
Conference Room				Hicks	8	160
Meeting Room				Hicks	26	525
Storage				Hicks		85
Kitchenette				Hicks		85
Computer Lab	Greenley	18	1,023			
Veterans Services						
Offices	Quintyne	2	260	Hicks	3	416
Student Lounge	Quintyne		260	Hicks	42	842
Conference Room				Hicks	8	160
Meeting Room				Hicks	26	525
Storage				Hicks		85
Kitchenette				Hicks		85
Shared Spaces						
Seminar Room				Cutler	41	1,075
Break Room				Cutler		136
Work Room				Cutler		136
Total ASF			***4,472***			***8,668***

Figure 49 - Hicks and Cutler Space Program

Works Progress Administration (WPA) Murals in Hicks Hall

Greenley Library Renovations



Project Description

The lower level of Greenley Library is currently occupied by the Academic Advisement Information Center (AAIC), Research Aligned Mentorship (RAM) Program, Computer Services, and Data Center. Once these offices move out of the building, the lower level will be transformed into much needed study and collaboration space for students.

The Honors Program will be relocated to Hicks Hall, which will allow the space currently occupied by the Honors Program to be reclaimed for distance learning. This move supports the growing needs of the distance education programs and enables the expansion of digital learning resources on campus.

The reallocation of space within Greenley Library aligns with the goal of improving student resources and supporting academic success. By optimizing existing facilities, the library will better serve the diverse needs of the student population and foster an environment that encourages learning and innovation.

Building Statistics

Major Use: Library
Construction Year: 1972
Building Area: 73,233 GSF
FCI Condition: 13%

Move Out

AAIC (Cutler)
RAM (Cutler)
Honors Program (Hicks)
Data Center (Whitman)
Computer Services (Whitman)

Move In

N/A

Enabling Projects

Whitman Hall
Hicks Hall
Cutler Hall

Concurrent Construction

Gleeson Hall Renovations
Lupton Hall Renovations

Swing Space Needs

N/A

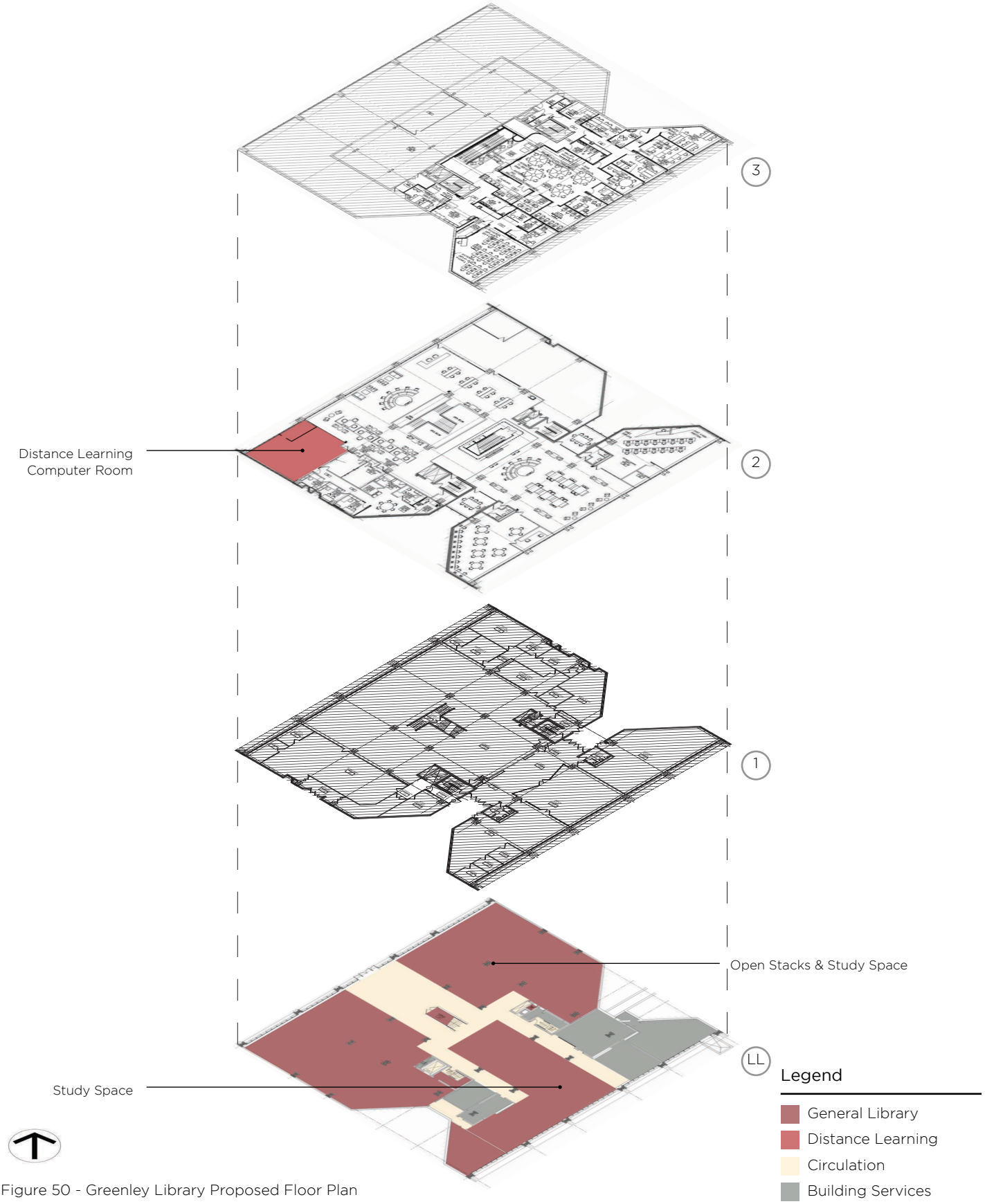


Figure 50 - Greenley Library Proposed Floor Plan

Proposed Scope of Work

Full Renovation
Work Area: 18,868 GSF
Project Timeline: June 2030 - January 2032
Cost Estimate: $65,656,000

Building Exterior

Based on the capital project list provided by the College, the roof and windows were replaced in 2015. No additional exterior improvements are anticipated.

Building Interior

Once AAIC, RAM, and Data Center move out of the building, space on the lower level will be converted to open stack and study space for the library. A new testing center and shared office space will be created on the south side of the building.

- Open Stack and Study Space: 13,595 GSF
  - Low-Intensity Renovations
  - Remove temporary office partitions currently used by AAIC and RAM
  - Floors: Carpet; Vinyl Base
  - Walls: Existing to Remain
- Open Stack and Study Space: 3,800 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Carpet; Vinyl Base
  - Walls: Gypsum Wallboard on Metal Framing
- Building Services: 1,473 GSF
  - High-Intensity Renovations: Full Reconfiguration
  - Floors: Concrete
  - Walls: Concrete Masonry Units
  - Ceilings: None; Prime and Paint Structure
- Provide new acoustic ceiling tile system throughout the building to conceal the ductwork and piping associated with the new mechanical systems. Assume 66,857 GSF.
- Provide building signage and window treatments throughout work area

Technology Infrastructure

Provide the following systems throughout the work area as part of the renovations. Other floors or spaces may be affected by the renovations since many buildings on campus are currently fed from a single IDF that may be disrupted during construction.

- IT IDF/MDF spaces that meet current industry standards
- Horizontal and backbone telecommunications cabling
- Wireless access points (Wireless Networking)
- OSP cabling in existing pathways
- Electronic security systems (Cameras, Access Control, Intrusion, Blue Phones) for both inside and outside the building
- Public safety DAS and cell phone DAS systems as required for proper coverage of services

Mechanical Systems

- Replace (3) existing AC units located on the penthouse MER.
- Replace the PRV and existing heating system while retaining the steam service as backup.
- Install a new HVAC system aligned with the campus energy master plan.
- Install a hybrid system with cluster plants and a central neutral temperature water loop.
- Share geothermal wellfields and heat recovery heat pumps with Ward Hall, Whitman, School of Business, Hooper Hall, Health and Wellness, Memorial Hall, and Alumni Hall.
- Install a closed-loop geothermal wellfield (8” diameter, 500 feet depth boreholes) with “U” bends in each borehole.
- Install geothermal wellfield pumps and (8) 70-ton modular heat recovery heat pumps in Greenley Library.
- Install primary chilled water (45/55°F) and hot water (140/120°F) loops with secondary loops for Hale Hall, Roosevelt Hall, Knapp Hall, and Laffin Hall.
- Replace existing constant volume AC units with new single-zone VAV system or multi-zone VAV system with terminal air boxes.
- Modify existing ductwork and install thermostats and CO2 sensors as required.
- Replace pneumatic controls with DDC controls compatible with the campus JCI BMS system. Install flow meters on chilled and hot water piping loops to monitor energy consumption.

Electrical Systems

- Upgrade the existing 750 kVA transformer and install a new 1500 kVA step-down transformer and 4,000 Amps switchboard.
- Provide plug load controllers for electrical outlets in offices and other spaces.
- Reuse the generator to provide emergency power for the fire pump, lighting, elevator, and optional standby power via ATS.
- Replace T8 fluorescent lighting with new LED fixtures, with controls compliant with energy codes and daylight dimming requirements.
- Consider installing a central lighting management system.
- Install electrical sub-meters for energy monitoring by use type (heating, cooling, lighting, etc.).
- Revise the fire alarm system to fit the new space program and renovation.

Plumbing Systems

- Replace the existing 4" cold water service and install code-compliant backflow prevention.
- Install new cold water distribution piping with code-compliant insulation.
- Disconnect the existing hot water service and install a new hot water system tied to geothermal heat recovery chillers, supplemented by a heat pump domestic water heater.
- Install new hot water distribution piping with code-compliant insulation and circulating pumps for hot water maintenance.
- Assess the size and capacity of the existing sanitary service to ensure it meets new programming requirements.
- Install low-flow, automatic sensor-type restroom flush valves and faucets.

Fire Protection Systems

- Install new fire service with double check valve assembly.
- Fully sprinkler the entire building per NFPA 13, zoned by floor.
- Install a manual Class I standpipe system to comply with the latest building code.

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1C: Lighting Upgrades (Fixture Replacements with Advanced Lighting Controls)
- EEM 5.1: Submetering
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 6.4: ERV/Heat Recovery Run Around Loop
- EEM 6.5: Lab Airflow Optimization
- EEM 6.6: Demand Controlled Ventilation
- EEM 7.4B: Water-to-Water Heat Pumps w/ Geothermal (Scenario 4B)
- EEM 11.1: VFDs on Pumps
- EEM 12C: Tie in Domestic Hot Water to HRC Loops

Cipriani Drive Improvements

Project Description

Cipriani Drive serves as the primary circulation corridor on campus. The existing width of its two travel lanes (~20 feet per lane) and ample landscape space on both sides provide opportunities to transform the corridor into a multi-modal boulevard that spans the entire campus perimeter. It will also elevate the image of the campus and improve the first impression for visitors and first-time students.

The installation of bidirectional five-foot-wide cycle tracks (i.e., bike lanes) on both sides of Cipriani Drive that extends from the Route 110 entrance to the Melville Road entrance represents the largest investment in bicycle infrastructure on campus. These tracks will reinforce connections from parking lots and bus stops.

Cyclists will be protected by a three-foot-wide hatched buffer with rumble strips and the cycle tracks will be surfaced with high-visibility, integrally colored asphalt. Reducing the width of the travel lanes from 20 to 12 feet will help lower vehicle speeds, promoting safer road conditions for all users.

Recommended improvements to pedestrian crossings along Cipriani Drive include:

- Removal of two crossings that do not provide distinct connections.
- Addition of one raised crossing.
- Upgrade of six existing crossings to raised crosswalks.
- Installation of rectangular rapid flashing beacons and continental striping at all crossings.

The two crosswalks slated for removal were identified as redundant, with other nearby crossings providing access to the same destinations. Removing these crosswalks will reduce potential conflict points between pedestrians and motorists without compromising pedestrian connectivity. A new raised crosswalk will be installed between the campus bus hub on the north side of Student Lot #4B and the driveway to the driving range, improving access to the proposed Weathervane Trail.

The aesthetic improvements along Cipriani Drive will focus on planting new landscaping, including shade trees, and installing pedestrian-scale light poles with branded pole banners. These banners will feature Farmingdale State College branding and foster a collegiate atmosphere along the campus's primary corridor.

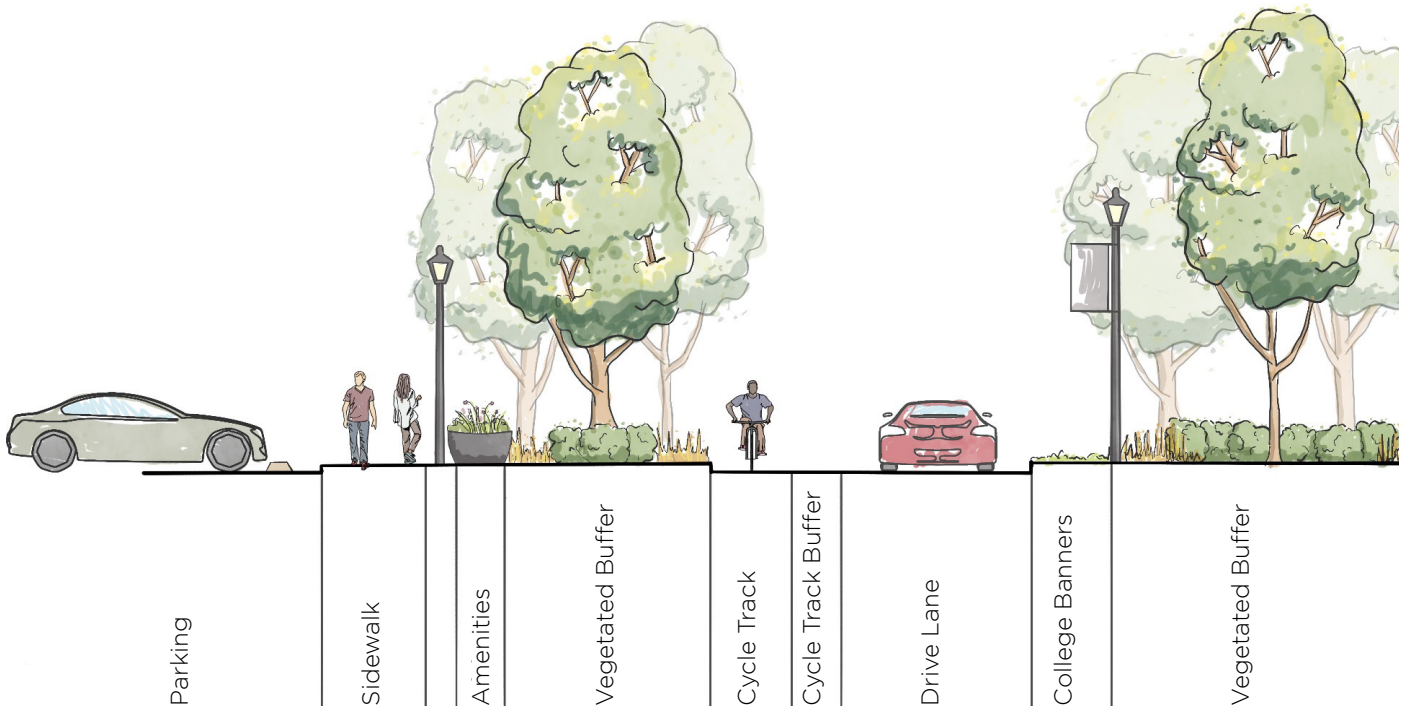


Figure 51 - Placemaking along Cipriani Drive

Proposed Scope of Work

Cost Estimate: $12,169,000

Cycle Track

- Mill the existing top course of asphalt pavement to a 1-inch depth and install a 1-inch lift of integrally colored asphalt over a prepared binder asphalt surface (50,000 linear feet).
- Grind 1/2-inch deep depressions along travel lanes (8,800 linear feet).
- Install epoxy reflectorized pavement symbols along the cycle track, spaced every 500 feet (20 locations).
- Apply epoxy reflectorized pavement markings on an 8-foot width (11,000 linear feet).

Pedestrian Crossings

- Remove two existing pedestrian crossings and add one new crossing.
- Upgrade six existing crossings to raised crosswalks, each 28 feet wide with tapered ends, installing an 8-inch base course, 2.5 inches of binder, and 1 inch of top asphalt.
- Install new Rectangular Rapid Flashing Beacons (RRFBs) with concrete foundations and electrical connections at 16 locations.
- Apply continental striping using epoxy reflectorized pavement for enhanced visibility (640 linear feet)
- Install ADA-compliant detectable warning units on concrete landings, 6 inches deep at ten locations.

Landscaping

- Plant shade trees spaced 40 feet apart along the 10,000-foot length of roadway on both sides, including removal of existing turf, tree installation, and application of 3 inches of mulch (500 trees).
- Add flowering accent trees spaced 120 feet apart along the 10,000-foot length (166 trees).
- Include native perennial and shrub understory plantings in planters, with 80% coverage of ornamental species.
- Construct a bioswale with a 6-inch riser ring to replace existing inlets (10 units).
- Install 32 pre-fabricated concrete planters along the south side of Cipriani Drive.

Lighting + Pole Banners

- Install 450 pedestrian-level light poles (15-foot columns), spaced approximately 45 feet apart.
- Add 266 pole banners to light poles, positioned at roughly 75-foot intervals.

Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of recommendations.

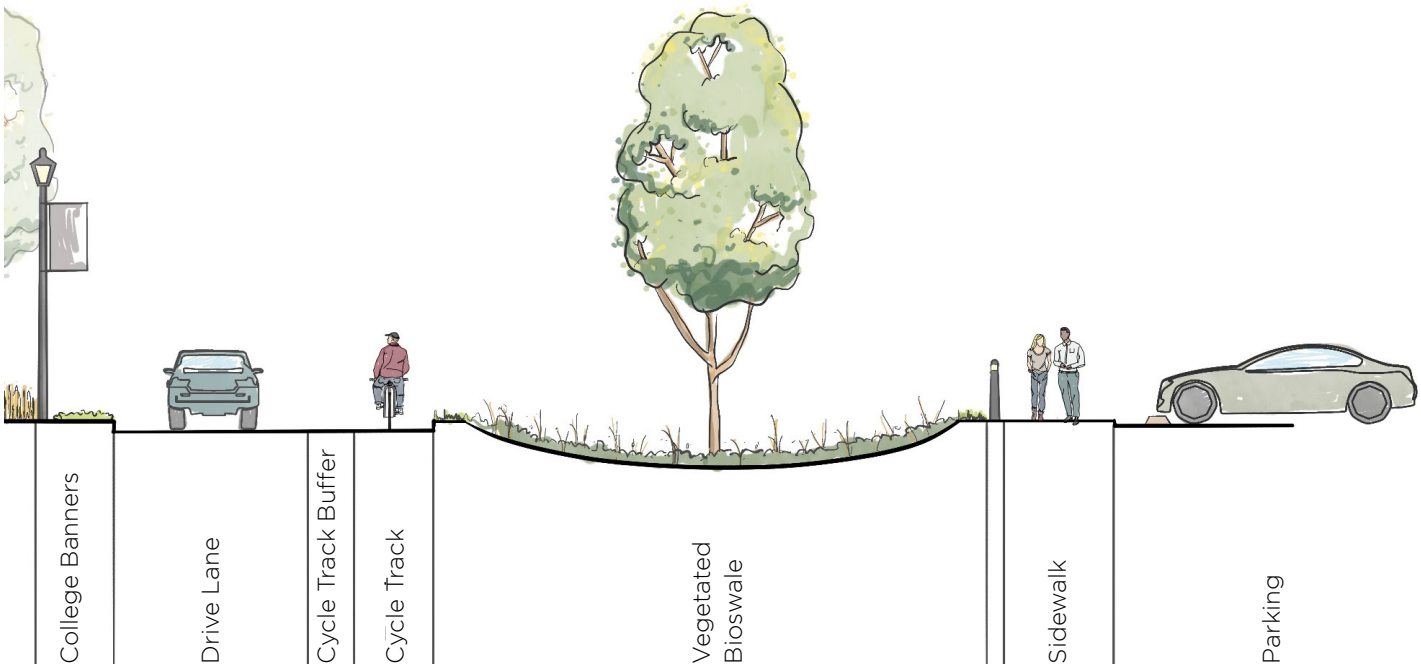
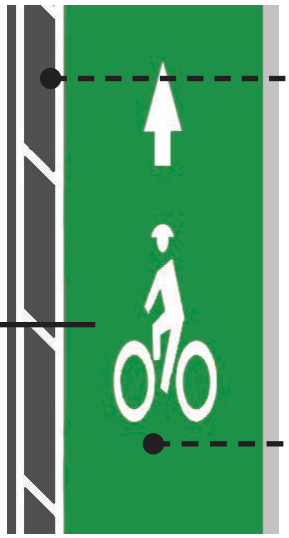


Figure 52 - Proposed Cycle Track Location

Legend

Extent of Cycle Track

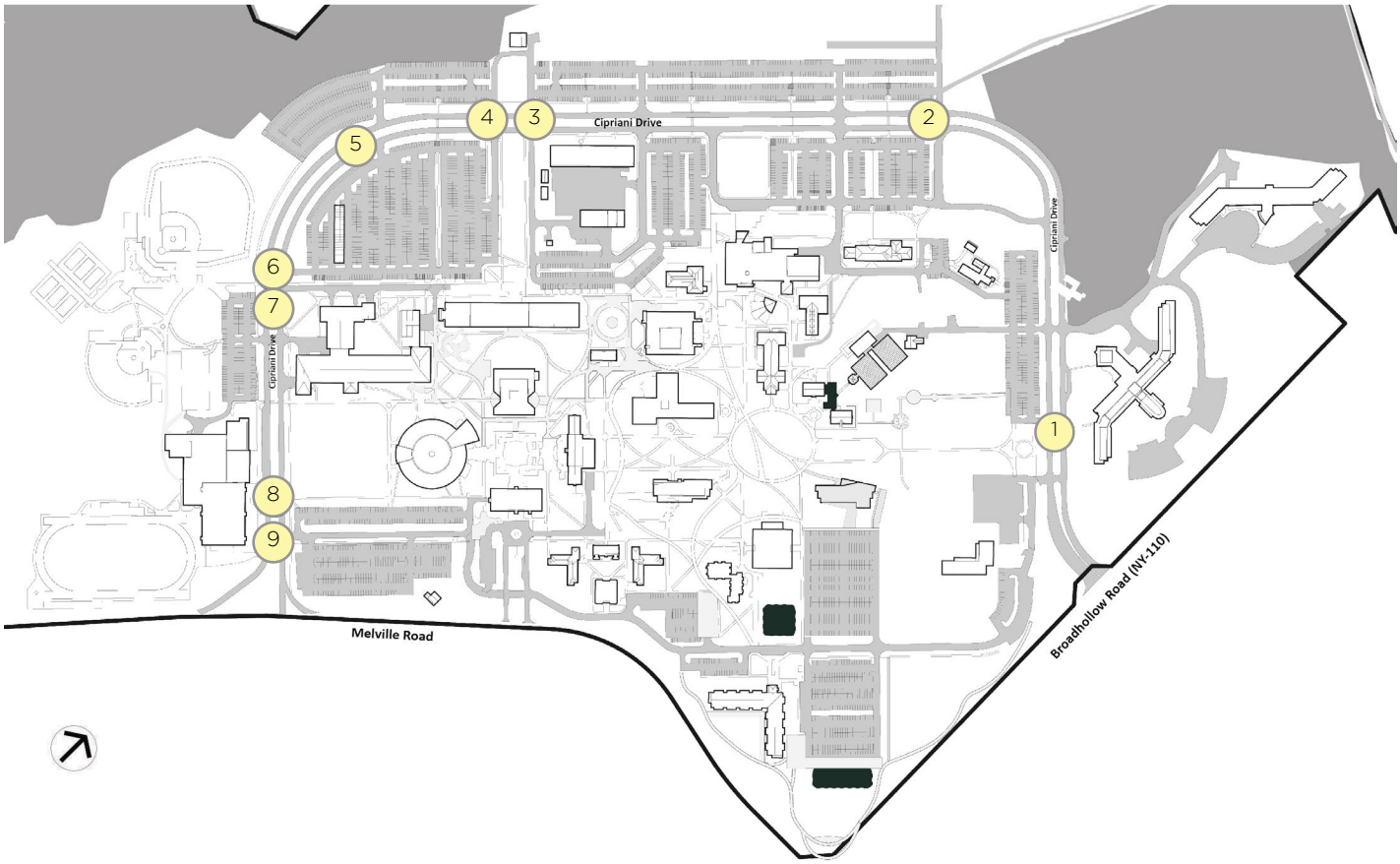
Termini of Cycle Track



3" Hatched Buffer with Rumble Strip

One-Way 5' Cycle Track

Figure 53 - Proposed Cycle Track Details



Pedestrian Crossings to Add

2 North of Campus Center Bus Hub

Pedestrian Crossings to Remove

3 President's Residence to Hale Hall

7 Student Lot #7 to Service Entrance of Lupton Hall

8 Nold Hall to Roosevelt Hall

Recommended Raised Crosswalks

1 Bioscience Park Crosswalk

4 President's Residence to Hale Hall

5 Student Lot #6 to Student Lot #5B

6 Nold Hall Service Driveway to Student Lot #7

9 Student Lot #9 to Nold Hall Athletic Stadium

Figure 54 - Pedestrian Crossings

Parking Lot Pedestrian Connectivity

Project Description

With a significant portion of the student body living off-campus, the commuter experience plays a crucial role in shaping the overall campus culture and identity at Farmingdale State College. While the campus experience for commuters, faculty, staff, and visitors, has traditionally focused on vehicular circulation, these recommendations enhance pedestrian connectivity within existing parking lots.

Key commuter parking lots on the northwest side of campus—specifically Student Parking Lots 3, 5A, 5B, 5C, and 6—lack adequate pedestrian infrastructure. Most notably, commuters parking in Student Parking Lot 6 must navigate potential vehicular conflicts within the lot, cross Cipriani Drive, and cross Student Parking Lot 5B without any protective pedestrian infrastructure. This scenario places pedestrians in direct conflict with motorists, who are more likely to be distracted within parking lots—according to studies by the National Safety Council.

Other commuter parking lots, including Student Parking Lot 2, the adjacent faculty/staff lot, and Student Parking Lot 7, also lack sufficient pedestrian infrastructure. Addressing these connectivity issues is key to significantly improving the commuter pedestrian experience.

Given these considerations, substantial pedestrian infrastructure improvements will be made in these key parking lots to reimagine the commuter experience across campus. Landscaping opportunities within these parking lots will be explored to improve aesthetics and provide essential habitat value in areas dominated by impervious surfaces.

While these lots have been prioritized, it is recommended that pedestrian safety and connectivity improvements be explored across all parking lots on the campus. As part of the development of the proposed new student housing project, pedestrian upgrades should be integrated into the existing Residential Student Lot 11 and planned parking lot on the northeast side of Sinclair Hall. These improvements will enhance connectivity to the new housing project, Orchard Hall, the planned Orchard Hall crossing, and the new Student Center proposed for the south side of Sinclair Hall.

Proposed Scope of Work

Cost Estimate: $3,602,000

Faculty & Staff Parking Lot + Student Parking Lot #2

- Remove 8,150 SF of existing concrete sidewalk and turf
- Remove 900 SF of existing asphalt pavement, concrete curb and sidewalk
- Install 1,650 LF of 5 ft wide concrete sidewalk
- Install 200 LF of concrete curb and 900 SF of 6” concrete sidewalk on 6” RCA subbase
- Install 24 2’ x 5’ ADA compliant embedded detectable warning units, with 100 SF concrete pads
- Install 18 epoxy reflectorized pavement crosswalks
- Install 108 LF of epoxy reflectorized pavement hatched buffer

Student Parking Lot #3

- Remove 8,590 SF of existing concrete sidewalk and turf
- Remove 360 SF of existing asphalt pavement, concrete curb and sidewalk
- Install 1718 LF of 5 ft wide concrete sidewalk
- Install 144 LF of concrete curb and 360 SF of 6” concrete sidewalk on 6” RCA subbase.
- Install 34 2’ x 5’ ADA compliant embedded detectable warning units, with 100 SF concrete pads
- Install 21 epoxy reflectorized pavement crosswalks
- Install six epoxy reflectorized pavement hatched buffers (365 LF)

Student Parking Lots #5A + 6

- Remove 6,595 SF of existing concrete sidewalk and turf
- Remove 1,000 SF of existing asphalt pavement, concrete curb and sidewalk
- Install 1,319 LF of 5 ft wide concrete sidewalk
- Install 400 LF of concrete curb and 1,000 SF of 6” concrete sidewalk on 6” RCA subbase.
- Plant 3600 SF of landscaped area with 8” of select fill and 4” of topsoil and seed.
- Install 28 2’ x 5’ ADA compliant embedded detectable warning units, with 100 SF concrete pads
- Install 13 epoxy reflectorized pavement crosswalks

Student Parking Lot #5B/5C

- Remove 5,255 SF of existing concrete sidewalk and turf
- Remove 3,455 SF of existing asphalt pavement, concrete curb and sidewalk

- Install 1,051 LF of 5 ft wide concrete sidewalk
- Install 1,210 LF of concrete curb and 3,455 SF of 6" concrete sidewalk on 6" RCA subbase.
- Install 43 2' x 5' ADA compliant embedded detectable warning units, with 100 SF concrete pads
- Install 23 epoxy reflectorized pavement crosswalks

Student Parking Lot #7

- Remove 1,050 SF of existing concrete sidewalk and turf
- Remove 840 SF of existing asphalt pavement, concrete curb and sidewalk
- Install 210 LF of 5 ft wide concrete sidewalk
- Install 336 LF of concrete curb and 840 SF of 6" concrete sidewalk on 6" RCA subbase.
- Install 14 2' x 5' ADA compliant embedded detectable warning units, with 100 SF concrete pads
- Install eight epoxy reflectorized pavement crosswalks

Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations

Parking Lots Prioritized for Improvement

1. Student Parking Lot #2
2. Faculty and Staff Parking Lot
3. Student Parking Lot #3
4. Student Parking Lot #5A
5. Student Parking Lot #6
6. Parking Lot #5B
7. Student Parking Lot #5C
8. Student Parking Lot #7

Figure 55 - Parking Lots Prioritized for Improvement

Figure 56 - Existing Lot 2 and UPD Lot

Figure 57 - Proposed Improvements to Lot 2 and UPD Lot

Figure 58 - Existing Lot 3

Figure 59 - Proposed Improvements to Lot 3

Figure 60 - Existing Lot 5

Figure 61 - Proposed Improvements to Lot 5

Figure 62 - Existing Lot 5A

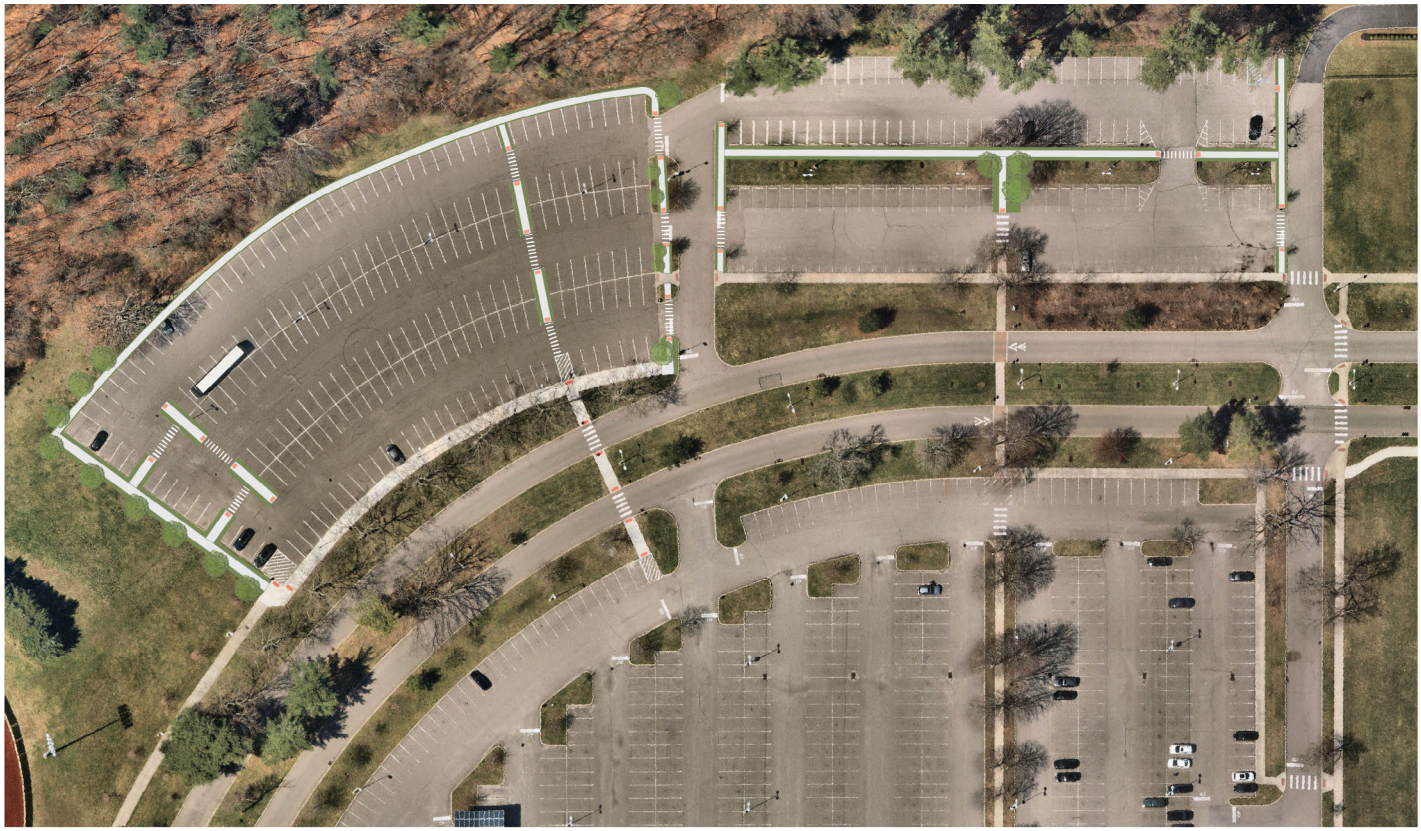


Figure 63 - Proposed Improvements to Lot 5A

FSC Shuttle System Redesign

Project Description

Public transit plays a vital role in connectivity and accessibility on a college campus. The FSC shuttle system, with its connections to countywide bus networks, the Long Island Rail Road, and the FSC Aviation Center, serves as a crucial link between the campus and the broader region. To further enhance this connectivity and to encourage greater use of the shuttle system among students, faculty, and visitors, it is recommended that the FSC shuttle system be expanded and upgraded.

Proposed improvements include the addition of a new bus stop at the existing Suffolk County Transit/NICE bus hub northeast of the Campus Center, upgrades to the bus hub itself, and a redesign of the shuttle route and schedule. Additionally, new amenities at bus stops, such as improved shelters and seating, will further enhance the convenience and utility of the shuttle system for all users.

Figure 64 - Existing Bus Bays

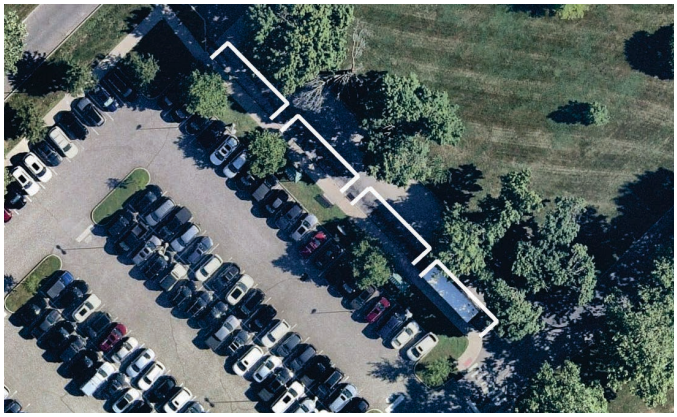


Figure 65 - Proposed Four Bus Bay Arrangement

Proposed Scope of Work

Cost Estimate: $288,000

These enhancements to the shuttle system will provide improved shelter, accessibility, safety, and convenience, making the FSC shuttle a more appealing option for the entire campus community.

Bus Shelters

- Install one bus shelter at Laffin Hall and two new shelters at the Campus Center Bus Hub.
  - Use solar-powered shelters, each measuring 5’ x 15’, and include benches for passenger comfort.

Striping of Bus Bays

- Create four 40’ x 10’ bus bays with three 5’ x 10’ buffers.
- Apply epoxy reflectorized pavement markings to define bus bays, totaling approximately 460 square feet.

Signage

- Install signage at the entrance of the bus hub to prevent unauthorized vehicle access and idling.
  - Use three metal signs with 5-foot poles for clear visibility.

Pedestrian Scale Lighting

- Install five pedestrian-level light poles (15-foot columns) to improve safety and visibility.
  - Position lighting approximately every 45 feet along a 220-foot section of the bus hub.

Landscaping

- Plant 100 square feet of perennial and shrub mix (60/40 coverage) around each bus shelter, with 3 inches of mulch for aesthetics and maintenance.

Smoking Areas

- Remove the existing bus shelters currently designated as smoking areas, including those near Orchard Hall, the Business School building, and Lupton Hall/ Greenley Library.
- Install three 10’ x 15’ awnings and metal benches to update outdoor waiting locations.

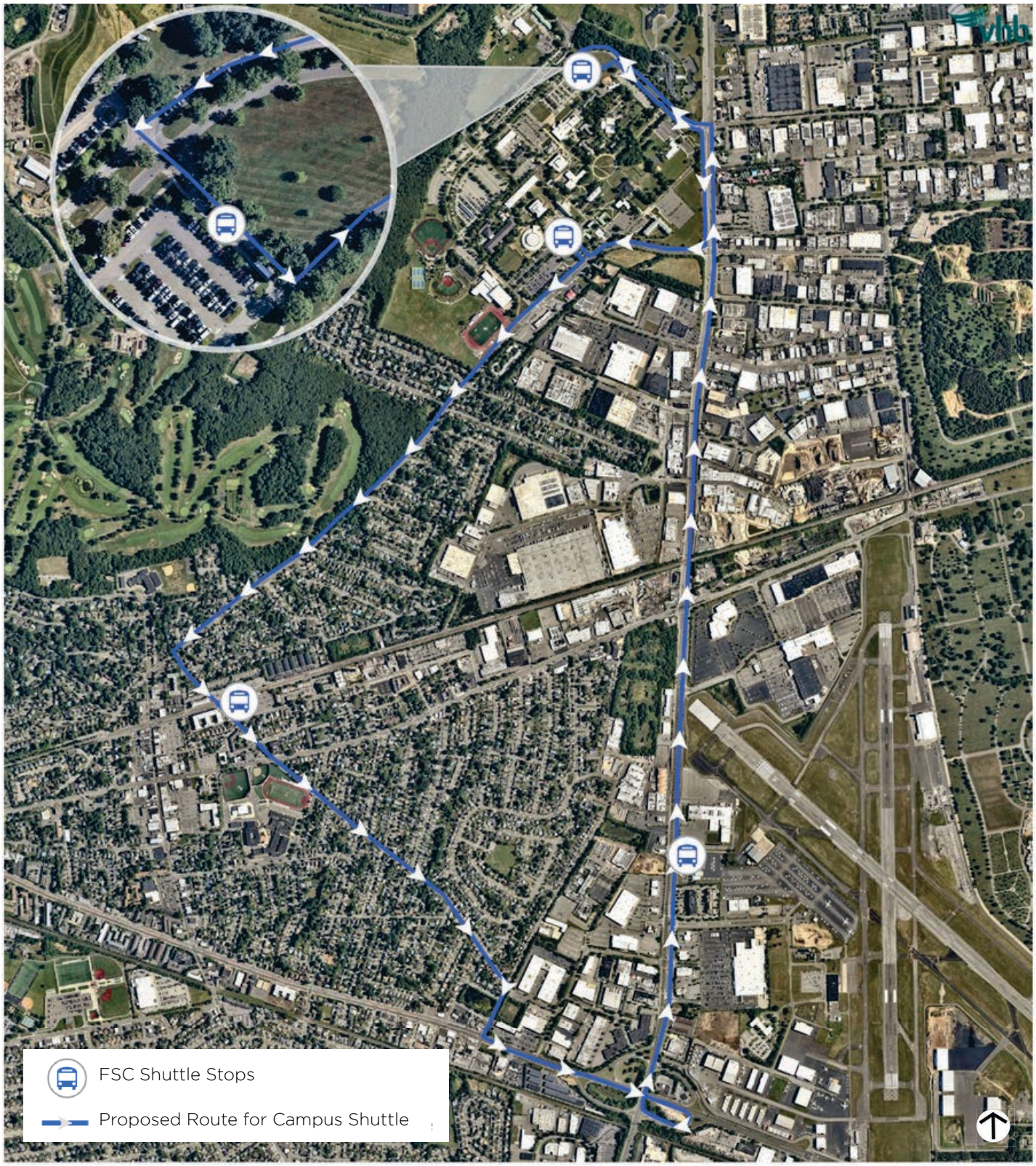


Figure 66 - Proposed Bus Route Adjustments

Potential Schedule Refinement

A preliminary review was conducted to determine the feasibility of refining the Campus Shuttle system to improve service, reliability, and connections to regional bus systems. Changes to the existing Campus Shuttle schedule will be necessary with the proposed addition of a shuttle stop at the Campus bus hub on the north side of Student Lot #4B (referred to hereafter as the "Campus Center stop"). This change will expand the service from three to four stops.

The addition of this new stop presents an opportunity to redesign the Campus Shuttle schedule in several ways:

- Revise the route to eliminate difficult turns currently required.
- Align shuttle arrival times with Suffolk County Transit (SCT) and Nassau Inter-County Express (NICE) schedules for seamless regional connectivity.
- Coordinate the shuttle schedule with afternoon class times at the Aviation Center.

The review first analyzed the potential new route with the shuttle departing from the Campus Center stop, traveling south to Laffin Hall via Route 110 and Melville Road (or alternatively via Cipriani Drive depending on traffic), stopping at the Farmingdale Long Island Rail Road (LIRR) station, and concluding at the Aviation Center on Route 110 before returning to the Campus Center. When the shuttle does not serve the Aviation Center, it would complete its loop by returning via Melville Road. This proposed route minimizes U-turns and improves overall circulation.

The next step evaluated the feasibility of scheduling arrival and departure times at the Campus Center stop to align with SCT and NICE system schedules. While the ideal scenario would involve syncing shuttle times with LIRR services, frequent revisions by the Metropolitan Transportation Authority make it impractical to coordinate with LIRR timetables.

Schedules for SCT Routes 1 and 12 and NICE Route 70 were obtained and analyzed by the planning team. The Campus Shuttle's arrival and departure times were adjusted to ensure smooth transfers, particularly in the morning hours when most passengers arrive on campus. For example, the shuttle was scheduled to depart shortly after the arrival of SCT and NICE buses (excluding westbound NICE Route 70 and eastbound SCT Route 12, as these routes originate at the Campus Center and have low ridership early in the morning).

Another consideration in the new schedule was the limited space at the Campus Center bus stop, which can accommodate only four buses at a time. To manage this constraint, bus arrivals were staggered. For example, SCT buses (Routes 1 NB, 1 SB, and 12 WB) and NICE Route 70 EB are all scheduled to arrive between 7:00 and 7:01 AM. Therefore, the Campus Shuttle was scheduled to arrive at 7:03 AM and depart at 7:05 AM, ensuring county buses have time to leave while still allowing quick transfers for passengers. Once these times were determined, schedules for the other three stops were developed based on estimated travel times.

- Laffin Hall: ~5 minutes (~4 minutes without traffic)
- LIRR Station: ~10 minutes (~5 minutes without traffic)
- Return to Campus Center: ~15 minutes (~7 minutes without traffic)

When the Aviation Center is included in the route, additional time was allotted:

- Aviation Center: ~10 minutes (~9 minutes without traffic)
- Return to Campus Center: ~10 minutes (~8 minutes without traffic)

The proposed schedule provides a buffer to accommodate fluctuations in traffic, especially since shuttle trips on Route 110 will be limited to those serving the Aviation Center.

The review also examined ways to align the shuttle schedule with class times at the Aviation Center. Currently, the Campus Shuttle serves the Aviation Center three times in the morning and twice in the afternoon. The existing schedule, however, does not align with typical class start and stop times at the Center. Based on the Spring and Fall 2024 schedules, all classes at the Aviation Center occur in the afternoon with the earliest starting at 12:30 PM and the latest ending at 9:05 PM.

As a result, it was recommended that shuttle service to the Aviation Center focus primarily on the afternoon, with one morning stop (9:00 AM) to accommodate commuting staff. Afternoon stops should align closely with class times to serve classes scheduled from 12:30 PM to 3:15 PM, 3:30 PM to 4:20 PM, and 4:30 PM to 5:45 PM. No changes to the overall hours of operation for the shuttle are recommended.

An example of a revised morning schedule was developed to illustrate possible improvements (Figure 67). Further analysis, including a study of traffic patterns and feedback from frequent shuttle passengers, is recommended before finalizing any changes. The provided example should be considered a preliminary concept rather than a final recommendation.

Example Existing Schedule		
DEPARTS LIRR	DEPARTS LAFFIN HALL	DEPARTS AVIATION CENTER
7:10 AM	7:15 AM	xxxxxxxxxx
7:40 AM	7:45 AM	xxxxxxxxxx
8:00 AM	8:10 AM	8:25 AM
8:40 AM	8:50 AM	xxxxxxxxxx
9:00 AM	9:10 AM	xxxxxxxxxx
9:30 AM	9:40 AM	9:55 AM
10:10 AM	10:20 AM	xxxxxxxxxx
10:30 AM	10:40 AM	xxxxxxxxxx
11:00 AM	11:10 AM	xxxxxxxxxx
11:30 AM	11:40 am (Drop Off Only)	11:50 pm (Drop Off Only)
Lunch Break (12:00 PM - 1:00 PM)		

Example Proposed Schedule			
DEPARTS CAMPUS CENTER	DEPARTS LAFFIN HALL	DEPARTS LIRR	DEPARTS AVIATION CENTER
7:05 AM	7:10 AM	7:20 AM	xxxxxxxxxx
7:35 AM	7:40 AM	7:50 AM	xxxxxxxxxx
8:05 AM	8:10 AM	8:20 AM	xxxxxxxxxx
8:35 AM	8:40 AM	8:50 AM	9:00 AM
9:10 AM	9:15 AM	9:25 AM	xxxxxxxxxx
9:35 AM	9:40 AM	9:50 AM	xxxxxxxxxx
10:05 AM	10:10 AM	10:20 AM	xxxxxxxxxx
10:35 AM	10:40 AM	10:50 AM	xxxxxxxxxx
11:05 AM	11:10 AM	11:20 AM	xxxxxxxxxx
11:35 AM	11:40 AM	11:50 AM	12:00:00 PM (Drop Off Only)
12:10:00 PM (Drop Off Only)	12:15:00 PM (Drop Off Only)	Lunch Break (12:20 PM - 1:20 PM)	

Figure 67 - Proposed Bus Schedule Adjustments

Melville Entrance Plaza and Orchard Walkway

Project Description

The Melville Entrance Plaza and Orchard Walkway Project combines two complementary initiatives to enhance campus connectivity, aesthetics, and functionality at the southern gateway. Together, these improvements will transform the campus facade along Route 110 and Melville Road into vibrant, pedestrian-friendly spaces for students, faculty, and visitors.

The project includes the creation of a welcoming plaza at the intersection of Route 100 and Melville Road, situated south of Orchard Hall. This new plaza will provide a functional and visually appealing space, featuring native landscaping that creates a serene buffer between pedestrian areas and vehicular traffic on Melville Road. The plaza will serve as a ceremonial gateway, offering a paved gathering space with colorful flower beds, ornamental trees, and shrubs selected for multi-season bloom, to ensure year-round beauty, biodiversity, and interest. Pedestrian-scale lighting, benches, and other amenities will encourage social interaction and year-round use, making it a central hub for campus life.

The Orchard Walkway extends from this plaza along the south side of Orchard Hall along Route 110. This pedestrian-friendly path will activate the Orchard Hall façade, transforming the building's previously underutilized lawn into an inviting campus frontage. Foundation plantings along Orchard Hall will emphasize its new role as a prominent feature of the campus along Route 110, reinforcing the idea that this façade serves as a symbolic "front" of the campus. A native landscaped buffer along Route 110 will enhance the public-facing side of the College while improving the residential experience for campus residents.

The new walkway will create a seamless pedestrian experience throughout the area with nodes for socialization and study. These improvements will convert open turf areas into a formal, pedestrian-friendly processional edge that supports leisurely walks and functional connectivity across campus.

Proposed Scope of Work (Melville Entrance Plaza)

Cost Estimate: $1,280,000

These enhancements will create a vibrant, functional plaza, serving as a prominent and welcoming entryway to the campus.

Paver Installation

- Install 6,000 square feet of concrete pavers on a 1-inch sand setting bed with a 6-inch concrete subbase for added durability.

Plaza Installation

- Construct a 3,200-square-foot plaza using concrete pavers installed on a 1-inch sand setting bed (no concrete base).

Landscaping

- Plant 5 shade trees spaced 40 feet apart along the 10,000-foot length of the roadway on both sides, including the removal of existing turf, tree installation, and a 3-inch mulch layer.
- Add 4 flowering accent trees spaced 120 feet apart along the 10,000-foot length, with turf removal, tree installation, and 3-inch mulch.
- Install 1,150 square feet of native perennial and shrub understory planting along the full length edge of the plaza, featuring a 10-foot width with 3 inches of mulch. Spacing includes perennials at 12 inches and shrubs at a minimum of 5 feet.

Pedestrian Scale Lighting + Pole Banners

- Install 4 pedestrian-level light poles, each 15 feet high, at approximately 45-foot intervals along the 10,000-foot length to enhance visibility and safety.

Site Furnishing

- Place 4 metal benches, each 8 feet wide, around the plaza to provide seating.
- Install 2 Wi-Fi-enabled, outdoor charging units for convenience.
- Add 4 permanent planters, each 36 inches tall and 4 feet wide, to enhance the aesthetic and define the space.

New Entry Sign

- Install a double-sided monument/billboard sign along Melville Road to mark the campus entrance.

Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations.

Proposed Scope of Work (Orchard Walkway)

Cost Estimate: $5,458,000

These improvements aim to create a vibrant, accessible walkway that not only enhances the aesthetic quality of the campus perimeter but also encourages greater pedestrian use and interaction with the surrounding environment.

Paver Installation

- Install 40,000 square feet of concrete pavers to create a 20-foot-wide shared streetscape along a 2,000-foot length.
- Pavers will be set on a 1-inch sand bed with a 6-inch reinforced concrete base to ensure durability.

Landscaping

- Plant 100 shade trees spaced 40 feet apart along both sides of the 2,000-foot walkway, including turf removal and tree installation with 3 inches of mulch.
- Add 40 flowering accent trees spaced 120 feet apart along the 2,000-foot length, with turf removal, tree installation, and 3 inches of mulch.
- Install 40,000 square feet of native perennial and shrub understory plantings, with a minimum width of 10 feet along the walkway.
  - Understory plantings to include 12-inch perennial spacing and shrubs with a minimum of 5-foot spacing, plus 3 inches of mulch bedding and irrigation.

Pedestrian Scale Lighting and Pole Banners

- Install 50 pedestrian-level lights on 15-foot columns, placed at approximately 45-foot intervals along the 2,000-foot walkway.
- Mount 266 pole banners on antique-style lighting fixtures, spaced approximately 75 feet apart, to create a collegiate atmosphere.

Site Furnishing

- Install 20 metal benches, each 8 feet wide, along the walkway to provide seating.
- Place 10 permanent planters, each 36 inches tall and 4 feet wide, to enhance the aesthetic and define the space.

Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations.

Figure 68 - Melville Entrance Plaza and Orchard Walkway

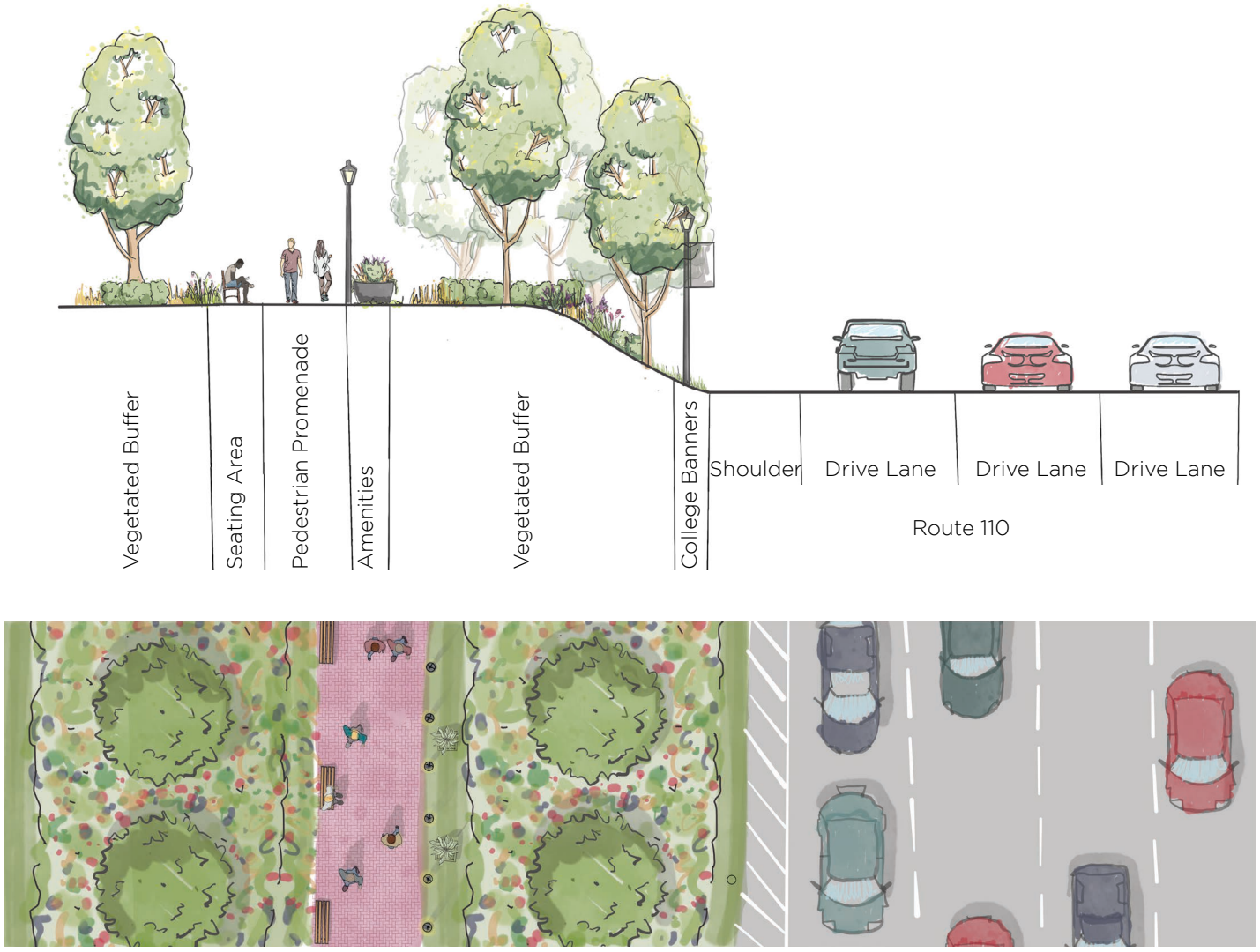


Figure 69 - Façade Activation Along Route 110

Trail Access Improvements

Project Description

Informal pathways that extend from the main campus are frequently used by the campus community. The two primary paths are the Cornfield Trail and Loop that extends from the northern commuter lots to a loop northwest of campus and the Weathervane Trail that connects the campus to a shopping center north of Route 110. As part of the master plan recommendations, both trails will be formalized with trailheads, signage, pedestrian fencing, and other features to enhance user experience and accessibility.

The Cornfield Trail and Loop will serve a recreational purpose, while the Weathervane Trail will provide an alternative pedestrian and cyclist route to the shopping center; addressing sidewalk gaps along Route 110. The proposed trail names are placeholders that reflect the College's agricultural heritage and illustrate the branding potential of formalizing the paths. Final names will be selected in the future with campus community input.

Cornfield Trail and Loop

The Cornfield Trail will formalize the path from the northwest side of campus to the loop near Bethpage Golf Course. Wayfinding and "no access" signage will guide users and maintain safety near construction zones. A new entry sign will establish the trailhead and a connecting path from Student Parking Lot 3 will improve access. The total length of the Cornfield Trail and Loop will span approximately 1.2 miles.

Weathervane Trail

The Weathervane Trail will formalize the current path from the northern campus, near Broad Hollow Bioscience Park, to the shopping center at 610 Broadhollow Road. The dirt path will be replaced with permeable pavement, creating an attractive route for pedestrians and bicyclists. Solar-powered lights and cedar split rail fencing will enhance the trail, and support the College's sustainability goals. Trailhead signage will further reinforce the trail's identity and an informal side trail from Cipriani Drive will be closed to improve wayfinding. The total length of the Weathervane Trail will be approximately 0.4 miles.

Proposed Scope of Work

Cost Estimate: $3,444,000

Cornfield Trail & Loop

The Cornfield Trail will primarily serve recreational purposes, offering a scenic and educational experience.

- Install one 18" x 5" Wood Trail Head Sign
- Install two 12" x 18" wood trail wayfinding signs
- Install two 5' high 12" x 18" metal signs (access prohibited signage)
- Install a 700 foot long, 12-foot-wide mulch (3" depth) pathway (fine grading)
- Conduct a species assessment, invasive species removal and native species restoration across 14,000 square feet (700-foot length x 20-foot width) along the perimeter of the proposed mulch pathway

Weathervane Trail

The Weathervane Trail will be designed to safely guide pedestrians and bicyclists to the shopping center north of the campus, providing an alternative to the route along Route 110.

- Install two 18" x 5" Wood Trail Head Signs
- Install one 12" x 18" wood trail wayfinding signs
- Install a 2,300 foot long, 12-foot-wide permeable pavement pathway
- Install 4,600 linear feet of cedar split rail fencing on both sides of the proposed permeable pavement pathway
- Install 15 solar powered light poles (15' high columns, 150 feet spacing) along the east side of the proposed permeable pavement pathway
- Conduct a species assessment, invasive species removal and native species restoration across 1 acre (2,300-foot length x 20-foot width) along the perimeter of the proposed permeable pavement pathway

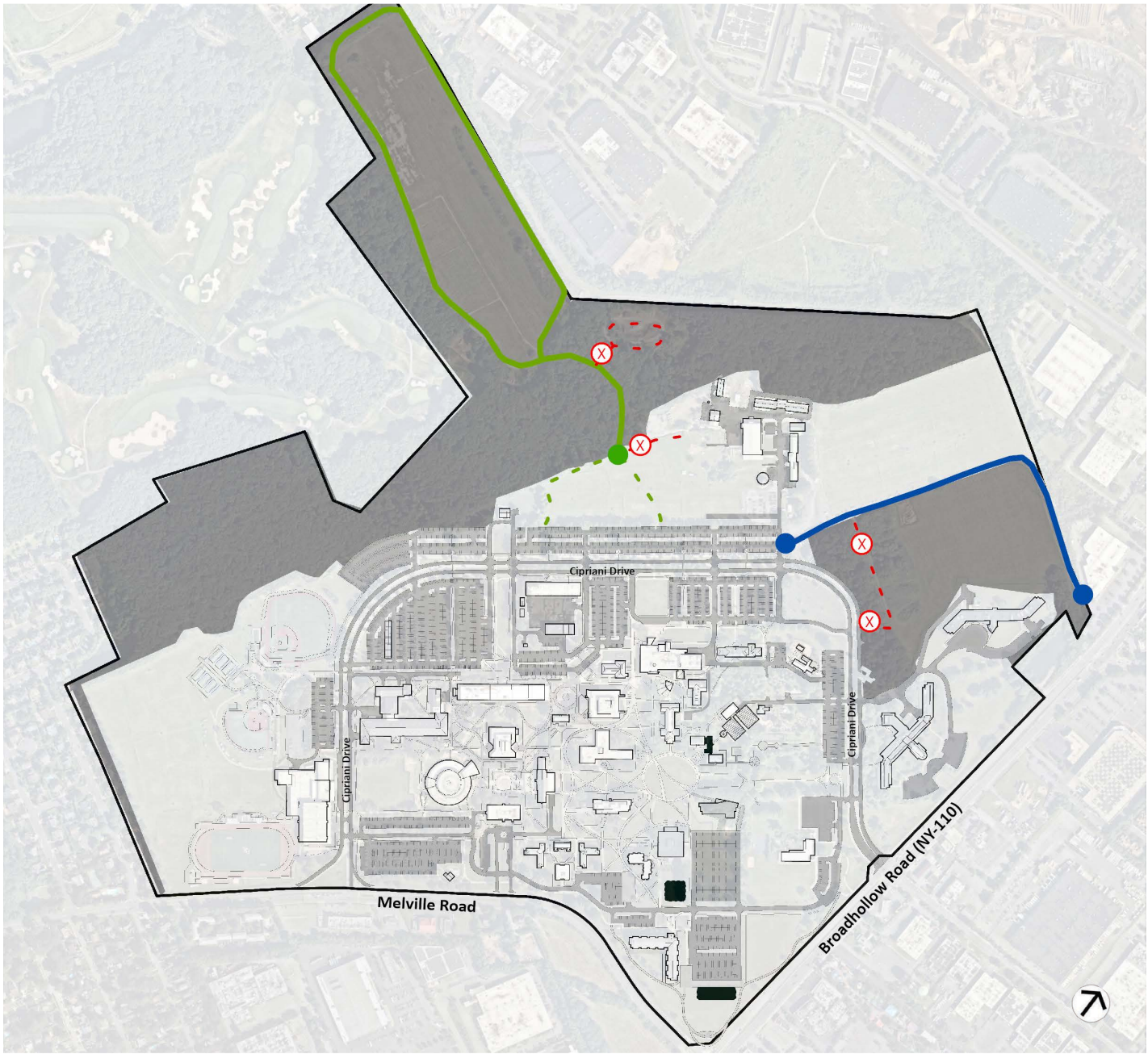


Figure 70 - Trail Access Improvements

Legend

- Weathervane Trail
- Weathervane Trail Head
- Cornfield Trail
- Potential Cornfield Trail Extensions
- Cornfield Trail Head
- Prohibited Access
- Prohibited Entry

Building System Upgrades

Required building system upgrades were identified by the planning team during building walkthroughs and campus interviews. As buildings are renovated, all building and technology systems will be upgraded as part of the work. Several buildings that are not planned for renovation, however still require system upgrades within the next ten years. These buildings include:

- Alumni Hall
- Dewey Hall
- Health and Wellness
- Heating Plant
- Horton Hall
- Memorial Hall
- Orchard Hall
- Service Building
- Aviation Center

The scope of work for each building will depend on the type and condition of existing systems. This section includes recommendations for upgrades to architectural, mechanical, electrical, plumbing, and fire protection systems. Technology systems should also be reviewed at both the building and campus levels to ensure consistency and performance across campus. The review should include, but not be limited to, the following areas:

- IT IDF/MDF Spaces
- Horizontal and Backbone Telecommunications Cabling
- Wireless Access Points (Wireless Networking)
- OSP Cabling and Pathways
- Electronic Security Systems (Cameras, Access Control, Intrusion, Blue Phones)
- Public Safety and Cell Phone Coverage
- Instructional Technology (to ensure alignment with pedagogical goals)
- Acoustical Treatments for Comfortable Learning, Research, and Work Environments

As part of the building system upgrades, the College should consider modifications to entrances, interior doors, stairways, toilet rooms, locker rooms, and signage for full ADA compliance.

Mechanical Ventilation Systems

Several buildings currently rely on natural ventilation, which is accepted by the latest NY State Building Code. For improved indoor air quality and better control of outdoor air, the College should consider installing mechanical ventilation systems in these buildings.

- Alumni Hall
- Memorial Hall
- Ward Hall - Long-Range Projects
- Dewey Hall
- Hooper Hall - Long-Range Project
- Knapp Hall - Long-Range Project

Clean Energy Master Plan Integration

The Clean Energy Master Plan, recommends the installation of cluster plants, a central neutral temperature water loop, and distributed geothermal wellfields. If this work is completed, many building heating and domestic hot water systems will need to be modified. The following adjustments will be necessary to accommodate these changes:

- Steam radiators will be replaced with new radiators sized for low-temperature hot water.
- Steam to hot water heat exchangers and hot water radiators will need to be analyzed and replaced if their capacity cannot accommodate the new low-temperature hot water.
- Hot water radiators fed from the central heat plant will be replaced with new radiators sized for low-temperature hot water.
- Steam unit heaters will be replaced with electric infrared or low-temperature hot water unit heaters.
- Air Handling Units (AHUs) with steam heating coils will be replaced with hot water heating coils.
- AHUs with hot water heating coils will need to be analyzed and replaced if their capacity cannot accommodate low-temperature hot water.
- Buildings with steam-to-domestic hot water heat exchangers should be equipped with a heat exchanger connected to central heating water and supplemented with heat pump-type domestic hot water heaters for temperature boost.
- Buildings relying on central plant domestic hot water heating will have heat exchangers connected to central heating water, supplemented by heat pump-type domestic hot water heaters.
- All process equipment that relies on campus steam service will be replaced with electric equipment.

- A neutral temperature loop, as outlined in the Clean Energy Master Plan, connecting distributed geothermal wellfields to heat pumps, will need to be provided.
- The main electrical service and switchgear for the campus will need to be analyzed and upgraded to accommodate higher electrical loads required by the transition to cleaner energy sources.

By integrating the Clean Energy Master Plan with the necessary building system upgrades, the College can align its infrastructure with sustainability goals, ensuring both the reliability of campus systems and compliance with modern energy standards.

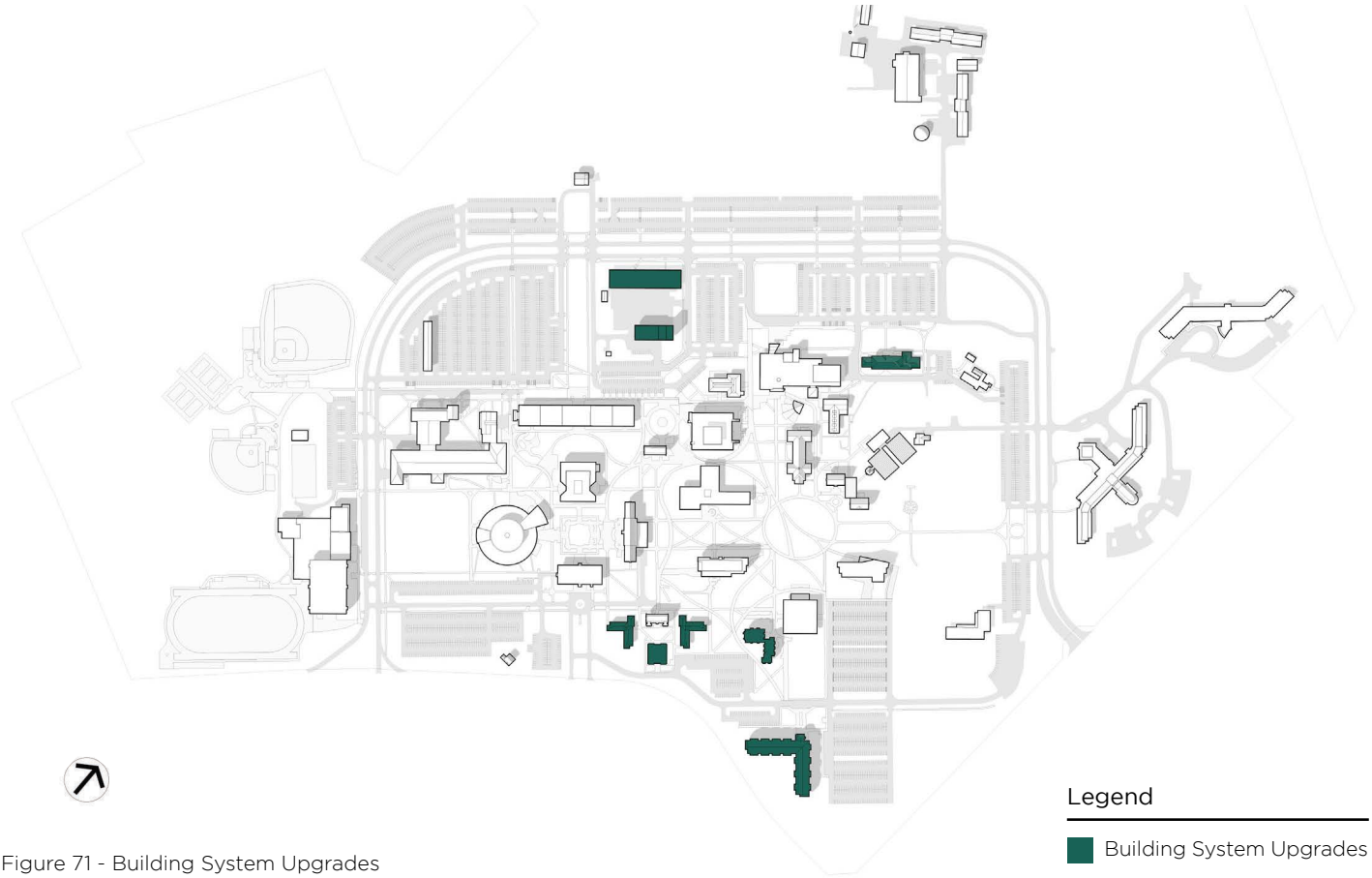
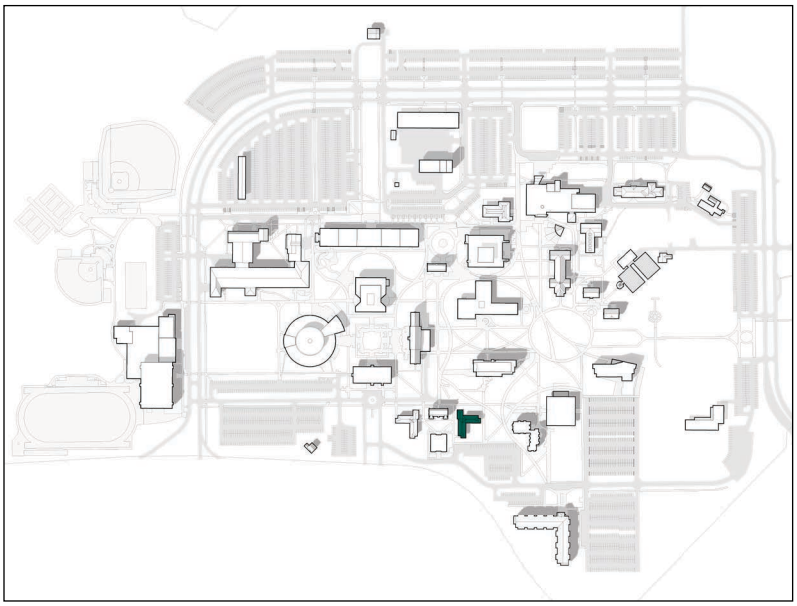


Figure 71 - Building System Upgrades

Alumni Hall Upgrades



Proposed Scope of Work

Building Exterior

- Repair cracked/damaged masonry.
- Replace damaged column covers.
- Rake and recaulk exterior sealant joints.
- Replace single-glazed windows with double-glazed, energy efficient units.

Building Interior

- Replace floor tile that is in fair condition.
- Replace delaminated interior doors.
- Replace vinyl stair treads.

Mechanical Systems

- Provide mechanical ventilation system; there is currently no central air-handling unit system.
- Upgrade building control system; the building is currently served by manual thermostatic valves.

Electrical Systems

- Replace electrical panels, switches, and motor controllers.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention.
- Install backflow prevention for incoming hot water service from Heating Plant.
- Provide automatic fixtures and install insulation on all domestic water piping.

Building Statistics

Major Use: Residential

Construction Year: 1950

Building Area: 12,569 GSF

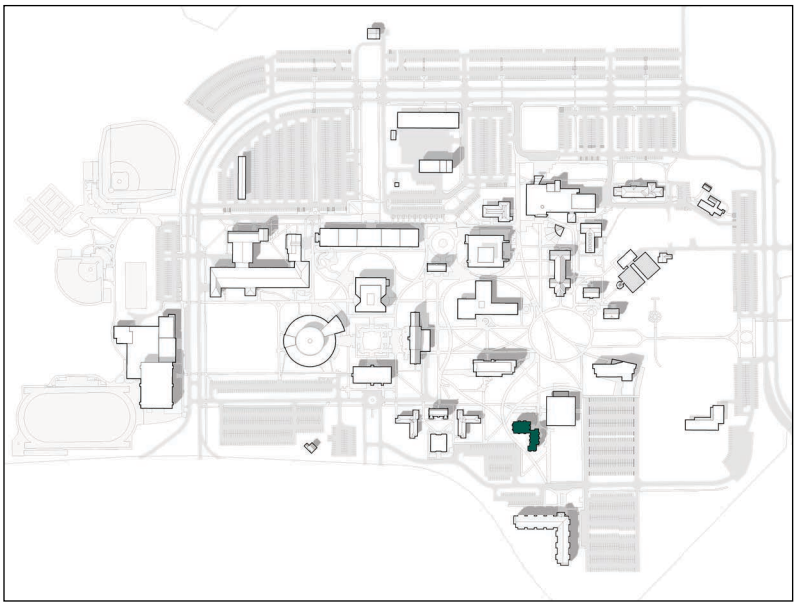
FCI Condition: 0%

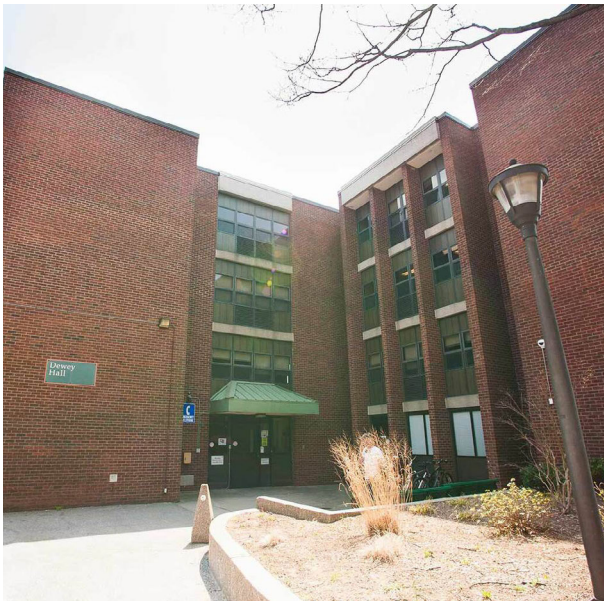
Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 2.1: Window Replacement
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 8.1: Plumbing Fixtures

Dewey Hall Upgrades





Proposed Scope of Work

Building Exterior

- Repair cracked/damaged masonry.
- Replace damaged window panels and single-glazed windows with double-glazed, energy efficient units.

Building Interior

- Replace floor tile that is in fair/poor condition.
- Replace interior doors, casework, and toilet partitions.

Mechanical Systems

- Provide mechanical ventilation system; there is currently no central air-handling unit system.
- Replace heat exchanger and pumps that are in poor condition.
- Upgrade building control system on unrenovated (upper) floors.

Electrical Systems

- Replace exterior metal halide lighting.
- Replace inoperable light bulbs.

Plumbing Systems

- Replace incoming water service and install code compliant backflow prevention.
- Install missing insulation on distribution piping.
- Replace original steam to hot water heat exchanger, which is near the end of its lifespan.
- Investigate and repair leaks near showers.
- Provide code compliant roof vent.

Building Statistics

Major Use: Residential

Construction Year: 1970

Building Area: 37,506 GSF

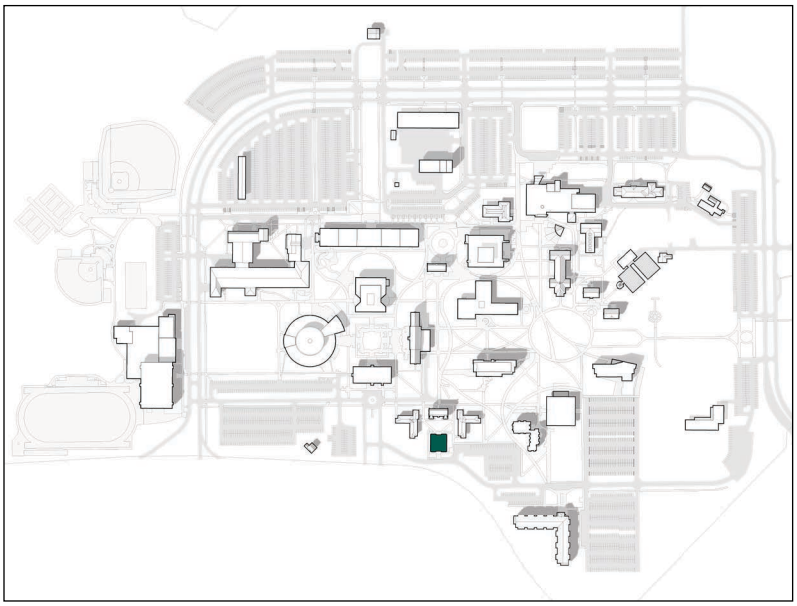
FCI Condition: 1%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1A: Lighting Upgrades (Relamp)
- EEM 2.1: Window Replacement
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 11.1: VFDs on Pumps

Health and Wellness Upgrades



Proposed Scope of Work

Building Exterior

- Repair cracked/damaged masonry.
- Rake and repoint deteriorating mortar joints.
- Rake and recaulk exterior sealant joints.
- Replace exterior ceilings that are in fair/poor condition.
- Replace single-glazed windows with double-glazed, energy efficient units.

Mechanical Systems

- Replace indoor air-handling unit and exhaust fans.
- Replace outdoor condensing unit that is currently using R-22 refrigerant.

Electrical Systems

- Replace electrical panels, switches, and motor controllers.
- Replace exterior and interior fluorescent light fixtures.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention.
- Replace incoming hot water service from Heating Plant and provide backflow prevention.

Building Statistics

Major Use: Health Services

Construction Year: 1969

Building Area: 6,177 GSF

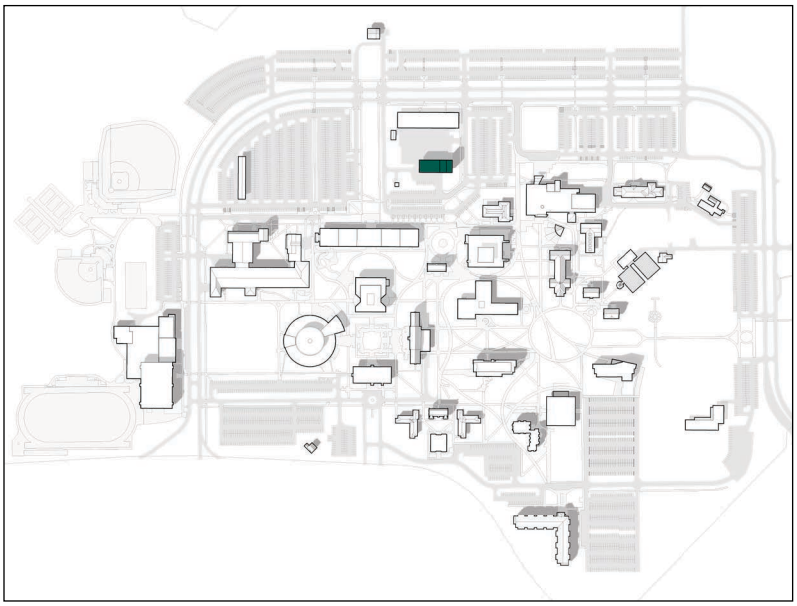
FCI Condition: 28%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1B: Lighting Upgrades (Fixture Replacement)
- EEM 2.1: Window Replacement
- EEM 6.2A: AHU Replacement

Heating Plant Upgrades



Proposed Scope of Work

Building Exterior

- Repair cracked/damaged masonry.
- Replace soffit panels and exterior ceilings.
- Replace broken glass blocks along south wall.
- Replace single-glazed windows with double-glazed, energy efficient units.

Building Interior

- Replace broken quarry tile in Heating Plant.
- Replace carpet that is in poor condition.
- Replace interior doors that are in fair/poor condition.
- Scrape, prime, and paint floors, walls, and ceilings.

Mechanical Systems

- Upgrade control system from pneumatic to DDC.
- Replace wash room exhaust fan.

Electrical Systems

- Replace electrical panels, switches, and motor controllers.
- Replace interior fluorescent light fixtures.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention.
- Provide automatic fixtures and install insulation on all domestic water piping.
- Replace roof drains.
- Provide code compliant roof vent.

Building Statistics

Major Use: Utilities

Construction Year: 1950

Building Area: 14,806 GSF

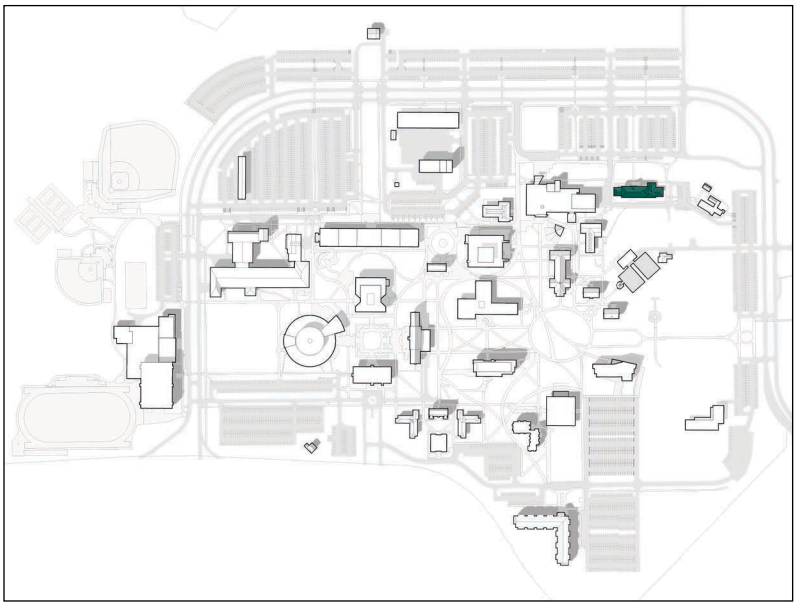
FCI Condition: 116%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1B: Lighting Upgrades (Fixture Replacement)
- EEM 2.1: Window Replacement
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 8.1: Plumbing Fixtures

Horton Hall Upgrades



Proposed Scope of Work

Building Exterior

- Replace doors that are rusted and in poor condition.
- Scrape, prime, and paint wood cornice.

Building Interior

- Repair damaged gypsum wallboard (GWB).
- Replace vinyl stair treads.
- Replace casework that is in fair/poor condition.

Mechanical Systems

- Replace three indoor air handlers and exhaust fans.
- Replace heating boiler and pumps.
- Upgrade control system from pneumatic to DDC.

Electrical Systems

- Replace incoming electrical service.
- Replace electrical panels, switches, and motor controllers.
- Replace interior fluorescent light fixtures.

Fire Protection Systems

- Replace incoming water service and provide code compliant backflow prevention.

Building Statistics

Major Use: Administration

Construction Year: 1953

Building Area: 22,046 GSF

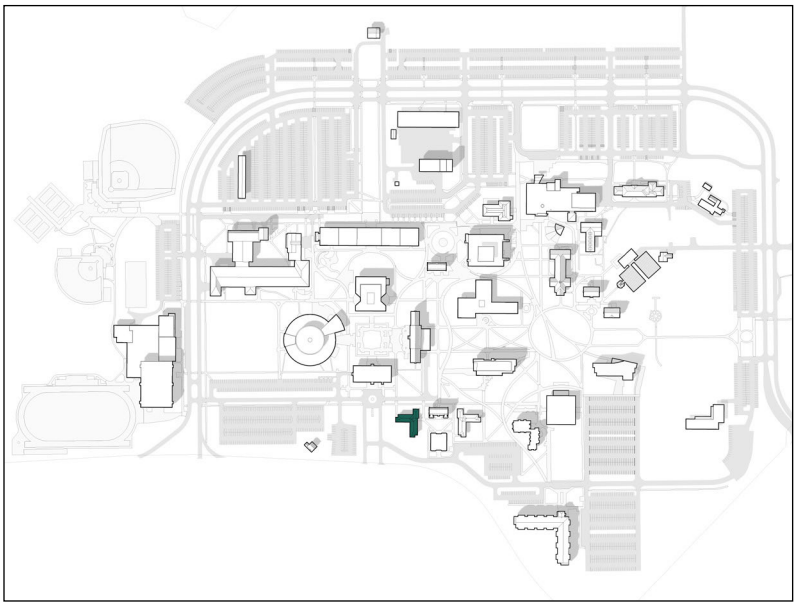
FCI Condition: 21%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1B: Lighting Upgrades (Fixture Replacement)
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 6.2A: AHU Replacement
- EEM 11.1: VFDs on Pumps

Memorial Hall Upgrades



Proposed Scope of Work

Building Exterior

- Repair cracked/damaged masonry.
- Replace soffit panels and exterior ceilings.
- Replace rusted exterior doors.
- Replace single-glazed windows with double-glazed, energy efficient units.

Building Interior

- Replace warped/chipped interior doors.
- Replace vinyl stair treads.
- Replace casework that is in fair/poor condition.

Mechanical Systems

- Provide mechanical ventilation system; there is currently no central air-handling unit system.
- Upgrade building control system; the building is currently served by manual thermostatic valves.

Electrical Systems

- Replace electrical panels, switches, and motor controllers.
- Replace inoperable lighting fixtures.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention.
- Install backflow prevention for incoming hot water service from Heating Plant.
- Provide automatic fixtures and install insulation on all domestic water piping.

Building Statistics

Major Use: Administration

Construction Year: 1950

Building Area: 12,569 GSF

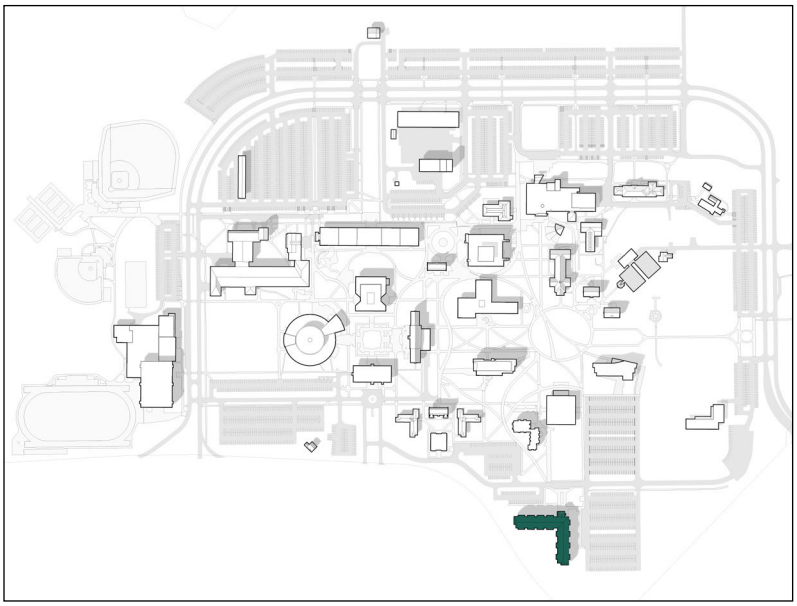
FCI Condition: 28%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1B: Lighting Upgrades (Fixture Replacement)
- EEM 2.1: Window Replacement
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 8.1: Plumbing Fixtures

Orchard Hall Upgrades



Proposed Scope of Work

Building Exterior

- Repair damaged Exterior Insulation Finish System (EIFS) walls.
- Replace rusted exterior doors.
- There is evidence of water infiltration at some windows; replace windows that are in fair condition.

Building Interior

- Replace damaged vinyl floor tile.
- Repair cracked/damaged gypsum wallboard (GWB).
- Replace chipped/damaged interior doors.
- Repair casework that is chipped and missing hardware.

Mechanical Systems

- Repair inoperable air-handling units and cooling system.
- Replace steam condensate pumps.

Electrical Systems

- Provide firestopping and fireproofing for cables/ conduits passing through the data room.
- Replace inoperable light bulbs.

Plumbing Systems

- Replace the incoming water service and provide code-compliant backflow prevention.
- Replace the steam-to-hot-water heat exchanger, as it is nearing the end of its life.
- Address leaks throughout the existing sanitary system.

Building Statistics

Major Use: Residential

Construction Year: 2005

Building Area: 107,000 GSF

FCI Condition: 40%

Clean Energy Master Plan

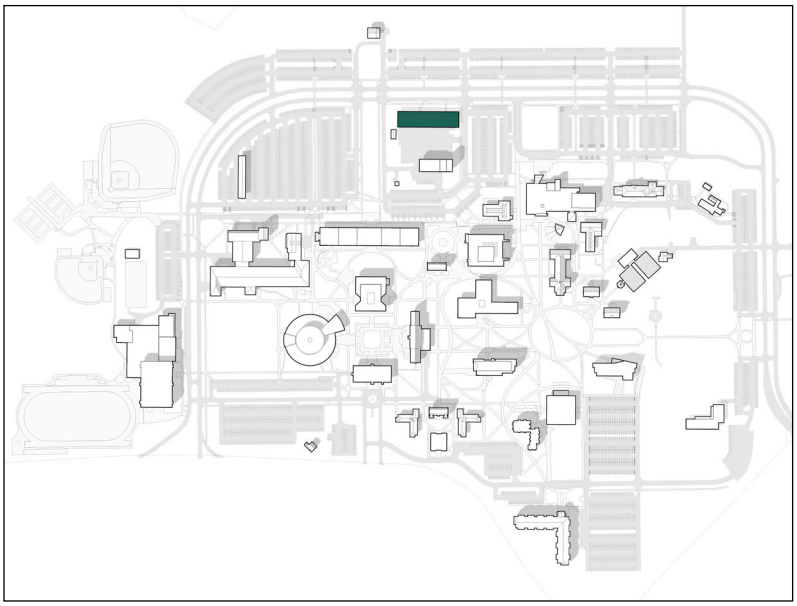
The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1A: Lighting Upgrades (Partial Relamp)
- EEM 2.1: Window Replacement

Fire Protection

- Replace incoming water service and provide code compliant backflow prevention.

Service Building Upgrades



Proposed Scope of Work

Building Exterior

- Repair cracked concrete frame and concrete walls that are in fair/poor condition.
- Replace rusted overhead doors.
- Replace single-glazed windows with double-glazed, energy efficient units.
- Replace Kalwall system along north wall.

Building Interior

- Replace damaged floor tile.
- Replace interior doors that are in fair condition.
- Replace casework that is in fair condition.

Mechanical Systems

- Replace the indoor HV unit.
- Upgrade the control system from pneumatic system to DDC controls..

Electrical Systems

- Replace incoming electrical service.
- Replace electrical panels, switchgear, switches, and motor controllers.
- Replace exterior metal halide lights and interior fluorescent light fixtures.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention and install insulation on all domestic water piping.

Building Statistics

Major Use: Maintenance

Construction Year: 1968

Building Area: 21,077 GSF

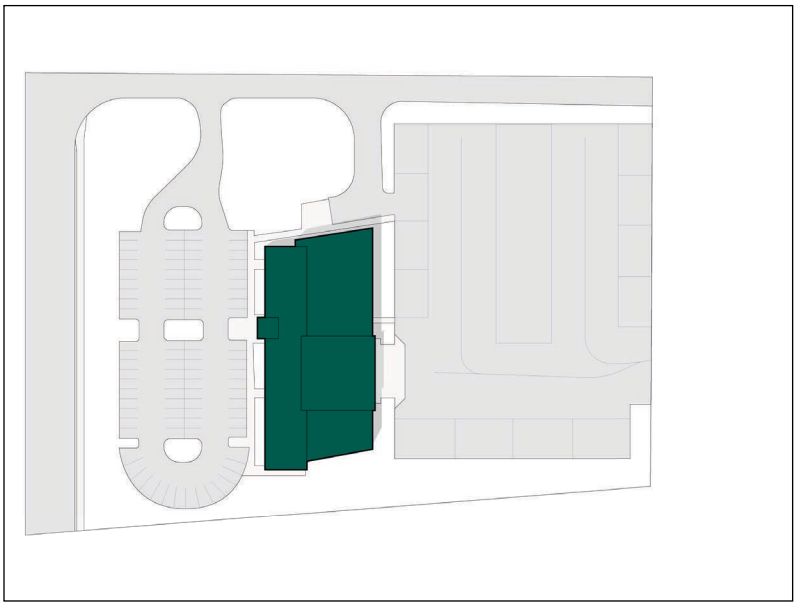
FCI Condition: 1%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1B: Lighting Upgrades (Fixture Replacement)
- EEM 2.1: Window Replacement
- EEM 6.1: HVAC Controls Replacement (DDC Conversion)
- EEM 6.2A: AHU Replacement

Aviation Center Upgrades



Proposed Scope of Work

Building Interior

- Replace damaged vinyl floor tile.
- Repair cracked gypsum wallboard (GWB).
- Replace interior doors that are in fair condition.
- Remove or replace plastic laminate casework in the main lobby.

Mechanical Systems

- Replace gas-fired boilers and inline hot water pumps.
- Replace rooftop exhaust utility fans.

Electrical Systems

- Replace inoperable light bulbs.

Plumbing Systems

- Backflow prevention and valves appear to be near the end of their life and should be replaced.
- Provide automatic fixtures and install insulation on all domestic water piping.
- Replace damaged roof drain with no emergency roof drain near areas of ponding.

Building Statistics

Major Use: Academic

Construction Year: 1996

Building Area: 20,384 GSF

FCI Condition: 9%

Clean Energy Master Plan

The following Energy Efficiency Measures (EEM) identified in the Clean Energy Master Plan will be addressed by this project:

- EEM 1A: Lighting Upgrades (Relamp)
- EEM 8.1: Plumbing Fixtures
- EEM 11.1: VFDs on Pumps

Long-Range Projects

All remaining projects identified by the planning team are long-range projects. While these projects are currently outside the master plan timeline, they may become a priority as academic programs grow, equipment needs to be replaced, or funding becomes available for a particular project. Due to the uncertainty of projecting costs more than ten years into the future, no cost estimates have been prepared for these projects.

The long-range projects include significant renovations to several key buildings, as well as new buildings that will allow the College to grow the residential student population.

- Hooper Hall Renovation and Elevator Addition
- Knapp Hall Renovations
- Ward Hall Renovation and Elevator Addition
- New Student Center
- New Student Housing

In addition to building projects, the master plan recommendations include the development of several long-range site strategies:

- A Landscape Management Plan that will recommend landscape strategies at building perimeters, pathways, and green spaces
- A Green Infrastructure Plan showing opportunities for turf reduction, bioretention areas, permeable pavers, forest restoration, rain gardens, and water harvesting.
- A Hardscape Plan that will improve campus walkways by clearly designating primary, secondary, and tertiary walkways, as well as service and maintenance paths.

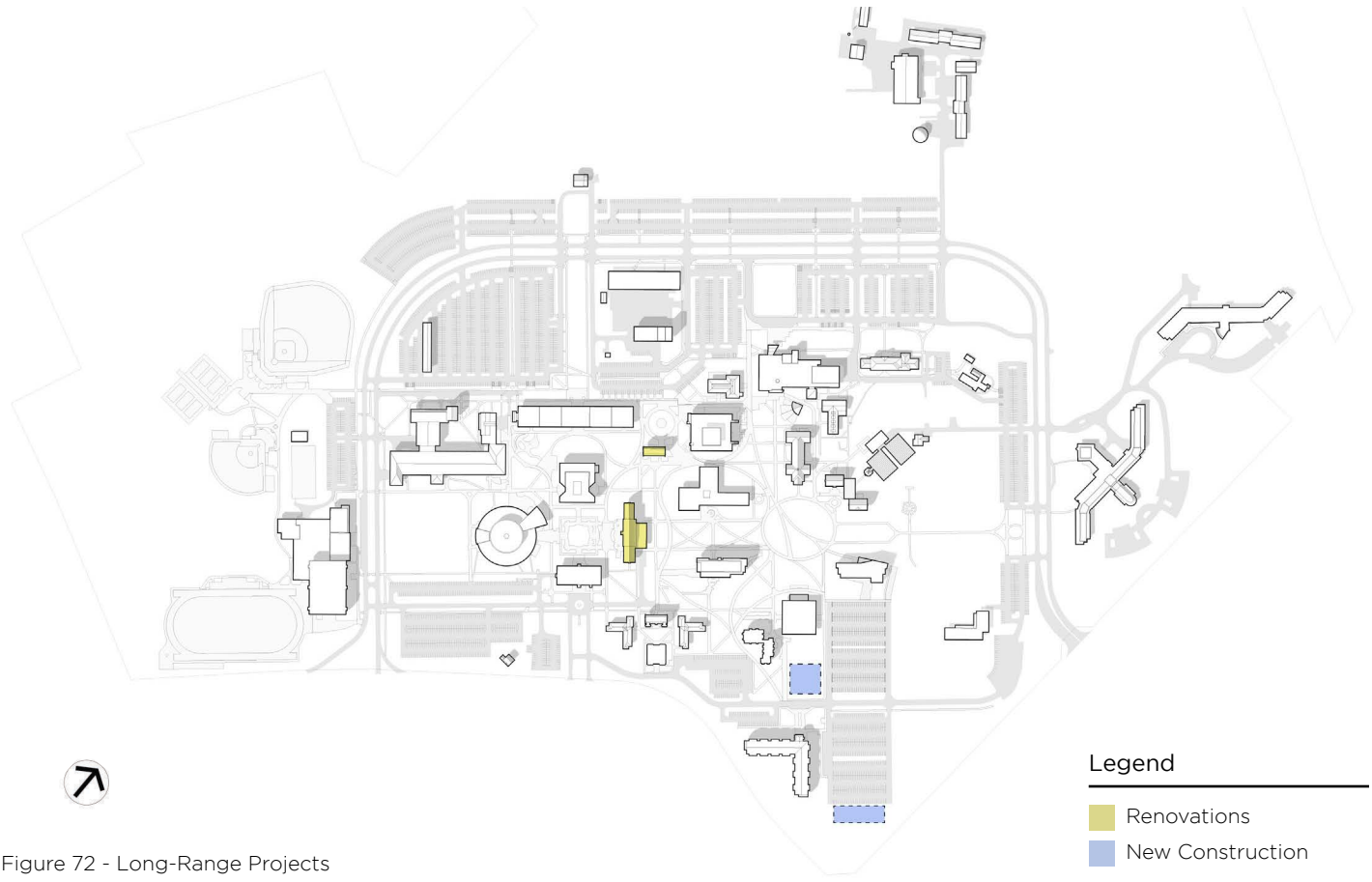
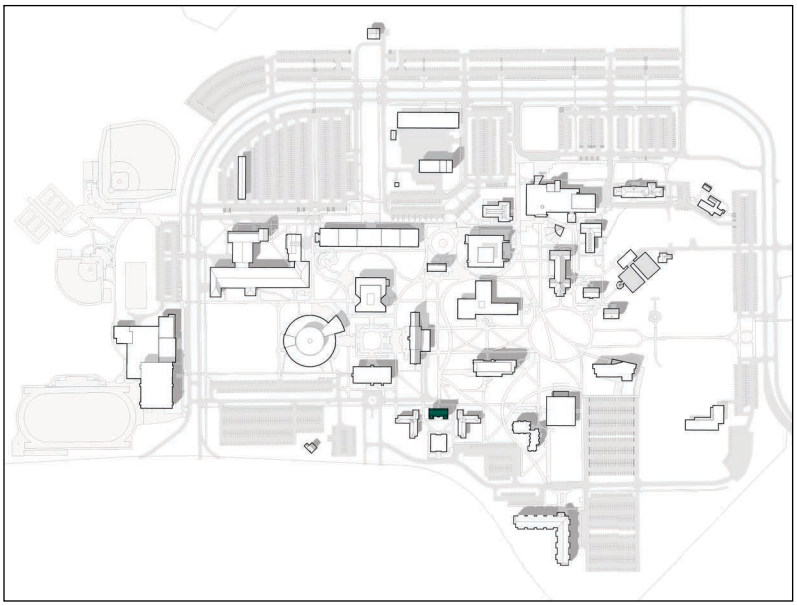


Figure 72 - Long-Range Projects

Hooper Hall Renovations



Project Description

The College has not made a significant investment (over $150,000) in Hooper Hall since the previous Master Plan. It currently houses the Long Island Educational Opportunity Center (LIEOC), which helps community members improve their academic and workforce development skills. While the overall condition of the building is fair, the exterior envelope is in poor condition and the building does not comply with current ADA guidelines. The Master Plan recommends a full renovation and construction of a small addition on the east side of the building to house an elevator.

Proposed Scope of Work

Building Exterior

- Install new roof sheathing, underlayment, asphalt shingles, and roof accessories.
- Replace deteriorated wood cornice and wood shingles.
- Replace exterior doors.
- Replace single-glazed windows with double-glazed, energy efficient units.
- Scrape, prime, and paint wood cornice and trim.
- Replace metal railings at main entrance.

Building Interior

- Reconfigure interior space, as necessary, for proposed layout and elevator addition.
- Replace interior finishes (carpet, floor tile, ceiling tile) in renovated area.
- Scrape, prime, and paint plaster walls and ceilings that will remain as part of the work.
- Replace interior doors in renovated area.
- Replace casework in renovated area.
- Install ADA signage throughout the building.

Mechanical Systems

- Provide mechanical ventilation system. There is no central air handling unit system.
- Upgrade the building control system from pneumatic to DDC controls.

Electrical Systems

- Replace old electrical panels, switches, and motor controllers.
- Replace interior fluorescent light fixtures.
- Inspect and relocate the smoke detector in mechanical room to the highest point of the room.

Plumbing Systems

- Replace incoming water service and provide code compliant backflow prevention.
- Replace manual fixtures, provide missing insulation

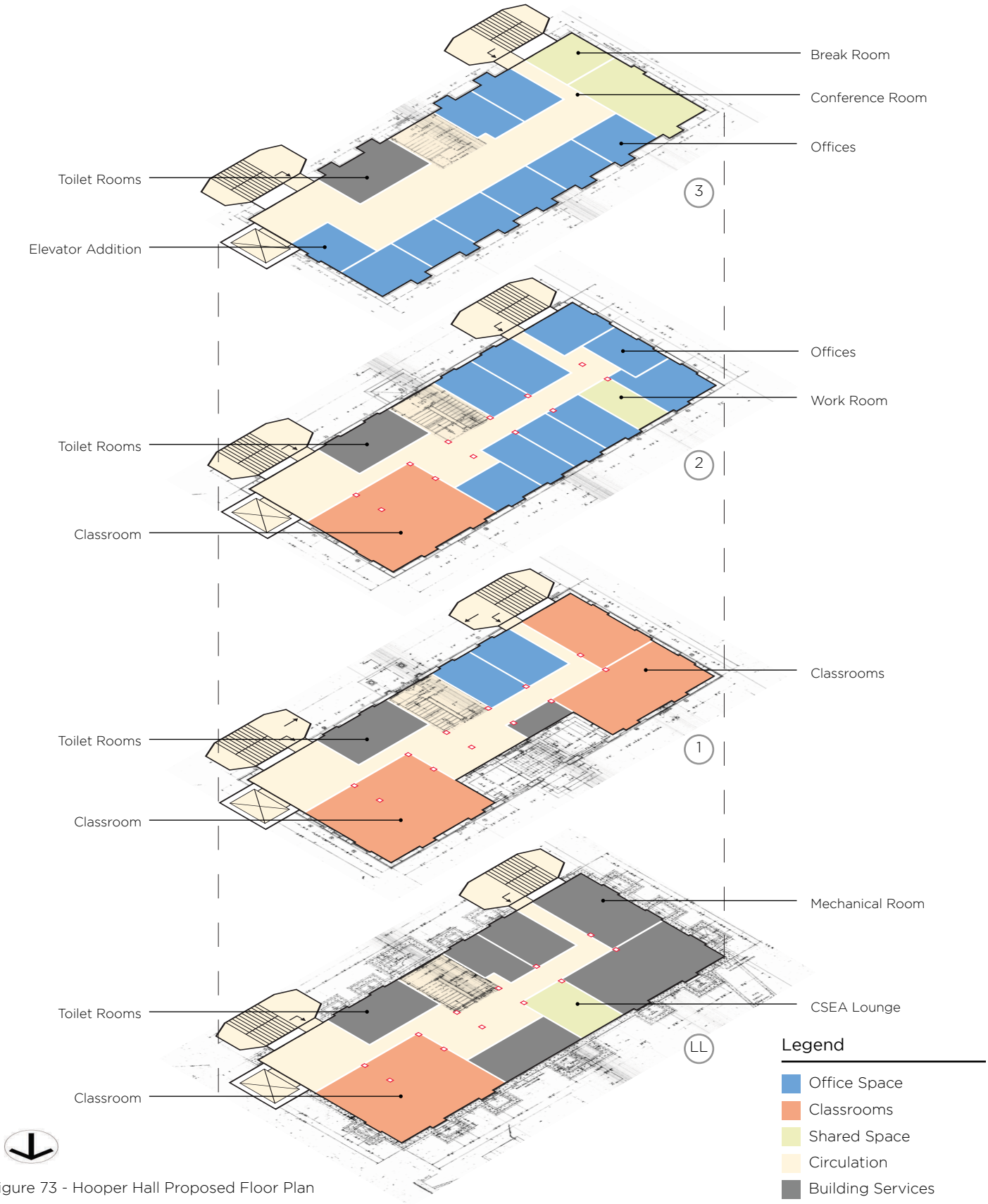
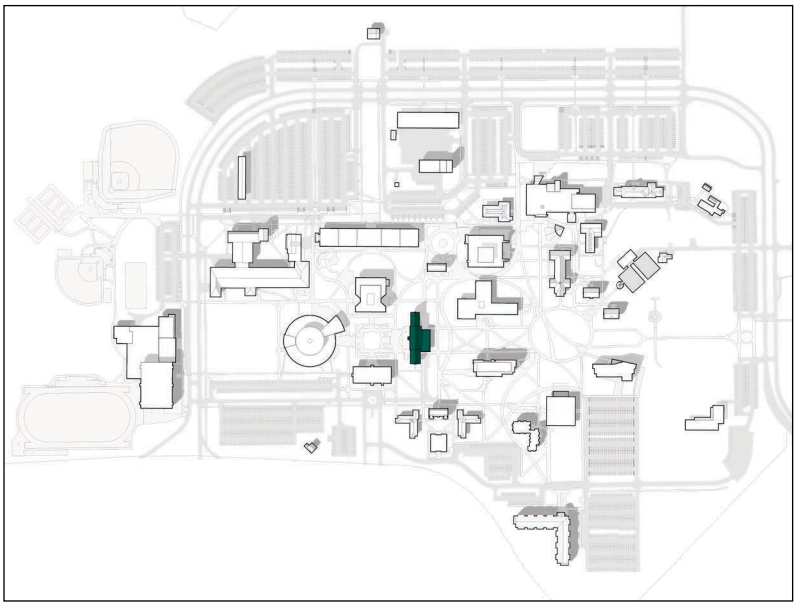


Figure 73 - Hooper Hall Proposed Floor Plan

Knapp Hall Renovations



Project Description

Recent renovations on the first floor of Knapp Hall have modernized the space to accommodate grant-sponsored programs, Academic Support and Access Programs, and the Research Foundation. The second floor, which houses offices for the School of Arts and Sciences, was not included in the renovations. Space on the second floor is in fair/poor condition and presents several accessibility challenges, including the lack of an elevator and multiple level changes.

After Psychology offices move to Thompson Hall, only faculty offices for Professional Communications and English will remain on the second floor. These departments could relocate to Memorial Hall or Ward Hall, once departments in those buildings move to Whitman Hall and the new Computer Sciences Center.

The Master Plan proposes comprehensive renovations to the second floor, including the installation of an elevator and ramp to address the level changes. A new Testing Center will be provided that supports both academic and grant-sponsored programs. The remaining space on the second floor will provide additional office and support space for departments located on the first floor.

Proposed Scope of Work

Building Exterior

- Scrape, prime, and paint wood window sills.
- Replace exterior doors.

Building Interior

- Reconfigure interior space, as necessary, for proposed layout, elevator, and ADA ramp.
- Replace interior finishes (carpet, floor tile, ceiling tile) in renovated area.
- Scrape, prime, and paint plaster walls and ceilings that will remain as part of the work.
- Replace interior doors in renovated area.
- Install ADA signage throughout the building.

Mechanical Systems

- Install a new air handling unit to serve the 2nd floor. No modifications are needed for the 1st floor.
- Upgrade the HVAC system controls for the hot water radiators on the 2nd floor.

Electrical Systems

- Replace old electrical panels, switches, and motor controllers serving 2nd floor.
- Replace interior fluorescent light fixtures.

Plumbing Systems

- Install code-compliant backflow prevention for the building.
- Replace all manual plumbing fixtures on the 2nd floor.

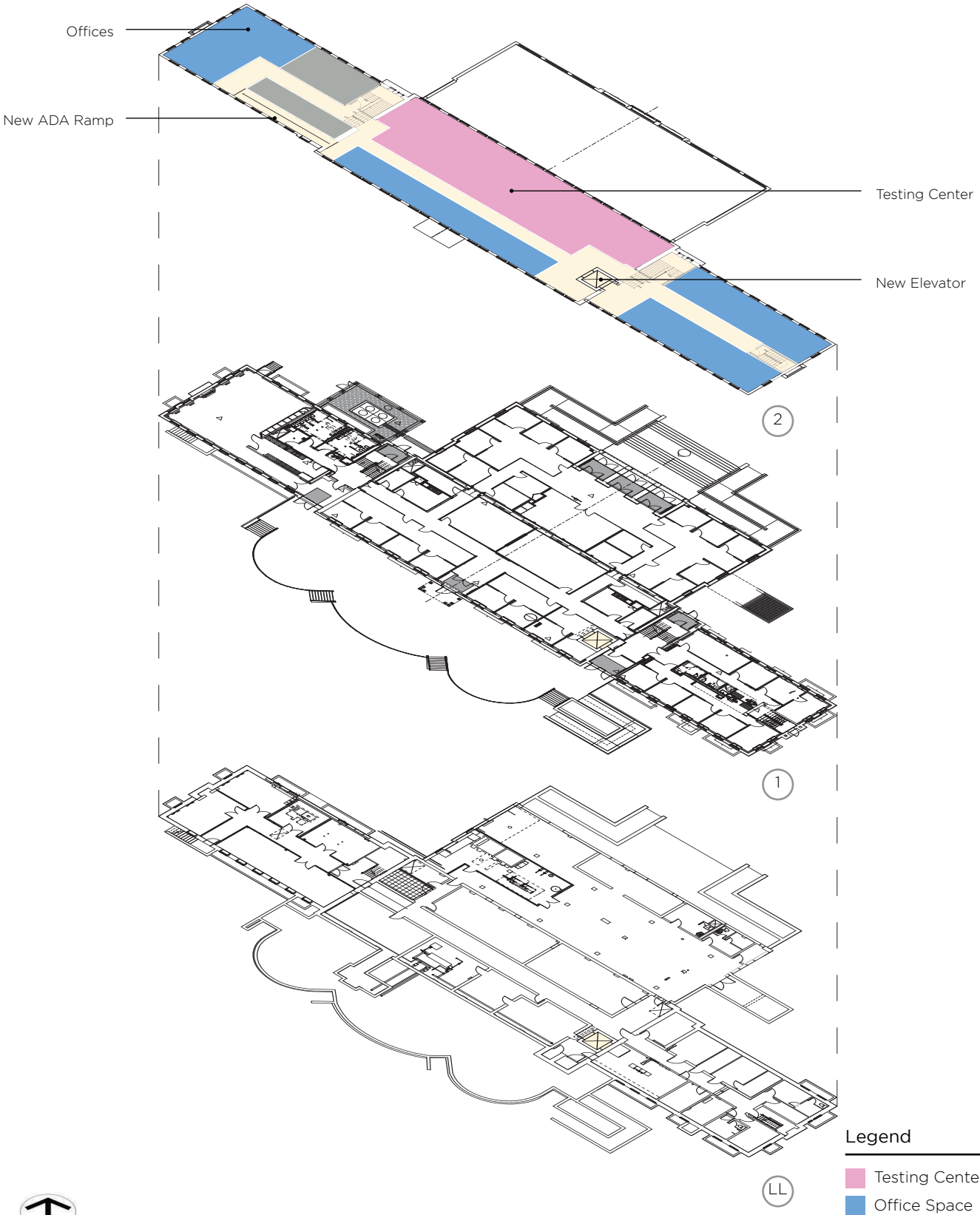
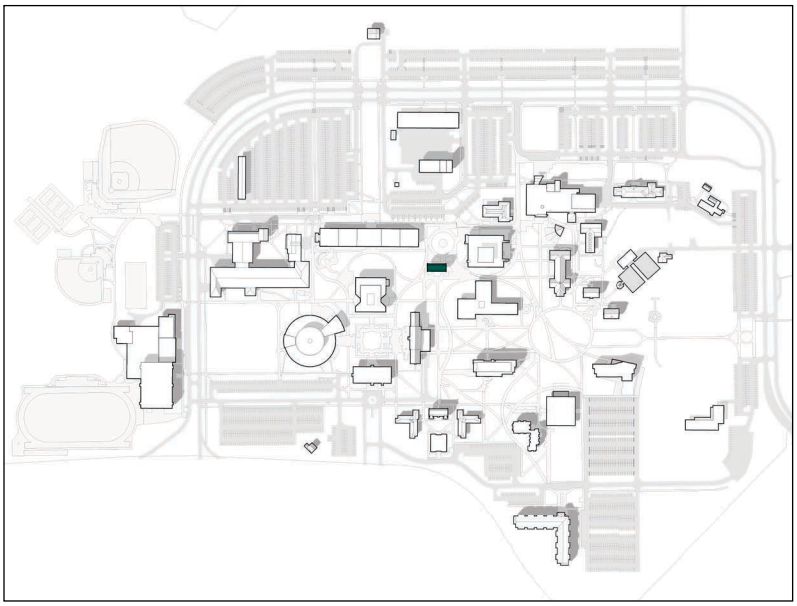


Figure 74 - Knapp Hall Proposed Floor Plan

Ward Hall Renovations



Project Description

Ward Hall currently serves as swing space for Criminal Justice, which will move to Sinclair Hall once the renovations are complete. The building also houses offices for Marketing and Communications and the Union.

The proposed renovations to Ward Hall will retain the recently updated Great Room on the first floor. The rest of the building will be renovated to provide private offices and shared support space. To bring the building into ADA compliance, a small addition will be constructed on the east side of the building to house an elevator.

Proposed Scope of Work

Building Exterior

- Replace deteriorated wood soffits.
- Replace exterior doors.
- Replace single-glazed windows with double-glazed, energy efficient units.
- Scrape, prime, and paint wood soffits and trim.

Building Interior

- Reconfigure interior space, as necessary, for proposed layout and elevator addition.
- Replace interior finishes (carpet, floor tile, ceiling tile) in renovated area.
- Scrape, prime, and paint plaster walls and ceilings that will remain as part of the work.
- Replace interior doors in renovated area.
- Replace casework in renovated area.
- Install ADA signage throughout the building.

Mechanical Systems

- Provide mechanical ventilation system. There is no central air handling unit system.
- Replace steam converters
- Upgrade HVAC system controls, which is on pneumatic/manual thermostats.

Electrical Systems

- Replace outdated electrical panels, switches and motor controllers.
- Replace interior fluorescent light fixtures.
- Replace broken exit signs.

Plumbing Systems

- Replace the incoming water service and provide code-compliant backflow prevention; address areas with missing insulation.
- Install insulation for the hot water distribution system, where missing in some areas.
- Remove the house trap, as it is not permitted under SUCF Directives, and provide a compliant connection.
- Replace all manual fixtures and install missing insulation.

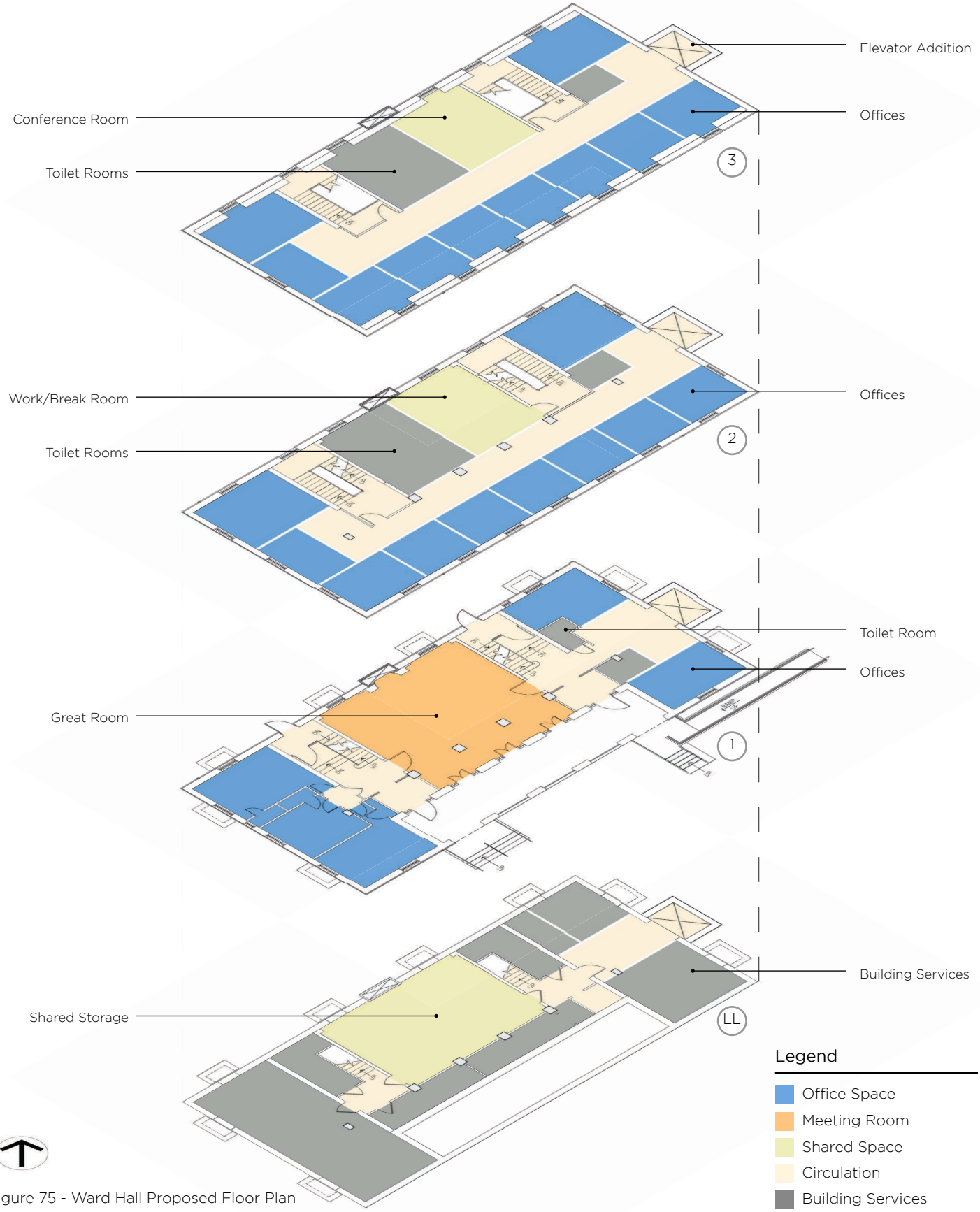


Figure 75 - Ward Hall Proposed Floor Plan

New Student Housing

Project Description

The proposed student housing will be located southeast of Orchard Hall. The new building will accommodate suite-style rooms for 100 students, addressing the College's current waitlist for on-campus housing.

To maintain and grow enrollment, the President indicated that it will be essential to recruit students from outside of Long Island, who will require on-campus housing. This new facility will help meet that need and enhance the overall campus experience for residential students. The project also includes site improvements such as a student plaza, enhanced connectivity, landscaping, and site furnishings.

Due to the reported need for student housing and possibility that this project may start within the master plan timeline, a detailed scope of work has been developed. The number of beds may be adjusted based on the residential needs of the College when the project is implemented.

Proposed Scope of Work

Sitework

The proposed site improvements will transform the area around the new building into a dynamic, pedestrian-friendly space that encourages social interaction and fosters a sense of community. The planned landscape infrastructure includes an adjacent plaza, that will enhance the future residential quad experience. To balance the increase in impervious surfaces, features such as a native meadow and on-site rain garden will support stormwater management on the site. All proposed elements will connect with the Melville Plaza and Orchard Walkway projects, creating a cohesive residential experience that further integrates the residences with the campus.

- Hardscape Materials
  - Concrete Pavers: Install 50,000 square feet of concrete pavers on a 2-inch sand setting bed and a 6-inch reinforced concrete base.
  - Sidewalk Installation: Install 400 linear feet of 8-foot-wide sidewalk with broom finish on a 6-inch minimum concrete pavement and a 4-inch compacted aggregate base.
- Landscaping
  - Grade and install tree trenches with permeable pavers, including four trees.
  - Plant ten shade trees within patios, including removal of turf, installation of trees, 3-inch mulch, and 36-inch depth of CU-Structural Soils under pavement.
  - Plant four flowering trees spaced 120 feet apart, including removal of turf and installation of trees with 3-inch mulch.
  - Install 16,000 square feet of native perennial and shrub plantings along a 10-foot width of the roadway, with 3-inch mulch and irrigation.
  - Install a 15,000 square foot meadow with native seed mix via a no-till drill seeder.
  - Create a 5,000 square foot rain garden, including site regrading, bioretention soil mix, 3-inch mulch, and perennial/shrub planting.
- Pedestrian Scale Lighting
  - Install six pedestrian-level light poles (15-foot columns) spaced approximately 45 feet apart along a 400-foot length.
- Site Furnishing
  - Install ten 8-foot-wide metal benches.
  - Add eight pre-fabricated concrete planters (36 inches tall, 4 feet wide).
  - Install 30 outdoor tables with seating.
  - Install two Wi-Fi-enabled, outdoor charging units.

Technology Infrastructure

- Install IT IDF/MDF spaces which meet current industry standards .
- Install horizontal and backbone telecommunications cabling.
- Install wireless access points (wireless networking).
- Install OSP Cabling connected to the campus via the Data Center Project.
- Install electronic security systems (Cameras, Access Control, Blue Phones) for both inside and the immediate exterior.
- Install Public Safety DAS and Cell Phone DAS systems as required for proper coverage of services.

Mechanical Systems

- Install a new HVAC system in line with the campus energy master plan (hybrid system with central neutral temperature water loop).
- Install a geothermal wellfield shared by Orchard Hall, Dewey Hall, and the new student center (closed loop wells, 8" diameter, 500 feet deep).
- Set up a dedicated mechanical room for new student housing with heat exchangers for chilled and hot water loops.
- Install a Dedicated Outdoor Air System (DOAS) with Fan Coil Units (FCU) for ventilation, heating, and cooling.
- Provide each dormitory unit with a CAV box for ventilation and a FCU for heating/cooling, controlled by a thermostat in common spaces.

- Equip the laundry room with a dryer exhaust fan, a make-up air unit, and a differential pressure monitoring system.
- Install DDC controls compatible with the campus JCI BMS system; add flow meters for energy consumption monitoring.

Electrical Systems

- Connect the new building to the campus 13.2 kV electrical distribution loop via a 1,000 kVA step-down transformer to 277/480V.
- Install a 1,600 Amps 277/480V switchboard and a separate step-down transformer for 120/208V distribution.
- Install a generator for emergency power, supporting the fire pump, emergency lighting, and optional standby power (via ATS).
- Install new LED light fixtures with controls compliant with energy codes and daylight dimming.
- Set up electrical sub-meters for monitoring energy usage by heating, cooling, lighting, and other systems.
- Install an addressable fire alarm system, including a Fire Alarm Control Panel (FACP) in the electrical room and remote annunciator panels in the lobby, interconnected with the campus system.

Plumbing Systems

- Install new water, fire, sanitary, and storm systems, ensuring backflow prevention assemblies are in place.
- Set up a domestic hot water system using geothermal heat recovery chillers with a supplemental heat pump booster as needed.
- Install low-flow, automatic sensor-type flush valves and faucets (water sense labeled).

Fire Protection Systems

- Install a full sprinkler system zoned by floor, in accordance with NFPA 13.
- Install a Class I standpipe system if the building exceeds 30 feet from fire department vehicle access.

Survey grade assessment of existing utility systems, drainage systems, and subgrade feature locations to be conducted prior to further design and placement of sitework recommendations.

Figure 76 - New Student Housing Proposed Site Plan

New Student Center

Project Description

The proposed student center will be a central destination for students to socialize, study, and spend their downtime. Inside, it will offer a range of amenities including a dance studio, a small fitness center with locker rooms, a game room, student club spaces, and food service options. To complement these indoor features, the plan also includes key site improvements aimed at enhancing the exterior. A welcoming student plaza and surrounding landscaping will provide inviting outdoor spaces where students can relax and engage with each other.

Given its location near the residence halls, the new student center will offer a more convenient gathering place for residential students than the Campus Center or Quintyne Hall. To further enhance connectivity with Orchard Hall and the new student housing, the project includes transforming the existing crossing north of Orchard Hall into a shared street that prioritizes pedestrians. This redesigned area will feature brick pavement, landscaping, pedestrian-scale lighting, and public art, to create a vibrant, student-friendly corridor. Reducing the speed limit to 5 MPH and installing an elevated plaza with two raised crosswalks bookending the street segment will further designate this area as a pedestrian-first environment while simultaneously providing traffic calming measures.

The College already faces a shortage of student lounge and recreation space, making the new student center a critical addition to campus. Therefore, a more detailed scope of work was completed for this project.

New Student Center Location

Proposed Scope of Work

Site

These improvements will transform the area around the proposed student center into a dynamic, pedestrian-friendly space that fosters social interaction and a sense of community.

- Pavement Treatment
  - Install public street art on 3,700 square feet of roadway to visually distinguish the shared street.
- Student Center Hardscape
  - Install 12,000 square feet of concrete pavers to create a shared streetscape on a 1-inch sand setting bed with a 6-inch reinforced concrete base.
- Pedestrian Scale Lighting + Pole Banners
  - Install 47 pedestrian-level light poles spaced 45 feet apart along a 1,000-foot length.
  - Add 20 pole banners to light poles, spaced approximately 75 feet apart along a 750-foot length, to create a collegiate feel.
- Bollards
  - Place 30 concrete sphere bollards (3-foot diameter) around the elevated plaza for added security and definition.
- Landscaping
  - Plant 48 shade trees spaced 40 feet apart along paved areas, including removal of existing turf, tree installation, and application of 3-inch mulch.
  - Add 22 flowering accent trees spaced 120 feet apart along the 10,000-foot roadway length.
  - Install 17,750 square feet of understory plantings with mulch bedding and irrigation along a 10-foot width of the plaza's edge.
  - Create a 39,000-square-foot meadow with native seed mix, involving lawn removal, soil amendment, and seeding.
  - Construct a 12,000-square-foot rain garden, including bioretention soil mix, 3-inch mulch, and perennial/shrub planting.
- Sidewalk Extensions
  - Install a 210-foot sidewalk to connect the student center with the existing raised crosswalk, using 8-inch concrete pour, 4-inch compacted aggregate base, and broom finish.

- Enhanced Crossings
  - Construct an elevated plaza with brick pavers to act as a raised crosswalk, reducing vehicle speed and promoting pedestrian priority.
  - Install two raised crosswalks with asphalt finish, each 28 feet wide, incorporating 8-inch base course, 2.5-inch binder, and 1-inch top asphalt, with epoxy-reflectorized pavement markings for enhanced visibility.
  - Construct two concrete pads (100 square feet each) with ADA-compliant detectable warning units.
- Site Furnishings
  - Install 6 metal benches, each 8 feet wide.
  - Place 10 pre-fabricated concrete planters (36 inches tall, 4 feet wide) to define the plaza space.
  - Add 30 outdoor tables with chair units for student use.
  - Install a sculptural art piece to create a focal point for the plaza.

Technology Infrastructure

- Install IT IDF/MDF spaces which meet current industry standards .
- Install horizontal and backbone telecommunications cabling.
- Install wireless access points (wireless networking).
- Install OSP Cabling connected to the campus via the Data Center Project.
- Install electronic security systems (Cameras, Access Control, Blue Phones) for both inside and the immediate exterior.
- Install Public Safety DAS and Cell Phone DAS systems as required for proper coverage of services.

Mechanical Systems

- Install a new HVAC system in line with the campus energy master plan, including a hybrid system with cluster plants and a central neutral temperature water loop.
- Install a large geothermal wellfield shared by Orchard Hall, Dewey Hall, the new student center, and new student housing (8" diameter, 500 feet deep boreholes with "U" bends).
- Install a geothermal wellfield pumping system and (6) 70 nominal TON modular heat recovery heat pumps in the new student center's mechanical room.
- Create primary chilled water (45/55°F) and hot water (140/120°F) loops from the heat recovery heat pumps for Orchard Hall, Dewey Hall, the new student center, and new student housing.
- Provide a secondary chilled water and hot water loop in the mechanical room to serve the new student center.
- Install a Dedicated Outdoor Air System (DOAS) with chilled water cooling coil, hot water heating coil, and Energy Recovery Wheel (ERW) for ventilation.
- Install multiple small air handling units (AHUs) for high-occupancy spaces (e.g., Fitness Center, Dance Studio) with separate AHUs for dehumidification.
- Provide an exhaust fan for food services.
- Install DDC controls compatible with the campus JCI BMS system and flow meters for chilled and hot water loop energy consumption monitoring.

Electrical Systems

- Connect the building to the campus 13.2 kV electrical distribution loop with a new 1,000 kVA step-down transformer to 277/480V.
- Install a 1,600 Amps 277/480V switchboard and a separate step-down transformer for 120/208V distribution.
- Install electrical outlets with plug load controllers where required.
- Install a generator for emergency power (fire pump, lighting, elevator, and optional standby) via Automatic Transfer Switches (ATS).
- Install LED light fixtures with controls compliant with energy codes and daylight dimming requirements; consider a central lighting management system.
- Install electrical sub-meters for monitoring energy usage by type (heating, cooling, lighting, etc.).
- Install an addressable fire alarm system with a Fire Alarm Control Panel (FACP) in the main electrical room and annunciator panels in the lobby; connect to the campus Simplex fire alarm system.

Plumbing Systems

- Install new water, fire, sanitary, and storm systems, with backflow prevention assemblies.
- Provide all-electric food services to comply with the SUCF energy directive.
- Install a domestic hot water system utilizing geothermal heat recovery chillers and a supplemental air-cooled heat pump booster.
- Install low-flow, automatic sensor-type restroom flush valves and faucets (water sense labeled).
- Install specialty plumbing services (grease trap) for food services as needed.

Fire Protection Systems

- Install new fire service with a double check valve assembly.
- Fully sprinkler the building in accordance with NFPA 13, zoned by floor.
- Provide a Class I standpipe system if the highest floor is more than 30 feet above fire department access.

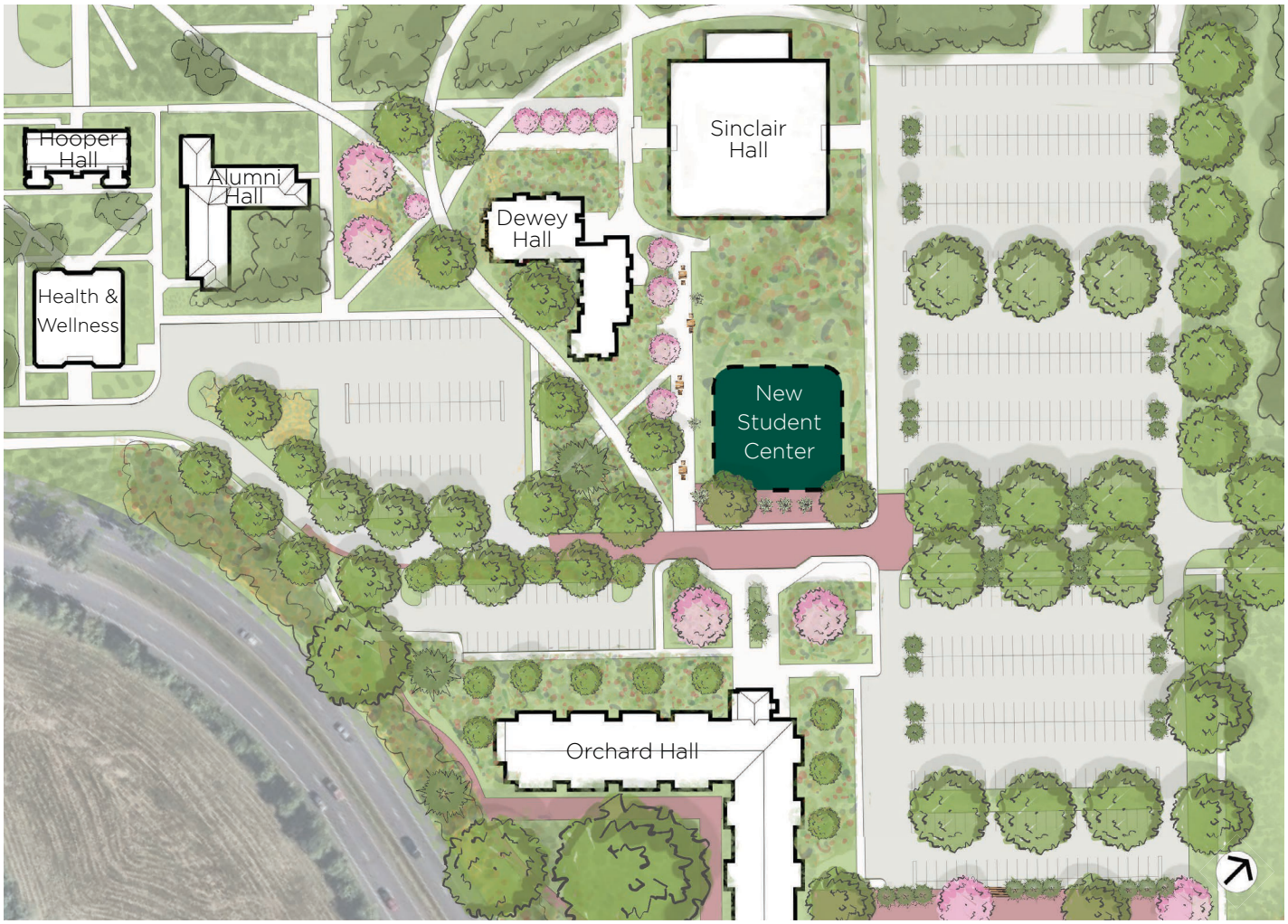


Figure 77 - New Student Center Proposed Site Plan

Quintyne Hall

Quintyne Hall

Campus Gateways

Project Description

Campus gateways are crucial visual elements that portray and reinforce a campus's unique identity. The strategic placement of gateways facilitates circulation and wayfinding, guiding campus visitors through their distinct identifying features. Additionally, gateways serve as prominent congregation points, fostering both active and passive interactions among all members of the campus community.

Several areas on campus would benefit from the formalization of gateways. Based on how these areas are used by students, faculty, staff, and visitors, several gateway typologies are recommended. These typologies, serving distinct functions at both pedestrian and vehicular levels, are defined as follows:

Gateways also embody the diverse aspects of student life by reflecting the College's commitment to sustainability, wellness, technological advancement, and connectivity. Each gateway highlights the interconnections between campus buildings, natural landscapes, and academic programs, underscoring their overall significance. These elements serve as outward expressions of campus identity, enhancing visual interest and drawing attention to the services and experiences offered within the College.

The Arrival Gateway

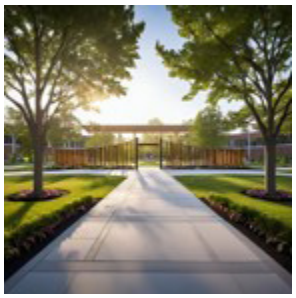
Located at key campus entrances, these gateways cater primarily to vehicular traffic. Conceptually and physically larger in scale, the Arrival Gateway creates a public-facing campus identity and makes a strong impression on both students and visitors. Key elements include vehicular-level signage, orientation features, vivid landscape displays, and community-focused amenities such as public event notices and information boards.

The Pedestrian Gateway

The Pedestrian Gateway adopts a human-scale approach while connecting campus entrances and nodes. These gateways also provide gathering places and wayfinding opportunities. Like the Arrival Gateway, the Pedestrian Gateway reflects a location-specific identity, offering a welcoming experience at pedestrian-level entrances for students and visitors.

The Ceremonial Gateway

The Ceremonial Gateway celebrates campus-wide achievements in sports, performing arts, and academic programs. Positioned near Nold Hall, Laffin Hall, and the Teaching Gardens, these gateways serve as key locations for photography, branding, and marketing. Grand in appearance, they provide memorable spaces for important milestones, such as the beginning of a student's journey or the conclusion of their academic career. These areas can also be incorporated into campus walking tours and provide prime photo opportunities.



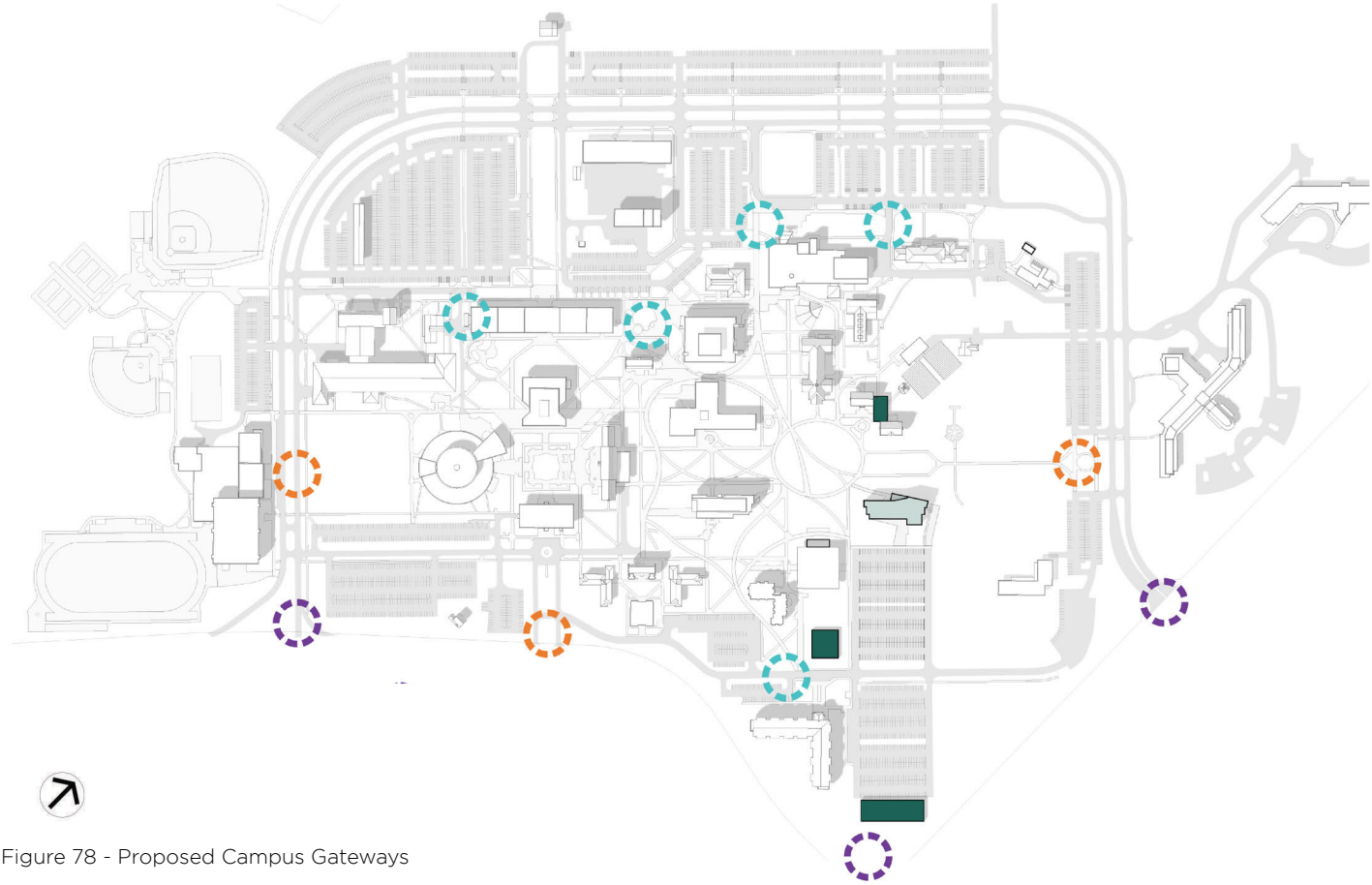


Figure 78 - Proposed Campus Gateways

Legend

- Arrival Gateway
- Pedestrian Gateway
- Ceremonial Gateway

Landscape Management

Project Description

Consistent and thoughtful landscape design is essential for creating a campus that feels integrated and easy to navigate. Farmingdale State College would benefit from standardized landscape management practices and clearly defined priority areas that present a unified vision of the campus. An in-depth review of the vegetation on campus is crucial for understanding its historical features and accurately estimating the maintenance needs for current and future conditions.

Implementing a Landscape Management Plan has the potential to transform public spaces and elevate the campus's overall aesthetic. Detailed planting plans for specific sites can help reduce lawns in underused areas, which will allow the College to decrease long-term maintenance efforts and reallocate resources to more critical zones. A management plan also provides guidance for future efforts by clarifying the value of proposed designs, management needs, and cohesion in overall aesthetics. Using a tiered approach to landscape planning ensures that all projects align with the following guidelines.

Landscape Typologies

- Manicured Landscapes: These areas feature highly organized plantings along well-used routes in highly visible locations. Sustainable practices include using native low-water plants, organic fertilizers, and drip irrigation to support long-term plant health. In the short term, intensive planting and regular pruning will be required. Long-term practices include introducing low-maintenance ground cover and improving soil health to prevent invasive species and reduce weedy growth.
- Maintained Landscapes: Located in active-use areas, these landscapes balance aesthetics with functionality. Permeable paths and shade trees enhance usability and create a smooth transition from the highly organized Manicured Landscapes to more casual, well-maintained spaces. These areas often include walkways and pedestrian crossings. Short-term practices involve planting durable plant material and shade structures that withstand pedestrian activity. Long-term efforts include strategically placing low-maintenance plants based on their intended purpose and location.
- Managed Landscapes: In less active areas, planning focuses on ecological benefits over aesthetic uniformity. Practices such as reducing mowing frequency, planting wildflowers to support pollinators, and restoring native habitats should be prioritized. The expansive forested areas along the northern and eastern portions of the campus are rich ecosystems and valuable assets. These spaces should be recognized in formal landscape plans to enhance biodiversity while providing educational and recreational opportunities for the campus community.

Sustainable Practices Across Typologies

Incorporating sustainable techniques across all landscape types—including drought-resistant plants, organic soil amendments, and drip irrigation—will further support the longevity and environmental responsibility of the campus landscape.

Landscape Management Matrix and Map

The accompanying Landscape Management Matrix (Figure 82) offers a visual reference for future landscape applications and aligns site-specific planning with the overall aesthetic goals of the campus. The matrix provides written guidance on the benefits of the proposed features. The following definitions outline the primary considerations for placing management areas:

- Recreational Areas: Does the typology include recreational spaces or features?
- Sustainability Focus: Does the typology prioritize sustainability?
- Cultural and Heritage Sites: Does the typology encompass locations of historical or cultural significance?
- Safety and Accessibility: Does the typology address safety and accessibility, particularly for individuals with disabilities?
- Water Management: Does the typology incorporate water management strategies?

The proposed Landscape Management Plan serves as the foundation for future development, additional plant palettes, management strategies, and prioritized areas. Additional funding should be considered for a complete site assessment and strategic planning process.

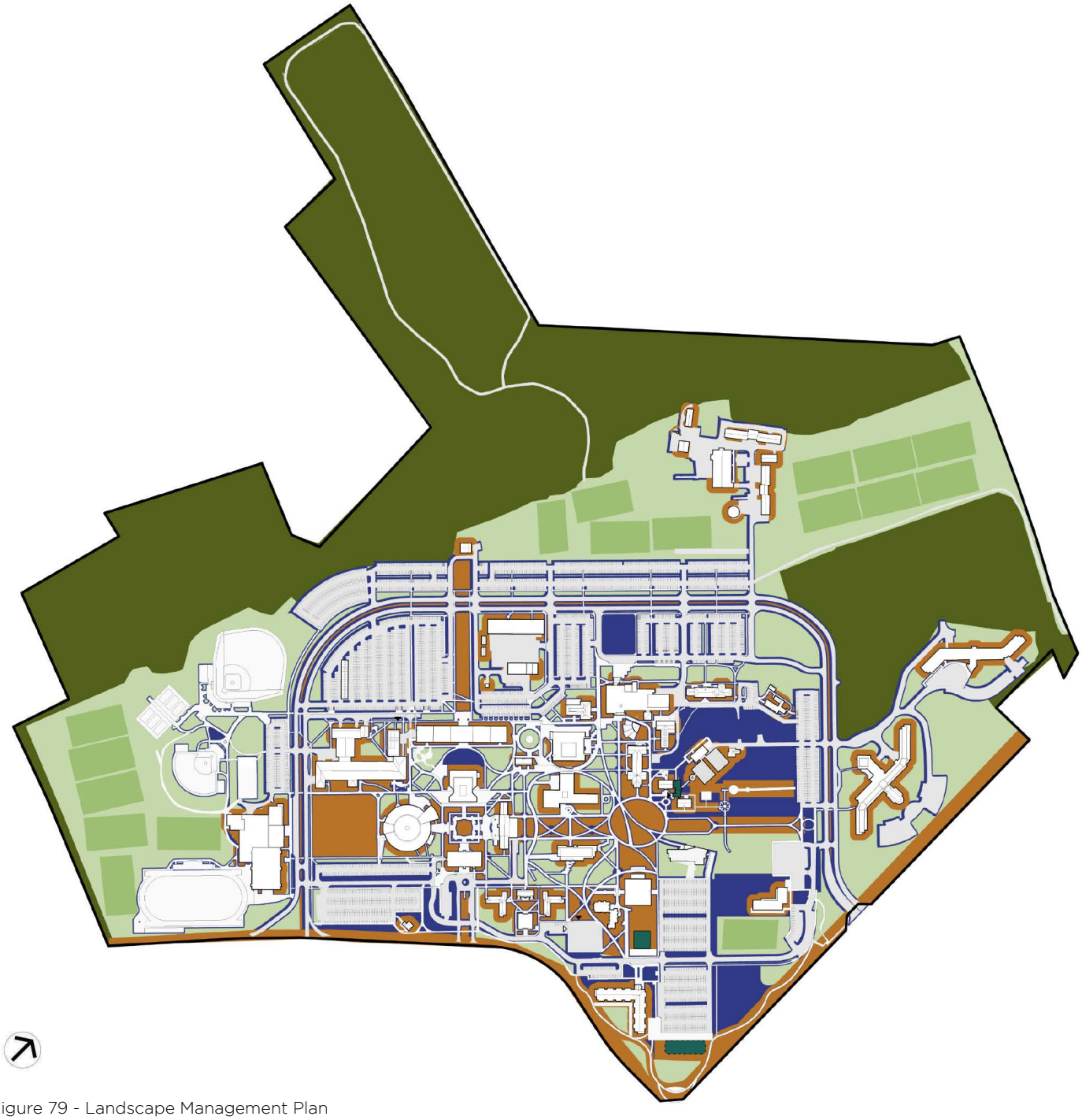


Figure 79 - Landscape Management Plan

Legend

- Manicured Landscape
- Maintained Landscape
- Managed Landscape
- Existing to Remain

Green Infrastructure

Project Description

Establishing a comprehensive Green Infrastructure Plan for the campus is essential to enhance sustainability efforts, manage environmental impact, and achieve long-term cost savings. Site elements such as bioswales and turf reduction will provide significant benefits, including reduced stormwater runoff, improved water quality, increased biodiversity, and lower maintenance costs. Integrating these solutions will also alleviate pressure on municipal services, enhance the aesthetic and ecological value of campus landscapes, and create a more resilient environmental infrastructure.

The primary elements under consideration offer substantial long-term advantages. Replacing large turf areas with native landscapes will not only reduce watering and mowing needs, but also support local biodiversity. Bioretention basins and bioswales manage stormwater by capturing, filtering, and gradually releasing it, which minimizes flood risk and lowers irrigation demands. Permeable paving allows rainwater to infiltrate the ground, replenishing aquifers and reducing the load on stormwater systems. Rain gardens enhance visual interest while managing runoff and creating habitat for pollinators. Woodland restoration transforms underutilized areas into vibrant ecosystems, sequestering carbon and providing recreational spaces.

Additional considerations—such as sustainable lawn care practices, green streets, ecological footprint analysis, tree canopies, and smart irrigation systems—will complement the primary infrastructure by further promoting resource efficiency and sustainability. A detailed analysis of system requirements and management needs will be necessary to guide their direct application. Together, these elements will form a robust framework that not only improves the environment, but also generates cost savings through efficient resource management and reduced maintenance.

Elements Considered for the Green Infrastructure Plan

- Turf Reduction: Replacing turf areas with native plants.
- Bioretention: Creating landscaped basins to capture and treat stormwater runoff.
- Bioswale: Designing vegetated channels to manage stormwater runoff.
- Permeable Paving: Using materials that allow water infiltration.
- Rain Garden: Establishing vegetated depressions to capture and filter runoff.
- Forest Restoration: Restoring woodlands to improve biodiversity.
- Water Harvesting: Implementing systems to collect and store rainwater.
- Native Plant Landscaping: Using region-specific plants that require minimal maintenance.

Additional Considerations for the Green Infrastructure Plan

These elements will require further assessment to determine their feasibility and integration:

- Sustainable Lawn Care Practices: Adopting water-conserving practices and enhancing soil health.
- Green Streets: Incorporating green infrastructure into street designs.
- Ecological Footprint Analysis: Evaluating the campus's environmental impact.
- Hybrid Green Infrastructure: Combining traditional and green infrastructure techniques.
- Tree Canopies: Expanding tree coverage to provide shade and improve air quality.
- Smart Irrigation Systems: Using advanced technologies to optimize water use.

Prioritization Factors for Planning and Implementation

The Green Infrastructure Matrix (Figure 83) includes the following factors to guide the prioritization of projects:

- Aesthetic Value: The impact the project will have on the visual appeal for campus users.
- Environmental Impact: The ecological benefits of the project, such as water quality improvement, carbon sequestration, and habitat creation.
- Educational Value: The potential for the project to serve as a teaching tool or research opportunity.
- Community Engagement: Opportunities to involve students, faculty, and the local community in planning, implementation, and maintenance.
- Funding Opportunities: Availability of grants or funding sources specific to the project.
- Maintenance Complexity: The level of expertise and effort required for ongoing maintenance.
- Resilience to Climate Change: The impact the project will have on how the campus adapts to or mitigates the effects of climate change.

The proposed Green Infrastructure Plan provides a foundation for future development and includes site-specific recommendations, management strategies, and priority areas to be further refined. Additional funding should be considered to support a complete site assessment and strategic planning process.

Figure 80 - Landscape Management Plan

Legend

- Turf Reduction
- Bioretention & Bioswales
- Permeable Paving
- Existing to Remain
- Forest Restoration
- Rain Garden
- Water Harvesting

Hardscape Plan

Project Description

A comprehensive hardscape plan provides value to college and university planners by recommending solutions that accommodate the needs of all users and meet ADA accessibility standards. By incorporating accessible pathways, ramps, and signage, the plan ensures that individuals of all abilities can navigate the campus with ease and dignity. In coordination with the Landscape Management Plan, the Hardscape Plan establishes a unified typology for the entire campus, promoting a cohesive campus identity.

The plan facilitates seamless connections between pedestrian plazas to create vibrant hubs for social interaction, events, and gatherings. Existing spaces, such as Ralph Bunche Plaza and Gleeson Square, become key focal points within the broader plan. Additionally, sustainable practices—such as the use of permeable pavements or recycled materials—should be integrated into the plan to encourage sustainability across all aspects of campus planning.

Walkway Types

The selection of hardscape materials also helps define edge boundaries and circulation patterns. The following hierarchy of walkway types offers a framework for design considerations:

- Primary Walkways: These walkways are typically 8 to 12 feet wide and serve as main thoroughfares through the campus core. They should be constructed with concrete or pavers to accommodate heavy pedestrian traffic and maintain durability.
- Secondary Walkways: Typically measuring 5 to 8 feet in width, these walkways connect primary walkways to campus buildings. To ensure visual and material consistency, they should also use concrete or pavers.
- Tertiary Walkways: These smaller paths are usually 3 to 5 feet wide and cater to low-traffic areas branching off secondary walkways. They can be constructed using concrete, gravel, or pavers, depending on the intended use and location.

Establishing this hierarchy, or a similar structure, ensures that all walkways are appropriately designed to meet the needs of the campus. This approach to walkway design highlights the essential role of hardscape in enhancing the overall campus experience.

This proposed Hardscape Matrix (Figure 84) provides a foundation for future development and includes site-specific material palettes, management strategies, and priority areas to be further refined. Additional funding should be considered to support a complete site assessment and strategic planning process.

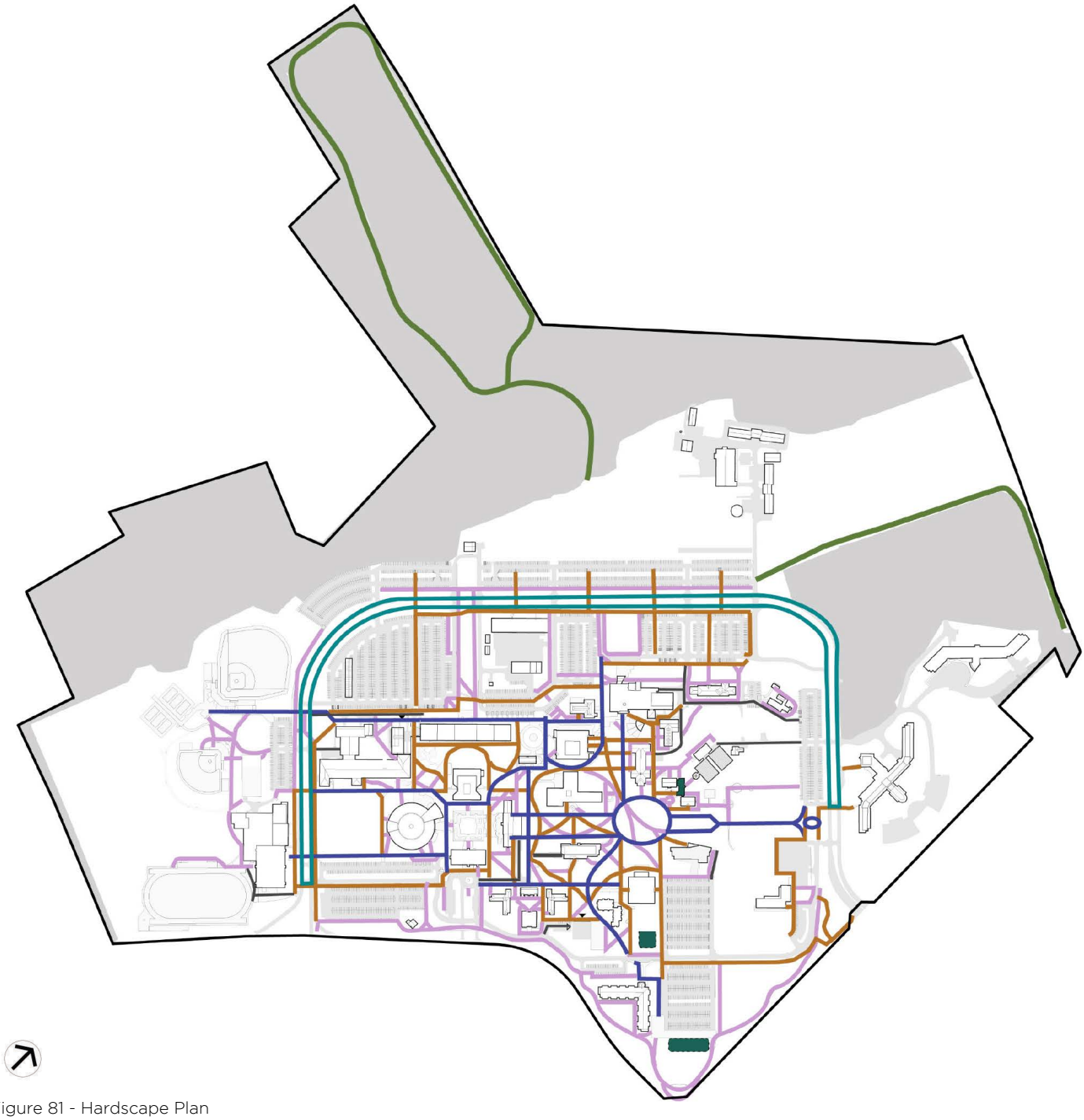


Figure 81 - Hardscape Plan

Legend

- Primary Walkway
- Secondary Walkway
- Tertiary Walkway
- Hiking Trail
- Service and Maintenance Path
- Service and Maintenance Path

Landscape Management Matrix

Legend	Typical Typology Location	Sustainable Practices	Short-Term Techniques	Long-Term Techniques	Recreational Areas (Yes/No)	Sustainability Focus (Yes/No)	Cultural and Heritage Sites (Yes/No)	Safety and Accessibility (Yes/No)	Water Management (Yes/No)
Manicured	Manicured								
	Building perimeters	Use native and low-water plants; Mulch to reduce water evaporation; Reduce chemical treatments, drip line irrigation	Initial intensive planting	Low maintenance ground cover	No	Yes	Yes	Yes	Yes
	Between buildings, intersections	Use drought-resistant plants; Implement efficient irrigation systems; Use organic fertilizers	Intensive care and regular mowing	Soil health improvement	No	Yes	Yes	Yes	Yes
	Pathways, building edges	Use drip irrigation; Incorporate native species; Mulching to retain soil moisture	Initial intensive care, Regular pruning	Long-term soil enrichment and plant health	No	Yes	Yes	Yes	Yes
	Around utility infrastructure	Use fast-growing native plants; Implement organic soil amendments; Plan for future canopy coverage	Quick-growing hedges	Manage excessive growth of taller hedge species	No	Yes	No	No	Yes
Maintained	Maintained								
	Along main walkways, bike lanes	Use permeable path materials; Plant shade trees; Reduce water usage	Plant shade trees	Long-term canopy establishment, regular path maintenance	Yes	Yes	No	Yes	No
	Roadway intersections, pedestrian crossings	Use permeable paving; Opt for low-maintenance plants; Reduce chemical maintenance	Install durable, low-maintenance plants	Highlight key species through educational signage	No	Yes	No	Yes	No
Managed	Managed								
	Perimeter areas, boundary edges	Reduce mowing frequency; Plant wildflowers for pollinators; Restore native habitats	Initial native plantings	Long-term biodiversity enhancement	No	Yes	No	No	No
	Parking lots, driveway medians	Use permeable paving; Opt for hardy, low-maintenance plants; Develop bioswales	Plant hardy, low-maintenance species	Install bioswales for stormwater management	No	Yes	No	Yes	Yes
	Forested areas	Maintain native woodland species; Promote existing biodiversity; Minimize disturbances	Clear paths and underbrush	Introduce educational signage	Yes	Yes	No	No	No

Figure 82 - Landscape Management Matrix

Green Infrastructure Matrix

Map Symbol	Green Infrastructure Type	Minimum Space Required	Installation Cost	Maintenance Cost	Maintenance Complexity	Time to Implement	Site Selection Considerations	Contingencies	Aesthetic Value	Environmental Impact	Educational Value	Community Engagement	Resilience to Climate Change
	Turf Reduction - Meadow	0.1 acre	$$	$	Low	1 to 3 months	Mowing, invasive plant control, supplemental planting and seeding, prescribed burns	Lawn areas to be used for future construction in the next two years to remain as lawn.	Increased	High	Medium	High	High
	Bioretention Basins	500 sq. ft.	$$	$$	Medium	1 to 3 months	Final slope and elevation conditions, proximity to buildings, soil infiltration rates, ease of accessing for maintenance	Additional construction to identify additional water storage need and potential placement	Increased	High	High	Medium	High
	Bioswale	200 linear feet	$	$	Medium	1 to 2 months	Final slope and elevation conditions, proximity to buildings, soil infiltration rates, ease of accessing for maintenance	Site assessment to address existing flood concerns	Increased	High	High	Medium	High
	Permeable Pavement	500 sq. ft.	$	$	Medium	1 to 2 months	Annual inspection, sweeping or vacuuming, replenish joint aggregate, invasive plant management	Permeable options should be considered for all efforts relating to pavement disturbance and replacement.	Increased	High	Low	Low	Medium
	Rain Garden	200 sq. ft.	$	$	Medium	1 to 2 months	Remove litter and debris, invasive plant control, aesthetic expectations “cues of care”	Site assessment to address existing localized flood concerns or increased water runoff	Increased	High	High	Medium	High
	Water Harvesting	200 sq. ft.	$$	$	Medium	2 to 6 months	Roof area, cistern or storage tank locations, usage remands, plumbing requirements, filtration systems	Consideration for harvesting efforts are best considered for proposed construction efforts as a means to mitigate runoff and drywell needs	No change	High	High	High	High
	Woodland Restoration	1 acre	$$$	$$	High	1 to 3 years	Invasive plant control, supplemental seeding, optional burn, aesthetic expectations	Existing forest conditions are expected to remain. Restoration efforts are not limited by internal campus construction.	Increased	High	High	High	High
To Be Considered at All Times	Native Plant Landscaping	0.1 acre	$	$	Medium	1 to 3 months	Soil conditions, local climate, ecological benefit, expected site use, water needs	Not limited	Increased	High	Medium	Medium	High
Full Campus Assessment Needed	Sustainable Lawn Care Practices	>0.1 acre	$	$	Medium	Ongoing	Current lawn conditions, soil fertility, pest issues, existing and proposed irrigation systems, required fertilizer use	Not limited	No change	Medium	Medium	Medium	High
	Green Streets	1 block (~600 ft)	$$$	$$	High	1 to 2 years	Street width and layout, traffic patterns, stormwater flow, utility locations, maintenance access	Green street methodology is most feasible along Cipriani Drive and parking lot edges	Increased	High	High	High	High
	Ecological Footprint Analysis	N/A	$$	$	Low	1 to 6 months	Available data on resource yes, waste generation, carbon emissions, biodiversity and operational practices	Not limited	No change	High	High	High	High
	Tree Canopies	10 trees (~0.1 acre)	$	$	Medium	6 months to 1 year	Distance from buildings, species diversity, subsurface space for root growth	Tree locations should be mindful of historic trees that no longer remain and any proposed construction efforts to limit duplication of work	Increased	High	Medium	Medium	High
	Smart Irrigation Systems	>0.1 acre	$$	$	Medium	1 to 3 months	Existing irrigation system, location and functionality, availability of water, senor placement, technology integration and system upkeep requirements	Not limited	No change	Medium	Low	Low	Medium

Figure 83 - Green Infrastructure Matrix

Hardscape Matrix

Legend	Hardscape Scenario	Minimum Width	Materiality	Conditions in Which it Applies	Definition of Scenario
	Primary Walkways	8-12 feet	Concrete, Pavers	Main routes with high foot traffic	Main thoroughfares for pedestrian traffic
	Secondary Walkways	5-8 feet	Concrete, Pavers	Connect primary walkways to buildings	Intermediate routes between buildings and primary walkways
	Tertiary Walkways	3-5 feet	Concrete, Gravel, Pavers	Low foot traffic areas	Less frequented paths branching off secondary walkways
	Hiking Trail	Varies for paths	Woodchip, stone dust	Recreational activities	Maintained areas for sports and recreational activities
	Service and Maintenance Paths	10-12 feet	Asphalt, Concrete	Service and maintenance vehicle access	Routes for service and maintenance vehicles
Site Specific Design Required	Parking lots	Varies	Asphalt, Permeable Pavers	All parking conditions	Transition to pervious pavement
	Plazas and Courtyards	Varies	Concrete, Pavers, Grass	Open social and gathering spaces	Large open hardscape areas for social interaction
	Bicycle Paths and Bicycle Parking	5-8 feet for paths	Asphalt, Concrete, Metal Racks	Routes and areas for cyclists	Dedicated lanes and parking for bicycles
	Crosswalks	6-10 feet	Painted Asphalt, Pavers	Intersections of roads and pedestrian pathways	Marked areas for pedestrian crossing
	Curbs	6-12 inches height	Concrete	Edges of roadways and planting beds	Raised edges to manage water runoff and define spaces
	Curb Ramps	3-5 feet	Concrete with tactile paving	Crosswalks, building entrances	Sloped transitions between curb and street level

Figure 84 - Hardscape Matrix