CARLETON UNIVERSITY

2016 CAMPUS MASTER PLAN UPDATE

PREPARED BY:

BrookMcIlroy/

Acknowledgments

The 2016 Campus Master Plan Update was completed under the direction of the Steering Committee and Project Team.

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BrookMcIlroy/
Update Based On 2010 Campus Master Plan prepared by DTAH

CARLETON CAMPUS MASTER PLAN STRUCTURE

Section 1

Introduction provides an overview of the process to undertake the 2016 Master Plan and the describes the elements of the Master Plan Document.

Section 2

Master Plan Overview presents the graphic Master Plan and future recommended building massing and identifies the key areas of focus for the 2016 Master Plan Update.

Section 3

Core Principles are provided to guide the physical development of the campus and to identify Carleton University's priorities.

Section 4

Massing Studies provides a site by site investigation into the development form which would implement the basic principles.

Section 5

Plan Implementation describes the way in which the plan is intended to be implemented and maintained over time.

Appendix A

Summarizes the potential redevelopment statistics for the entire campus by building sites.

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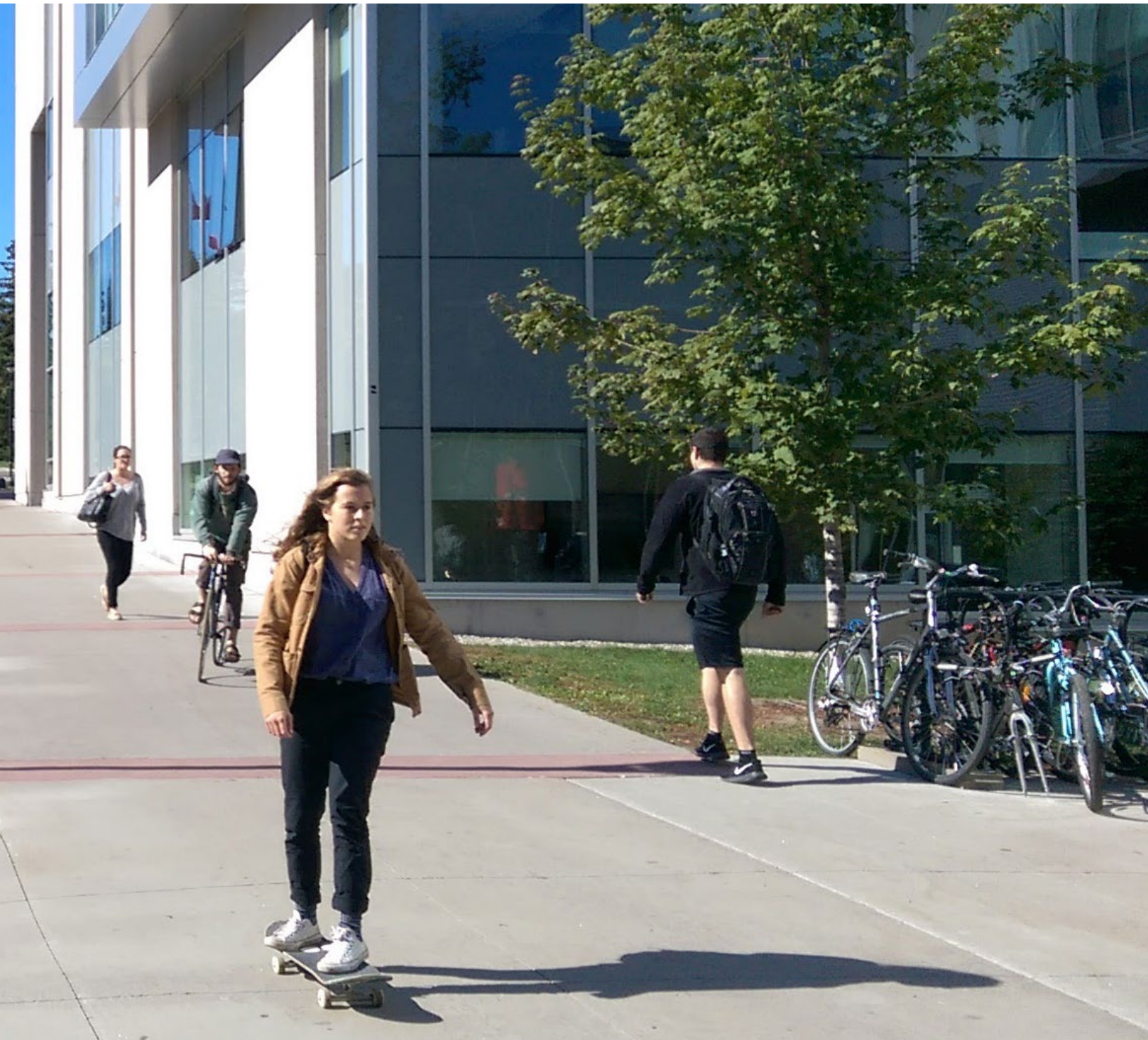
Panoramic view of the Quad looking south and east with the Tory and Paterson Buildings in the background

1.0 INTRODUCTION

The purpose of this plan is to set the parameters, policies and directions for the physical development of the campus – its buildings, landscapes, movement systems and general infrastructure.

View looking west towards Library Road along a central campus pathway



As Carleton approaches its 75th year in 2017, the University is poised to advance its next five year mission for building and operating a healthy, fiscally responsible, sustainable campus community. The 2016 Campus Master Plan Update builds on the 2010 Plan by addressing the elements of the existing Master Plan that require emphasis or additional consideration.

Carleton University has evolved significantly since the adoption of the 2010 Campus Master Plan, including the construction of the River and Canal Buildings, the MacOdrum Library additions and enhancements, Lennox and Addington House, and the new Health Sciences building (under development). The purpose of this plan is to set the parameters, policies and directions for the physical development of the campus – its buildings, landscapes, movement systems and general infrastructure. The Campus Master Plan addresses the location and size of buildings and general uses, while allowing flexibility and variation over time. This plan also fulfills the Board of Governors' policy to update the Carleton University Campus Plan every five years.

The arrangement of buildings and landscapes in the campus is guided by a set of planning strategies that aim to:

- A Strong Mandate For Environmental Responsibility
- Maintain a Compact Academic and Research Campus
- Orient The Campus Through Streets, Pathways and Tunnels
- Apply a Hierarchy to Landscape Design and Maintenance
- Support an Inviting and Active Winter Campus
- Focus on Creating Streets and Walkways For People
- Reinforce Connections To Campus Surrounding
- Support Design Quality
- Create Architecture that reinforces an Interconnected Campus
- Facilitate River Access
- Match Parking Demand with Supply
- Integrate Safety in Design Principles
- A Sustainable Approach to Storm Water Management
- Identify Clear Development Priorities
- Holistic Approach to Space Management
- Implement a forward thinking North Campus Plan

The 2010 Plan proposed 3 primary and 17 secondary potential development sites in the academic and residential areas. Of these development sites, a number of key construction projects have been completed or are under construction. Each of those projects have been designed to further the goals of the 2010 Plan. These projects include the completion of the River and Canal Buildings, the design and construction of the MacOdrum Library renovation, the vertical addition to Herzberg Lennox – Addington Residence, Residence Commons addition, Alumni Hall addition, and Building 46 – the new parking garage located over the O-Train tracks. In addition to these completed projects, the new Health Sciences Building is currently under construction and slated for completion in fall 2017.

Similar to the 2010 Plan, this Campus Master Plan includes a series of massing studies which test the development capacity of the 21 academic and related building sites in the Core and Mid Campus, the 8 residential sites, and the capacity in the North Campus overall. Each site can be built to a greater or lesser number of floors. A range of four to six floors for the majority of buildings in the Academic Campus would yield approximately 1,668,500 square feet (155,000 sqm) of gross floor area, the mid campus 536,903 square feet (49,900 sqm), the residential campus 661,000 square feet (61,400 sqm), and the remaining North Campus 1,170,600 square feet (108,750 sqm).

Complete development of the grounds at this density doubles the existing space on campus today from approximately 4,760,000 square feet (442,200 sqm) to 9,020,800 square feet (838,000 sqm) including the North Campus or 7,605,400 square feet (706,600 sqm) excluding the North Campus.

- Section 1.0 – Introduction provides an overview of the process to undertake the 2016 Master Plan and the describes the elements of the Master Plan Document.
- Section 2.0 – Master Plan Overview presents the graphic Master Plan and future recommended building massing and identifies the key areas of focus for the 2016 Master Plan Update.
- Section 3.0 – Core Principles are provided to guide the physical development of the campus and to identify Carleton University's priorities.
- Section 4.0 – Massing Studies provides a site by site investigation into the development form which would implement the basic principles.
- Section 5.0 – Plan Implementation describes the way in which the plan is intended to be implemented and maintained over time.
- Appendix A - Summarizes the potential redevelopment statistics for the entire campus by building sites.

2.0 MASTER PLAN OVERVIEW

This section provides a graphic overview of the Campus Master Plan. A more detailed description of the Core Master Plan Principles are described in Section 3.0.

Existing aerial view of the campus looking north

Campus Master Site Plan

The campus grounds are divided into Academic (West and East), Residential, Mid and North Campus areas.

Names of campus areas used in Campus Master Plan

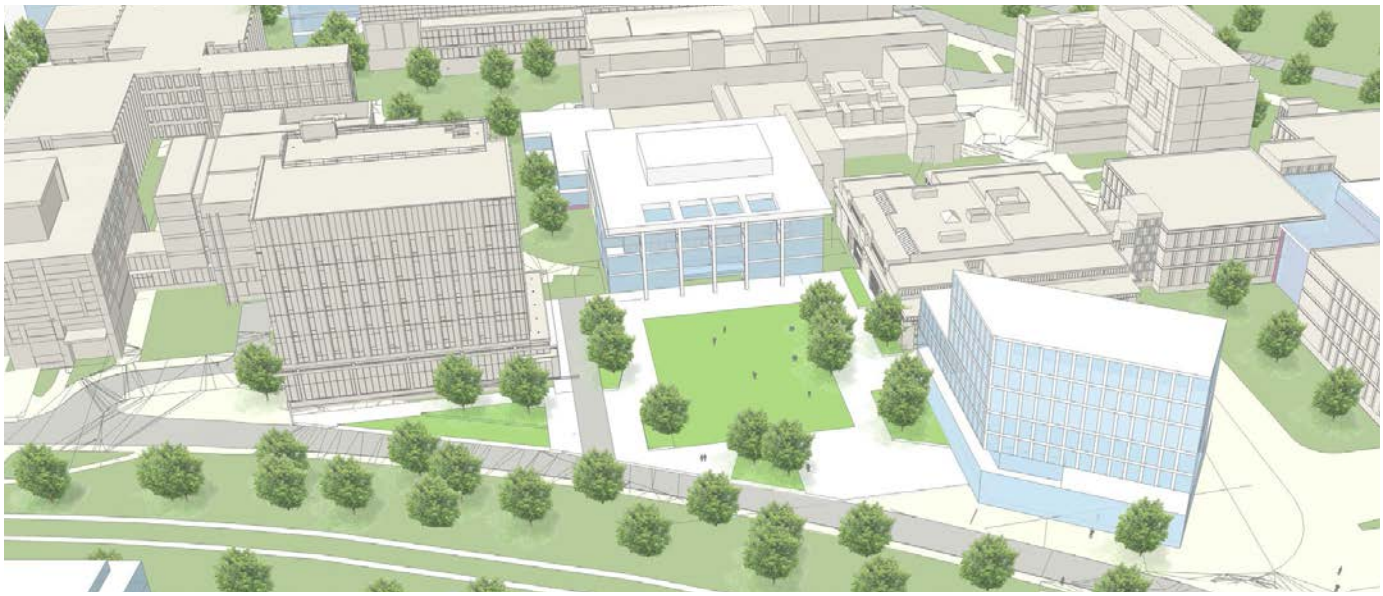
The 2016 Campus Master Plan was initiated in September 2015 and completed in June 2016. This update tests the 2010 Master Plan's key principles and finds that they continue to be relevant and have been reconfirmed through an extensive consultation process. The consultation process included two campus wide events, a focused design workshop with the School of Architecture, two detailed online questionnaires (with over 160 combined responses), and internal and external stakeholder interviews. Through that consultation process it has been determined that the 2016 Master Plan Update should provide additional direction in four (4) key areas, including:

- The design, programming and maintenance of campus-wide landscaped spaces;
- The height and massing of new buildings relative to their location on campus and proximity to streets, open spaces and existing buildings;
- The hierarchy / character of pedestrian and cyclist routes on campus including streetscape design for Campus Avenue and Library Road; and,
- A visionary new design for the North Campus with a strong focus on integrated circulation, reduced surface parking, new open space and a mix of building types, heights and sizes.

The areas of focus listed above are addressed throughout this document and have resulted in two new principles and an overall update to the 2010 directions.

The site plan and digital model illustrated in the next two pages show a campus built to capacity with buildings in the 4-6 storey range in the Academic Campus (East and West Campus) and 6-15 storeys in the North and Residential Campus. Existing buildings on the plan view are white, proposed are orange, and vertical additions are hatched. The model shows general massing, not building design.

The identified sites provide Carleton University with a menu of available site for future development. Some of them have greater potential to improve the campus environment than others. The most transformative sites focus around the Main Quad which provides an opportunity to create a positive connection to the river, and at the west entrance to the University Centre which will create an Entry Quad as the future centre of gravity for the campus.



Massing view looking west across O-Train tracks towards a future Entry Quad

Existing 2016 Campus Map with Street and Building Names

Proposed Campus Master Plan

Existing aerial view of the campus looking north

Campus Master Plan massing with existing building sites shown in beige and future buildings in white

3.0 CORE PRINCIPLES

This section presents the essence of the Master Plan; the policy intent of Carleton University concerning the physical development of the campus.

1 A Strong Mandate for Environmental Responsibility

Carleton's strategic goals focus on the University as a custodian of the future, and as stewards of healthier, more sustainable communities. This is undertaken at the same time as balancing the University's physical and financial resources.
Carleton promotes it's role in sustaining the earth's ecological and climatic health through its teaching, research, physical development, operations and the lifestyle of its students and staff. A Strategic Plan for Embedding Sustainability into Carleton University Operations has been completed and provides sustainability measures to improve efficiency on campus.

In its development plan, Carleton will continually seek ways to build, renew and maintain buildings, infrastructure and landscapes in a way that conserves resources, land, water and vegetation, reduces energy use, and limits waste disposal.

The Campus Master Plan Update recognizes the importance of acting sustainably and applying best practices as they evolve. Wherever possible new campus development should clearly articulate the environmentally sustainable features of a project through building science. Signage and education opportunities should further and promote Carleton's commitment to environmentally responsible Campus development and maintenance.

Precedent image of naturalized sustainable landscape

2 Maintain a Compact Academic and Research Campus

Primary academic, communal, and support facilities will be located within a ten-minute walk (measured at 750 metre diameter circle), to facilitate student and faculty travel between classes. The 2016 Campus Master Plan Update examined the opportunity to expand this to a 15 minutes walk and found that the expanded distance did not add sufficient capacity to the core campus to warrant a longer class-change time.

Maintaining capacity within the 10 minute radius will require replacement of under-performing buildings and surface parking areas with more compact, taller buildings and stand-alone / below-building parking structures. The appropriate height and massing of new buildings will be determined by evaluating impacts on the surrounding areas including testing shadow impacts to maximize sunlight on adjacent open spaces, streets and walkways.

Academic research facilities will be located to encourage interdisciplinary contacts, and be associated with their related academic units. Research space will continue to be focused within the main academic campus with opportunities for future locations in the North Campus.

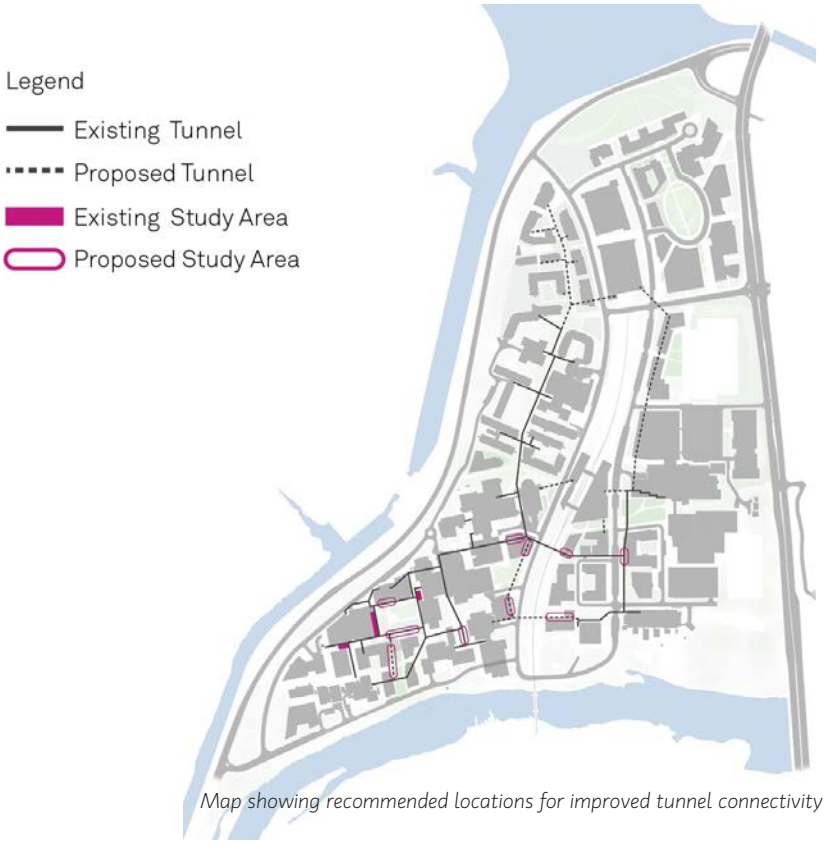
In the long term, Carleton may consider creating specialized study/research areas for graduate level students in the North Campus. Alternate uses for the North Campus could include a Performing Arts Centre, Industry Partnerships and Campus supportive retail.

Academic and research functions will be located close to each other in the main Academic Campus

3 Orient the Campus through a reinforced structure of Streets, Pathways and Tunnels

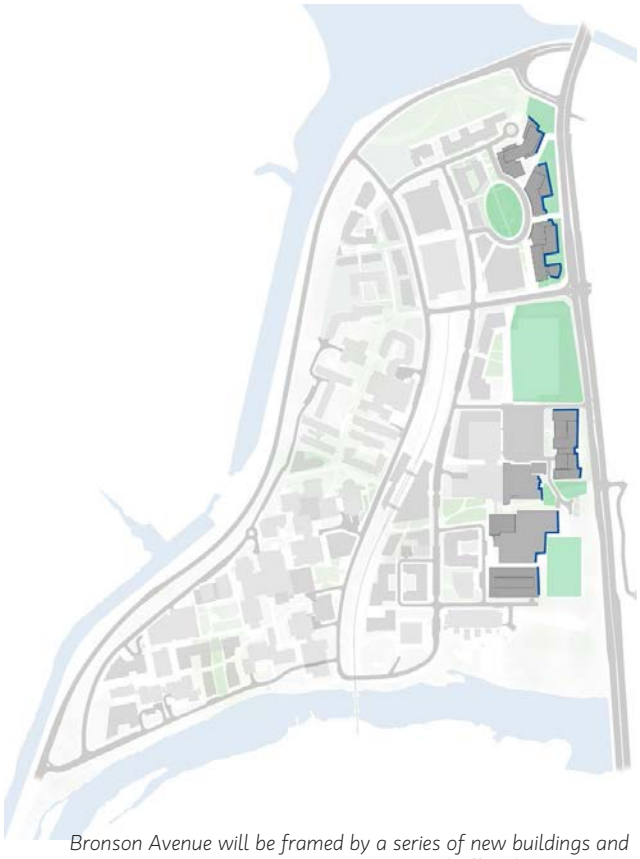
Streets, pathways and tunnels will continue to provide the primary means of access through the campus. The placement, massing, and uses of buildings will work together to frame and animate these networks. The primary circulation systems within academic buildings will connect with each other and the tunnels to form a pleasant and convenient public access structure. The improved character and connectivity of the tunnel system was identified through the consultation process as an important part of this Master Plan Update. Opportunities to improve the tunnel system through new development should be considered, potential improvements include:

- Improve connectivity from the Robertson Building to the River Building and northwards to the parking facilities and future residential buildings.;
- Provide access to natural light and increased opportunities to reflect above grade conditions within the tunnel including views to outdoor spaces and buildings above;
- Consider live feed LED screens showing Campus events, maps; and/or,
- Incorporate public art opportunities to showcase student and campus work.



Map showing recommended locations for improved tunnel connectivity

Internal streets will be framed by new development with buildings reinforcing the street edges



Bronson Avenue will be framed by a series of new buildings and buffered open spaces

Existing and future open spaces will provide structure to inform building design and placement

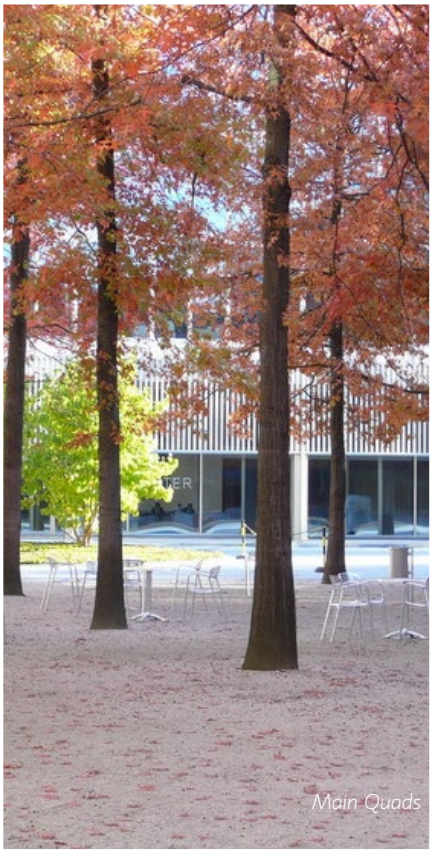
Future development will be informed by the existing network of pedestrian trails and walkways throughout the Campus

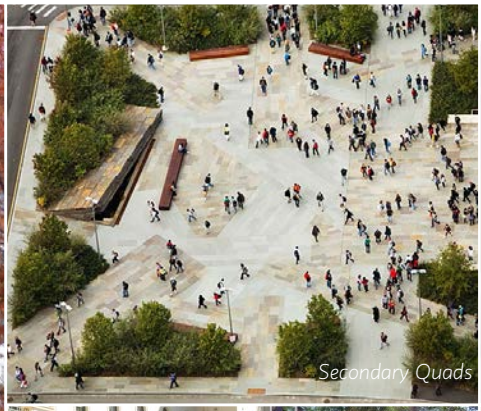
4 Apply a Hierarchy to Landscape Design and Maintenance

The Campus will be divided into a hierarchy of landscape typologies. These typologies will be used to assist with the design, maintenance and programming of outdoor spaces. The level of design and maintenance should vary from low to high use open spaces. The proposed hierarchy of high to low maintenance open spaces is as follows:

- Main Quads
- Secondary Quads (Courtyards)
- Residence Open Spaces
- Forecourts and Gardens
- Naturalized Areas and Buffers

The following pages describe the landscape open space hierarchy on Campus as well as general landscape recommendations to be considered throughout.


Main Quads


Secondary Quads


Residence Open Spaces

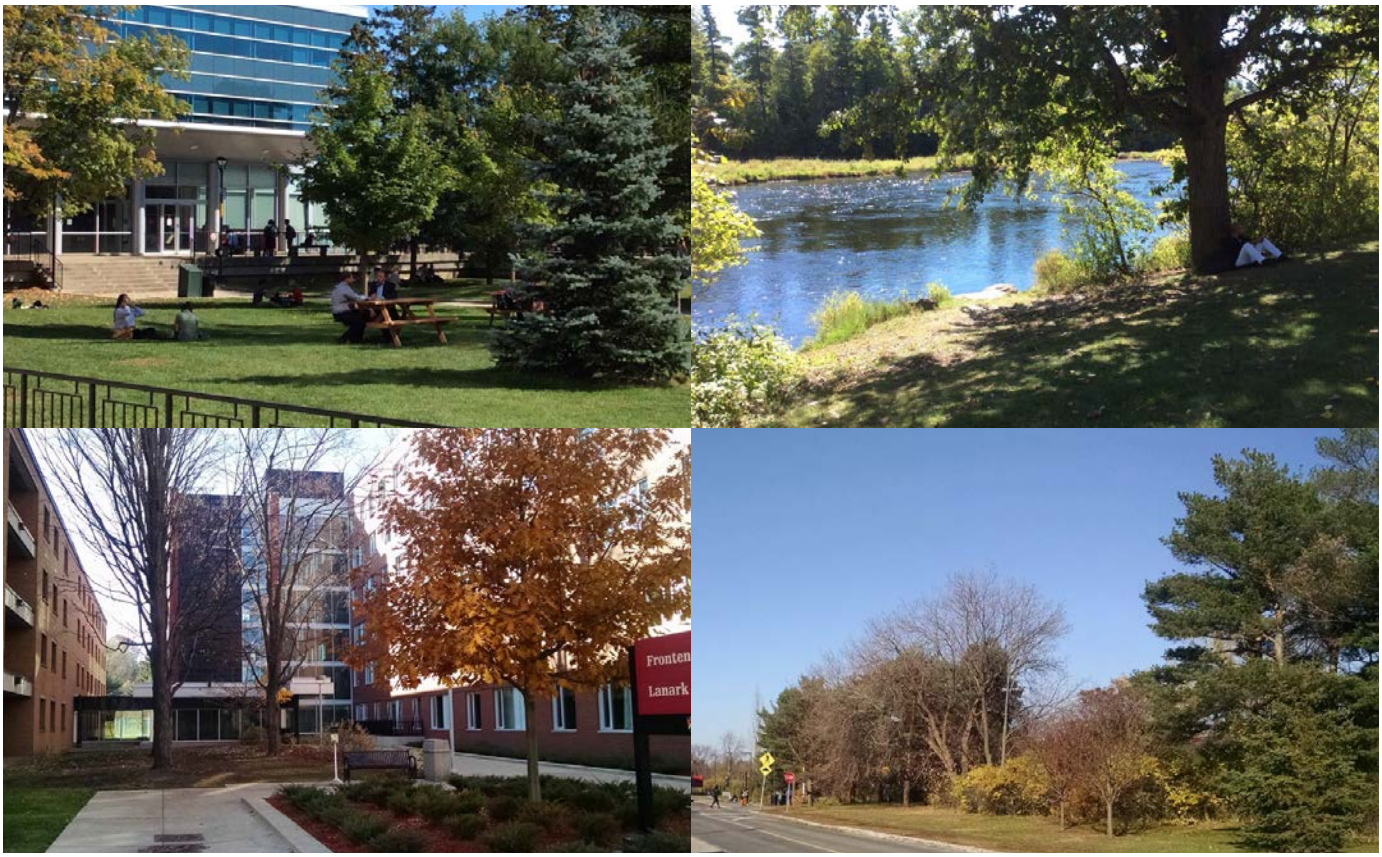

Forecourts and Gardens


Naturalized Areas and Buffers

Diagram showing the hierarchy of landscape open spaces on Campus

General Landscape Recommendations: Carleton University is a predominately green campus with expansive manicured and naturalized landscapes. The following section provides overarching recommendations for existing and future landscaped open spaces. Also highlighted in this section is the correlation between the built-form recommendations and the design of future open spaces. Below is a summary of the key directions that should be applied when considering existing and new open spaces.

- Open space on the Campus is a community-wide asset, playing an important role in defining the character and identity of Carleton University. Generally, outdoor spaces on the Campus should be well tended and maintained.
- Active building bases (ground floors) and positive indoor-outdoor relationships should be an objective of all new development. Buildings should frame open spaces and relate physically and visually to the outdoor environment.
- Landscapes and open spaces should promote all season use, particularly in the winter months. Protection from wind will be a key factor in making the outdoor environment more comfortable in the winter.
- Accessibility and low maintenance should rank high among Campus-development objectives.
- Open spaces should be useful and meaningful, relating to a theme or concept that



A variety of landscape spaces are provided on Campus (clockwise from the top left: the Main Quad, The Ottawa River, the landscape Buffer along Campus Avenue and a Residence Area Courtyard)

ties into the Campus culture such as water protection and sustainability. Spaces should generally be perceived as public and not private, and as being open and easily accessed both physically and visually.

- Infrastructure and amenities for cycling should be integrated into all new and existing Campus open spaces.
- Minimizing storm water run-off should be address in the landscape design with a focus on low impact development that increases infiltration and improves water quality.
- All landscape plans should use non-invasive and/or native planting.
- Overall tree health on Campus should be monitored and a tree succession plan created to ensure the long-term viability of the existing tree canopy.
- Hardscaped areas should consider materials that allow for water infiltration to minimize runoff.
- The existing balance of naturalized and manicured open spaces on Campus should be maintained.

The mix of naturalized (above) and manicured landscapes is a highly valued character of the Campus

Main Quads: Existing and future Main Quads are designed to support the needs of the entire campus population. These spaces are highly articulated with walking paths, programmable open spaces, seating and shade trees and / or structures. The design and maintenance of Main Quads should represent the overall character and vision of the university. Opportunities to animate these spaces in the winter should be investigated including,: winter sports, temporary shelters / warming huts, etc. Main Quads include the existing Quad, and the future Entry and North Quads.

Landscape principles for Main Quads include:

- Maintain diverse planting and tree species;
- Design with hard or soft landscape to fit function;
- Provide fixed and flexible seating and gathering spaces to support the function of the area;
- Ensure Quad are physically and visually connected to public indoor spaces; and,
- Create winter animation through outdoor programming or temporary winter weather protection.

Main Quad precedent image showing a mix of hard and soft landscaped areas

Main Quad precedent image showing smaller, more intimate, seating areas

Secondary Quads (Courtyards): Secondary Quads are generally less formal courtyards and should be designed to support a specific user group or department. These spaces can have individual user expression while being welcoming to the entire campus population. Examples of Secondary Quads include the courtyard north of the University Centre and the Mackenzie Building Courtyard.

Landscape principles for Secondary Quads include:

- Focus on informal gathering;
- Tie to the identities of the groups who use them and remain inviting to the entire campus community;
- Contain a variety of seating and shade/shelter opportunities; and,
- Design as less formal landscape than Main Quads while providing the same level of amenities.

Secondary Quad precedent image showing stairs as seating areas

Secondary Quad precedent image showing more informal spaces

Residence Open Spaces: Residence Open Spaces are unique landscapes on campus. The existing residence areas provide a variety of informal active green spaces, hardscaped and seating areas - all of which are important to retain in the future. The Residence Open Spaces need to serve the dual function of providing the typical residential amenity spaces that are needed by students throughout the year while also representing the more formal character of a campus setting. As the residence area expands a focus should be placed on creating usable spaces for informal sports (frisbee, catch, etc.) while also maintaining a slightly formal character that provides a strong, positive first impression for students and their families.

Landscape principles for Residence Open Spaces include:

- Ensure Residence Open Spaces are highly maintained with open green spaces for small gatherings, picnics and other residential based uses;
- Employ a formal design character to reinforce the institutional character of the area, including linear planting of trees and a formal geometry to the circulation and landscape;
- Encourage open non-programmed areas in both soft and hard landscaping;
- Create highly visible and regular shaped areas to support best practices in campus safety. Hidden or dark corners are not recommended;
- Mass and scale buildings to maximize sunlight on open spaces throughout the year. Taller buildings should be located to minimize shadows on adjacent open spaces; and,
- Implement a minimum dimension of 25m in any direction for Residence Open Space. This will support a light-filled and open character.

Residence Open Space precedent image showing a clearly defined primary circulation path

Residence Open Space precedent image showing a mix of open lawn and framed open space areas

Forecourts and Gardens: Other spaces on campus can be characterized as Forecourts or Gardens. These are the spaces between buildings and along streets. These spaces play an important role in connecting the main areas of campus and providing strong, well-framed connections between buildings and streets. These spaces should be low maintenance and should provide high quality connective spaces on campus.

Landscape principles for Forecourts and Gardens include:

- Focus the design on the year-round character of the space with weather protection and sheltered walking areas;
- Design well-articulated walking paths that support a winter maintenance plan and minimize closures and gated stairs or walkways;
- Use of low maintenance naturalized planting to frame walkways and circulation areas;
- Move away from a focus on seating and gathering spaces;
- Provide a sense of arrival to a specific building, campus use, and / or department. This should include places to wait and socialize between classes; and,
- Reflect the individual character of the building while being consistent with the rest of campus in overall materials.

Forecourt precedent image showing informal waiting areas outside the entrances of buildings

Garden precedent image showing interesting and engaging planting areas

Naturalized Areas and Buffers: The Naturalized Areas of the campus are highly valued. These areas are found along the Rideau River to the south and along the Canal to the west and north. This character is to be preserved and maintained. To highlight the natural character of the campus there is an opportunity to provide Naturalized Buffers along the edges of the west side of the campus in the areas where future buildings are not anticipated. New naturalized buffers, such as along the sports fields at Bronson Avenue, can have a more informal landscape character with, if possible, naturalized ground cover, cluster tree planting and a variety of tree species. The design of Naturalized Buffers should also integrate lighting and pathways where appropriate.

Key landscape principles for Naturalized Areas and Buffers include:

- Reinforce the existing plant materials and supplement as required;
- Use non-invasive and local plant species;
- Support a well-connected campus structure, including pathways and wayfinding as required; and,
- Create a naturalized appearance for all buffers at the campus edges to highlight the internal campus character.

Existing naturalized buffer between Library Road and Colonel By Drive

Existing naturalized buffer along the banks of the Ottawa River

5 Support an Inviting and Active Winter Campus

Carleton University's winter campus should be a primary consideration in designing for comfort, activities and weather -protection. The design of buildings and landscapes should minimize winter maintenance and the closure of circulation routes, stairs and pathways and maximize sunlight on exterior circulation routes.

New and retrofitted outdoor campus spaces should consider all season uses and through entrance design, canopies and solar orientation, maximize weather protection from snow, rain and wind. Where possible Main Quads should include winter programming that activates open spaces throughout the school year. Seasonal activities for more informal sports should be supported throughout the campus including in the design of future North Campus open spaces.

Summer visualization looking south along Campus Avenue towards the new Entry Quad and Health Science Building

Winter visualization looking north towards the school of Architecture and a new building site, framing the Entry Quad

6 Focus on Creating Streets and Walkways for People (Movement)

Transportation Priority: When prioritizing the various modes of movement on campus, pedestrians have first priority, followed by bicycles, transit, cars and service vehicles.

Barrier Free Environment: Carleton is committed to creating a barrier free environment throughout the campus. The proposed expansion to the tunnel system and its integration with flanking buildings will improve the campus' accessibility. Where terrain or other features make these logistically impossible, special services for people with disabilities will be incorporated.

Streets: Carleton will balance the use of streets for vehicular traffic and prioritize use by pedestrians and bicycles, requiring more emphasis on generous sidewalks, street trees, dedicated cycling routes, and the animation of flanking buildings.

A northern extension of Campus Avenue to Colonel By Drive and a link to Bronson Avenue north of the field house may alleviate some of the current rush hour congestion.

University Drive will extend to serve the North Campus. Library Road will continue to be terminated at the Canal Building; the northern section replaced with a pedestrian path wide enough to take emergency and residential traffic on moving day. The proposed elements for Library Road, University Drive and Campus Avenue are outlined in the sections shown on pages 32 and 33. The ultimate configurations of the road sections will be determined through a detailed design process.

Pedestrians: The pedestrian environment will provide a sense of comfort for users throughout the day and evening hours with well-lit walkways, shade trees and outdoor recreational and study/seating areas in sheltered locations. The aim is for pedestrians to have a sense of pride in the campus.

Existing (2016) Street System

Planned Street System

Bicycles: The accommodation of cycling will be further improved, with secure bicycle parking nodes at key locations throughout the campus, and integrated within building entrances. In the Residential Campus, bicycle parking should be available for both residents and visitors. The bike route on Campus Avenue links to the recreational pathway by the canal and to Vincent Massey Park on the south side of the river, accompanying the rail transit line.

Transportation Demand Management (TDM): Techniques will aim to reduce car use per person using tools such as incentives for multiple vehicle occupancy, increased parking charges and reduced availability, and improved bicycle access and storage. The University will support the City of Ottawa's continual improvement of the rail and bus transit initiatives that will enhance the University's TDM strategy.

Planned Pedestrian Pathway Hierarchy

Rail Transit: The O-Train Station tracks are centrally located on campus. A City of Ottawa initiative to twin track the service may enable construction of a combined academic building and covered station, providing climate-controlled cross-platform and cross-campus connection.

Bus Transit: Buses uses the efficient loop of University Drive and Campus Avenue, with a series of pick-up and/or drop-off stops and two major stops on either side of the rail station, forming a transportation hub.

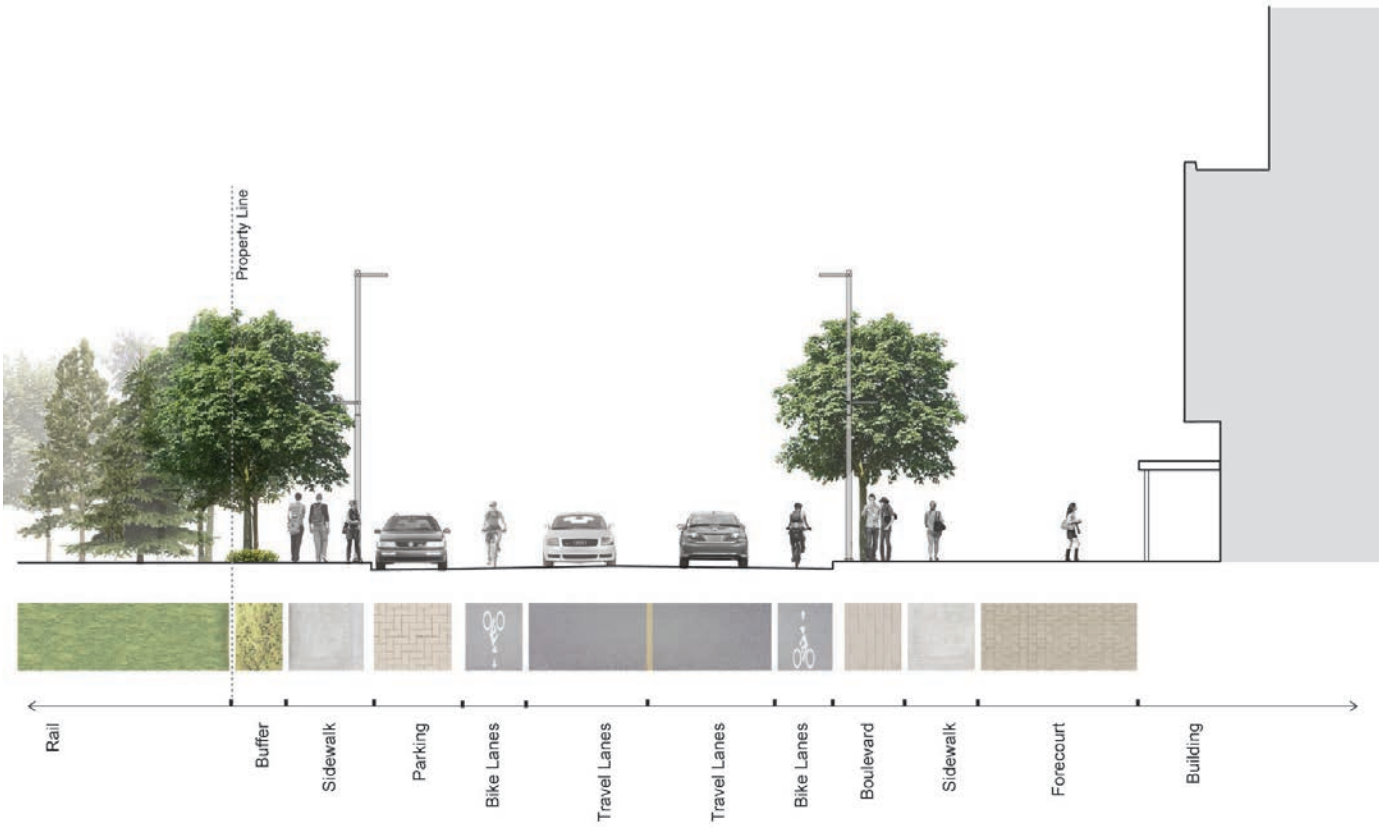
Recommended Cycling Routes and types of trails

The redesign of the intersection at the north entrance (where University Drive turns to meet Sunnyside Avenue at Bronson Avenue) may trigger a change in bus circulation. A change to the direction of the bus circulation should be considered to maximize the efficiency of the loop. Should a directional change occur, opportunities to co-locate the O-Train and transit stops on Campus Avenue should be considered. Overall the intersection change should better facilitate exiting from Campus .

Taxis: Pick-up and drop-off from taxis are accommodated at the proposed Entry Quad, together with visitor information. Passengers will be able to wait indoors in the proposed buildings flanking the Entry Quad.

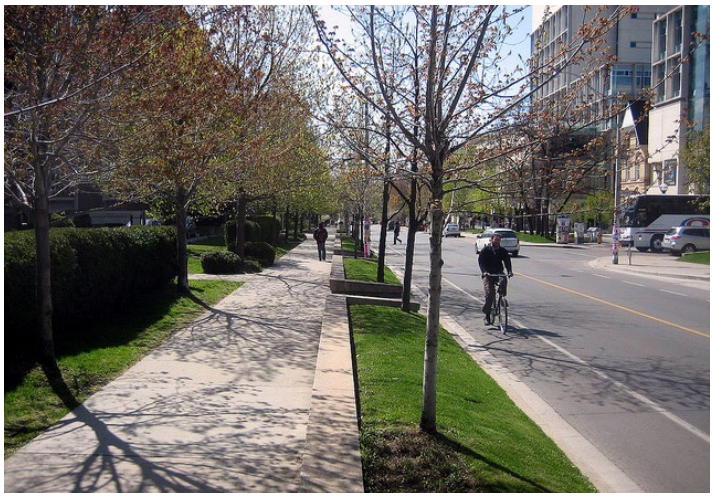
Transit plan showing trains and buses relative to the Entry Quad

Campus Avenue - Streetscape Elements



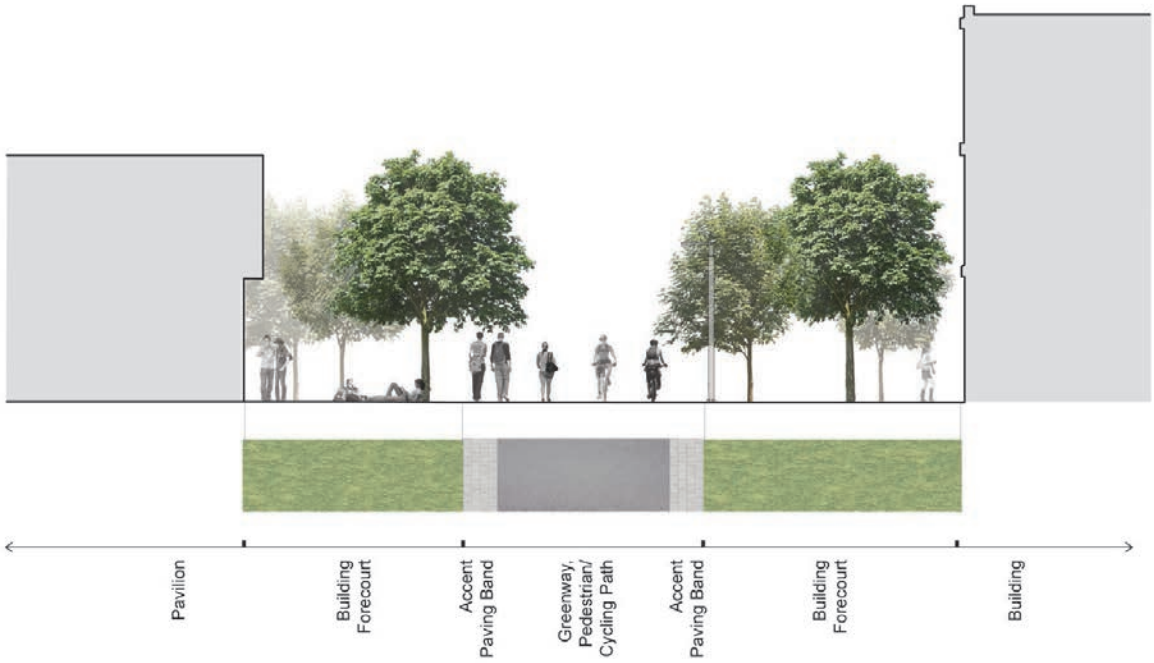
Section showing recommended street elements for Campus Avenue and University Drive

Campus Avenue and University Drive will have upgraded pavement markings at pedestrians crossings



Campus Avenue and University Drive will prioritize safe travel zones for cyclists

Library Road: Streetscape Elements



Section showing recommended street elements for Library Road

Library Road will be a pedestrian street that can accommodate both service and emergency vehicles

Library Road should use banding and paving material to create pedestrian scaled walking zones along the path

Service and emergency vehicles: Service vehicles will use the campus street system where possible, and use shared pedestrian/service routes where street access is unavailable. The negative visual impact of service areas will be mitigated through building and landscape design. New campus development will consider the delivery needs of future programs. These needs will be addressed in the detailed design of the building to minimize impacts on streets and pedestrian areas.

Diagram showing service / access roads and locations

7 Reinforce Connections to Surroundings

Carleton will work with its neighbours to increase connections between the campus grounds and their surroundings.

Throughout the consultation process the campus community have identified the natural beauty of the campus as its strongest and most positive feature. This naturalized character must be balanced with ensuring the campus is well-connected to its surroundings.

Bronson Avenue needs a greater pedestrian emphasis to offset its anti-urban high-speed character. Carleton will encourage and work with the City of Ottawa to create a unified vision for the street that is in keeping with the existing context on both sides of the street, while focusing on porous connections into the campus. Development within the campus will seek to establish a greater civic presence through placing buildings at the street edge, particularly in the Mid and North Campus areas. The campus will gain greater presence along Bronson Avenue in this way, with a stronger connection at Sunnyside Avenue and to the residential areas to the north.

Visualization looking south along an urbanized Bronson Avenue with street trees, enhanced lighting, wide sidewalks and banners

Diagram showing a strong institutional presence on Bronson Avenue and a mix of access and egress opportunities

Colonel By Drive is both an attractive drive and an important access road to the campus, but because of the lack of crossings and in places, dense landscaping, sometimes it is a visual barrier to the Rideau Canal and arboretum beyond. Carleton will work with the National Capital Commission and Parks Canada to obtain better visual and physical access. This is particularly important at the new north entrance off of Colonel By Drive where a dedicated signalized vehicular, pedestrian and cyclist crossing would benefit both the general public and the campus community.

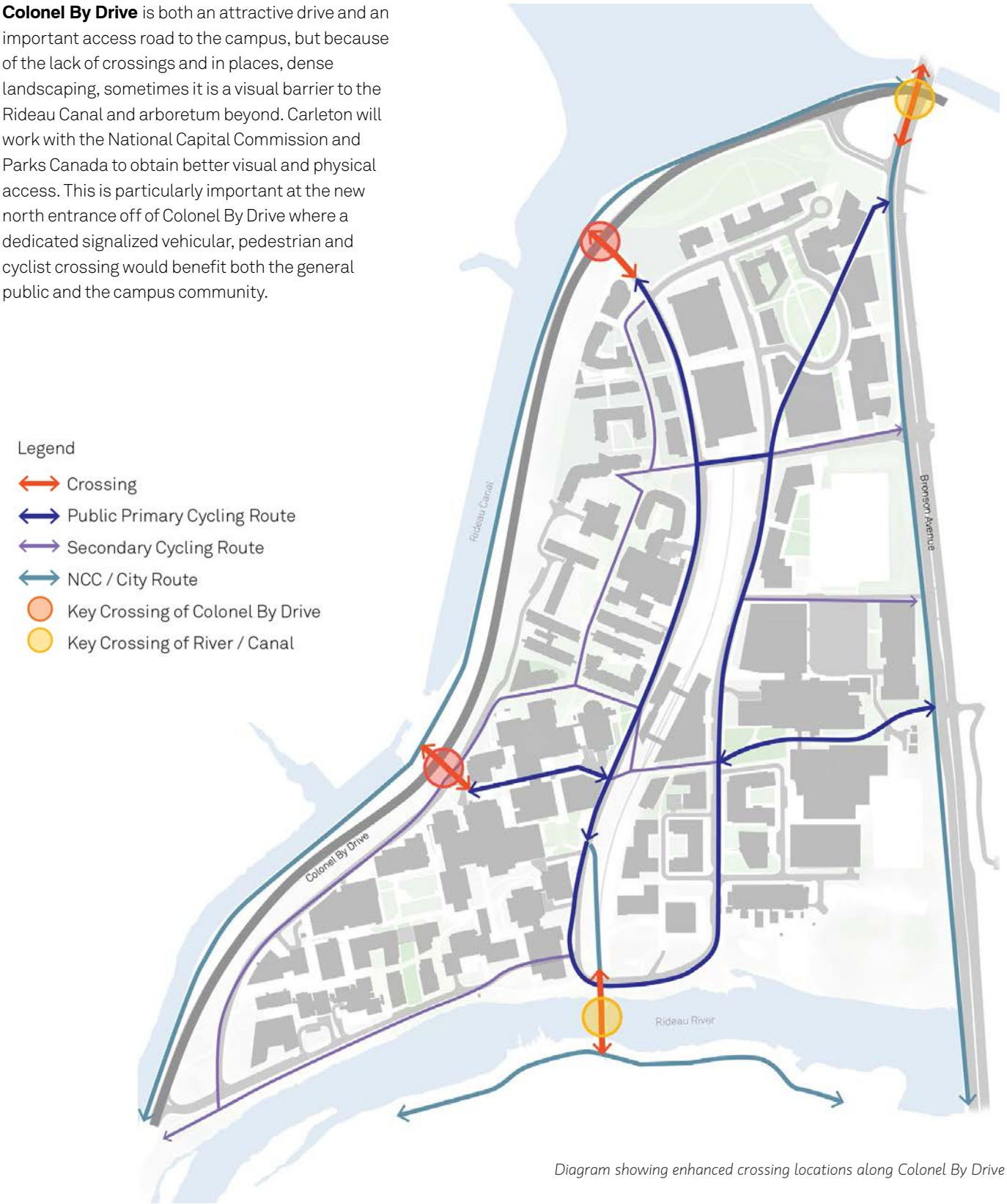


Diagram showing enhanced crossing locations along Colonel By Drive

The Rideau River Flood Plain is regulated by the Rideau Valley Conservation Authority (RVCA), and requires that development be controlled in the river's riparian zone. Carleton will work with the RVCA to balance active and passive use of the river bank (such as informal sports fields, walks, seating and patios).

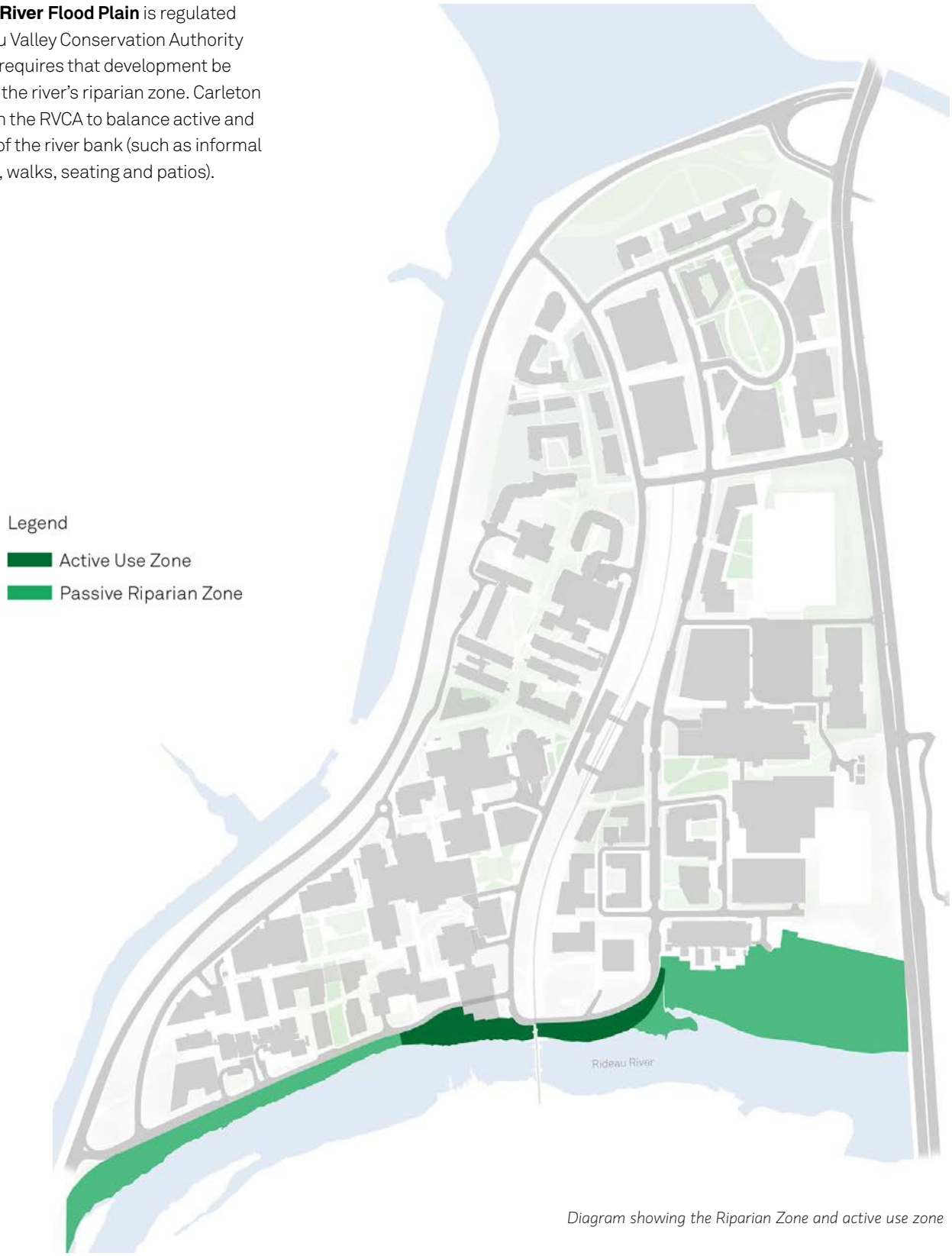


Diagram showing the Riparian Zone and active use zone

8 Support Design Quality

The design of landscapes and buildings will focus on achieving a high functional and aesthetic quality. Building design will favour architectural interest and life cycle costing over the simple provision of space at low capital cost. Landscape design will unify the grounds, stimulate social interaction, and offer delight, comfort, and security.

Since 2010, several new buildings and renovations have been completed including the expansion to the MacOdrum Library, The River Building and the Canal Building. These high quality, contemporary building projects add to the diversity of architectural style on campus. This diversity of style will reflect Carleton's development history and the eras in which buildings were constructed. It was reconfirmed through the consultation process that there is a perception that while the quality of the landscape has greatly valued, some of Carleton's building inventory is thought to be "tired", and in need of reconstruction or retrofit. The following general design principles and recommendations are provided to inform architectural design:

- Building massing and design should prioritize the implications on the surrounding open spaces including shadowing, weather protection, and wind;
- New buildings should aim tomaintain a 20 metre separation distance from existing buildings. If 20m is not achievable the minimum dimension for facing primary facades is 15 metres. Secondary facades (those that do not house active building uses or are less that 25m in length) should have a minimum facing dimension of no less than 12 metres.
- A goal for access to sunlight in surrounding open spaces should be determined at the outset of the project and used to shape the form of the building;
- Building designs should be contemporary and represent the era in which they are designed;
- A focus on best practices in context-based design should be used to inform the architectural approach such as access to light, landmark features, existing circulation paths and accessibility; and,
- Existing buildings that are to be retained should be prioritized for repairs and retrofits.

Landscapes should act as a unifying element within the campus. In addition to Section 4.0 the following recommendation are provided to inform landscape design:

- Native plant material should be used consistently to reflect the natural context of the campus;
- Ornamental plant material should be selectively used to highlight key nodes and provide accent colour;
- Educational signage should be installed where non-potable water is used for irrigation;

- Construction materials should be consistent, durable and have a quality finish;
- The principle walkways should be 6m wide and designed to accommodate both pedestrians and cyclists;
- Walkways between buildings and adjacent to roadways can be reduced in width to match pedestrian traffic flow, all walkways should be well lit;
- Sculpture, art and commemorative trees can be incorporated to enhance the experience; and,
- New trees should be planted to create a shade canopy during the summer months, and the shrub material should be low to improve visibility and increase the sense of safety in the grounds.

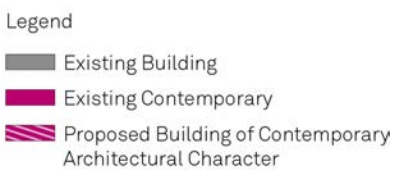


Diagram showing current inventory of Academic Buildings of Contemporary Architectural Character

Diagram showing future inventory of Academic Buildings of Contemporary Architectural Character

9 Create Architecture that Responds to the Surrounding Context and Reinforces an Interconnected Campus

Student social spaces will be accommodated in the lower floors of academic buildings, with more office uses above. Within the Core Campus height will typically be restricted to 6-storeys. Exceptions for taller buildings can be considered at the Entry Quad, the North Campus and the residential areas.

Visualization showing the preferred character of future academic buildings with a visual connection to the surrounding areas, natural light into the tunnel system and public / common spaces on the ground floor

Generous communal space for circulation, informal group and individual study and meeting places, will link formal teaching areas, and connect to neighbouring buildings. To support a connected campus the tunnel system will be expanded and given direct or indirect access to daylight. Outdoor study and social spaces will be incorporated in terraces overlooking the river.

Campus and Faculty Identity: Buildings will be designed to establish both faculty identity and, in combination with other buildings, a cohesive campus identity. Designs will promote cross-disciplinary contact and close connection between teaching and research. While in the first instance they may be designed to express a particular faculty identity, they will be organized as a "loose fit" to encourage a long life of adaptation to alternative academic use.

Building facades should frame open spaces

10 Facilitate River Access

The relationship with the Rideau River will be a feature of campus life by making spacial connections and including light-impression bank-side amenities. By orienting buildings to the river with terraces, entrances and atria, and by incorporating food services and amenities such as paths, benches and seating areas, the river can be experienced and enjoyed all seasons.

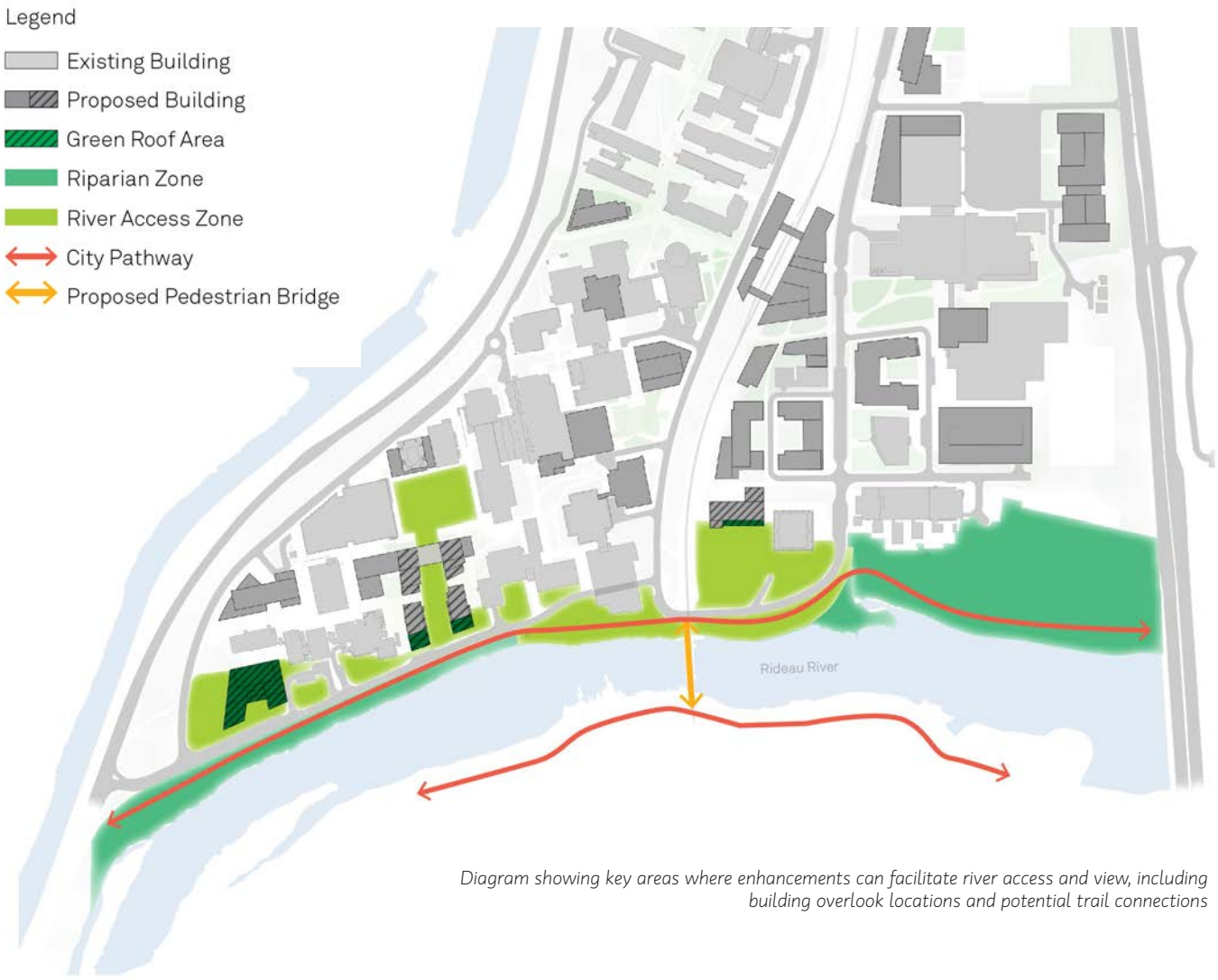


Diagram showing key areas where enhancements can facilitate river access and view, including building overlook locations and potential trail connections

11 Match Parking Demand with Supply

Parking will continue to be provided throughout the campus, increasingly in structured facilities, while parking provision per person will decrease over time as car pool and transit use increases. The majority of surface stalls will be in the North Campus. Until this area of campus develops and an additional parking garage is required.

Within the Core Campus the existing garage will be replaced with a larger one on the preferred P3 site. To protect future parking capacity the existing North Campus parking garage is structured to accommodate three additional floors of parking and a second similar sized North Campus parking garage site has been identified.

Since most new buildings will remove surface parking and will require structured parking, Carleton should prepare for the increased infrastructure costs by gradual parking charge increases so that surface lots, while they last, subsidize future structured lots.

	Lot	Spaces
Under Building	**P1**	106
Entry Court	**P2**	0
Parking Garage	**P3**	856
Rail Way Building	**P4**	0
Surface	**P5A**	206
Under Building	**P5B**	400
Parking Garage	**P6**	954
Under Building	**P7**	553 *
Remains(Social Science)	**P8**	13
Under Building	**P8A**	102
Under Building	**P9**	400
Remains (Surface)	**P10**	20
Under Bldg + East Quad	**P11**	320
Replaced (Field House)	**P12**	0
Remains (Surface)	**P14**	98
Remains (Russell Grenville)	**P15**	15
Remains (River Building Garage)	**P16**	60
Remain (Commons/Lennox)	**P17**	19
Parking Garage	**P18**	1060
Remain (Library)	**LGAR**	176
Remain	**Street**	100
Remain	**Small Lots**	139
	Total	**5597**

* # of the parking space to be determined by requirements

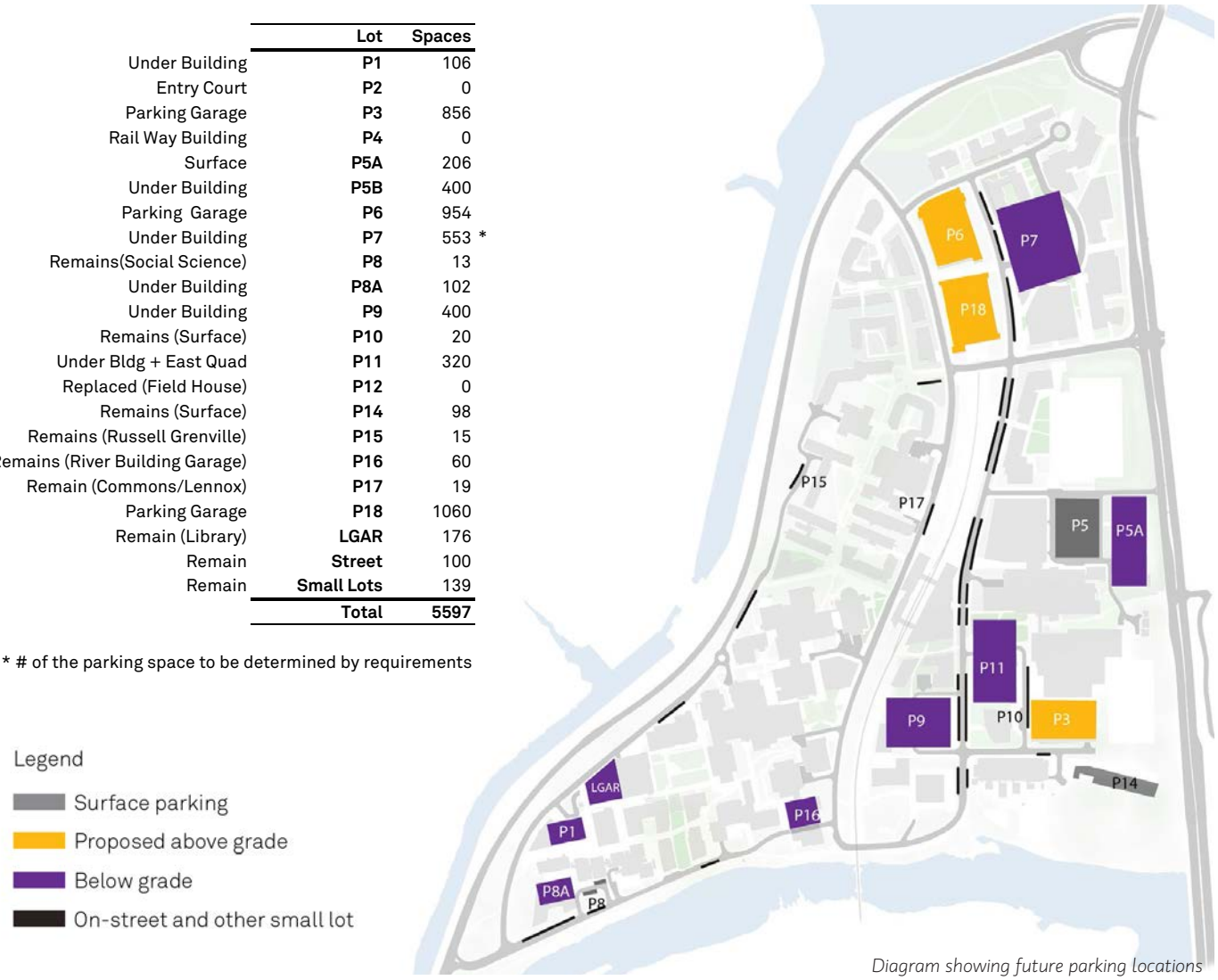


Diagram showing future parking locations

12 Integrate Safety in Design Principles

The design and management of buildings, landscapes, and lighting will enhance personal safety. Enhancing safety sets up a virtuous circle: the safer the campus feels, the more it is occupied, the safer it becomes. The sense of personal safety is one measure of a viable environment, along with and resulting from other measures such as clarity, legibility, convenience, vitality, and delight. For this reason, most of the principles in this plan will contribute to the development of a safer campus. Lighting can add immeasurably to the night aesthetic of the campus as well, by subtly illuminating key features.

Recommendations to increase the sense of personal safety on campus include:

- The exterior lighting system should be designed to reinforce the spatial structure and organization of the campus, and provide the cues necessary for orientation and way-finding at night.
- Lighting design should minimize glare and contrast caused by overly bright sources, these conditions can contribute to impaired visibility in the intervals between light sources.
- Lighting strategies should aim to limit light levels to no more than that required for night vision and to distribute the light more evenly, with smooth transitions between illuminated buildings, roads, walkways, and open spaces so that the eye can comfortably adapt to and see into shadows.
- All building entrances and alcoves or 'dark corners' should be softly lit and loading areas should not be brighter than building entrances.
- Lighting should be designed to minimize light pollution.
- Overly bright lighting which might disturb sleep in residential areas should be avoided.

13 A Sustainable Approach to Storm Water Management

The 2016 approach to Storm Water Management remains consistent with the 2010 Master Plan with no major changes or updates.

Rainwater flows to the Rideau River over the land surface and via six piped sewer catchment areas from building roofs and pipe-drained surfaces. Overland flow currently discharges in two primary locations: near the rail track crossing and near Bronson Avenue, flowing to those points along routes marked by blue arrows in the diagram below. The largest piped catchment outlet is at the Bronson Avenue Bridge, which is complicated by the fact that it, along with the overland flow at that point, is within the flood plain and riparian zone.

Diagram showing overland flow and storm water management ponds

Water quantity control for the piped system will be provided mainly through rooftop storage as the North, Residential and East Campus is developed. Rainwater harvesting for grey water systems, green roofs and irrigation will also be explored. Infrequent heavy surface flow will be interrupted by “dry ponds” in the North Campus, surface parking lots and the practice field and a small “wet pond” north of the Leeds Residence. Spring or high river water flooding of low ground along Bronson Avenue has been held back by the Raven Road berm. The practice field provides temporary storage for overland flow.

Water quality can be improved, if existing water quality proves inadequate, in sewer networks 2 to 6 with oil grit separators at discharge points. Network 1, at Bronson Avenue Bridge, is more complex and would rely on source control at roofs and parking lots.

Diagram showing storm sewer and quality/quantity control

14 Identify Development Priorities

The priorities for new constructions and renovations will be assessed based on the following:

- A space needs perspective (for academic, residential, administrative and ancillary functions), as well as from the point of view of energy savings and facility renewal; and,
- A campus-wide perspective, choosing sites which have one or more of the following attributes: are relatively free of constraints; contribute to place-making by spatially containing positive open space; provide a greater sense of river access; help connect the East and West Campus; and animate the tunnels.

Key construction projects, studies and future initiatives identified through the consultation process include the following recommendations:

- Completion of the Entry Courtyard with a renovated entrance to the University Centre and upgrades to Alumni Park including the removal of the water fountain to the west of the Robertson Building and the investigation of more permanent weather protection structures in the park for events.
- Investigation of creating more usable informal sports facilities (in coordination with the RVCA) along the river on the west side of campus should be undertaken through an Athletics and Recreation Review.
- Retrofit of the north entrance along University Drive to facilitate better driving access in and out of campus.
- Securing approvals for and constructing the new north entrance off of Colonel By Drive as an extension of Campus Avenue.
- Review required building upgrades for the Robertson Building.
- Undertake detailed design for the Campus Avenue North Campus entrance at Colonel By Drive.
- Determine if heritage conservation should be included as a Campus Master Plan principle.
- Examine all new development projects with an aim to further enliven and connect the existing tunnel system.

Site Selection Priorities

Map identifies site where future buildings will contribute to the character of planned and existing open spaces

Map identifies sites where future buildings should facilitate better connections to the river including both physical and visual connections

Map identifies areas where tunnel improvements should be considered in the academic core. Improvements include incorporating daylighting (purple) and better connectivity (dashed black)

Map identifies areas recommended building orientation to frame future East-west Campus connections

15 Holistic Approach to Space Management

In meeting space needs, the University will emphasize consolidation over expansion. The most efficient utilization of existing space has first priority, followed in sequence by the renovation of existing space, additions or infill development, replacement of buildings close to their end of life and finally on one of the new sites identified in the Master Plan.

Over the life of a building, it will see several changes of use. It's programming and subsequent design will therefore aim for loose fit to encourage long life, so that later uses fit more readily into the building frame. The most likely practical effect of this approach will be a strong and flexible circulation structure as the primary organising feature of the building.

Flexible functions such as central classrooms, communal, group and casual study space and student services will occur throughout the campus but will congregate in greater intensity in central locations, whereas faculty and research buildings of a specialized nature will find places further out.

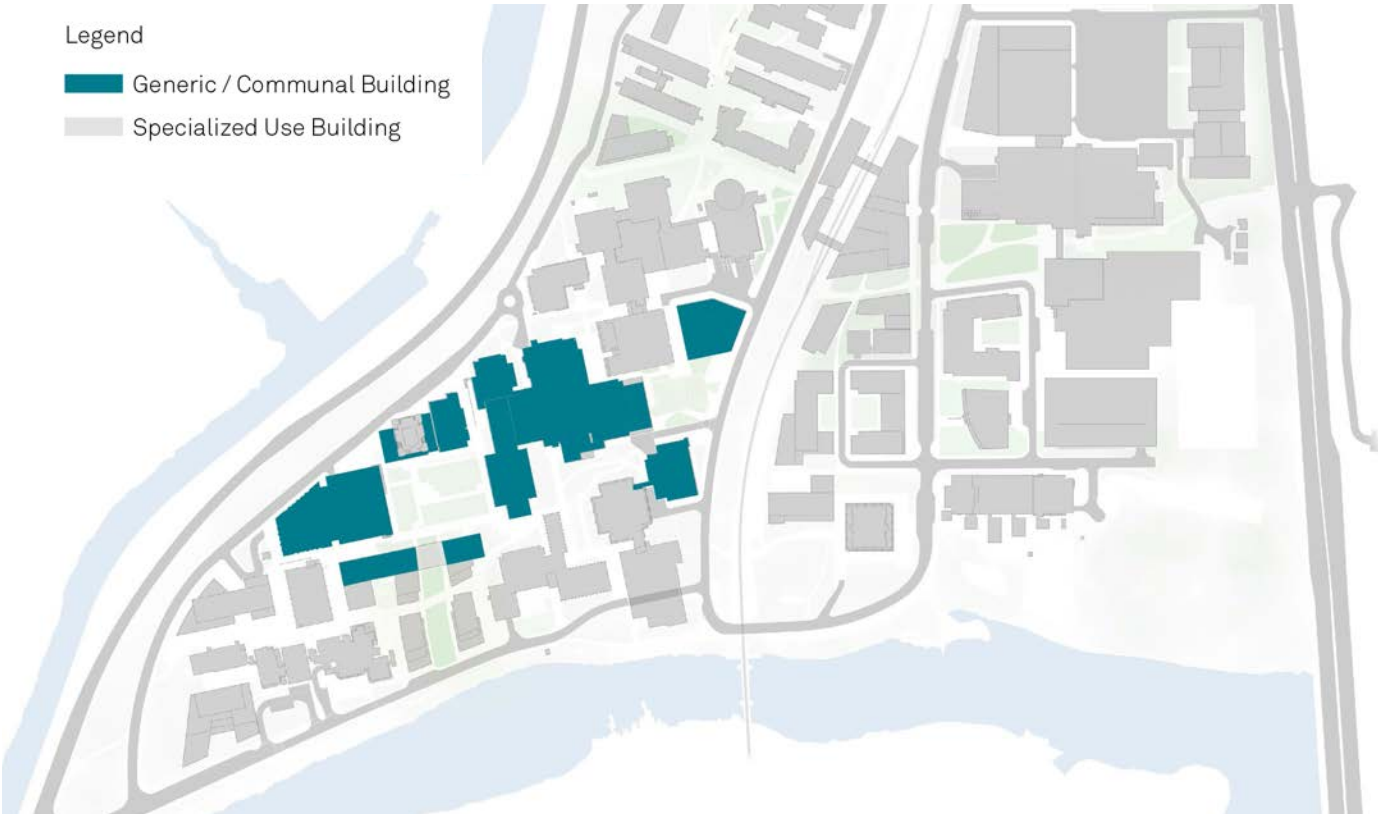


Diagram showing generic and specialized building locations

16 Implement a Visionary Approach to the North Campus Reserve

The North Campus is a short and midterm resource as a way to postpone some (but not all) of the need to construct structured parking, and a long term resource for academic use once the rest of the campus is fully developed. Alternatively, it could be developed for land-consuming uses affiliated with the university such as a research park or major cultural facility. This will require a full site infrastructure plan and should only be undertaken with a clear understanding of the programming and densities for the entire area.

The North Campus design will be guided by a number of key campus recommendations that were development through the 2016 Master Plan Update process. These key directions include:

- Create a new North Campus Quad framed by new development.
- Limit the amount of surface parking in favour of additional development and open spaces.
- Facilitate a strong diagonal connection from the centre of the campus to Bronson Avenue for both pedestrians and cyclists.
- Consider additional height and density along Bronson Avenue and Colonel By Drive where shadow impacts are reduced and where development can benefit from clear views to Dow's Lake.

The North Campus demonstration plan is described in more detail on the following pages.

North Campus precedent image showing development facing the North Quad with a range of informal seating and built form

Key Design Considerations for the North Campus

1. A New Central Oval Quad framed with new development
2. New campus development facing onto Bronson Avenue with a series of mid block walkways
3. A pedestrian boulevard connecting the new Quad to University Drive
4. A second parking garage over the O-Train Tracks
5. A vertical addition of up to 2 storeys on top of the existing structured parking garage.
6. A new signalized entrance off of Colonel By Drive
7. Taller campus development facing Dow's Lake and the canal (10-15 storeys)
8. Flexible building sites to allow for a mix of building footprints
9. An urbanized and green Bronson Avenue Streetscape

Demonstration Plan for North Campus Area


7
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Bronson Avenue

4.0 MASSING STUDIES

This section investigates individual site massing opportunities to illustrate how the principles of the Campus Master Plan can be applied to future development proposals.

Existing photo of Carleton University's Main Quad

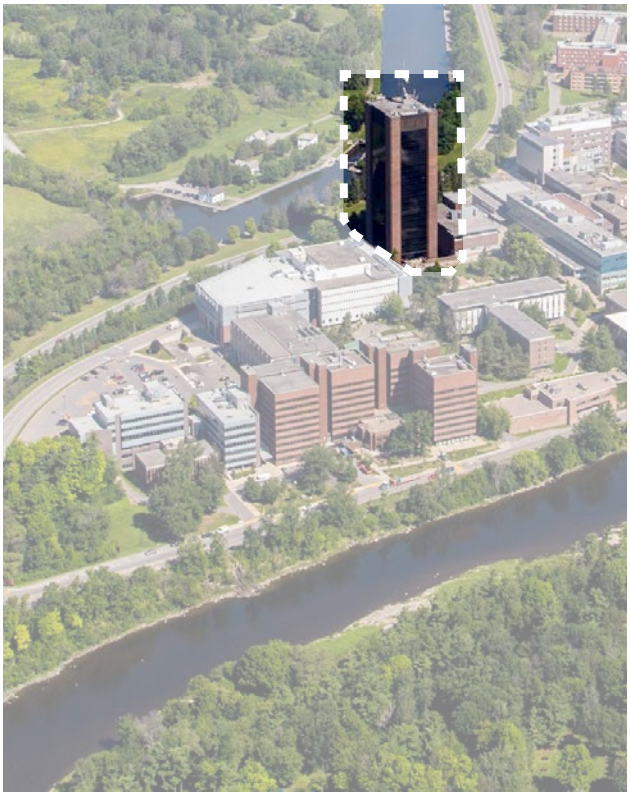
With the exception of a new vision for the North Campus, the recommendations in this section are generally in keeping with the 2010 Master Plan. In addition, a new 20 metre minimum separation distance has been established between the primary facade of existing and new buildings to provide sun penetration and usable open spaces between buildings. While the recommendations focus on buildings, they serve the overarching objectives of reinforcing the Main Quad, establishing a campus Entry Quad, and strengthening the connection between built form and open spaces across the campus.

4.1 Reinforcing the Main Quad

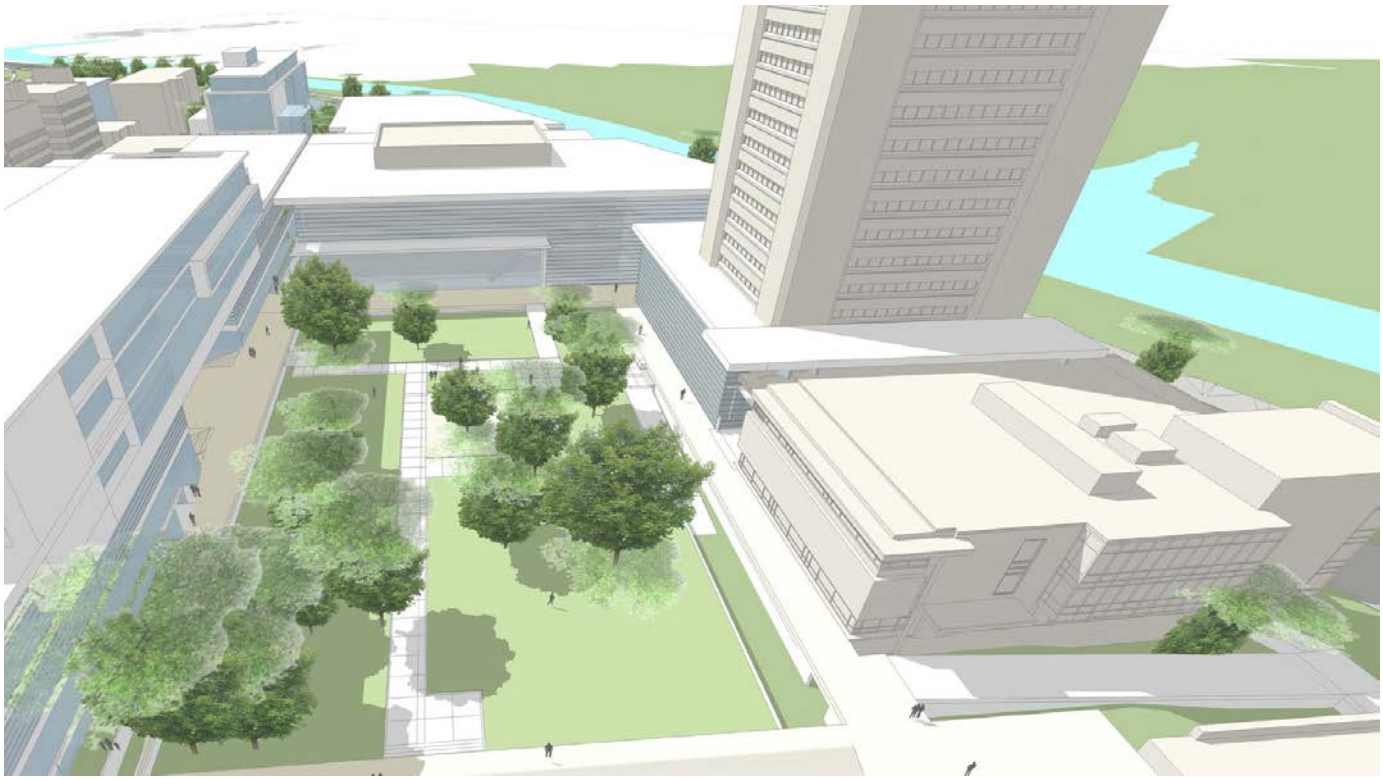
Dunton Tower

Dunton Tower provides a strong campus landmark, but does not provide an active presence at grade or a strong edge to the Main Quad. As demonstrated on the following pages (developed in the 2010 Master Plan Update and reconfirmed in 2016), providing a 3-storey podium addition to Dunton Tower could accommodate new office and classroom uses, in a more efficient manner, while framing the Main Quad with more vibrant uses. In addition, expanding the ground floor of Dunton Tower permits an expansion of the tunnel below, adding additional well-lit casual study and meeting space.

Main Quad and Dunton Tower to the north



Existing aerial image highlighting Dunton Tower



Model view of Main Quad and Dunton Tower to the right

Section through Dunton Tower and new lower level addition (credit: DTAH 2010 Campus Master Plan)

Dunton Podium, Tunnel Plan
(credit: DTAH 2010 Campus Master Plan)

Dunton Podium, Second and Third Level Plan
(credit: DTAH 2010 Campus Master Plan)

Dunton Podium, Quad Level Plan
(credit: DTAH 2010 Campus Master Plan)

Dunton Podium, Roof Plan
(credit: DTAH 2010 Campus Master Plan)

Paterson Hall and the Life Sciences Building

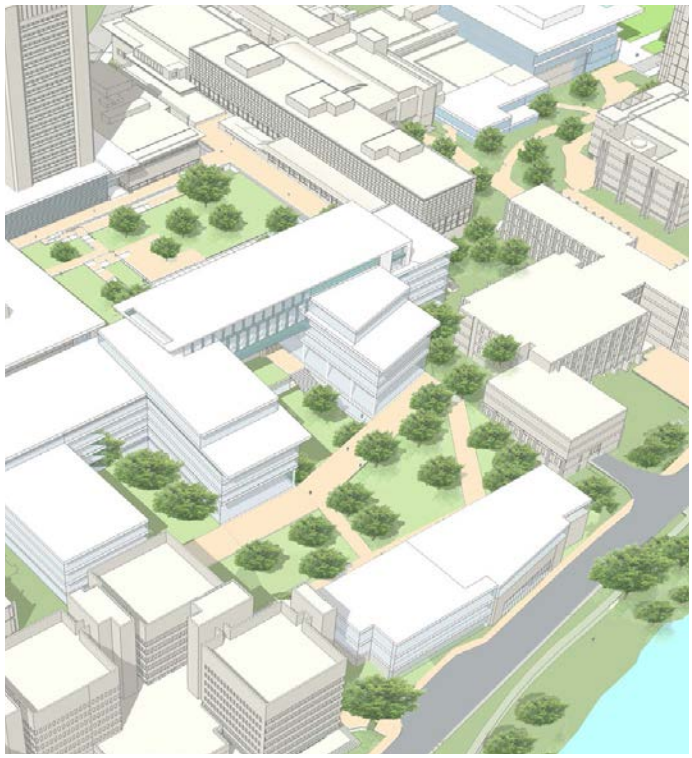
The area that includes Paterson Hall and the Life Sciences Buildings is recommended to be developed in two phases. In the short to medium term, Paterson Hall will be replaced with new buildings and the Life Sciences Building will be renovated. In the medium to long term the Life Sciences building will be demolished and the area vision will be fully implemented with the construction of 4 new interconnected buildings.

Paterson Hall, one of the first buildings on campus, is in need of a complete upgrade or replacement. It currently occupies a large amount of land at a low density. The Master Plan recommends the replacement of Paterson Hall. The existing building currently faces onto the south side of the Main Quad and is well proportioned in relation to the quad while maintaining adequate sunlight on the open space. Any future development on this site should limit shadows and continue to frame the Main Quad.

The Life Sciences Building will be retained and renovated in the short to medium term. A 2 storey vertical addition and interior renovation is required to extend the building usability. The overall building renovation will also include re-purposed interior spaces, an improved facade facing onto the River and a better visual connection to the south. This renovation will allow the building to better serve the needs of the Campus over the next 20 - 25 years. Once the building has exceed its functional life, the full vision for the area can be implemented.

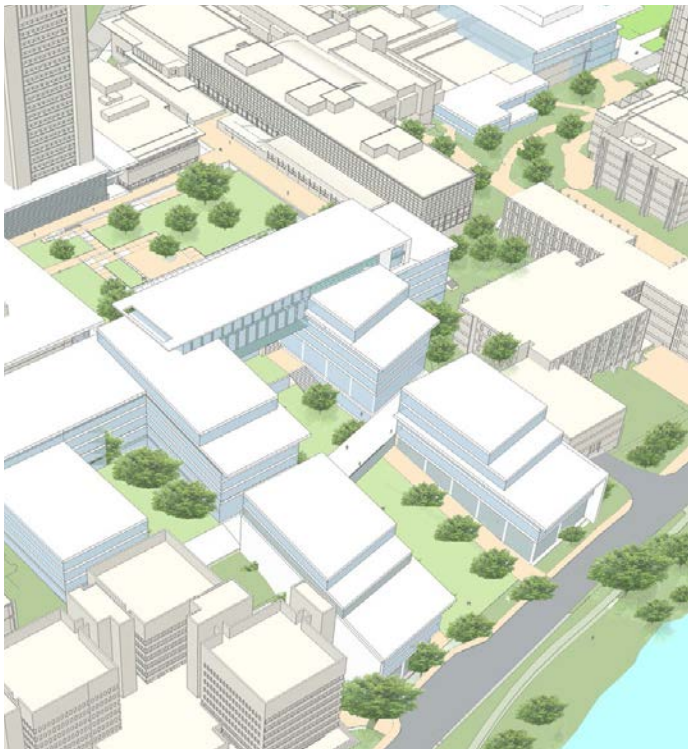
When implemented, the long term vision will allow for an increase of academic space in the heart of the campus and a dramatic reorientation of the campus to the river, which has been a longstanding goal of repeated campus plans since the 1990s. The slope of the land toward the river permits direct access from the quad to the middle floors of the building, increasing the range of stair access greater than the normal 3-floor limit. The primary means of connecting to the river will be a generous green linear court flanked by buildings. It would descend in two steps, each over a tunnel section which opens out to daylight and the view as it crosses the court. Interior “colonnades” could flank the court. Garden terraces would provide outdoor space at several levels to take advantage of river views.

Existing aerial image: highlighting Paterson Hall



Short to mid term vision for the area, replacing Paterson Hall and renovating the Life Science Buildings

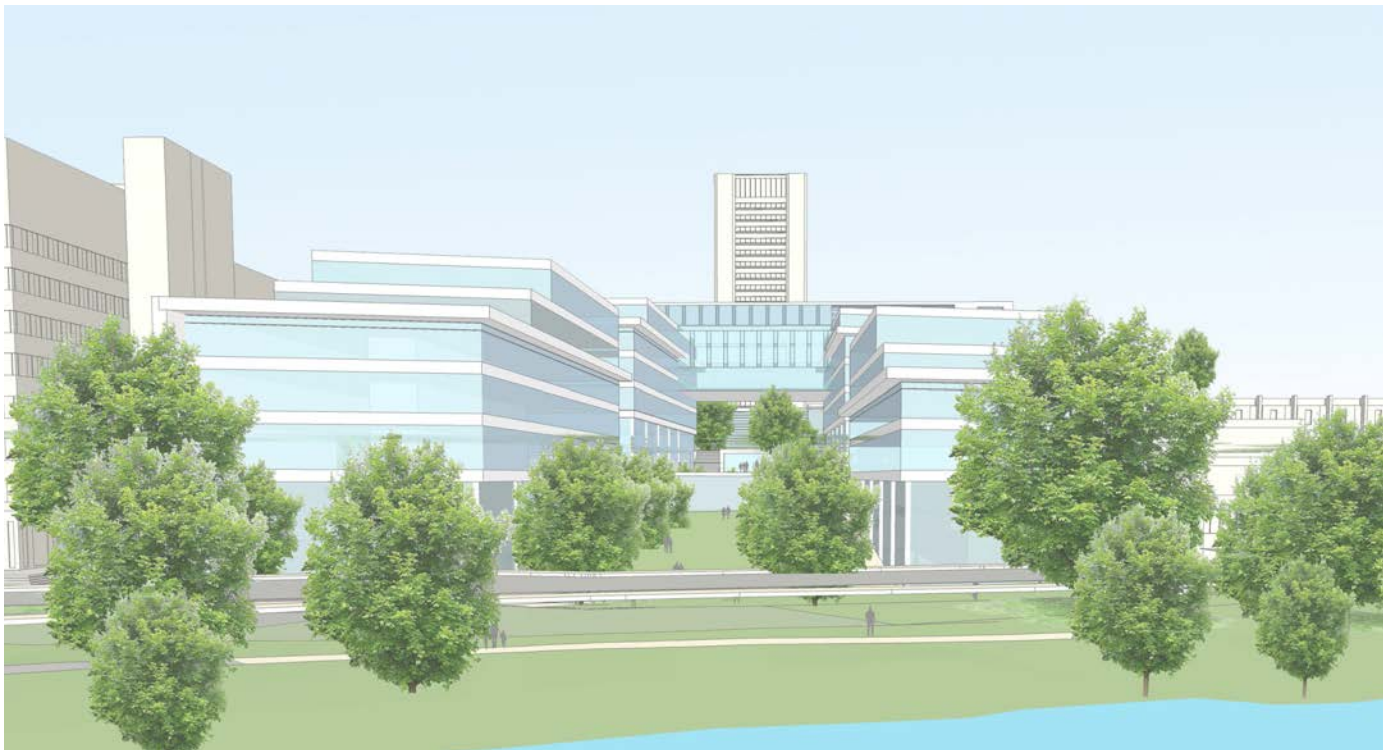
Short to mid term vision for the area, replacing Paterson Hall and renovating the Life Science Buildings



Long term vision for the area, replacing both Paterson Hall and The Life Sciences Building with 4 new academic buildings

Long term vision for the area, replacing both Paterson Hall and The Life Sciences Building with new academic buildings

Long term vision - model view of Main Quad looking towards the Ottawa River



Long term vision - model view of Ottawa River looking towards the Main Quad

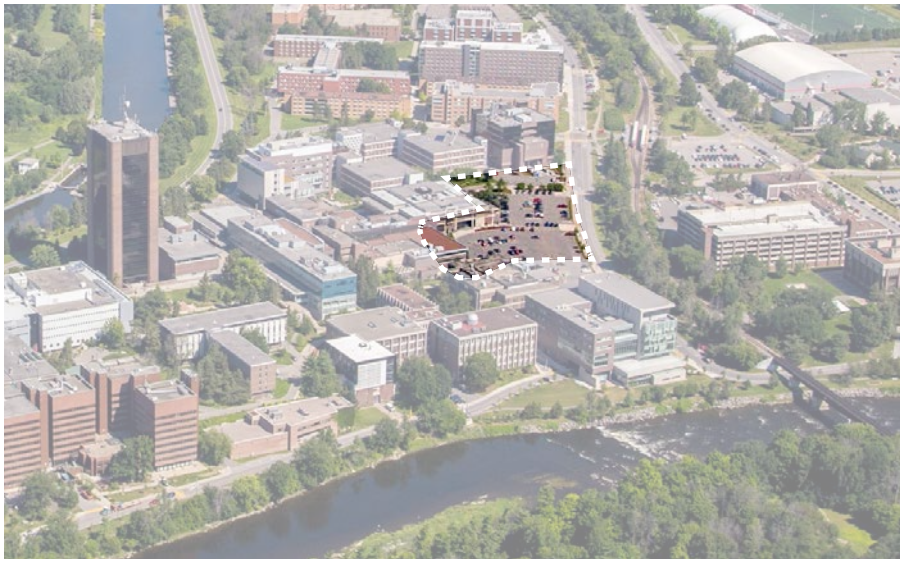
4.2 Establishing a Campus Entry Quad

The 2004 and 2010 Plan proposed a new Entry Quad on Lot P2, flanked by attractive buildings, including an extension of the University Centre. The University Centre facade is in need of a retrofit to acknowledge the importance of the building as a major entranceway into the campus. The Health Sciences Building, which frames the south side of the quad, is currently under construction and the northern flanking building is in the planning stages - the Entry Quad remains to be completed.

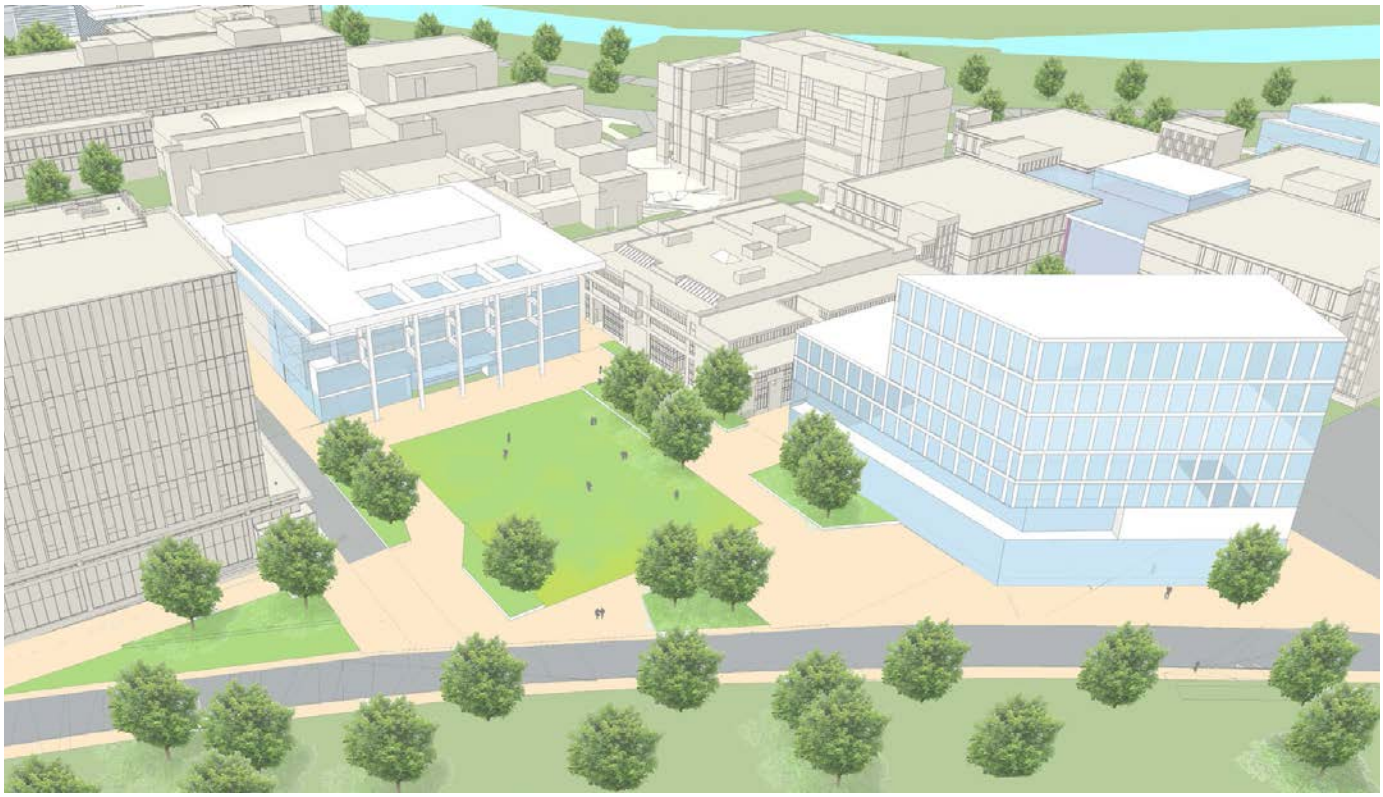
The north building spans the tunnel intersection between residences, the east and the west campuses. As such, there is great opportunity to bring daylight into the tunnels and to improve orientation within the tunnel system through additional entrances and outside views.

Key directions for the design and program of the Entry Quad include:

- A multi-purpose space that can accommodate student events and concerts (up to 1000 people), barbeques, and markets (with the necessary infrastructure to support such events).
- An informal social gathering space with a combination of green and hardscaped areas.
- A space that reinforces a feeling of welcome and belonging.
- A year-round space that can be programmed by student groups.
- A central location that can accommodate university events and the ceremonial flag poles.
- A dynamic space that acts as a gateway to the campus and the University Centre.



Existing aerial image highlighting the location of the future Entry Quad



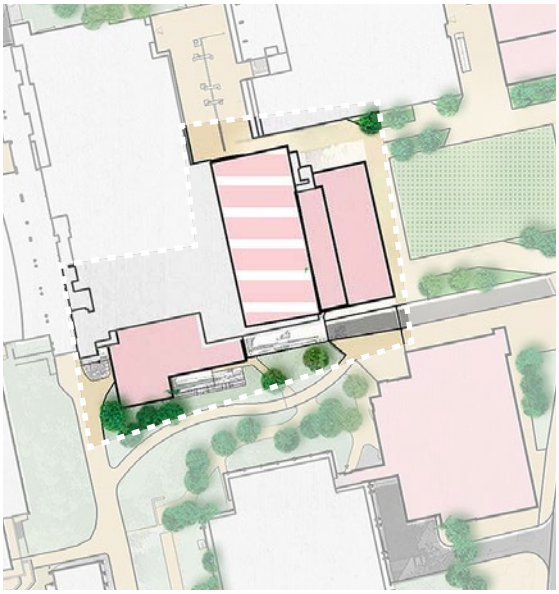
Massing Model View : Looking west toward new Entry Quad

Future Entry Quad framed by new development on three sides including the future Health Science Building to the South

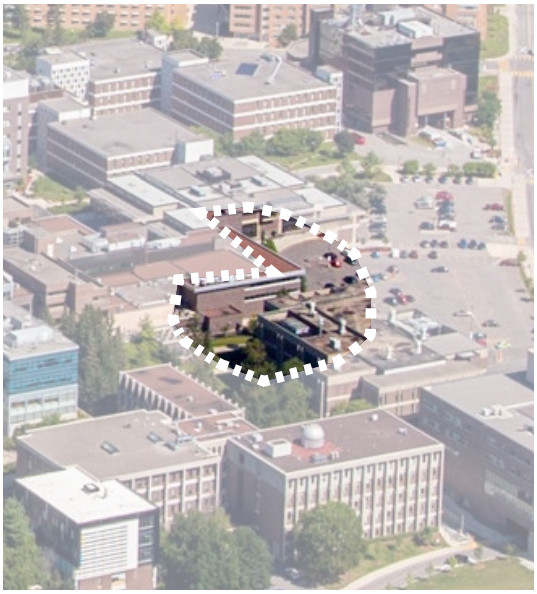
4.3 Additional West Campus Sites

University Centre Addition

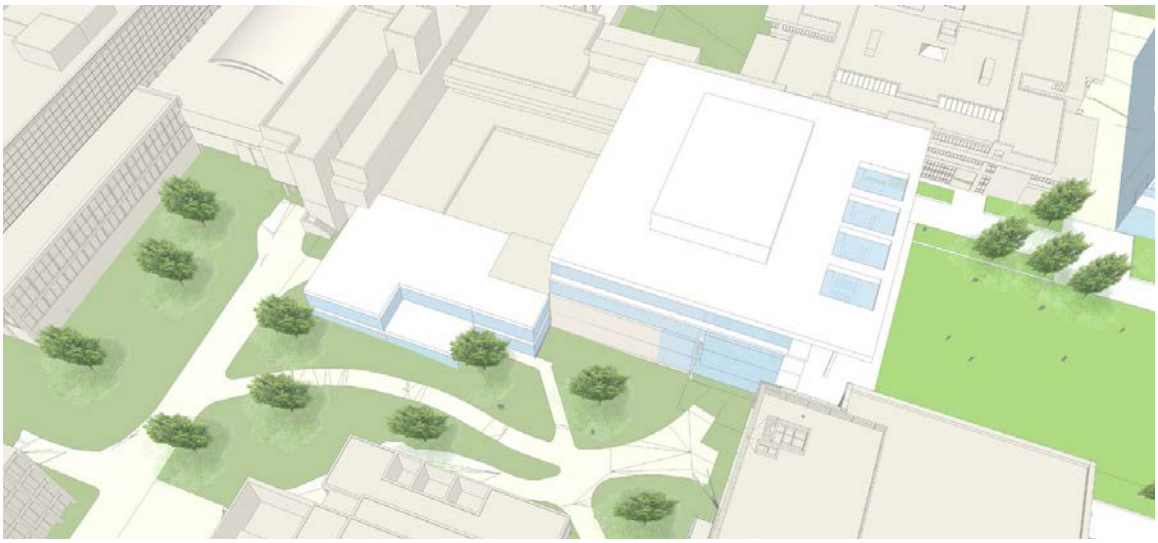
As the university grows, additional communal space may be needed, which can be added to the south and east side of the University Centre. This would help animate the adjoining large but underutilized open space to the south, while better framing the Entry Quad. In addition to the south expansion proposed in 2010., The building can be expanded to the east (facing the Entry Quad) and a vertical addition added to the newer portions of the building.



Entry Quad framed by an expanded University Centre



Existing aerial image highlighting University Centre additions

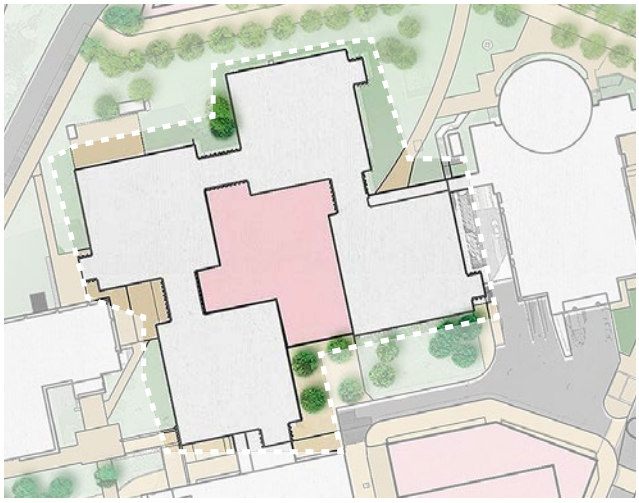


Massing Model View : Looking North toward the east and south additions to the University Centre

Mackenzie Courtyard Infill

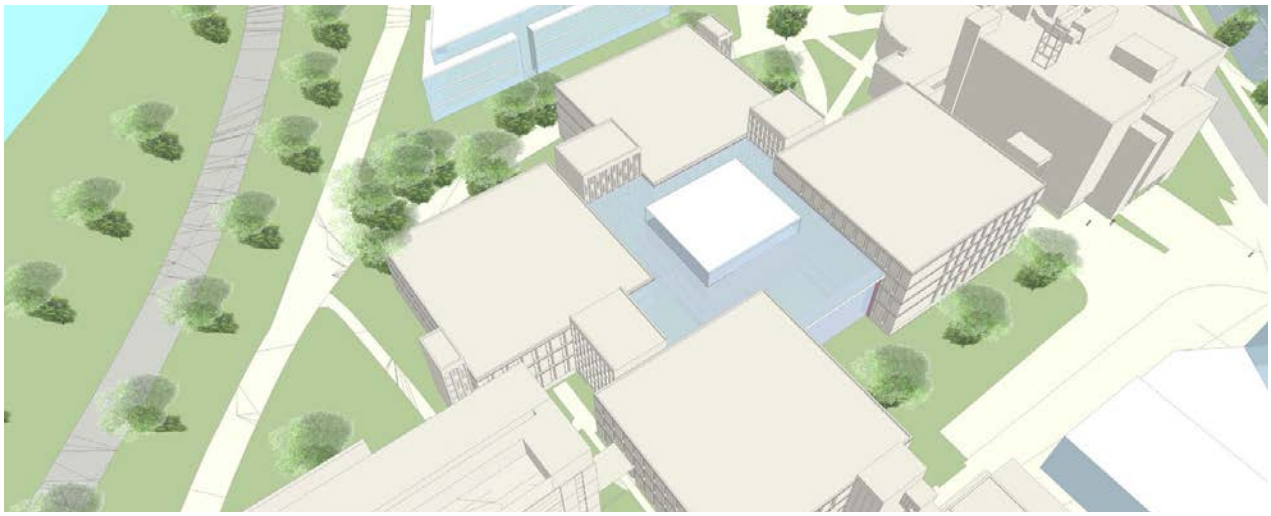
The Mackenzie Courtyard is underutilized as a campus gathering space, as the interior connections between the four pods are not well defined. This can be resolved through infilling. Generous public space for study and discussion on the ground floor could form the base of a perimeter atrium that provides and an additional 4-storeys of classroom and office space, while affording visual connections to the courtyard from the existing external windows. Connectivity between these uses would be provided on the upper levels with walkways spanning the atrium and connecting the pods.

In the interim, landscape improvements for the courtyard could be considered. This interim improvement has an opportunity to better respond to how the Engineering Students and Faculty use the space and provide a visual character that is representative of the department.



Future courtyard infill at the MacKenzie Building

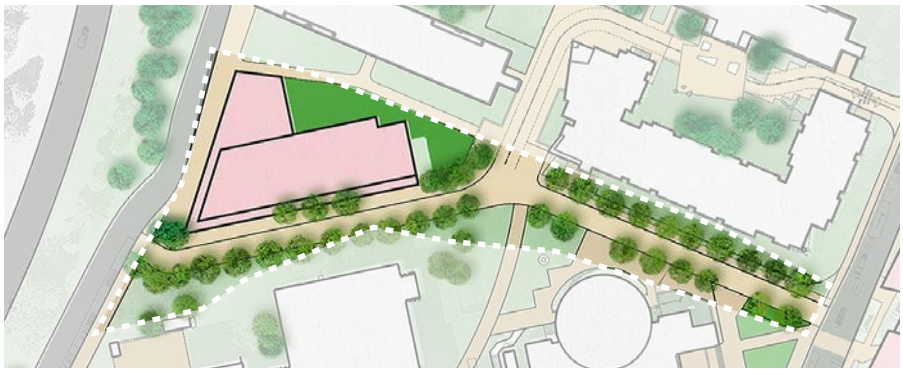
Existing aerial image highlighting the Mackenzie Building



Massing Model View : Looking north toward the courtyard Infill at the Mackenzie Building

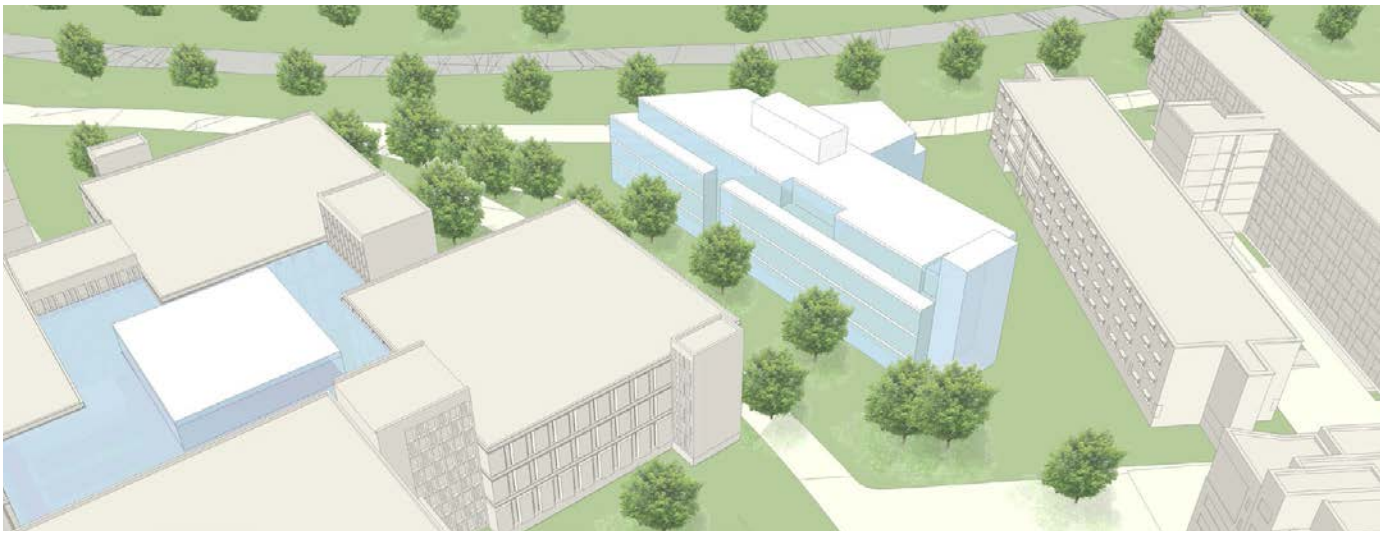
North Library Road

The temporary closure of Library Road was initiated following the 2010 Master Plan. A more formal landscape approach is recommended to formalize the closure and transform the area into a more inviting pedestrian environment. The path system can be designed to take emergency vehicles and can be positioned to protect for an academic building site on the northern side of the Core Campus. A detailed section and precedent images are provided on page 33 of this document.



Transformation of Library Road into a pedestrian only pathway

Existing aerial image highlighting the location of Library Road



Massing Model View : Looking west toward a new academic building located north of the pedestrianized Library Road

Parking Lot P1

Development of Parking Lot P1 offers the opportunity to overlook the Rideau Canal and provide views toward the Federal Experimental Farm. Parking beneath the building would use the existing ramp associated with the Library Annex.

Existing aerial image highlighting the P1 Parking Lot

Future academic building located on the P1 Lot

Massing Model View : Looking northeast towards P1 lot

Social Science Research

The Social Science Research Building is small, of temporary construction, and occupies a large site on the campus. A new building could provide additional space and strengthen the campus' river orientation with outlook terraces and a green forecourt. This site is a prime location where the new development can to reinforce a positive sense of arrival into the campus

Existing aerial image highlighting the Social Science Research Building

Future academic building located south of the Social Science Research Building

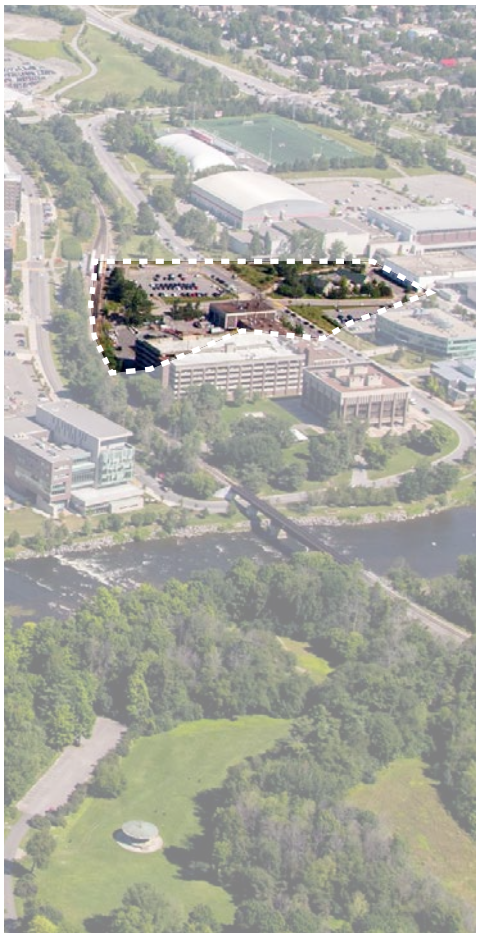
Massing Model View: Looking north towards future academic building

4.4 East Campus

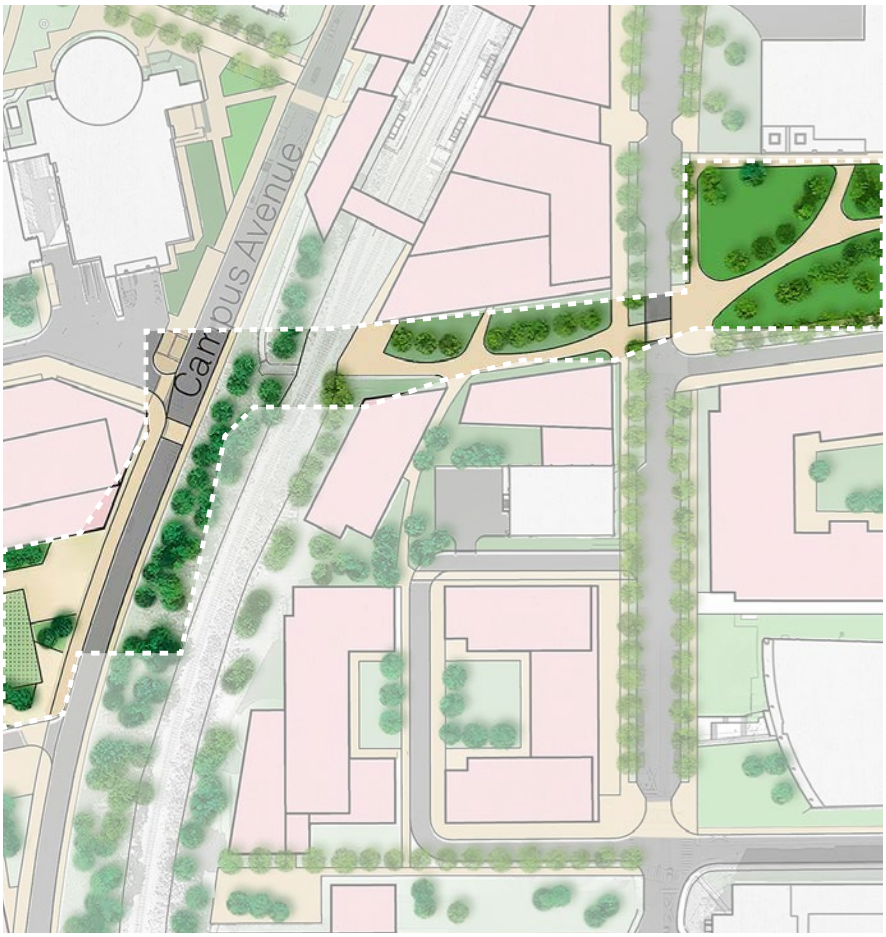
Site Works Reorganization

On the East Campus, three low density or end-of-life buildings and three surface parking lots offer the opportunity to increase land utilization. The Maintenance Building and Yard, once on the edge of the academic areas to the west, now increasingly in the central areas of Campus, takes up a large amount of valuable real estate. Similarly, the Day Care Centre could be replaced with a larger building in this area or in the Residential Campus. The parking structure has been recently upgraded but will reach the end of it usable life within the next 10-15 years. Replacing these three structures would free up a large area for more efficient redevelopment. The heating plant, however, would remain because of the great cost of relocation.

The cross-campus walk currently winds through this area. In the short term straightening the path and bringing the Maintenance Yard access drive closer to the heating plant will allow more effective subdivision of the area.



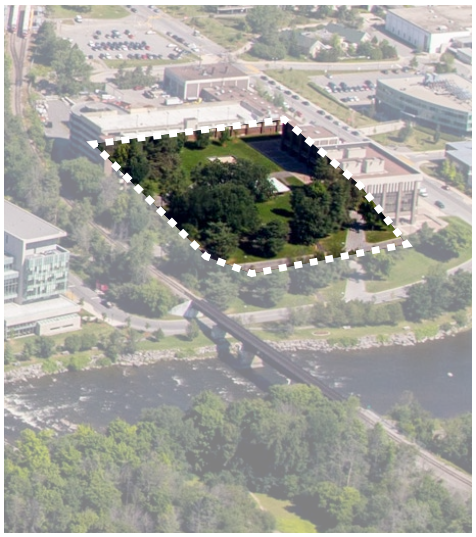
Existing aerial image highlighting the core area of the East Campus



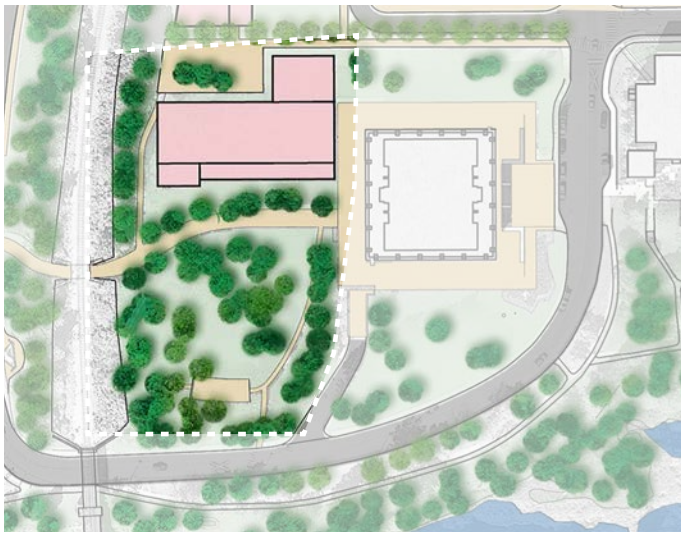
Reconfigured east-west centralized pedestrian and cyclist spine for the Campus

Alumni Park Backdrop

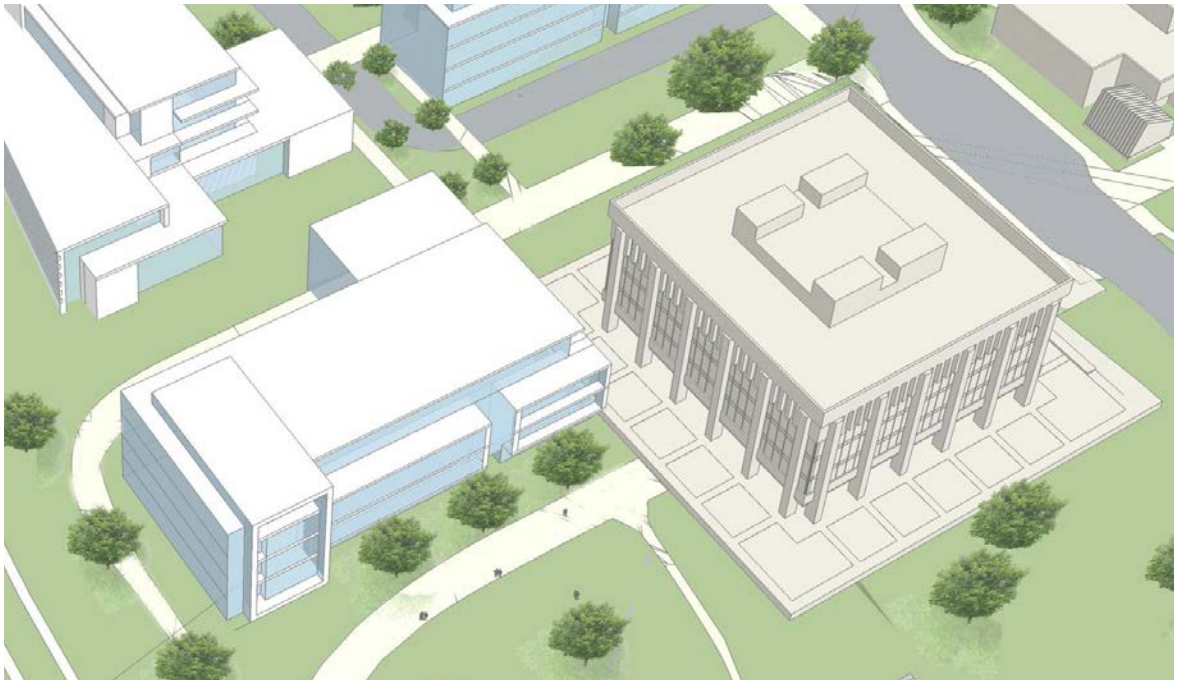
With the redevelopment of the East Campus, new development at the north end of Alumni Park provides the opportunity to animate the park with campus-wide uses on the ground floor and overlook terraces on upper floors. It can also improve connections between the East and West Campuses via a new southern tunnel or weather protected walkway. This would supplement an interior link which is presently only possible via a difficult northern route. If built before the demolition of the parking structure, it would act also as a visual buffer to the garage.



Existing aerial image highlighting the Alumni Park and future academic site



Future academic building located south of the existing East Campus parking structure



Massing Model View: Looking north towards future academic building

Over-Track Building

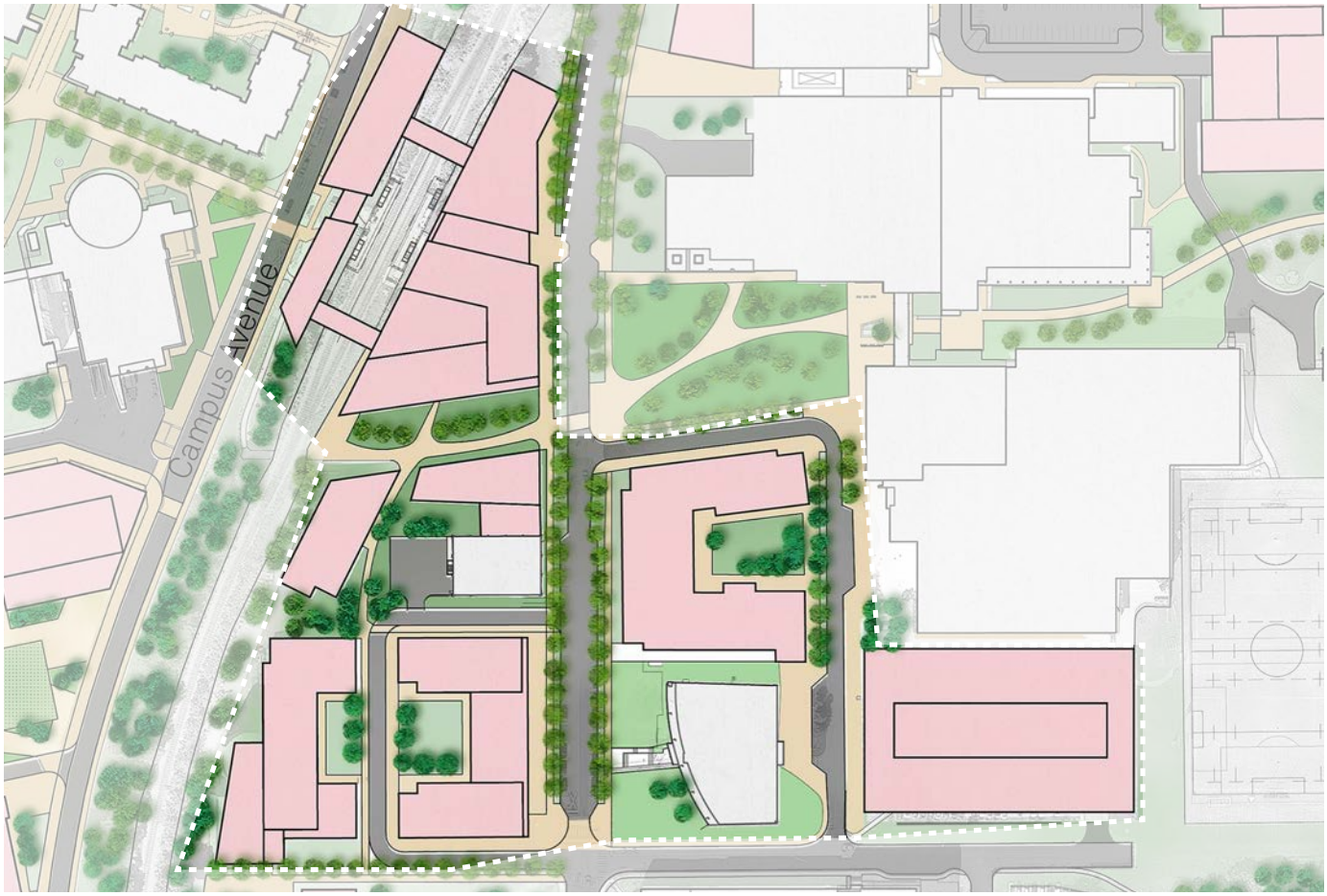
If the O-Train tracks are doubled as previously planned, there is the opportunity to utilize track air rights with a building encompassing the station, straddling the tracks and helping to connect East and West Campus. In the meantime, a first phase could be built on the east side, with the potential to be connected to a western wing at a later date.

Street and Quad

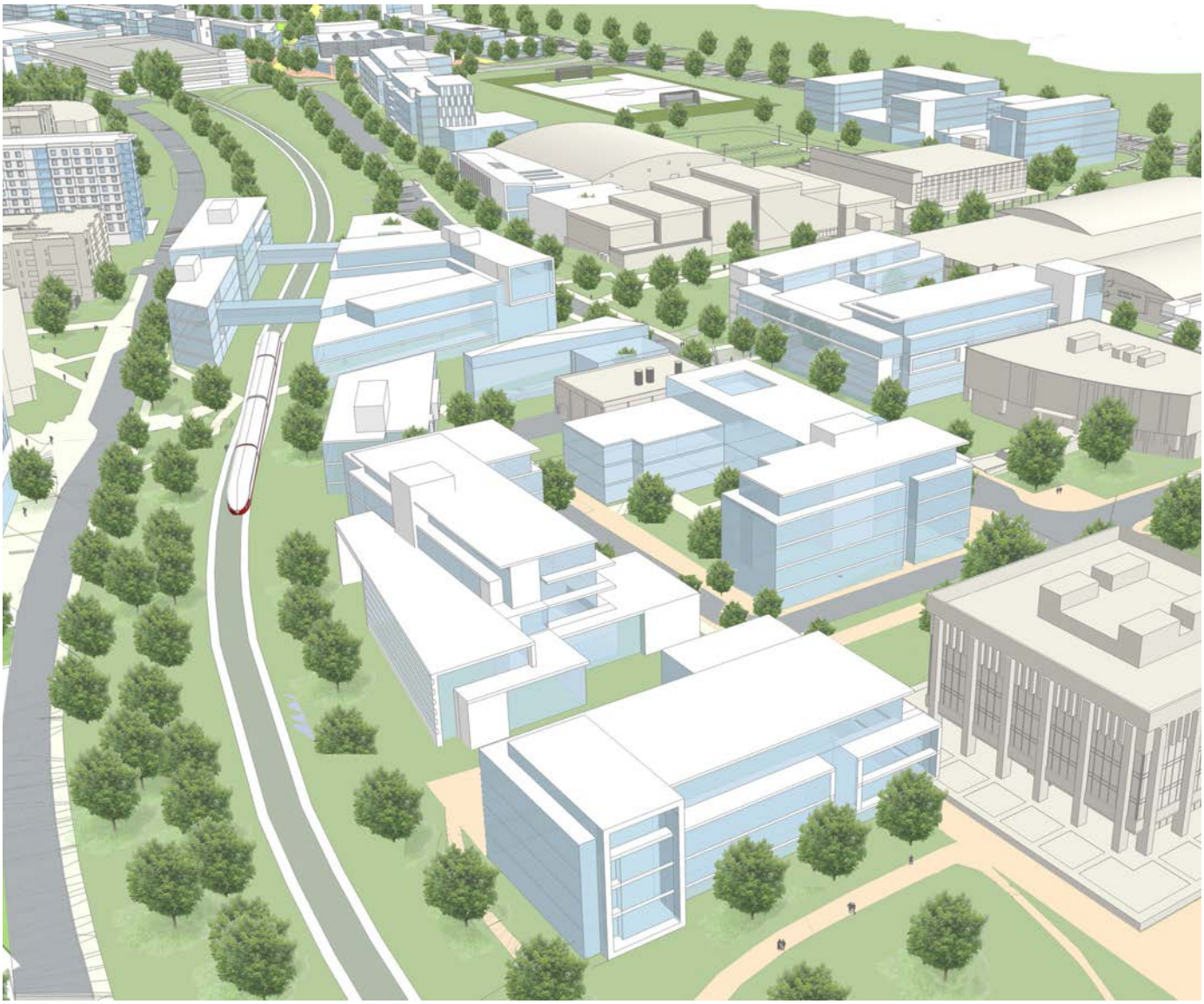
The East Campus will be organized by the street and a new quad flanked by buildings that provide communal uses at ground level. University Drive, also flanked and animated by new buildings, will change in character to become a more urban and multi-use vehicle/bicycle/pedestrian corridor.

Parking Structure

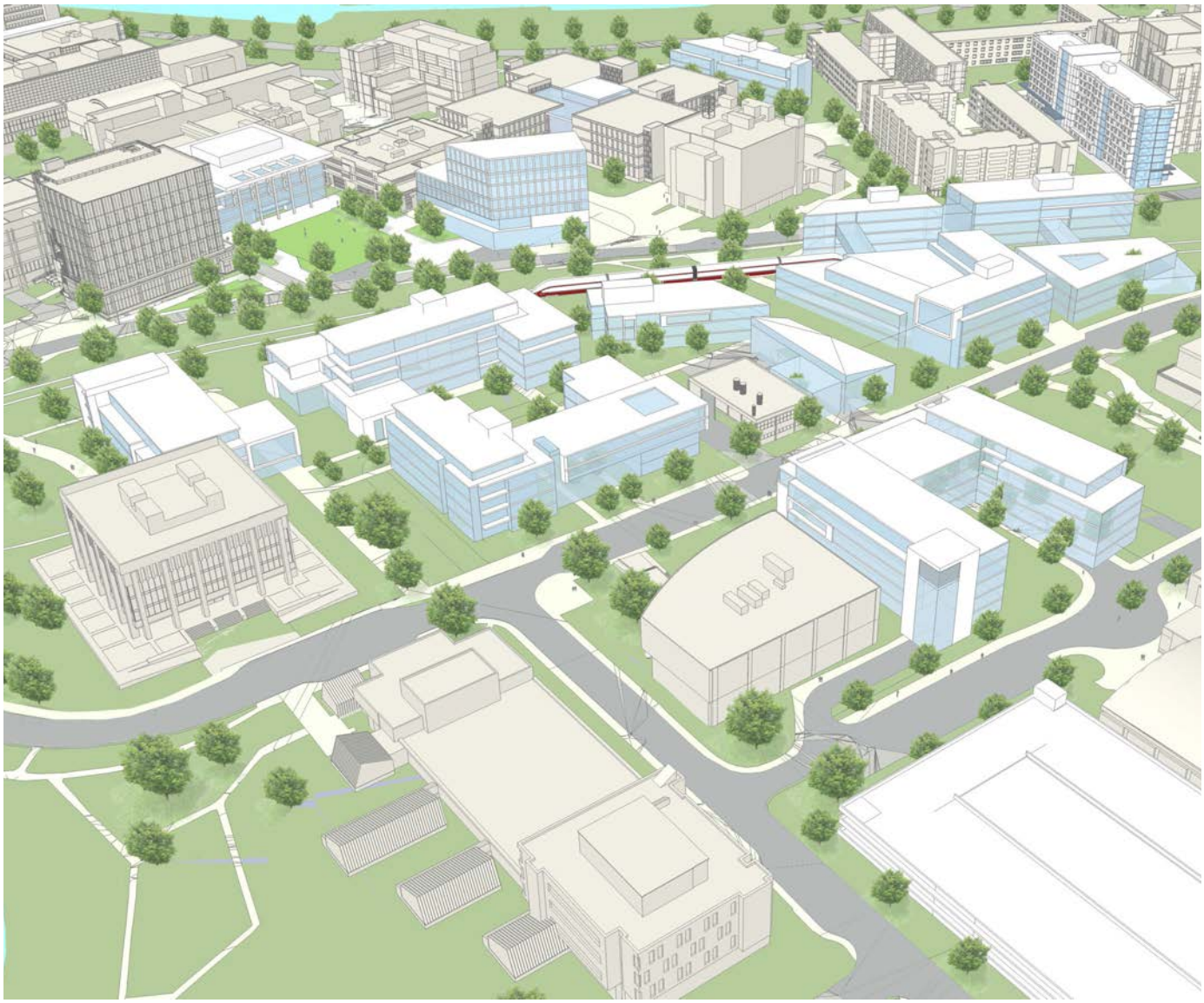
A new and larger parking structure is shown on Lot P3 to facilitate accessibility to the Academic Campus.



Demonstration Plan for the East Campus



Massing Model View: Looking north towards the reconfigured East Campus



Massing Model View: Looking west towards the reconfigured East Campus

4.5 Mid Campus

University Drive

The Campus Master Plan proposes that the maintenance yard be relocated from the East Campus to the current tennis bubble site. To the north is a site suitable for an institution affiliated with university programs but not requiring substantial student class-change requirements.

Bronson Avenue

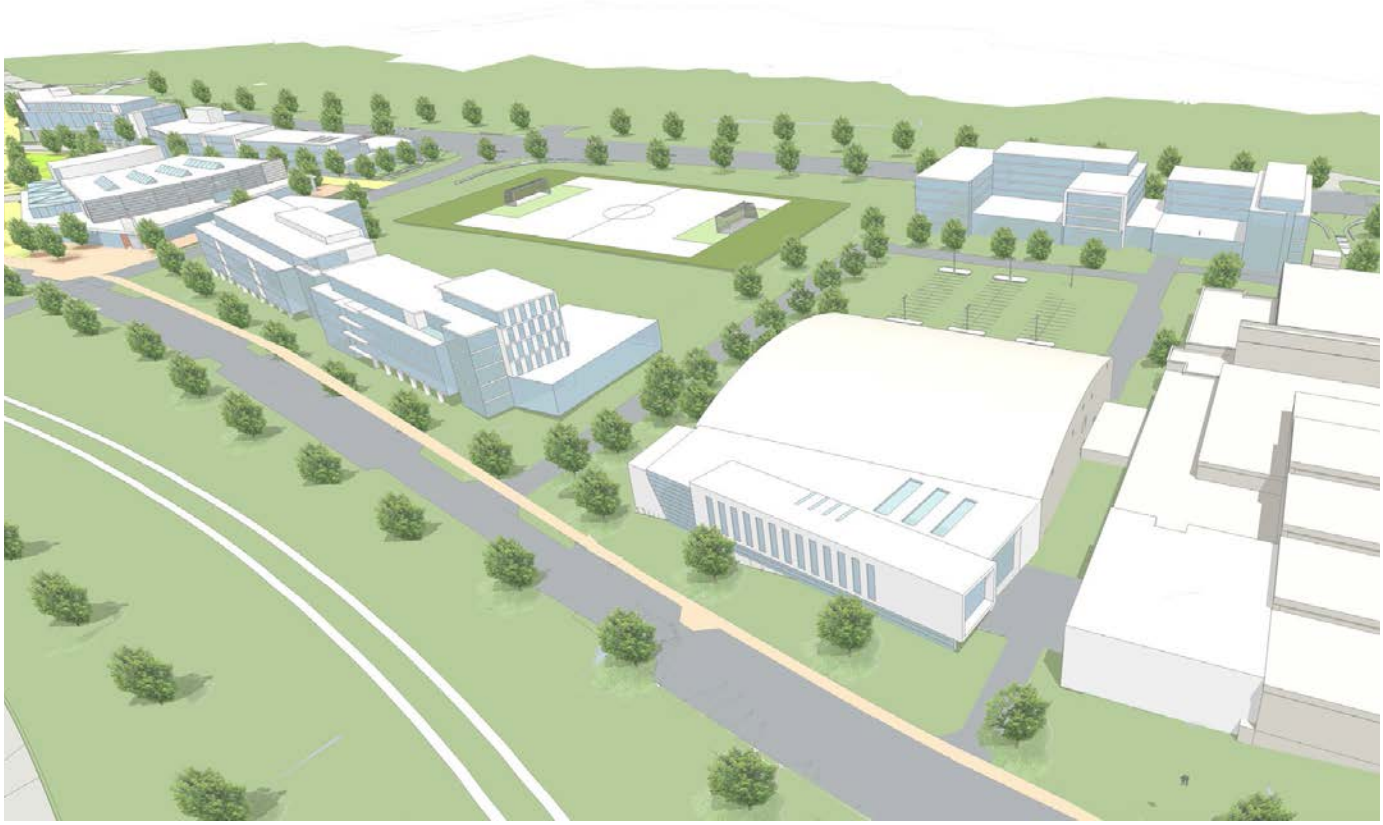
A larger site for similar institutional use, or for athletic expansion, faces Bronson Avenue, giving Carleton a stronger presence at the campus' eastern edge. The road serving the mid campus buildings and parking is also extended to Bronson Avenue, providing right-hand turn congestion relief at rush hours. The streetscape is given greater pedestrian emphasis with a wider tree-lined sidewalk and a well-articulated building entrance.

Future academic building located along University Drive and facing onto Bronson Avenue

Existing aerial image highlighting the Mid Campus

The Field House

The existing Field House has the ability to be expanded northwards as part of the buildings existing structural system. The plan also proposes an addition to the west of the Field House facing University Drive replacing the existing parking lot in that location.



Massing Model View : Looking east towards the sport field and Bronson Avenue

4.6 Residential Campus

The residential campus will expand northward, structured around an extended Campus Avenue and the central walk. The layout proposed establishes a series of courtyards and a streetscape framed by buildings along Campus Avenue. Design parameters for the scale and siting of new residence buildings is outlined in Section 04, which provides guidance with respect to creating usable open space to supports residence life.

Existing aerial image highlighting the Residential Campus

Future Residence Buildings expanding the Residential Campus northwards

Massing Model View: Looking north towards the expanded Residential Campus with taller gateway buildings located at the new Colonel By Drive entrance

4.7 North Campus

While currently used as parking, the North Campus provides a significant amount of developable land for a future campus focal point. Illustrated below is a compact, mixed-use campus organized around a central quad and tree-lined street network, and supported by structured and below grade parking. Buildings fronting Bronson Avenue address the street and provide a more established and welcoming pedestrian environment which an aim to establishing a stronger civic presence at the university.

Existing aerial image highlighting the north campus area

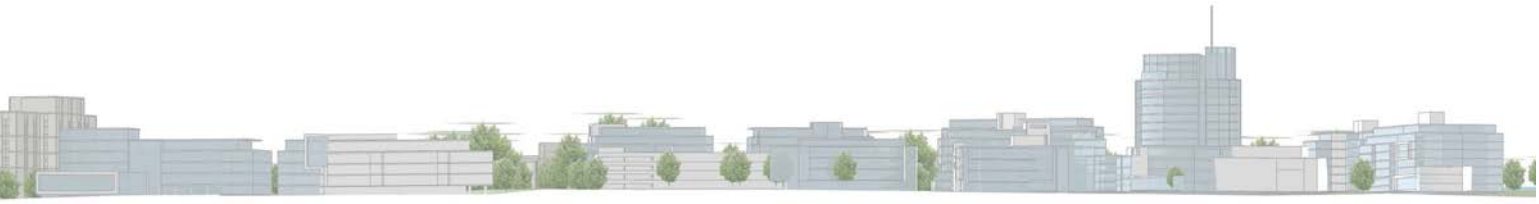
Future North Campus Build-out

Massing Model View : Looking north towards the expanded North Campus with taller buildings facing Dow's Lake and a mix of potential building scales and heights. All parking will be located in above or below grade structures

4.8 Campus Overview

Massing Model View: Looking north

Massing Model View : South Campus Elevation



Massing Model View : West Campus Elevation

Massing Model View: Looking west

5.0 IMPLEMENTATION

This section expands on the recommendations outlined in the previous sections, providing the University with a clear path for implementation, and an ongoing strategy for maintenance.


SPROTT


Legend
Academic Campus
C1 Core Area
I1 Infill
V1 Vertical Development
P1 New Parking Building
M1 Mid Campus
N1 North Campus
R1 Residential Campus
Colonel By Drive
Campus Avenue
University Drive
Bronson Avenue
Library Road
N4
N5
N3
N6
N2
P1
R8
N7
R7
R3
N8
N1
R6
R5
R2
N9
R4
R1
M1
M3
I5
M2
C6
C7
I4
C11
C5
C13
C8
V1
I3
P2
C12
C10
I1
I2
C4
C9
C2
C3
C1

5.1 Plan Implementation

An Approved Plan

The Campus Master Plan should be approved as University policy by the Board of Governors.

The Department of Facilities Management and Planning will ensure that every project is measured against the Campus Master Plan at all stages of the Project Development Process.

Updating the Plan

In order to respond to changing needs over time, the plan will evolve through amendments as necessary and updates every five years.

Plan Amendment: All projects must follow the principles of the Plan, or else an amendment is required. The Assistant Vice-President (Facilities Management and Planning) will review and advise as to whether a proposed project is consistent with the Plan, and will determine whether a major or minor amendment should be made. Major amendments – when the change would significantly affect the university communal interest or the quality of the campus environment – will reintroduce Steering Committee and campus community participation and must be approved by the Board of Governors. Minor amendments would be approved by the Vice-President (Finance and Administration), who will report the changes to the Building Program Committee of the Board of Governors and the campus community.

Plan Monitoring: Each year, a report on any measures taken to implement the Plan is made to the Building Program Committee of the Board of Governors.

General Updates: The Plan will be publicly reviewed at five year intervals, and approved by the Board of Governors. The principles and demonstration plans will be reconsidered, and accumulated amendments incorporated.

5.2 Supplementary Planning Studies

Future supplementary planning studies (such as Transportation Studies) should be formally approved as sub-sets of the Campus Master Plan, and thus have the status of policy. If parts of a supplementary plan contradict the Plan and the contradiction is justifiable and desirable, and if this occurs in between the five-year general review period, a plan amendment is required. If the timing coincides with that of the general review, the supplementary plan can be affirmed as part of that review.

5.3 Testing Projects

The Assistant Vice-President (Facilities Management and Planning) or designate (The Campus Plan Administrator) tests all projects against the Plan at all stages, and reports consistency or otherwise to the Board.

When a potential project is identified, an appropriate site in the Plan is selected. An important criterion is how the project's program and location will contribute to the needs of the campus as a whole, as well as to the needs of the specific group of users, by meeting a majority of the campus plan principles.

During schematic design, the Plan's principles and demonstration plans provide guidance, and measures for establishing compliance.

Each submission for approval at the Board's Building Program Committee includes a report on the project evaluated against the Plan.

5.4 Selecting Sites: A Checklist

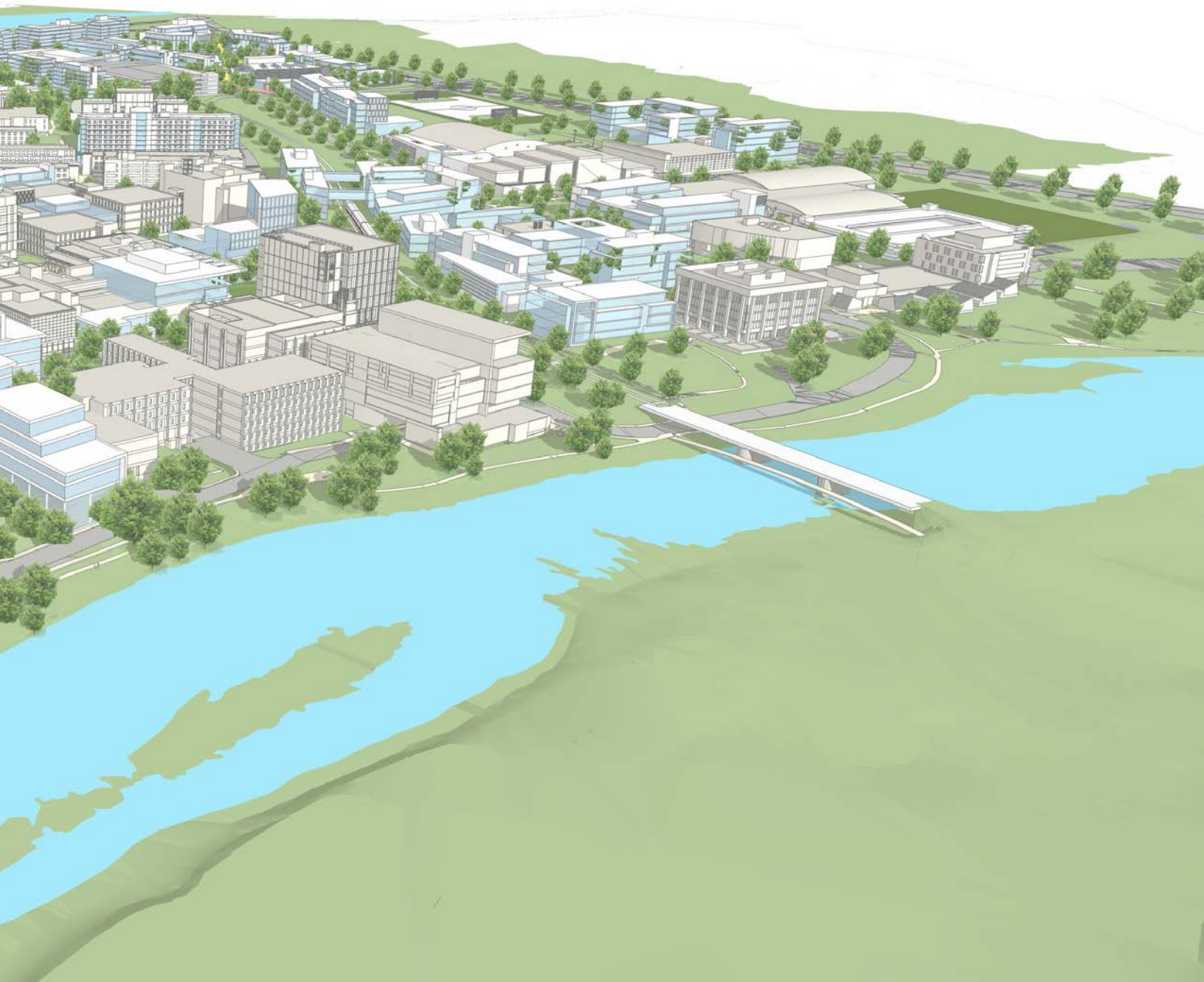
Guidance for site selection is provided throughout this report. The most relevant points are summarized here, with references to the source in the Plan. The palette of sites from which a selection can be made are contained in the Massing Studies section.

1. **Building type:** If an academic function, is it within the Academic Campus? See Strategy 2, Compact Academic and Research Campus. If an athletic or non-academic function but related to university programs, is it within the Mid Campus? If a residential function, is it within the Residential Campus?
2. **Program size:** How closely does the size of buildings match the size of a site? If a potential site can accommodate a greater program, can it be subdivided? See Massing Studies and Appendix A: Statistics.
3. **Programmatic relationships:** How closely connected is the site to related programs for ease of student and faculty interchange?
4. **Landscape Design:** How does the building and its proposed uses address the surrounding opens paces? See Strategy 4, Landscape Design.
5. **Space management:** Can the program be met without building on a new site? See Strategy 15, Space Management.
6. **Contribution to spatial structure:** How can the program and building type enhance the spatial structure of the campus? See Strategy 3, Campus structure and Strategy 14, Development Priority.
7. **Movement:** How would development enhance movement priorities? See Strategy 6, Movement.
8. **Connections:** How would development encourage connections and presence to Bronson Avenue, the Rideau River and Massey Park, and the Canal and Arboretum? See Strategies 7, Connections to Surroundings; 10, River Access; and 14, Development Priority.
9. **Parking:** Can the budget accommodate the added cost of structured parking? See Strategy 11, Parking.
10. **Development priority:** How well can the site and program meet campus-wide development priorities? See Strategy 14.
11. **Cost:** What is the comparative cost for developing the site for new infrastructure, loss of parking, need to build structured parking, removal of buildings, etc.

The greatest transformation of the campus will come from the completion of two projects: the Entry Quad and flanking buildings, and the Main Quad Revitalization including the Dunton Tower podium addition and the replacement of Paterson Hall and the Life Sciences Building.

APPENDIX A

This appendix provides the gross floor areas of the massing models presented in this plan document.



APPENDIX A


Legend
Academic Campus
C1 Core Area
I1 Infill
V1 Vertical Development
P1 New Parking Building
M1 Mid Campus
N1 North Campus
R1 Residential Campus
Colonel By Drive
Campus Avenue
University Drive
Bronson Avenue
Library Road

I1. Dunton Towor

Flrs	Area s.m.	Area s.f.
1	1,818	19,569
2	1,103	11,873
3	1,130	12,163
4	1,112	11,969
	5,163	55,574

I2. UniCentre Expansion

Flrs	Area s.m.	Area s.f.
1	590	6,351
2	514	5,533
	1,104	11,883

I3. UniCentre Expansion

Flrs	Area s.m.	Area s.f.
1	920	9,903
2	920	9,903
3	920	9,903
4	920	9,903
	3,680	39,611

I4. McKenzie Infill

Flrs	Area s.m.	Area s.f.
1	1,297	13,961
2	363	3,907
3	363	3,907
	2,023	21,775

I5. Fieldhouse

Flrs	Area s.m.	Area s.f.
1	1,760	18,944
2	1,760	18,944
3	1,760	18,944
	5,280	56,833

V1. UniCentre Expansion

Flrs	Area s.m.	Area s.f.
1	965	10,387
	965	10,387

Building Expansions	**18,215**	Area s.m.
	196,064	Area s.f.

C1. S.S.R. Replacement

Flrs	Area s.m.	Area s.f.
1	2,647	28,492
2	2,535	27,286
3	2,432	26,178
4	2,432	26,178
5	1,607	17,298
6	803	8,643
	12,456	134,075

C2. Parking Lot 1

Flrs	Area s.m.	Area s.f.
1	2,255	24,273
2	2,255	24,273
3	1,330	14,316
4	1,330	14,316
5	1,330	14,316
6	1,175	12,648
	9,675	104,141

C3. Paterson/L.S.R. Replacement

Flrs	Area s.m.	Area s.f.
1	5,120	55,111
2	5,120	55,111
3	5,120	55,111
4	5,120	55,111
5	5,120	55,111
6	4,320	46,500
7	2,450	26,372
	32,370	348,427

C4. Parking Lot 2 S.

Flrs	Area s.m.	Area s.f.
1	1,730	18,622
2	1,050	11,302
3	1,520	16,361
4	1,520	16,361
5	1,520	16,361
6	1,520	16,361
7	1,520	16,361
8	1,520	16,361
	11,900	128,090

C5. Parking Lot 2 N.

Flrs	Area s.m.	Area s.f.
1	2,133	22,959
2	2,133	22,959
3	2,133	22,959
4	2,133	22,959
5	2,133	22,959
6	884	9,515
7	884	9,515
8	884	9,515
	13,317	143,343

C6. Library Road

Flrs	Area s.m.	Area s.f.
1	1,515	16,307
2	1,515	16,307
3	950	10,226
4	950	10,226
	4,930	53,066

C7. Over Rail

Flrs	Area s.m.	Area s.f.
1	6,393	68,814
2	5,567	59,923
3	1,882	20,258
4	1,220	13,132
	15,062	162,126

C8. Parking Lot 11

Flrs	Area s.m.	Area s.f.
1	3,160	34,014
2	3,160	34,014
3	3,160	34,014
4	2,425	26,102
5	2,425	26,102
	14,330	154,247

C9. Alumni Park Back

Flrs	Area s.m.	Area s.f.
1	1,614	17,373
2	1,343	14,456
3	1,140	12,271
4	1,140	12,271
	5,237	56,371

C10. Maintenance Replacement

Flrs	Area s.m.	Area s.f.
1	2,310	24,865
2	2,310	24,865
3	2,310	24,865
4	1,600	17,222
5	1,600	17,222
	10,130	109,038

C11.Parking Lot 4 E.

Flrs	Area s.m.	Area s.f.
1	897	9,655
2	897	9,655
3	663	7,136
4	663	7,136
5	663	7,136
	3,783	40,720

C12. Garage Replacement

Flrs	Area s.m.	Area s.f.
1	2,446	26,328
2	2,153	23,175
3	2,153	23,175
4	1,502	16,167
5	1,502	16,167
	9,756	105,013

C13. Parking Lot 4 W.

Flrs	Area s.m.	Area s.f.
1	900	9,688
2	900	9,688
3	900	9,688
4	790	8,503
5	790	8,503
	4,280	46,069

West Campus	**84,648**	Area s.m.
	911,143	Area s.f.
East Campus	**62,578**	Area s.m.
	673,583	Area s.f.
Total Core	**147,226**	Area s.m.
	1,584,726	Area s.f.

M1. Tennis Replacement

Flrs	Area s.m.	Area s.f.
1	2,087	22,464
2	2,087	22,464
3	2,087	22,464
4	2,087	22,464
5	2,087	22,464
	10,435	112,321

M2. Bronson Frontage

Flrs	Area s.m.	Area s.f.
1	7,089	76,305
2	6,669	71,784
3	4,809	51,764
4	4,809	51,764
5	4,809	51,764
6	2,049	22,055
	30,234	325,436

M3. New Maintenance

Flrs	Area s.m.	Area s.f.
1	2,387	25,693
2	2,387	25,693
3	1,479	15,920
4	1,479	15,920
5	1,479	15,920
	9,211	99,146

Mid Campus	**49,880**	Area s.m.
	536,903	Area s.f.

N1. North Campus

Flrs	Area s.m.	Area s.f.
1	4,633	49,869
2	4,633	49,869
3	4,045	43,540
4	2,806	30,204
5		0
	16,117	173,482

N2. North Campus

Flrs	Area s.m.	Area s.f.
1	3,165	34,068
2	3,165	34,068
3	3,165	34,068
4	2,055	22,120
5	2,055	22,120
	13,605	146,443

N3. North Campus

Flrs	Area s.m.	Area s.f.
1	4,227	45,499
2	4,227	45,499
3	4,227	45,499
4	4,227	45,499
5	2,049	22,055
6	2,049	22,055
	21,006	226,106

N4. North Campus

Flrs	Area s.m.	Area s.f.
1	3,300	35,521
2	3,300	35,521
3	2,850	30,677
4	2,850	30,677
5	2,850	30,677
6	2,850	30,677
7	2,850	30,677
8	2,850	30,677
	23,700	255,104

N5. North Campus

Flrs	Area s.m.	Area s.f.
1	1,136	12,228
2	1,136	12,228
3	1,136	12,228
4	1,136	12,228
5	1,136	12,228
6	1,136	12,228
7	1,136	12,228
8	1,136	12,228
	9,088	97,822

N6. North Campus

Flrs	Area s.m.	Area s.f.
1	2,290	24,649
2	2,290	24,649
3	2,007	21,603
4	2,007	21,603
	8,594	92,505

N7. North Campus

Flrs	Area s.m.	Area s.f.
1	1,038	11,173
2	1,038	11,173
3	1,038	11,173
4	1,038	11,173
	4,152	44,692

N8. North Campus

Flrs	Area s.m.	Area s.f.
1	1,240	13,347
2	1,240	13,347
3	1,240	13,347
4	1,240	13,347
	4,960	53,389

N9. North Campus

Flrs	Area s.m.	Area s.f.
1	5,534	59,567
2	1,992	21,442
	7,526	81,009

North Campus	**108,748**	Area s.m.
	1,170,553	Area s.f.

P1.

Flrs	Area s.m.	Area s.f.
1	5,990	64,476
2	5,990	64,476
3	5,990	64,476
4	5,990	64,476
	23,960	257,903

P2.

Flrs	Area s.m.	Area s.f.
1	5,383	57,942
2	5,383	57,942
3	5,383	57,942
4	5,383	57,942
	21,532	231,768

Parking Garage	**45,492**	Area s.m.
	489,671	Area s.f.

R1. Residence

Flrs	Area s.m.	Area s.f.
1	1,127	12,131
2	1,127	12,131
3	1,127	12,131
4	902	9,709
5	902	9,709
6	902	9,709
7	902	9,709
	6,989	75,229

R2. Residence

Flrs	Area s.m.	Area s.f.
1	997	10,732
2	997	10,732
3	997	10,732
4	759	8,170
5	759	8,170
6	759	8,170
7	759	8,170
	6,027	64,874

R3. Residence

Flrs	Area s.m.	Area s.f.
1	1,244	13,390
2	1,244	13,390
3	1,244	13,390
4	1,244	13,390
5	1,085	11,679
6	1,085	11,679
7	1,085	11,679
	8,231	88,598

R4. Residence

Flrs	Area s.m.	Area s.f.
1	1,996	21,485
2	1,996	21,485
3	1,996	21,485
4	1,996	21,485
	7,984	85,939

R5. Residence

Flrs	Area s.m.	Area s.f.
1	574	6,178
2	574	6,178
3	574	6,178
4	574	6,178
	2,296	24,714

R6. Residence

Flrs	Area s.m.	Area s.f.
1	605	6,512
2	605	6,512
3	605	6,512
4	605	6,512
	2,420	26,049

R8. Residence / Commons

Flrs	Area s.m.	Area s.f.
1	1,279	13,767
2	1,279	13,767
3	1,279	13,767
4	1,279	13,767
5	744	8,008
6	744	8,008
7	744	8,008
8	744	8,008
9	744	8,008
10	744	8,008
11	744	8,008
12	744	8,008
13	744	8,008
14	744	8,008
15	744	8,008
	13,300	103,118

R7. Residence

Flrs	Area s.m.	Area s.f.
1	2,104	22,647
2	2,104	22,647
3	2,104	22,647
4	2,104	22,647
5	958	10,312
6	958	10,312
7	958	10,312
8	958	10,312
9	958	10,312
10	958	10,312
	14,164	152,460

Buildings Removed	Area s.m.
Soc. Sci. Res. Bldg.	1,335
Paterson Hall	7,431
Life Sciences	2,350
Daycare	526
Tennis Bubble	3,345
Parking Garage	23,862
Maintenance	4,072
Total Removed	**42,921**
Current Area (2016)	442,220
Future Remaining	**399,299**

Residential Campus	**61,411**	Area s.m.
	661,022	Area s.f.

Total New Buildings	**430,972**	Area s.m.
	4,638,940	Area s.f.
Existing Remaining Bldgs	**399,299**	Area s.m.
	4,298,015	Area s.f.
Grand Total	**830,271**	Area s.m.
	8,936,954	Area s.f.
Approx. Land Area	**597,122**	Area s.m.
Density	**1.39**	FSI