

Carleton University Capital Plan 2023



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Executive Summary

The Capital Plan sets out the major capital projects over \$5 million which the university prioritizes. It ensures that the university's built environment can support the academic mission and programming.

It outlines the capital planning process, as well as the Board of Governors' role in that process. It brings together the major capital projects that are underway, as well as identifies projects under consideration.

Details about each capital project are provided, along with the estimated costs and sources of funding. Having this information compiled within one document provides a full picture of capital planning at Carleton; specific projects are reviewed and approved individually.

This plan will be updated annually and presented to the Board of Governors. Individual project updates will be provided to the Building Program Committee four times a year.



Introduction

Situated on unceded Algonquin territory, Carleton University was founded by the community in 1942 to meet the needs of veterans returning from the Second World War. Over time, the student population outgrew its modest beginnings on First Avenue at what is now Glebe Collegiate, and land was purchased to develop Carleton University on a triangle of land between the Rideau River and the Rideau Canal, a UNESCO World Heritage Site. From its modest beginning to today, Carleton was and remains an integral part of the Ottawa community.

Its thriving campus accommodates more than 30,000 students, 1,000 faculty and 1,450 staff. Our main campus is now supplemented by two satellite locations that further connect Carleton to the broader Ottawa community. CU@Kanata is an innovation space in the heart of the national capital's tech hub, while Carleton's Dominion-Chalmers Centre provides an active arts, performance and learning space in the heart of downtown.

Our capital planning is guided by a number of strategic plans including Carleton's Strategic Integrated Plan, the Campus Master Plan, the Outdoor Space Master Plan and the Transportation Plan. These are supported by our commitment to sustainability and the goals outlined in the Strive for Sustainability Plan and our Energy Master Plan.

Over the last five years, one building addition, and two new buildings have been constructed – the Faculty of Engineering was expanded with the addition of its Design Centre, and the new Health Sciences Building and Nicol Building, home to the university's Sprott School of Business, were completed.

The newest crown jewel to the campus is a 450-bed student residence that is currently under construction and which will be the anchor to the Bronson Avenue entrance to the university. When the new student residence is completed in 2025, it will bring to 50 the number of buildings on campus. Projects to upgrade and renovate the Loeb Building, Paterson Hall and an expansion of the Terangga Commons Dining Hall and Kitchen to meet future growth of the student residence population, are underway.

We are always planning for the future and to that end, designs and preliminary plans are in the works for two potential state-of-the-art buildings including a Regional Aquatics Centre and Wellness Hub to compliment the Athletics precinct, and the Sustainability Research Centre to further expand the Engineering hub of buildings.

Our Campus Master Plan and other plans identify many exciting opportunities for future capital investments. Our Capital Plan provides the current status of that work.

Developing Capital Projects

The Process

The development of major capital projects (\$5 million or more) is overseen by the Board of Governors and evolves through multiple stages. The process starts with the identification of needs, key stakeholders and an executive sponsor. Once the business case is established by the Project Committee, the project comes to the Board for a series of approvals.

There are three principal approval steps at the Board:

1. **Capital proposal form:** The capital proposal form focuses on the business case and includes a concept design and preliminary (class D) cost estimates. Board approval provides authorization to invest in the development of more detailed designs and estimates.
2. **Project Planning report:** The project planning report focuses on schematic designs and includes more refined cost estimates (class C) and proposed funding sources. Board approval provides authorization to move to working drawings.
3. **Project Implementation report:** The project implementation report includes working drawings, a more refined (class B) cost estimate and funding sources. It includes details on schedules and cashflows. Board approval provides authorization to begin the tender process and start construction.

Once the project is underway, regular project status reports are provided. Upon completion of the tender process, a final (class A) cost estimate is provided. The Board's Building Program Committee and Finance Committee are updated at every meeting regarding the status of all ongoing capital projects. A Project Conclusion Report is filed at the end of every major capital project and includes lessons learned from the project implementation.

Partnerships

Another example of the benefit of partnership, is the consultation held with the Rideau Valley Conservation Authority (RVCA) during the development of the current Campus Master Plan. As a result of information provided by the RVCA, the plan better reflects the flood plain information. Due to our location, Carleton's planning process often requires and benefits from consultation and collaboration with a number of key external stakeholders including, but not limited to:

- City of Ottawa
- National Capital Commission (NCC)
- Rideau Valley Conservation Authority
- OC Transpo

Over the lifespan of the expansion of the Light Rail Transit (LRT), Carleton and the City of Ottawa have been working very closely as the tracks run through the centre of campus. This requires collaboration between the two entities to co-ordinate the impact on our campus for various activities of the construction.

The Planning Context

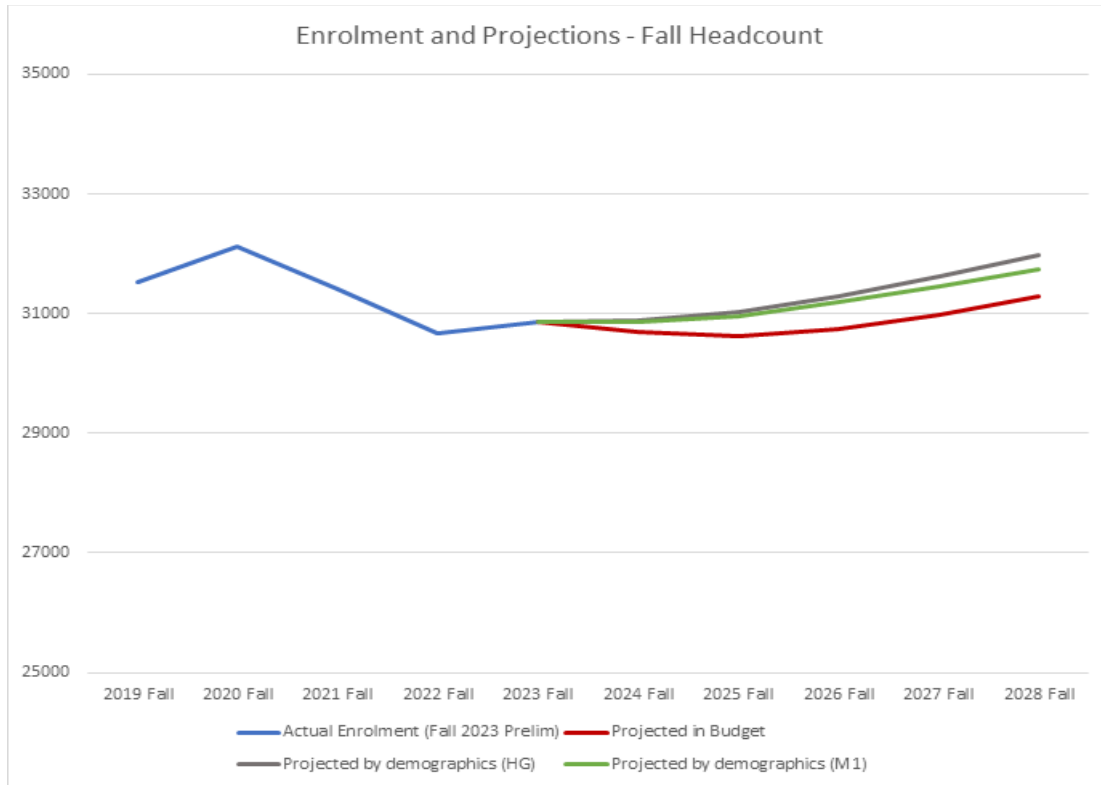
Slow Enrolment Growth

Following many years of steady and modest growth in enrolment of undergraduates, Carleton has seen a decrease in recent years in entering cohorts. Those decreases have been moderated somewhat by increases in upper-year retention with more and more students staying until graduation. The flow through of these smaller entering cohorts is why Carleton is projecting enrolment declines until 2026. Demographic projections over the planning horizon lead us to expect growth in the 18-year-old population. This should facilitate return to pre-pandemic enrolment levels for undergraduates.

For many years, graduate enrolment growth was limited due to the funding model that controlled the number of funded graduate spaces. In recent years, there were opportunities to grow beyond those historical caps, as well as opportunities to meet international student demand. The result has been a steady growth in graduate students, which is projected to continue at a modest pace as past growth flows through and intake is increased largely through new programs.

The projections in the charts below include the assumptions on which we base our budget, as well as projections based on Statistics Canada projections – Medium Growth scenario (M1) and High Growth scenario (HG) for Ontario. Much of this growth comes most of this growth is in the Greater Toronto Area (GTA), and there will require enhanced effort to tap into markets outside of Ottawa.

Our current projections suggest it will be at least 2027 before student numbers return to pre-pandemic levels.



Aging Infrastructure

Similar to other Canadian universities, Carleton has an aging building infrastructure. Our current building asset portfolio has an average building age of 40 years. Managing these assets requires carefully allocating the annual Capital Renewal Deferred Maintenance (CRDM) funding and provincially-funded Facilities Renewal Program (FRP) budget to address our campus community's diverse and changing needs while mitigating infrastructure risk.

The Capital Renewal Plan is currently in year nine of Carleton's 10-Year CRDM commitment. The CRDM addresses many needs, including improved electrical and plumbing systems, ventilation, building envelopes, interior finishes, site infrastructure (sewer/storm/watermain) and preventative maintenance. By addressing base building and site infrastructure issues first, the university will decrease the risks and costs associated with unexpected failures, unplanned disruptions on campus, and ensure that base building systems can adequately handle future renovations and research requirements.

Transportation Challenges

There has been significant investment in initiatives to improve traffic flow on campus, as per the Transportation Plan. Enhancements to the Bronson Avenue intersection to campus includes an additional northbound, left-turn lane to facilitate exit from campus,

more pedestrian-friendly sidewalks and crosswalks, and improved lighting. Additional enhancements included a roundabout that was added near the P18 garage, as well as a new wider bridge that spans the O-Train tracks.

The Transportation Plan also recommended a third access point to campus, which led to the creation of Stadium Way, providing another exit for vehicle traffic. The campus is serviced by OC Transpo and data collected for the Transportation Plan identified an opportunity to provide improved routing with the expansion of Raven Road to Bronson Avenue. The construction of this extension was a collaboration between Carleton University, the City of Ottawa and OC-Transpo. This bus-only access point, improves southbound bus traffic flow.

Future Vision

Master Planning Documents

The vision for Carleton's campus is outlined in the Campus Master Plan (CMP), a five-year plan that presents a potential vision for the future. It takes into consideration how the campus' special attributes can be enhanced over time. The plan's "big moves" recommend enhancements to our green space, moving toward more pedestrian-friendly streets, pathways and gateways, as well as how to highlight natural features. A stormwater management approach is explored and potential development sites are also identified for consideration.

The CMP is supported by the Outdoor Space Master Plan and the Transportation Plan, which operationalize elements of the CMP. Many other key planning documents also inform our Capital Plan including the Strategic Integrated Plan, the Carleton Academic Plan and several other campus-wide and sector-specific plans.

Governance of the Capital Plan

The Office of the Vice-President (Finance and Administration) and the Associate Vice-President (Facilities Management and Planning) are accountable for reviewing and updating this plan and the priorities identified within it.

An update on the Capital Plan will be presented annually to the Board of Governors, in addition to the updates on capital projects provided to the Building Program Committee four times a year.

Projects Underway



New Student Residence

Project Intent

The new student residence building will provide 450+ beds for first-year students, as well as various types of amenity spaces for all students on campus. The building is designed to promote and enhance a student focused residential community experience.

Project Scope

- The design of a residence building housing 450+ students with living and social spaces that support the first-year experience and Carleton University's mission and vision.
- A combination of single- and double- style bedrooms with semi-private or private bathrooms.
- Significant consideration for students with exceptional needs living in our community and amenities and spaces required.
- A first floor (or main floor) that provides amenity space for students including (but not limited to):
 - Welcoming entry
 - Study space
 - Communal lounge space
 - Social space (such as maker space, games room, etc.)
 - Laundry facilities
 - Fitness space (such as work out room, yoga area, etc.)
 - Common lounge space
 - Staff offices and staff living space

Current Status

Project implementation approved, under construction.

Estimated Project Cost

\$106 million

Estimated Completion Date

April 2025 - Occupancy



Teraanga Commons Dining Hall and Kitchen Expansion

Project Intent

As a direct result of an increase in meal plan holders created by the new Student Residence, an expansion to both the kitchen and dining hall seating capacity is required.

Project Scope

- Increase seating capacity to address the projected increase of students within the next five years.
- Upgrade delivery of food service stations to increase efficiencies and provide smooth provision of food services during peak times.
- Provide an aesthetically pleasing environment for visitors while enhancing offerings of more innovative and fresh meals from a variety of cultures.

Current Status

Project implementation approved, construction to begin late 2023.

Estimated Project Cost

\$8.5 million

Estimated Completion Date

Construction completion August 2024. Final completion fall 2024.



Decommissioning and Demolition of P9

Project Intent

Decommissioning and Demolition of P9 Parking Garage as the building has reached its end of life.

Project Scope

- Decommission and repurpose viable assets including but not limited LED lighting, EV charging stations, Code Blue security button currently located within P9.
- Relocation of a new ITS fibre pathway.
- Demolish all levels of the existing structure, as well as footings and tunnel sections located under structure.
- Grade and sod area following demolition.

Current Status

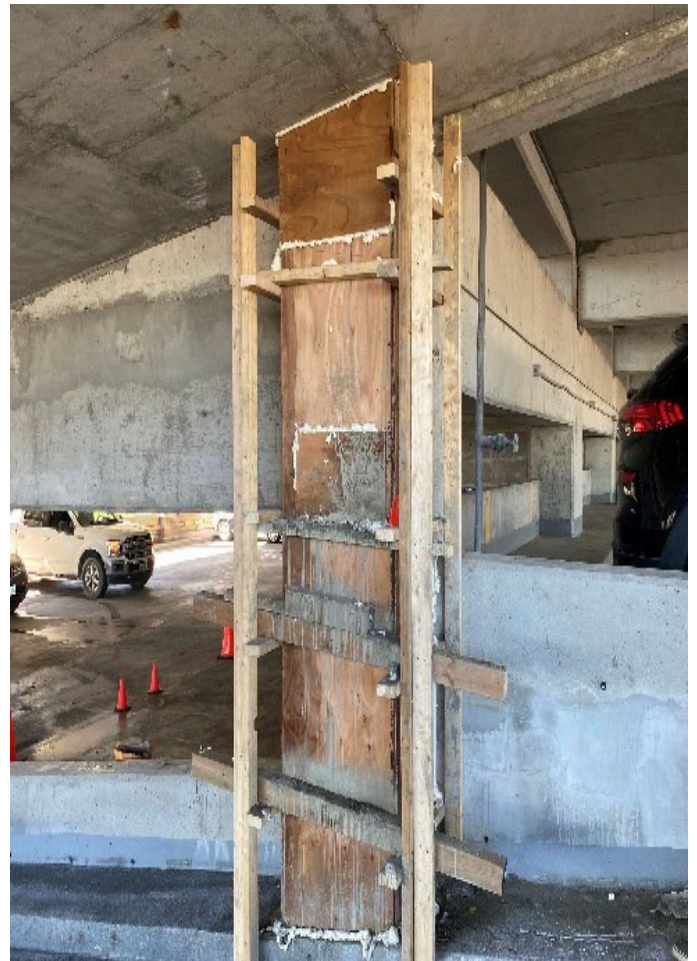
Capital proposal form approved, developing project plan. Planning Report - February 2024; Implementation Report - April 2024.

Estimated Project Cost

\$5 million

Estimated Completion Date

Fall 2024



Loeb Envelope Remediation and Replacement

Project Intent

The goal of the project is to improve the overall “health” of the building while increasing our commitment to sustainability, reducing our carbon footprint, realizing direct cost savings in offsetting energy consumption and minimizing the required maintenance over a 25-year span.

Project Scope

The project is for the replacement and remediation of the exterior walls and the replacement of the roof skylights, all the exits and the entrances of the Loeb Building.

Current Status

Capital Proposal form approved, developing schematic designs. Project planning report expected April 2024; Project Implementation Report expected fall 2024.

Estimated Project Cost

\$40 million

Estimated Completion Date

End of 2027

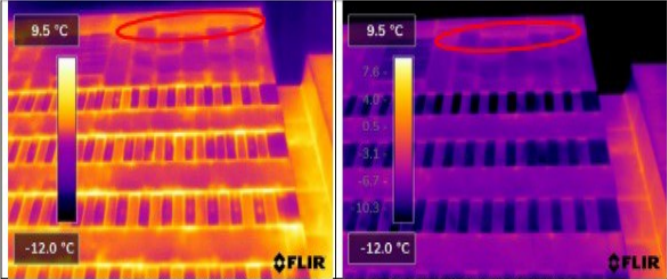


Photo 3 Thermal Bridging and Air Leakage at Panel Joints, South Elevation

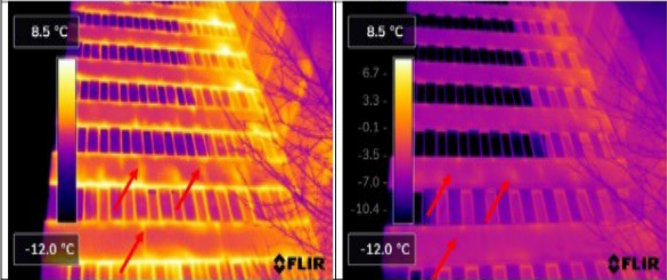


Photo 4 Thermal Bridging and Air Leakage at Panel Joints, East Elevation

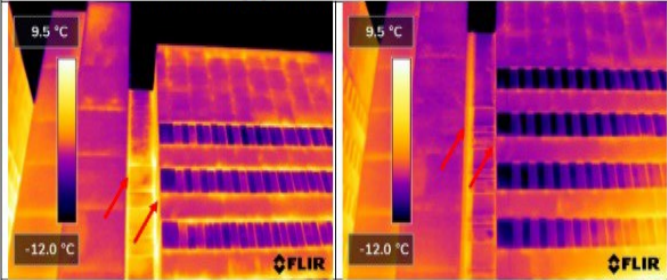


Photo 5 Air Leakage at Cladding Transitions (Inside Corner Condition), East Elevation

Paterson Hall Building Retrofit and Renewal

Project Intent

Replacing the entire building envelope and retrofitting all infrastructural systems.

Project Scope

- Wholesale removal and replacement of mechanical and electrical systems and building envelope, including cladding and roofing.
- Assessing the feasibility of a consolidated central cooling plant within Paterson Hall and intrusive investigation.
- Investigative, intrusive pre-design and concept designs.
- Decreasing the cost of ownership on maintenance and operation.
- Maximizing energy cost savings and reducing GHG emissions.

Current Status

Capital proposal under development, developing concept designs. Capital Proposal - February 2024; Planning Report - fall 2024.

Estimated Project Cost

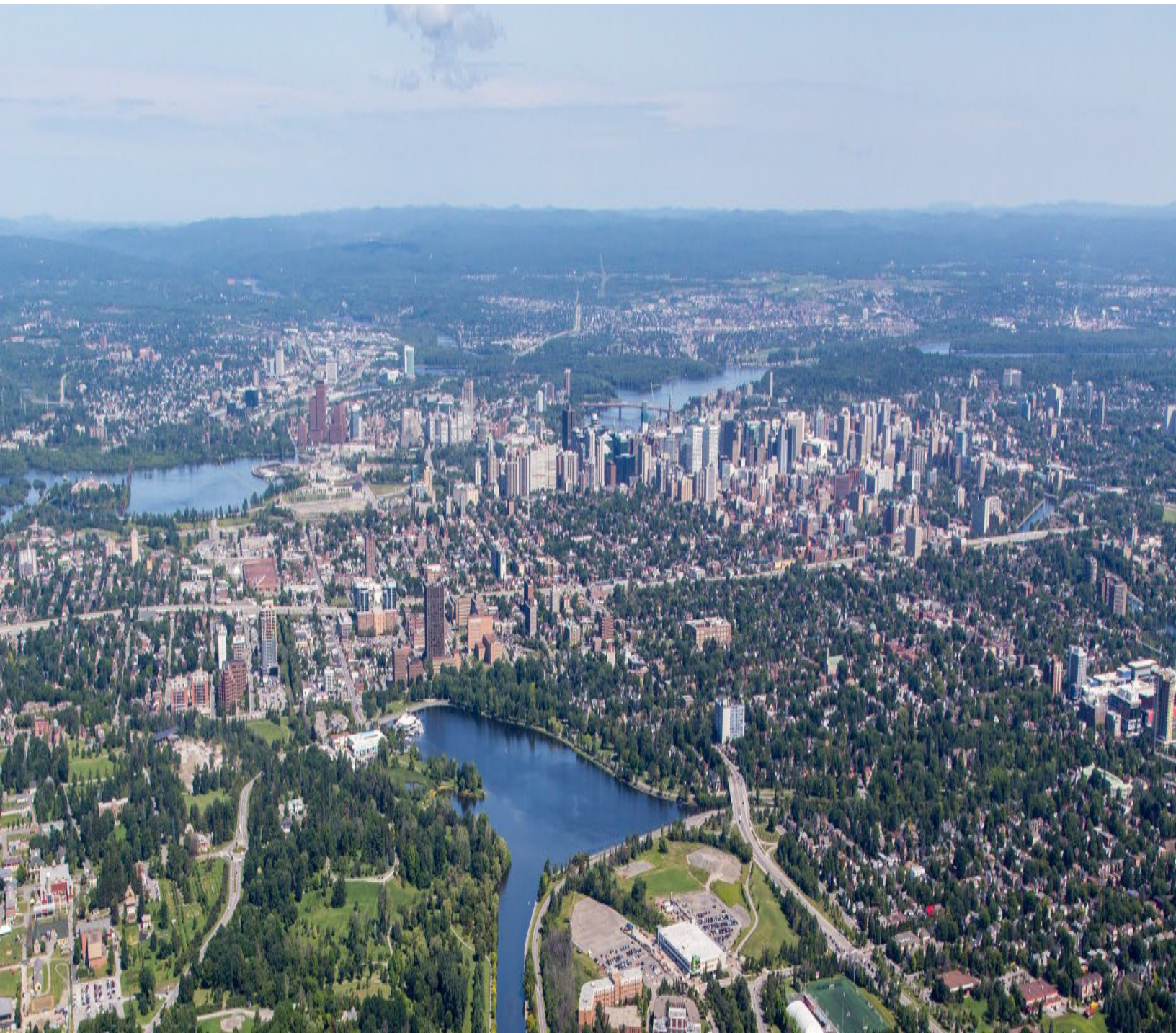
\$40 million

Estimated Completion Date

Late 2028, early 2029



Projects Under Consideration



Regional Aquatics and Wellness Hub

Project Intent

Expansion of fitness, wellness and aquatics, plus academic space that will enhance the student experience, culture and pursuit of well-being on campus.

- Phase 1 – Fitness and Aquatics Facility
- Phase 2 – Academic Programing

The building offers a new progressive service model which brings together health, wellness and research entities while creating a gateway to the Carleton campus along Bronson Avenue, as well as connecting the university to the broader city of Ottawa. It will be a place that removes obstacles of accessibility and learning facility and reflects diverse needs, interests and identities with the campus community.

Project Scope

Phase 1: Expanded fitness centre and new aquatic centre (two pools), including a possible option for a diving tower.

Phase 2: Wellness Hub, including research, academic space, and leased space. The Wellness Hub building would include an agora and large open spaces with lots of windows and natural light.

Current Status

On hold

Estimated Project Cost

Under review to be updated to reflect a phased delivery approach.

Estimated Completion Date

To be determined



Sustainability Research Centre (SRC)

Project Intent

Generate new income streams, resolve the Faculty of Engineering and Design's space needs, and attract new talents, donors and partnerships.

Project Scope

The Sustainability Research Centre is a 215,000sq. ft., six-storey building. Five signature showcase spaces on the main level will highlight program activity, and contain:

- Research labs
- Gathering and collaboration spaces
- Offices
- Meeting rooms
- Computer labs
- Grad carrels

Sustainable Design Strategies were utilized to limit embodied carbon and reduce energy consumption.

Current Status

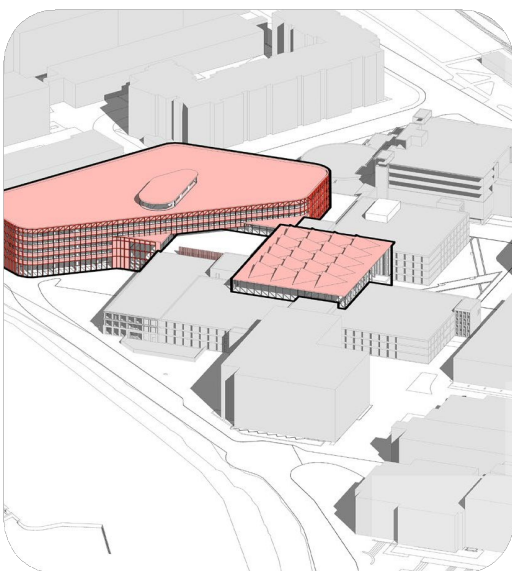
The schematic design report has been received, and the project is currently on hold.

Estimated Project Cost

To be determined

Estimated Completion Date

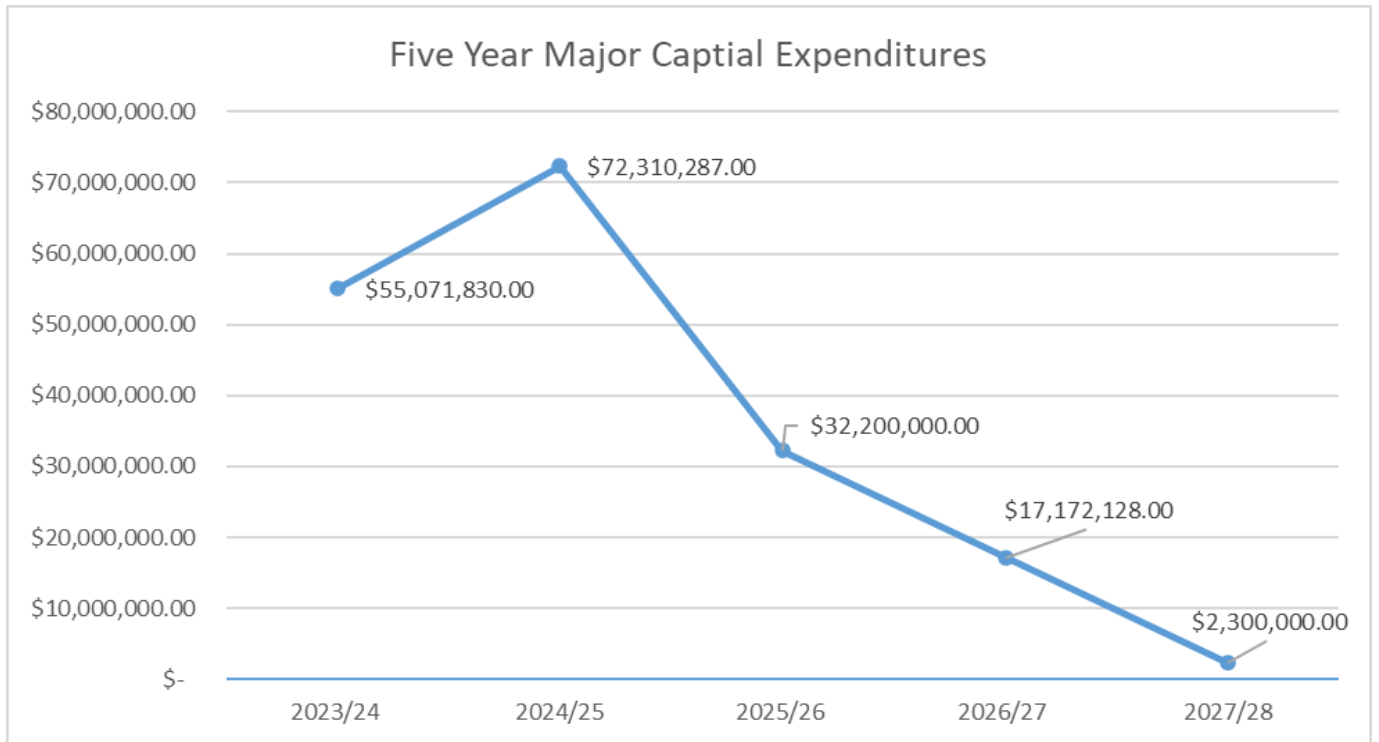
To be determined



Capital Budget Projections

Capital Budget and Expenditure Forecast

The capital budget for major projects currently underway is \$199,500,000. Over the next five years, capital project expenditures are forecasted to total over \$179,000,000. This expenditure forecast is based upon the stages that the projects are currently at in their project life cycle, and are adjusted and monitored on a monthly basis.



In 2021, Carleton issued a \$220-million debenture to fund capital investments. Current projects are expected to deploy \$160 million of that capital with the remaining \$39.5 million in project costs to come from various ancillary budgets. The remaining \$60 million in debenture funds will be reserved for future capital projects.

Major Capital Projected Five-Year Budget

CARLETON UNIVERSITY			
MAJOR CAPITAL INVESTMENT PROGRAM			
Oct-23			
	BUDGET	FUNDING SOURCE BREAKDOWN	
PROJECT	ESTIMATED BUDGET	Debenture Fund	Other funding sources
Projects Underway			
New Student Residence	106,000,000	80,000,000	26,000,000
Loeb Building Envelope Remediation and Replacement	40,000,000	40,000,000	-
Paterson Hall Renewal and Retrofit	40,000,000	40,000,000	-
P9 Decommissioning and Demolition of P9 Parking Garage	5,000,000		5,000,000
Teraanga Commons Dining Hall and Kitchen Expansion	8,500,000		8,500,000
Subtotal	199,500,000	160,000,000	39,500,000
Projects Under Consideration			
Regional Aquatics Facility (10 lane pool)	75,000,000	TBD	TBD
Sustainability Research Centre	225,000,000	TBD	TBD
Subtotal	300,000,000	TBD	TBD

Capital Renewal and Deferred Maintenance

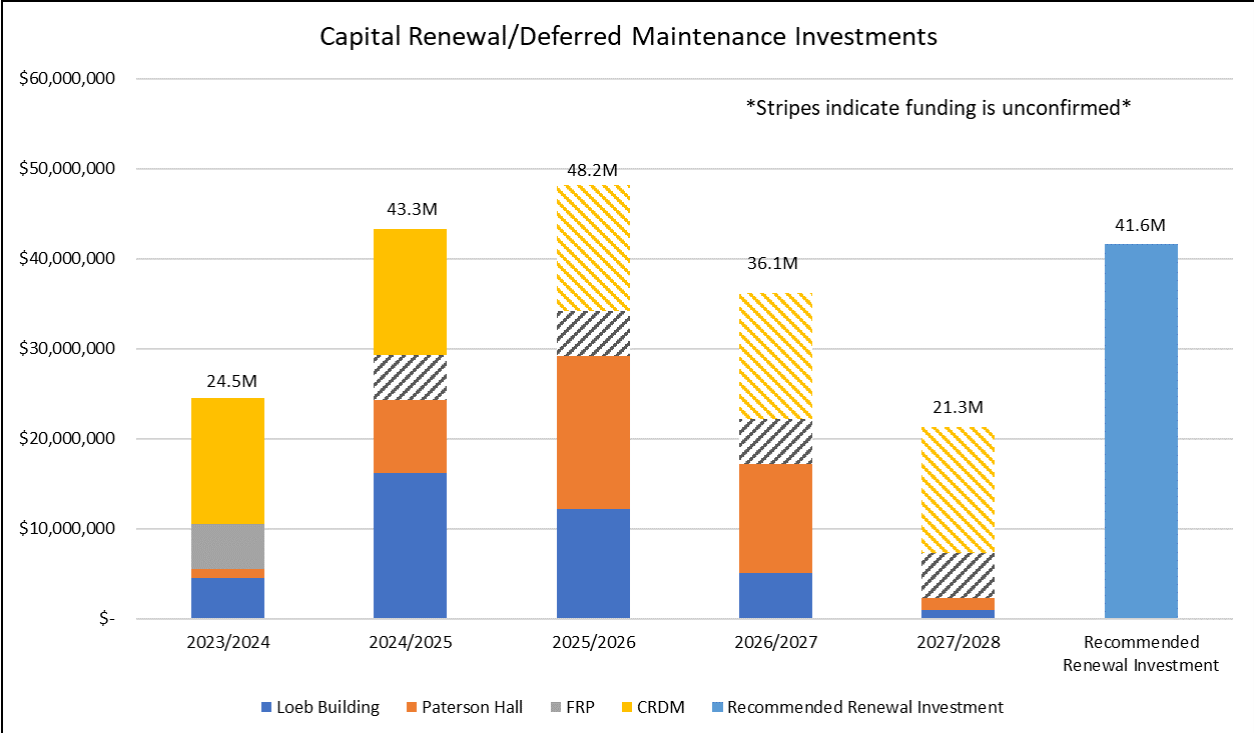
Carleton routinely audits its facilities and infrastructure in order to gather data on the condition of buildings, the associated systems, and infrastructure in order to plan for capital renewal and identify deferred maintenance requirements. This information allows the University to develop Capital Renewal and Deferred Maintenance (CRDM) plans to address risks and provide overall stewardship of the assets.

Carleton audits a minimum of 25% of its assets each year. The audits provide data on building condition, condition of building systems, and infrastructure. These audits are carried out by an independent third party utilized by all of the universities in the province. All of the data is held centrally and is shared with the Council of Ontario Universities (COU) and the Ontario Ministry of Infrastructure (MOI).

The Facility Condition Index (FCI) is a measure used to help us understand the overall asset condition. The Facility Condition Index (FCI) is calculated as the total cost of needed building repairs and renewal divided by the current replacement value cost of the building (CRV). Each building's FCI score reflects the current condition of the building: good, fair, poor, or critical. Generally, an FCI of 0-10% is good, 10-25% is good to fair, 25-60% is fair to poor, 60% and over is critical. For example, the FCI for Paterson Hall – which is slated for major renewal – is 26%.

The audit process was recently expanded to examine additional building components. This increased level of investigation identified more potential repairs and negatively impacted universities' FCIs and deferred maintenance backlogs. We have identified the recent FCI and recommended deferred maintenance in 4 asset categories: Academic/Administration, Ancillary, Residences, and Infrastructure. The 3-year FCI for each category and the associated deferred maintenance cost estimates for Carleton – based on the data from the February 2023 report – are as follows:

Category	FCI	3-year Deferred Maintenance
Academic/Admin	6.5%	\$82,522,795
Ancillary	8.1%	\$48,221,290
Infrastructure	17%	\$44,507,460
Residence	6.5%	\$16,951,694



Utilizing the new audits, the recommended maintenance over the next three years totals \$192,203,239 and the University’s total deferred maintenance backlog is estimated at \$1,194,618,078. The generally accepted investment strategy for annual renewal is 2% of CRV which would be \$41,647,436 annually.

Carleton’s estimated deferred maintenance costs resulting from the new audit procedures are more than double those estimated using the previous method. In 2020-21, Carleton’s total deferred maintenance was estimated at \$550 million. Carleton, along with other Ontario universities, is currently reviewing the new data to identify discrepancies and reconcile the FCI and deferred maintenance values. Nevertheless significant deferred maintenance backlogs are a sector-wide problem which has been of concern for some time.

Carleton is investing significant resources in addressing campus renewal. Two major capital projects are currently underway to significantly upgrade existing campus buildings – Loeb and Paterson. Expected investments in these two projects total \$80 million.

Each year, Carleton invests approximately \$19 million in Capital Renewal and Deferred Maintenance projects based on a list of priority projects presented to the Building Committee and Board of Governors. Carleton receives approximately \$5 million per year from the provincial government’s Facilities Renewal Program (FRP) for specific CRDM projects included on this list. The other projects are funded through a \$14 million

per year investment in CDRM from the university's operating budget – which is also under pressure at this time. This investment is based on a 10-year commitment made by the Board in 2015 and which will need to be revisited in 2025.

Bibliography

Key University Documents

Campus Master Plan
Carleton Academic Plan
Energy Master Plan
Outdoor Space Master Plan
Strategic Integrated Plan (SIP)
Strive for Sustainability
Transportation Plan

Acknowledgements

This document was prepared by the Office of the Vice-President (Finance and Administration) with contributions from the following individuals.

Lorraine Dyke	Vice-President (Finance and Administration)
Gary Nower	Associate Vice-President (Facilities Management and Planning)
Leanne Wilson	Project Manager (Facilities Management and Planning)
Maria McClintock	Assistant Director, Strategic Initiatives and Communications
Nathasha Macdonald	Associate Vice-President (Institutional Research and Planning)
Angela Marcotte	Associate Vice-President (Financial Services)