Forward & focused

Deferred maintenance report 2023

UNIVERSITY OF TORONTO | Facilities & Services

A note from our COO

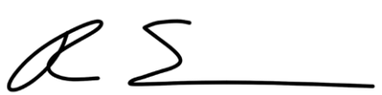
Nearly 100,000 people learn, work, and conduct research on our campus every day.

The University of Toronto's buildings and grounds form the foundation of our academic mission, attracting and retaining world-class talent, enabling pioneering research, and providing vibrant community spaces. The timely renewal of our aging infrastructure will ensure its reliability; this is vital to our success.

As stewards of our campus, we judiciously manage our deferred maintenance funding. This means thoughtfully and objectively prioritizing needs, establishing mechanisms for responsible project delivery, and addressing deferred maintenance through our large-scale energy and capital projects.

Today, we face both an economic climate of high inflation and the many investment needs of our institution. As a result, tackling the growing backlog of deferred maintenance on a large and historic downtown campus becomes increasingly challenging.

As a world leader in research, teaching, and sustainability, a long-term strategic decision-making framework is imperative to ensuring that our campuses continue to foster and inspire academic inquiry and innovation. This task, ultimately, reflects the character of our community.



Ron Saporta, Chief Operating Officer
Property Services & Sustainability

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LAND ACKNOWLEDGEMENT

We wish to acknowledge the land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Deferred maintenance defined

Deferred maintenance is the backlog of major building infrastructure renewals and upgrades that have been postponed to future budget cycles due to a lack of funds.

A backlog forms when investment in infrastructure renewal does not keep up with the aging and deterioration of equipment and many individual renewal costs compound.

Managing the backlog strategically is critical, as minor issues can escalate into major problems. This can make building system failures more likely, increase our operating costs, and impact the occupant experience.

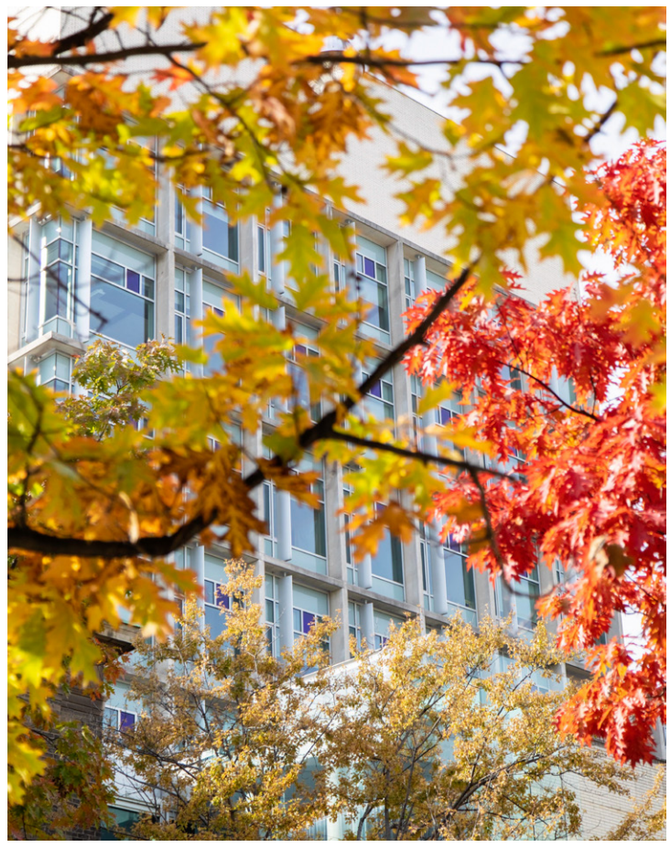
A widely recognized rule of thumb is to annually invest 1.5% to 3% of the total current replacement value of all buildings into infrastructure renewal.

Deferred maintenance provincially

Publicly funded colleges and universities in Ontario participate in the Facilities Condition Assessment Program. The program uses a common provider for annual facility condition audits and a single database with standardized definitions and categorizations to report on deferred maintenance to the provincial government.

The Ministry of Colleges and Universities provides institutions with annual Facilities Renewal Program funding for infrastructure repair and renewal to help address deferred maintenance on their campuses.

In 2022–23, the Ministry disbursed a total of $178M in funding, $11.4M of which went to the University of Toronto.



Deferred maintenance at U of T

Our facilities have significant—and growing—deferred maintenance needs.

As a world-class university, our grounds and spaces must be kept safe, comfortable, reliable, and up to date to enable state-of-the-art research and learning.

We adopt a focused and long-term approach to managing deferred maintenance, prioritizing high-risk assets for renewal and using a robust project delivery framework.

In addition to provincial funding, deferred maintenance at the University is addressed directly through projects funded by a dedicated internal budget, and indirectly through capital projects.

The budget is reviewed and established through the annual budget process.


A NEW
ERA OF
DISCOVERY

Benchmarking our investment

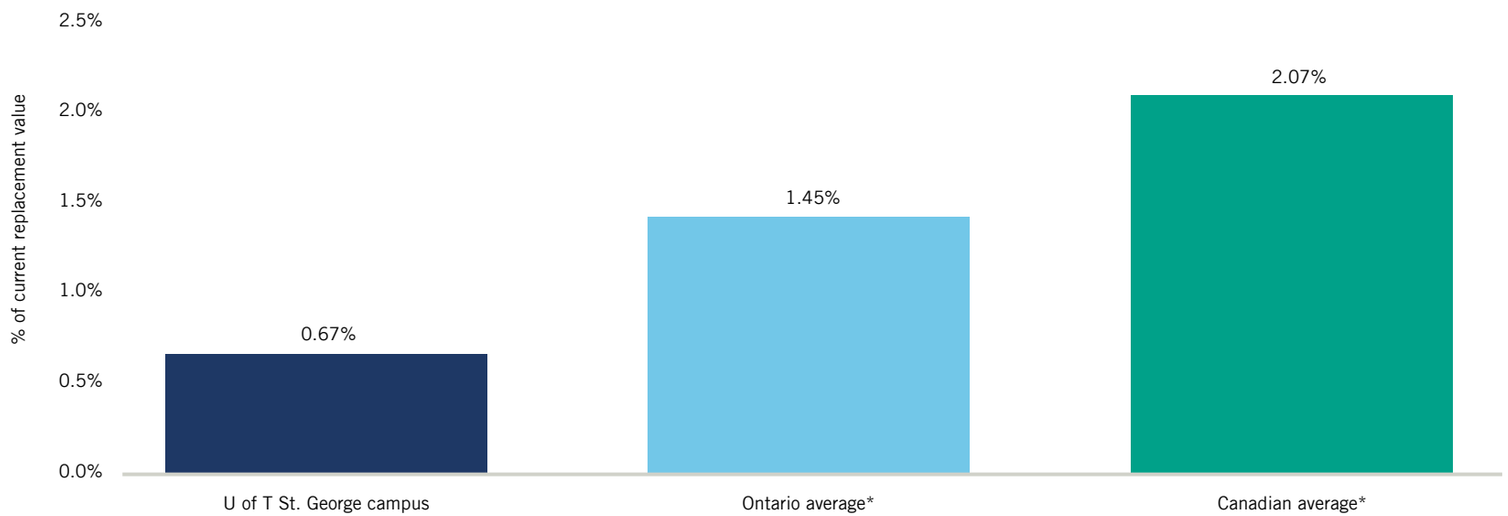
The University of Toronto's deferred maintenance funding has historically lagged behind that of all provincial and national comparators.

Over time, this has resulted in a sizeable deferred maintenance backlog, which has grown to one fifth of the total current replacement value of all University buildings.

Today, facing a backlog of $1.2B, a total of $76M in annual funding is required for U of T's St. George campus to reach the provincial average deferred maintenance investment (1.45% of total current replacement value).

This calls for a long-term funding plan and a rigorous approach to prioritizing needs and delivering on projects.

Deferred maintenance funding as a percentage of total current replacement value



*Canadian Association of University Business Officers. "2019 CAUBO Deferred Maintenance at Canadian Universities." January 2020.

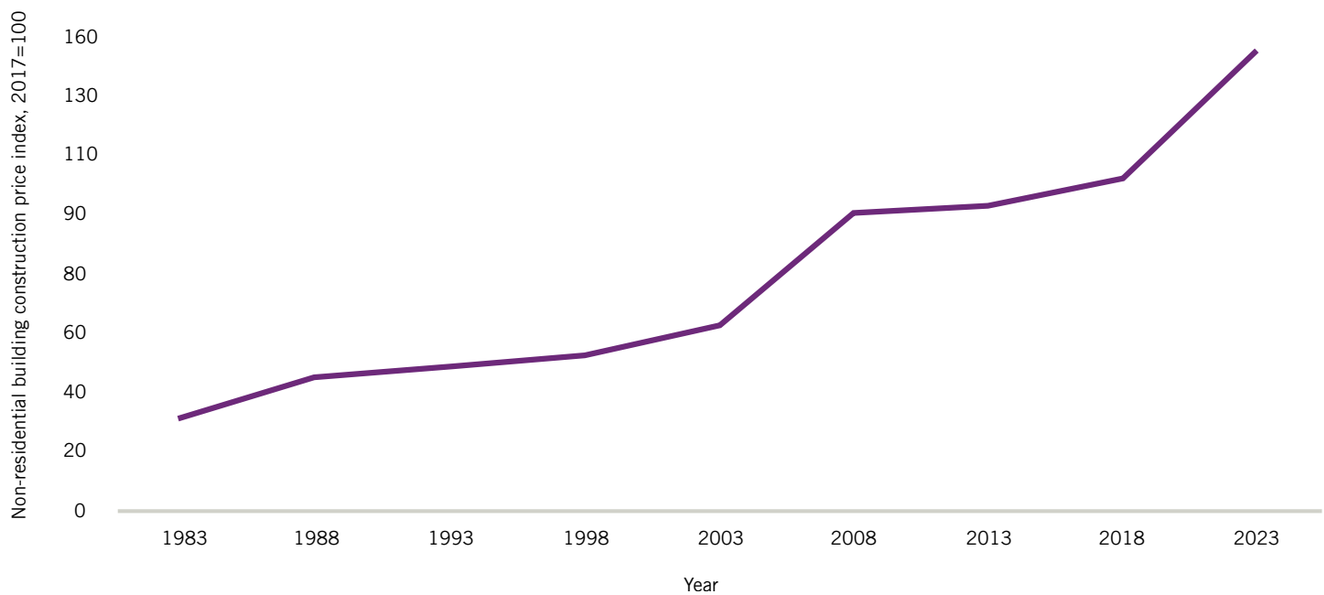
Unprecedented challenges

The University's deferred maintenance is subject to the same external forces that create challenges the world over. Persistent high inflation has eroded our purchasing power and reduced our infrastructure renewal capacity.

From 2020 to 2023, year-over-year inflation rates for non-residential construction in the City of Toronto ranged from 8% to as high as 17.5%—driving up the cost of deferred maintenance. This represents the fastest increase to the city's non-residential construction price index in the last forty years.

As a result, with the same budget, we can actually undertake fewer deferred maintenance projects than in previous years.

Non-residential building construction price index in Toronto



*Statistics Canada. Table 18-10-0276-01 Building construction price indexes, by type of building and division

A booming history

The deferred maintenance backlog will further grow in the coming years as many building systems on the St. George campus simultaneously approach end of useful life.

The University's rapid expansion during the 1960s ushered in a period of unprecedented facility growth.

Student enrolment more than doubled from 1958 to 1970, while staff population increased threefold. Meanwhile, the University's operating budget increased by over 630% as widespread construction transformed the St. George campus.

In 1967–68 alone, the University spent an equivalent $265M on capital projects; this exceeds the $199M spent annually on similar projects today.

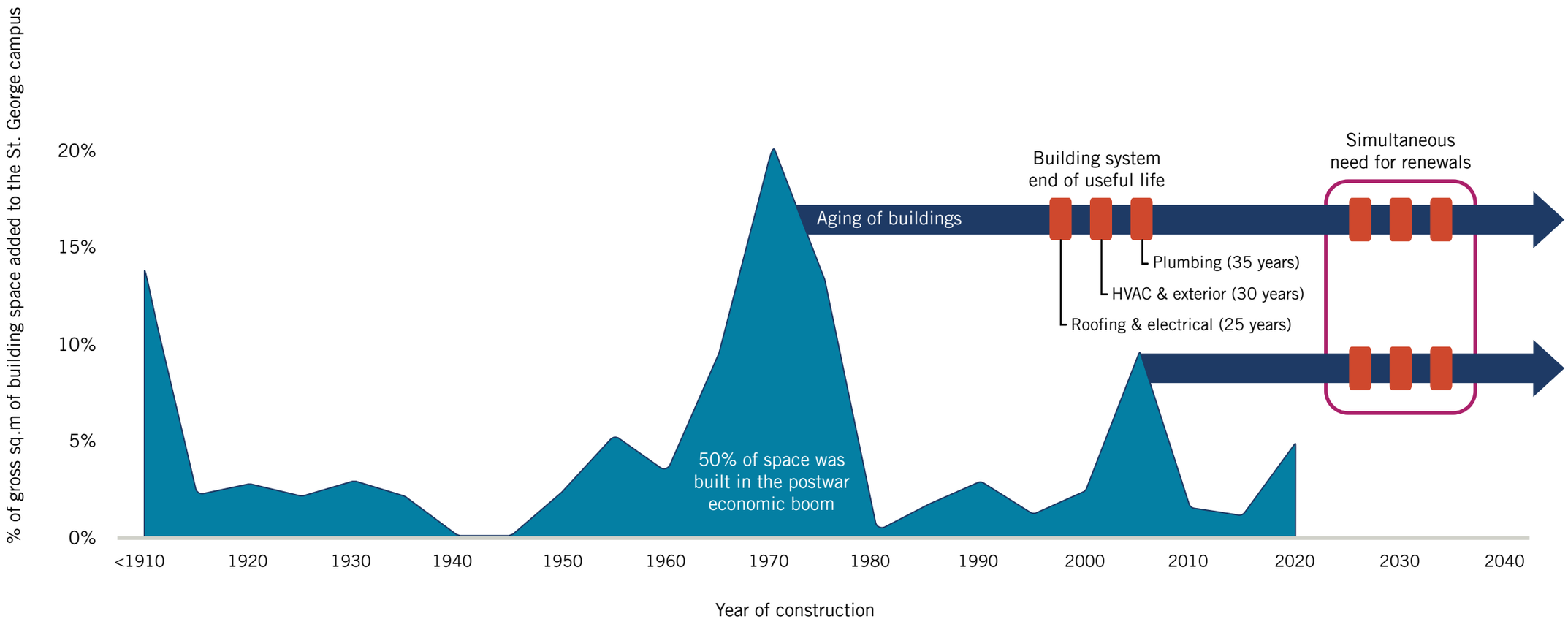
During these decades, we broke ground on more than twenty new buildings, including some of the University's most noteworthy: Robarts Library, the Medical Sciences Building, and New College.

Thirty years later, the University grew again—this time driven by programmatic expansion. Between 2000 and 2005, eight buildings opened their doors on the St. George campus, including the Bahen Centre for Information Technology, the Leslie L. Dan Pharmacy Building, and the Terrence Donnelly Centre for Cellular & Biomolecular Research.

Decades on from the two construction booms, the building systems that support these iconic spaces are rapidly approaching obsolescence simultaneously.

Incoming wave of renewals

The critical work to renew and modernize these important properties is not unpredictable, but it must be carefully managed to avoid the deferred maintenance situation becoming increasingly unsustainable.

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St. George Street
MYHAL CENTRE
FOR ENGINEERING INNOVATION
& ENTREPRENEURSHIP
55

Our data-driven approach

As stewards of the University's historic campus facilities and financial resources, we strategically select projects using a data-driven, risk-based approach.

Increasing institutional financial pressures have determined a deferred maintenance budget; this budget allows us to address up to 3.3% of the project backlog annually.

We use these funds wisely to ensure the reliability of campus infrastructure by prioritizing needs with the highest risk of failure and the greatest potential impact on the University community.

We also retain a $3M emergency fund each year for unplanned repairs (such as leaking from a stormwater pipe or the structural failure of a building entrance due to corrosion).

The process

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AUDIT

A specialist firm annually audits the condition of 20% of our building assets, considering age, physical state, and emerging design standards. The audit identifies the remaining useful life, estimated cost, and renewal year for each building system. This provides us with fresh, objective information in order to better understand the state of campus infrastructure.

Each building on campus is audited at least once every five years.

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ASSESS

Next, we update our database with audit information, property acquisitions, changes in space use, and building systems slated for removal or renewal through capital projects. The remaining useful life of building systems and repair costs are also adjusted for the passage of time and inflation.

❸

ALLOCATE

Then, building systems are assigned risk scores. These are derived from the remaining useful life of the system, based on the facility condition audit, the current use of the facility (which prioritizes academic and research uses), the future use of the building based on the University's master plan, and the severity of a failure's impact to occupants and to other building systems.

The highest-risk building systems inform the list of deferred maintenance projects for the next year.

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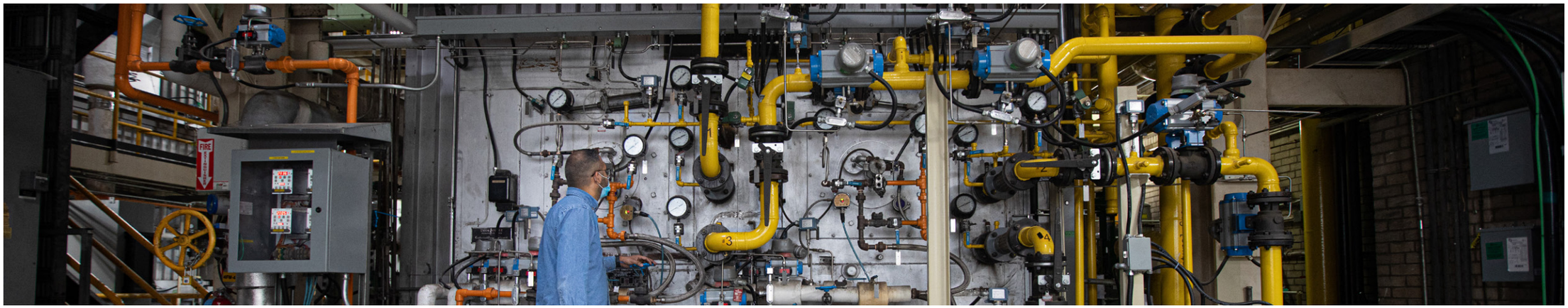
ACT

Finally, every selected deferred maintenance project is assigned a project manager and is put out to tender through a public procurement process. Then, implementation begins.

Tri-campus summary: 2023



$6.6B

The total current replacement value of all University buildings **increased by $700M** since 2022.

$1.2B

The tri-campus deferred maintenance backlog **increased by $232M** since 2022.

18.2%

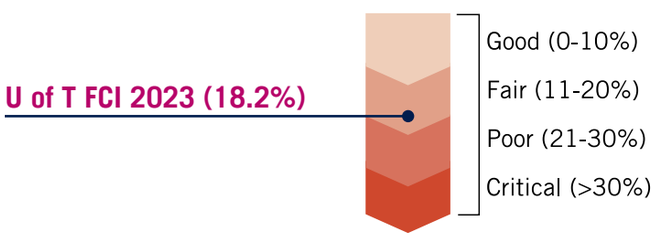
The combined tri-campus Facility Condition Index **increased by 1.8%** since 2022.

The increasing backlog

In 2023, the total tri-campus deferred maintenance backlog grew from $961M to $1.2B—a 23% increase.

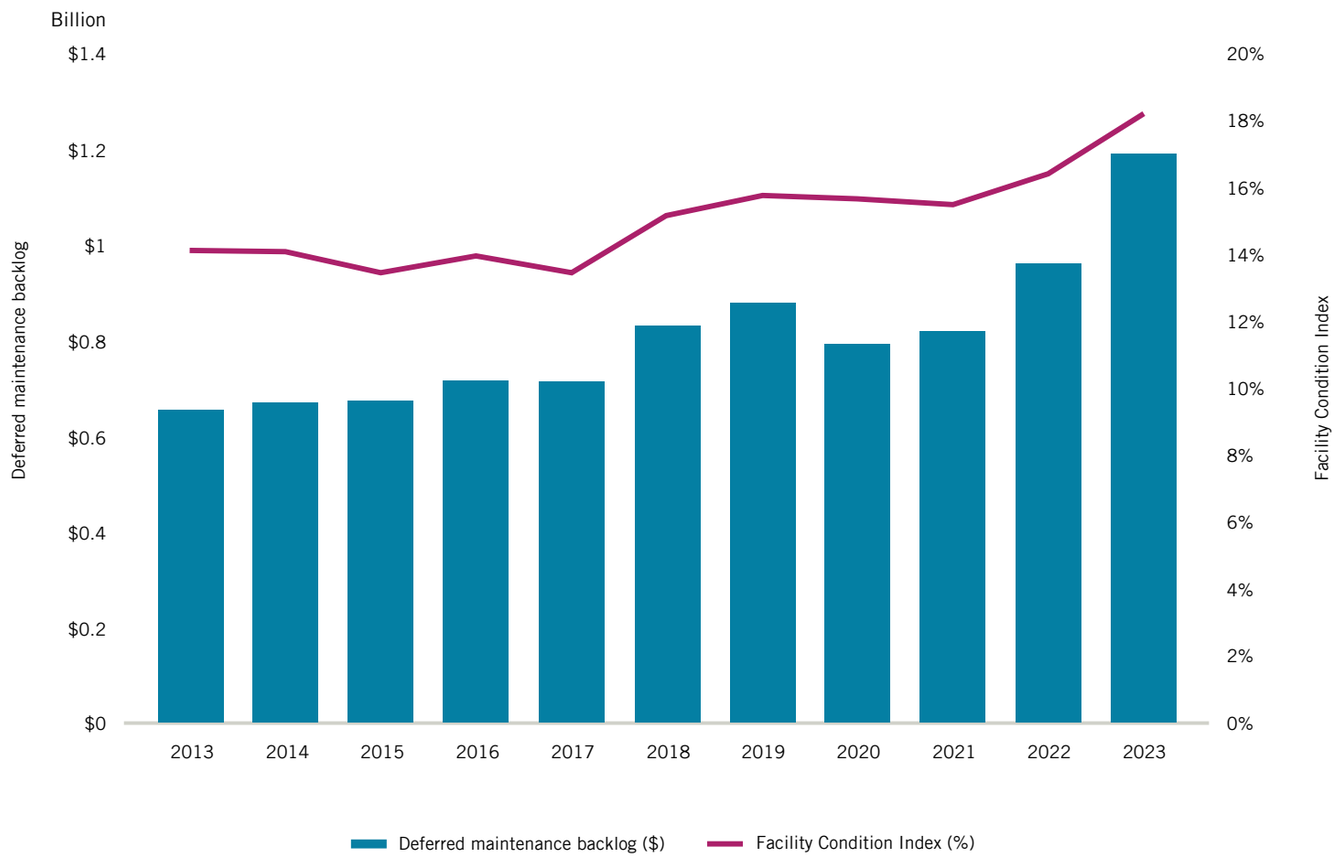
This growth was driven primarily by the high rate of inflation in the non-residential construction sector and the large wave of aging assets on the St. George campus (made up predominately of electrical, HVAC, and exterior structures), which are approaching the end of their remaining useful life. This trend is expected to continue.

Meanwhile, the combined tri-campus Facility Condition Index* grew by 1.8% to 18.2%.



**The Facility Condition Index is a cross-industry benchmark that compares the cost of fixing a building's deficiencies with the cost of replacing the building entirely. It reflects the relative condition of buildings and is categorized on an industry-standard scale.*

Tri-campus historical facilities deferred maintenance cost



Deferred maintenance by priority

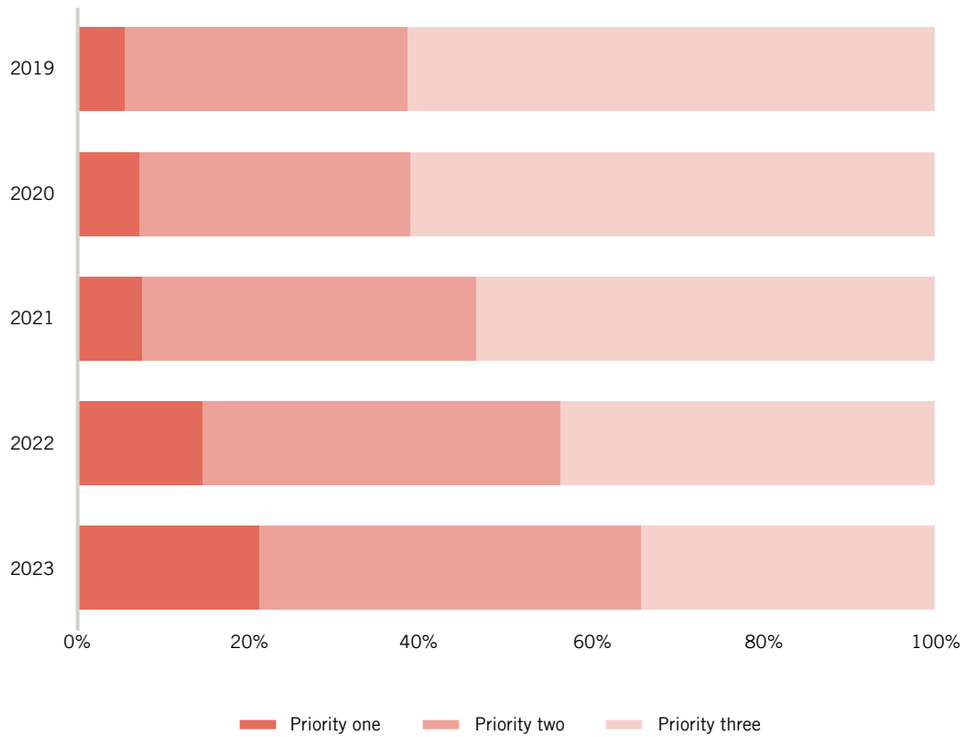
Not all deferred maintenance needs are equal.

During the annual facility condition audit, deficiencies are prioritized based on the urgency with which they must be addressed.

Deficiencies can be assigned one of the following priorities:

- **Priority one** — recommended to be addressed within the next year, as these assets are well beyond remaining useful life and/or are currently failing
- **Priority two** — recommended to be addressed in one to three years
- **Priority three** — recommended to be addressed in five years

Tri-campus priority distribution as a percentage of total deferred maintenance



Deferred maintenance by campus

	DEFINITION	ST. GEORGE	MISSISSAUGA	SCARBOROUGH
TOTAL CURRENT REPLACEMENT VALUE	The cost to replace all academic and administrative buildings on campus	$5.23B for 117 buildings	$0.77B for 26 buildings	$0.59B for 11 buildings
DEFERRED MAINTENANCE BACKLOG	The cost of major repairs and upgrades needed to fix a building's deficiencies	$992M **(up $214.2M)**	$101.2M **(up $6.9M)**	$100.1M **(up $10.6M)**
FACILITY CONDITION INDEX	Total deferred maintenance backlog / total current replacement value	19% **(up 2.6%)**	13.8% **(down 2.6%)**	16.8% **(up 0.1%)**
PRIORITY-ONE NEEDS	The cost of deficiencies that are recommended to be addressed within the next year	$321.5M **(up 98.9%)**	$39.8M **(up 12.7%)**	$18.9M **(up 103.2%)**

2023–2024 projects

CATEGORY	EXAMPLES	COST
ELECTRICAL & MECHANICAL SYSTEMS	Basin and tank replacements Building automation system upgrades New electrical switchgear Substation maintenance and electrical revitalization Building conversions and energy retrofits	$19.2M
ROOFS & BUILDING ENVELOPES	Roof replacements Exterior painting, window replacements, wall repairs, and perimeter caulking Noise abatement barrier installation	$12.6M
INTERIOR & FABRIC PROJECTS	Fire panel replacements Mould investigation Pipe replacements Balcony repairs	$1.9M
ELEVATORS	Major elevator renewal Elevator door upgrades Freight elevator repairs	$1.4M
ROAD REPAIRS & GROUNDS	Asphalt and concrete repairs Fence repairs Irrigation upgrades	$1.3M
TOTAL		**$36.4M**

Centralizing and streamlining delivery

We use the deferred maintenance budget to complete projects in a timely way according to a robust methodology. This is critical to preventing asset failure, remaining on budget, and minimizing disruption to campus operations.

The timeliness of this work is especially important in a global supply market where construction material lead times remain 62% higher than they were in early 2020.

As a result, in 2023, we formed a single central team—consolidating responsibilities previously diffused across many roles—dedicated to delivering consistent, high-quality deferred maintenance projects on time and on budget on the St. George campus.

The team has instituted a governance framework, relying on a trained staff of experienced project managers to serve as central points of contact. By using a structured and consistent approach when procuring and managing projects, we have also begun to accelerate delivery and reduce costs by testing new, optimized procurement strategies—such as bundling projects for tender and pre-tendering equipment.

Long-term view

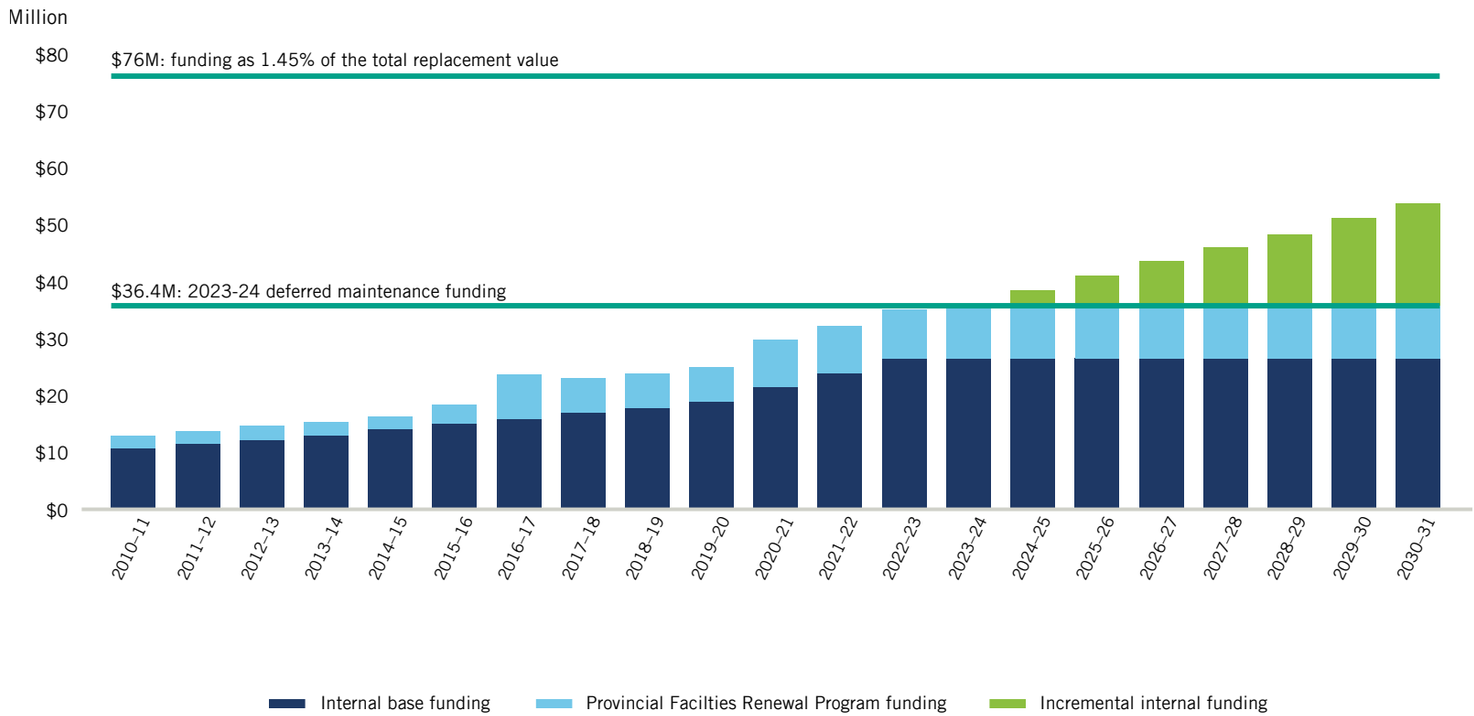
Today, growing the dedicated internal budget is more important than ever before; doing so means that we can maintain reliable facilities that support teaching, research, and operations in the face of simultaneously aging buildings and years of uncurbed inflation.

Deferred maintenance is addressed directly through projects funded by provincial Facilities Renewal Program monies and a dedicated internal budget.

In order to catch up to the average provincial spend of 1.45% of total current replacement value, the University needs to incrementally increase its deferred maintenance budget every year.

A total annual investment of $76M—an increase of $40M—is needed for the largest deferred maintenance backlog on the St. George campus.

Multi-year incremental funding proposal



Co-benefits of capital projects

Construction projects play a critical role in indirectly addressing a significant portion of deferred maintenance by replacing building elements and systems at—or beyond—their useful remaining life.

Project Leap is an ambitious initiative that aims to cut emissions on the St. George campus in half by 2027. It has the potential to address $30M of deferred maintenance by replacing existing chillers, high-temperature pumps, boilers, and other equipment with more energy-efficient technology.

The planned redevelopments of 215 Huron Street, the west wing of the Medical Sciences Building, and Site 1: The Gateway have the potential to address a combined total of $81M in deferred maintenance through demolition.

Finally, a myriad of other, smaller renovations will have a combined impact of $27M on deferred maintenance.