UNIVERSITY OF TORONTO | Facilities & Services

# DEFERRED MAINTENANCE REPORT

# 2024

# MESSAGE FROM THE COO

The University of Toronto is a historic institution with a world-class reputation. Our buildings and grounds form the foundation of the university's academic mission, enabling pioneering research and providing the vibrant community spaces that foster and inspire academic inquiry.

As stewards of the St. George campus, Facilities & Services judiciously manages deferred maintenance: the accumulation of the major infrastructure renewals and upgrades that have been deferred due to budget or resource constraints.

Using a data-driven, risk-based approach, Facilities & Services prioritizes deferred maintenance requirements to balance the concurrent needs of aging infrastructure in a fiscally responsible manner.

Today, as economic and climate pressures compound and buildings from large construction waves in the 1960s and early 2000s simultaneously require major upgrades, deferred maintenance costs are rising faster than ever.

Despite these challenges, Facilities & Services continues to manage our deferred maintenance needs. Through deliberate and strategic investment, we work to preserve, enhance and future-proof our campus for the 100,000 people who learn, teach and work here each day.

Ron Saporta, Chief Operating Officer
Property Services & Sustainability

*Photo: Zilbiing Indigenous Landscape project at Hart House green (David Lee)*

## STATEMENT OF ACKNOWLEDGEMENT OF TRADITIONAL LAND

We wish to acknowledge this 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.

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*Photo: Alumni Gates (Daria Perevezentsev)*


*Photo: Hart House in fall (David Lee)*

# DEFERRED MAINTENANCE DEFINED

Deferred maintenance (DM) describes the major infrastructure renewals and upgrades that have been delayed due to budget or resource constraints.

Unlike regular maintenance, DM involves capital investment aimed at preserving, enhancing and future-proofing our historic campus buildings.

When investment in renewal does not keep pace with aging and deteriorating infrastructure, a backlog occurs.

Managing this backlog and prioritizing DM needs is critical to preventing minor issues from escalating into major system failures—which increase operating costs and negatively impact the campus community.

# DEFERRED MAINTENANCE AT U OF T

## WHAT IS DEFERRED MAINTENANCE?

Deferred maintenance (DM) describes major infrastructure renewals and upgrades that have been delayed due to budget or resource constraints.

Managing DM is critical to prevent minor issues escalating into major system failures. But on a large, historic campus with 177 buildings spanning 11.2 million square feet, there is always a long list of things to do.

## HOW DO WE PRIORITIZE DM NEEDS?

As stewards of the historic St. George campus, Facilities & Services uses an evidence-based, multi-factor model to identify the projects that are most critical for the campus community.

*Photo: F&S teammates hard at work (Donglin Que)*

**Deferred maintenance includes strategic projects like roof replacements and HVAC upgrades.**

## AUDIT

Every five years, each building on campus is audited to assess its age, condition and design compliance, informing planning of and budgeting for future upgrades.

Audit results, property acquisitions, usage changes and planned updates are logged in a centralized, inflation-adjusted database, providing a complete view of campus infrastructure needs in the coming years.

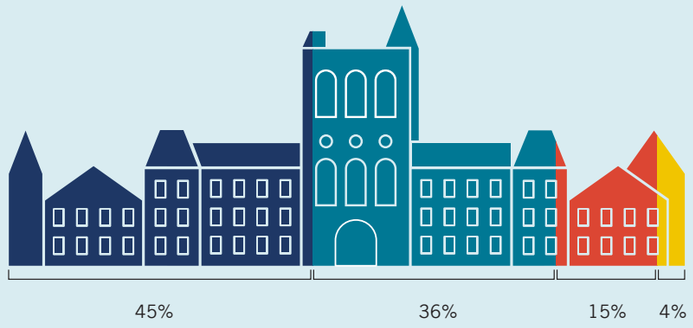
## ASSESS

To prioritize DM projects as fairly as possible given the resources available, F&S uses an evidence-based multi-factor model.

Every building element is given a score out of five, based on four weighted categories. The greater the risk or impact of an issue on campus users and infrastructure, the higher the score.

The highest scoring issues are prioritized for the following year. Criteria weightings are periodically reviewed by key stakeholders.

## PRIORITIZATION CRITERIA & WEIGHTING




- **Physical condition** measures the physical condition of building elements (prioritizing elements in critical condition).
- **Impact on users** measures the extent a failure would have on occupants and users of the building (prioritizing widespread over localized disruption).
- **Fabric impacts of failure** measures the impact a failure would have on the rest of the building (prioritizing issues with the potential to cause widespread damage).
- **Building use** measures the impact on the university's core mission (prioritizing academic and research functions).

## ACT

Work gets underway on the highest priority projects to preserve, enhance and future-proof our campus.

**This rolling five-year cycle is continually underway.**

# FACTORS IMPACTING DEFERRED MAINTENANCE

The combination of aging infrastructure, financial pressure and climate stress is stretching deferred maintenance budgets and delaying essential projects, increasing the risk of system failures. Addressing critical DM will mitigate the risk of failure and accelerate our journey to becoming a climate positive campus.

## EXTREME WEATHER EVENTS

Extreme weather events are becoming more severe and more frequent, placing additional stress on aging infrastructure.

For example, Toronto experienced a surge in intense rainfall events and record-breaking flooding in 2024: on July 16, 84 mm of rain fell within four hours and 128 mm fell within a similar period on August 17. Several analyses and models predict an increased frequency of these types of events. According to a 2022 report from the Financial Accountability Office of Ontario, municipal infrastructure maintenance costs are expected to grow 37% per year due to extreme weather events, compared to what would occur in a stable climate.

These events cause costly damage to buildings and infrastructure, exacerbating vulnerabilities in older buildings; in other words, delaying high-priority DM increases the risk of system failures during extreme weather. In turn, responding to acute issues diverts funds from other planned, high priority infrastructure renewals and upgrades.

We have an opportunity to proactively address DM to build resiliency to extreme weather events. Many of these renewals—such as recent work to replace the backup Ontario Institute for Studies in Education gas boiler with an electric version—also accelerate our journey to becoming climate positive.

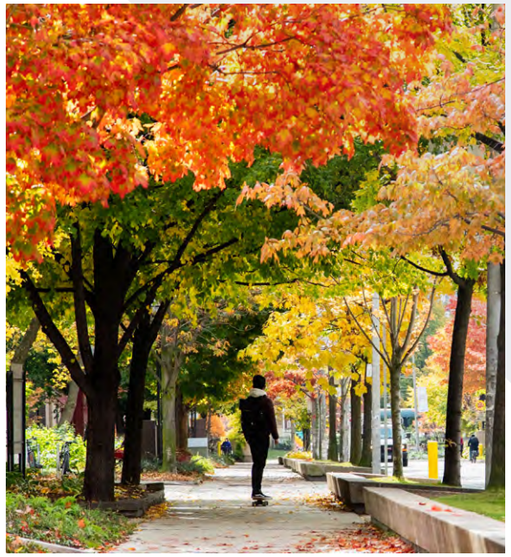


*Photo: St. George campus in fall (Diana Perevezentsev)*



**TORONTO NON-RESIDENTIAL BUILDING CONSTRUCTION PRICE INDEX**


## ECONOMIC PRESSURES

Persistent high inflation and market fluctuations for goods and labour have significantly eroded purchasing power.

Since late 2020, the extraordinary inflation felt by households across the country has also been felt on campus. During this period, the non-residential construction price index in Toronto increased 31.5 points and saw year-over-year inflation rates up to 17.5%—the steepest rise in four decades. As a result, DM budgets are unable to accomplish as much as they once did, and it costs more to finance these projects, factoring into a compounding backlog.

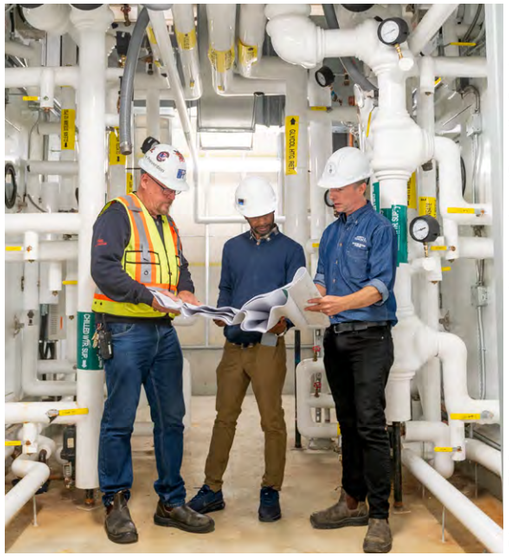


*Photo: F&S teammates consult blueprints (Donglin Que)*

## INFRASTRUCTURE LIFECYCLES

Core infrastructure renewals are somewhat predictable. Plumbing systems need renewing every 35 years, HVAC and exterior every 30 years, and roofing and electrical every 25 years.

Today, we are approaching critical renewal periods for university buildings built during major construction booms in the 1960s and 2000s. This double cohort of simultaneous renewals is resulting in a dramatic increase in DM needs. These DM projects are required to extend the useful working lives of some of our most iconic buildings and reduce the risk of system failures.

### ST. GEORGE CAMPUS INFRASTRUCTURE LIFECYCLES

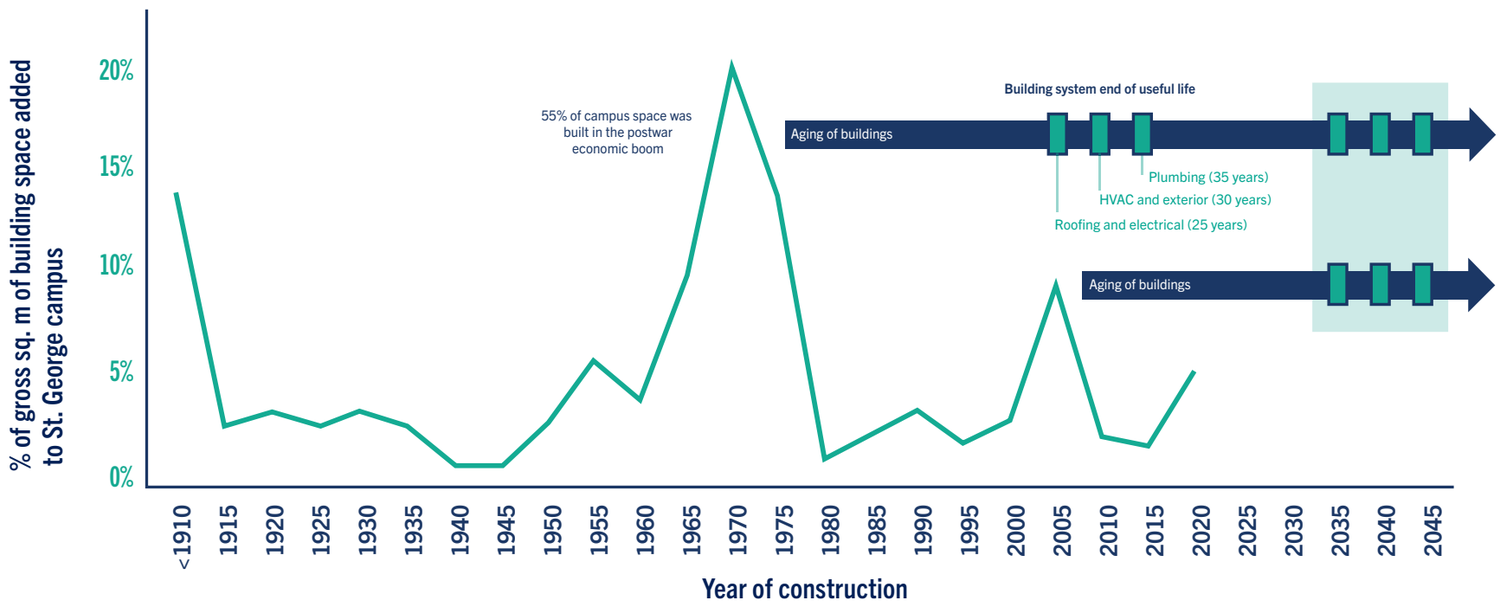



*Photo: Robarts Library and Commons (Hanna Borodina)*

## HIDDEN DEFERRED MAINTENANCE

Aging infrastructure holds inherent risks in terms of potential failure, operational inefficiencies and environmental impact.

F&S audits campus buildings regularly to predict and address issues before potentially catastrophic failures. But aging buildings often hide systemic vulnerabilities behind walls and beneath the surface; delaying high-priority DM in these environments increases the risk of larger unknown damage and more costly repairs.

# TRI-CAMPUS SUMMARY: 2024

**$7.2B**

The total Current Replacement Value of all university buildings has increased by $597M since 2023.

**$1.5B**

The tri-campus Deferred Maintenance Backlog has increased by $263M since 2023.

**20.3%**

The combined tri-campus Facility Condition Index has increased by 2.1% since 2023.

*Photo: St. George campus (Daria Perevezentsev)*

# DEFERRED MAINTENANCE BY CAMPUS

| | DEFINITION | ST. GEORGE | MISSISSAUGA | SCARBOROUGH |
|---|---|---|---|---|
| **TOTAL CURRENT REPLACEMENT VALUE** | The cost to replace all academic and administrative buildings on campus | $5.56B for 117 buildings (up $330M) | $0.96B for 26 buildings (up $223M) | $0.64B for 11 buildings (up $45M) |
| **DEFERRED MAINTENANCE BACKLOG** | The cost of major repairs and upgrades needed to fix a building's deficiencies | $1.24B (up $249M) | $73.2M (down $28M) | $141.6M (up $41.5M) |
| **FACILITY CONDITION INDEX** | Total deferred maintenance backlog / total Current Replacement Value | 22.3% (up 3.3%) | 7.7% (down 6.1%) | 22.2% (up 5.3%) |
| **PRIORITY-ONE NEEDS** | The cost of deficiencies that are recommended to be addressed within the next year | $420M (up 30.6%) | $6.1M (down 84.7%) | $47.7M (up 152.5%) |

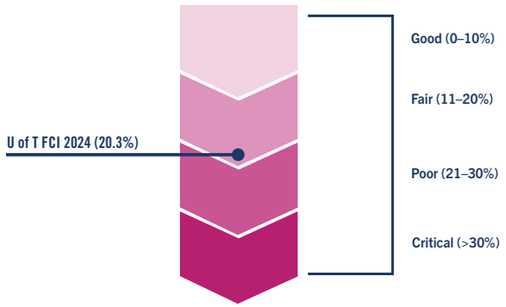
*Photo: F&S staff in the Central Steam Plant (Donglin Que)*

# A GROWING BACKLOG

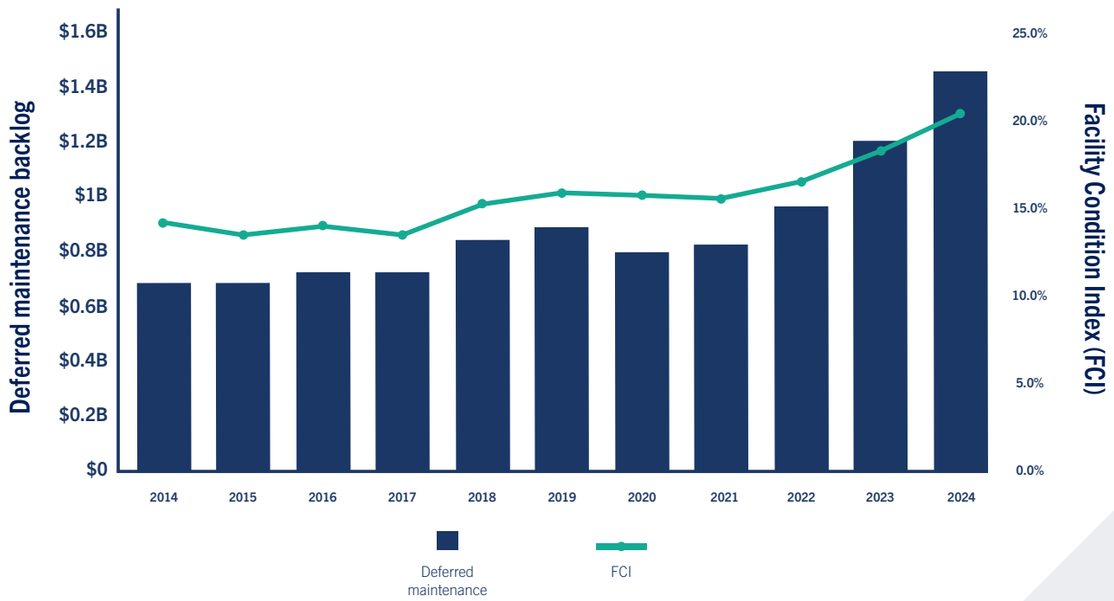
The Facility Condition Index (FCI) is a cross-industry benchmark that compares the cost of fixing a building's deficiencies (i.e. deferred maintenance) with the cost of replacing the building entirely (Current Replacement Value). FCI reflects the relative condition of buildings on an industry-standard scale. The lower the FCI, the better the assets' condition.

In 2024, the total tri-campus DM backlog grew from $1.2B to $1.5B—a 22% increase. Meanwhile, the combined tri-campus FCI grew from 18.2% to 20.3%.

Despite managing the DM portfolio to balance aging infrastructure needs, our DM backlog and FCI continue to climb. This is accentuated by market forces as high inflation in the non-residential construction sector drives up the cost of DM faster than CRV on our campus.




## TRI-CAMPUS HISTORICAL DEFERRED MAINTENANCE COST






# 2024 – 25 DEFERRED MAINTENANCE PROJECTS

*Photo: Infrastructure at BCIT (Donglin Que)*

| CATEGORY | EXAMPLES | COST |
|---|---|---|
| **ELECTRICAL & MECHANICAL SYSTEMS** | Basin and tank replacements<br>Building automation system upgrades<br>New electrical switchgear<br>Substation maintenance and electrical revitalization<br>Building conversions and energy retrofits | $11.5M |
| **ROOFS & BUILDING ENVELOPES** | Roof replacements<br>Exterior painting, window replacements, wall repairs and perimeter caulking<br>Noise abatement barrier installation | $24.7M |
| **INTERIOR & FABRIC PROJECTS** | Fire panel replacements<br>Mould investigation<br>Pipe replacements<br>Balcony repairs<br>Elevator renewal, door upgrades and freight repairs | $3.6M |
| **ROAD REPAIRS & GROUNDS** | Asphalt and concrete repairs<br>Fence repairs<br>Irrigation upgrades | $1.2M |
| **TOTAL** | | **$41.0M** |

# SPOTLIGHT: AN INVESTMENT IN ROOFING

## THE IMPORTANCE OF ROOFING INTEGRITY

Roofs are a critical component of building infrastructure, requiring replacement every 20–50 years, depending on materials and environmental conditions. Neglecting roof maintenance can lead to leaks, structural damage, energy inefficiencies and safety hazards.

## THE 2024 ROOFING RENOVATION PROJECT

In 2024, Facilities & Services undertook major renovations to replace multiple roofs across campus. One notable example was the roofing and window replacement project at University College, a historic building central to campus life.

*Photo: Astronomy and Astrophysics building roof (Donglin Que)*



*Photo: University College roof (Donglin Que)*

## UNIVERSITY COLLEGE ROOF RENOVATION

**Condition:**
Some sections of the roof at University College had not been replaced since 1960, and the wood frame single-pane windows dated back to 1890. Occupants were reporting water leaks in the café and library areas.

**Work completed:**
Work was focused around the south tower, including:

- Repairs to wood decking, ridges and gutters
- Installation of new membrane underlayment
- Replacement of roofing with slate shingles and copper panels
- South tower repairs and new wood-frame window installation

**Timeline:**
September–November 2024

**Impact:**

- Resolving structural issues: Eliminated leaks and protected key interior spaces.
- Maintaining building functionality: Ensuring a safe and comfortable environment for occupants.
- Energy efficiency: Improved insulation and energy savings.
- Longevity: Roof lifespan extended to 50+ years.

The investment in roofing at University College exemplifies the critical role of deferred maintenance in preserving university infrastructure. Addressing issues such as aging roofing not only resolves immediate issues but also enhances building performance and sustainability.

# SPOTLIGHT: AN INVESTMENT IN FIRE SAFETY

## THE IMPORTANCE OF FIRE ALARM SYSTEMS

Fire alarm systems provide early warnings, facilitate safe evacuation and help prevent loss of life during fire emergencies. As fire safety codes evolve to meet new industry standards, maintaining compliant and effective systems is both a legal and ethical responsibility.

## ENHANCING UNIVERSAL FIRE PROTECTION ON CAMPUS

Facilities & Services is committed to enhancing fire protection across campus. Ongoing efforts include upgrading fire alarm systems, installing and maintaining sprinklers and ensuring the reliability of life safety generators that power essential functions such as elevators and emergency exit lighting.

*Photo: Lecture in Rotman School of Management (Johnny Guatto)*



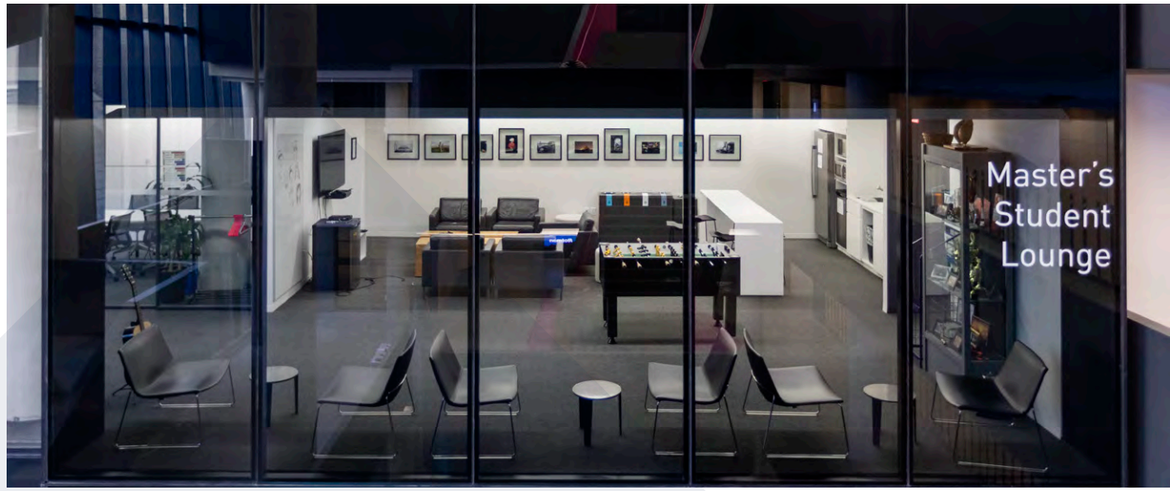



*Photo: Master's Student Lounce (Nicholas Iwanyshyn)*

## ROTMAN SCHOOL OF MANAGEMENT UPDATES

**Timeline:**
June–December 2024

**Condition:**
The Rotman School of Management is a high-traffic building with an aging fire alarm system. A full system upgrade was required to ensure compliance with current fire codes and enhance occupant safety.

**Work completed:**

- Replacement of the main fire alarm system with a state-of-the-art, code-compliant model.
- Installation of modern devices—e.g. smoke detectors—that use auditory and visual alerts, such as strobe lighting for people with hearing impairments.
- Upgrade of the fire alarm control panel to improve monitoring, alerting and reliability.

**Impact:**

- Ensure compliance: Upgrades align or exceed latest fire safety codes.
- Enhance occupant safety: Upgrades enable faster, more reliable and more accessible identification of smoke or fire, increasing time for evacuation.
- Evacuation guidance: Upgraded systems help manage safe evacuation during emergencies.

# ADDRESSING DM THROUGH CAPITAL INVESTMENTS

The U of T active capital program plays a vital role in addressing deferred maintenance through planned renovations and modernizations.

A standout recent example is the transformation of the Fitzgerald Building, a hundred-year-old structure designated under the Heritage Act. The building has been completely renovated to meet new space standards and modern sustainability objectives while preserving its venerable character. This revitalization includes new mechanical and electrical systems as well as advanced control technologies that facilitate superior energy management.

This transformation exemplifies the principle of adaptive reuse, preserving the building's essential nature while addressing its aging elements that would have otherwise required attention. The result is upgraded functionality and environmental performance — and a beautiful campus space that will be enjoyed for decades to come.

Overall, U of T's capital investments in 2024 are projected to address $49M in DM needs.

*Photos: Fitzgerald Building interior (Donglin Que)*

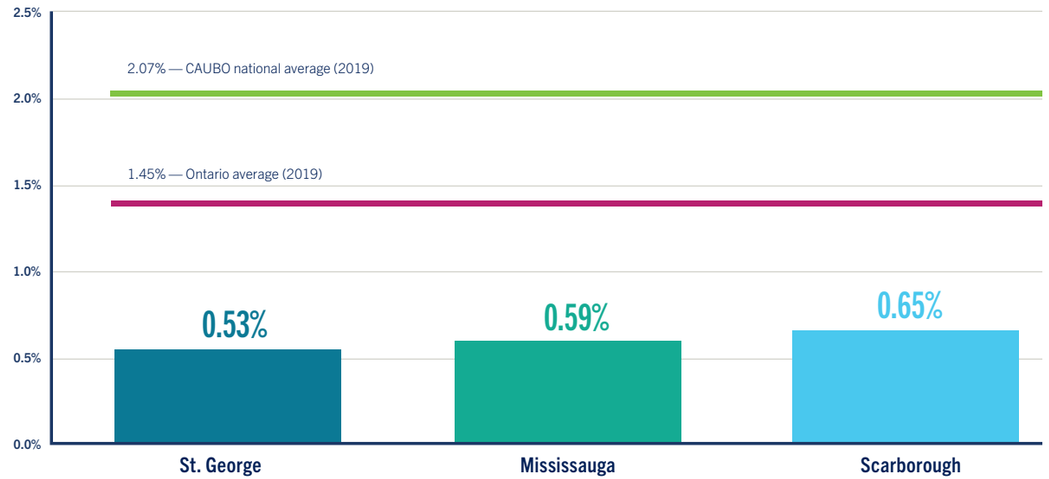
# BENCHMARKING OUR INVESTMENT

The University of Toronto's deferred maintenance funding is significantly below the Ontario average, and even further below the Canadian average.

At a time when Provincial Facilities Renewal Program funding levels remain static despite record inflation levels, growing the internal budget to address our increasing DM backlog is critical.

Experts recommend allocating 1.5% to 3% of the total Current Replacement Value (CRV) of all buildings annually to infrastructure renewal in order to ensure long-term sustainability and functionality. The national and provincial average spending rates are approximately, 1.45% and 2.07% of CRV, respectively. At U of T, the tri-campus spend in 2023/24 was 0.55%.

## TRI-CAMPUS 2023–24 FUNDING AS A PERCENTAGE OF CRV



# LOOKING AHEAD

If we continue on our current trajectory, the deferred maintenace backlog is expected to grow to approximately $2.0B by 2034.

In order to mitigate this, the university needs to incrementally increase its DM budget by $2.5M every year to keep pace with the average provincial spend (1.45% of total CRV).

*Photo: Exam Centre solar panel installation (Donglin Que)*

## ST. GEORGE CAMPUS DEFERRED MAINTENANCE BACKLOG GROWTH


## FORWARD-LOOKING ST. GEORGE DEFERRED MAINTENACE FUNDING

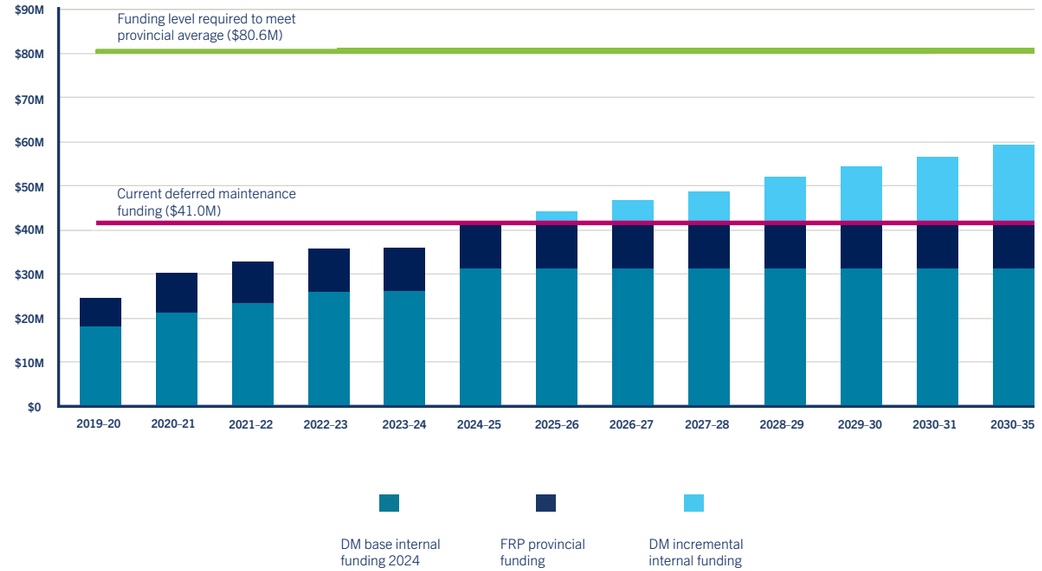




*Photo: F&S staff in the Front Campus geoexchange (Donglin Que)*

# REDUCING OUR RISK WITH STRATEGIC INVESTMENTS

Facilities & Services is a leader in deferred maintenance management across institutions in Canada. Each year we work through a substantial DM backlog, making challenging data-informed decisions to make the most of available resources and ensure the campus experience matches the standard of excellence across the university.

To prioritize DM projects, F&S employs an evidence-based, multi-factor model. This data-driven process effectively identifies the most critical issues and ensures that we strategically invest in the projects posing the greatest risk to infrastructure and occupant experience, delivering impactful changes while minimizing disruption to campus life. Developed in 2019, our model evaluates every building element on a five-point scale across four categories, with each category weighted according to feedback from academic leaders. This process assigns each building element a weighted risk score.

By systematically allocating limited DM funding using this model, we successfully reduced the Weighted Risk Index in 8 of 10 core DM areas between 2019 and 2024, a major achievement in managing campus infrastructure.

## WEIGHTED RISK INDEX (FIVE-POINT SCALE)

| ST. GEORGE DM AREAS | 2019 | 2024 | CHANGE |
|---|---|---|---|
| ROOFING | 4.37 | 3.88 | ▼ |
| FIRE PROTECTION | 4.32 | 2.86 | ▼ |
| HVAC | 3.86 | 3.61 | ▼ |
| ELEVATORS AND LIFTS | 3.55 | 3.46 | ▼ |
| ELECTRICAL | 3.33 | 3.93 | ▲ |
| EXTERIOR ENCLOSURE | 3.28 | 3.19 | ▼ |
| SITE IMPROVEMENTS | 3.13 | 2.51 | ▼ |
| FOUNDATIONS | 3.01 | 2.78 | ▼ |
| SUPERSTRUCTURE | 2.83 | 2.75 | ▼ |
| PLUMBING | 2.58 | 2.86 | ▲ |

*Photo: F&S staff in front of the living wall (Donglin Que)*

*Photo: Convocation Hall (David Lee)*

All photos provided by the University of Toronto unless otherwise stated.

Front cover photo: Robarts Library and Commons by Hanna Borodina
Ron Saporta headshot by Jenna Marie Wakani
Source for chart on page 9: Statistics Canada Table 18-10-0276-01
Charts and graphics throughout by Petra Amon
Layout by Michael Strizic

*Photo: King's College Circle (Donglin Que)*

Availble online at fs.utoronto.ca

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