UNIVERSITY OF TORONTO

OFFICE OF THE GOVERNING COUNCIL

FOR APPROVAL **PUBLIC** **OPEN SESSION**

TO: Academic Board

SPONSOR: Professor Scott Mabury, Vice-President, Operations and Real Estate Partnerships
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PRESENTER: See Sponsor
CONTACT INFO:

DATE: May 16, 2024 for May 23, 2024

AGENDA ITEM: 3

ITEM IDENTIFICATION:

Capital Project: Report of the Project Planning Committee for the Hart House infrastructure Renewal Stage 1 **– Total Project Scope and Sources of Funding**

JURISDICTION INFORMATION:

Pursuant to section 5.1 of the Academic Board's Terms of Reference, the Academic Board considers reports of project planning committees (i.e. space plan, site, overall cost and sources of funds) with a capital cost as specified in the Policy on Capital Planning and Capital Projects.

Pursuant to section 4.2.3. of the Planning and Budget Committee's terms of Reference, "…the Committee considers reports of project planning committees and recommends to the Academic Board approval in principle of projects (i.e. space plan, site, overall cost and sources of funds) with a capital cost as specified in the 'Policy on Capital Planning and Capital Projects.'"

The "Policy on Capital Planning and Capital Projects" provides that capital projects with costs between $10 million and $50 million (Approval Level 2) on the St. George campus, will first be considered by the Planning & Budget Committee, which shall recommend approval to Academic Board. Such projects will be confirmed by the Executive Committee of the Governing Council on the recommendation of the Academic Board [Section 3(b)(ii)(1)(a)]. The Policy further states that "any financing will be approved by the Business Board". [Section 3(c)].

GOVERNANCE PATH:

A. Project Planning Report, Total Project Cost, and Sources of Funding
1. Planning and Budget [for recommendation] (May 9, 2024)
2. **Academic Board [for approval] (May 23, 2024)**

3. University Affairs Board [for concurrence with the recommendation of the Academic Board] (May 29, 2024)
4. Business Board [for approval] (June 19, 2024)
5. Executive Committee [for confirmation] (June 18, 2024)

B. Execution of the Project:

1. Business Board [for approval] (June 19, 2024)

PREVIOUS ACTION TAKEN:

No previous action in governance.

HIGHLIGHTS:

Previous Administrative Actions

At the August 24th, 2019 meeting of the Capital Project and Space Allocation (CaPS) Executive Committee, the Hart House Infrastructure Renewal project was brought forward to approve the Terms of Reference, and to formally strike the Project Planning Committee.

At the April 12, 2019 Capital Project and Space Allocation Committee (CaPS) Executive Committee, the request to proceed with a Request for Proposal (RFP) to select a consultant team and for the expenditure of funds to engage consultants was conditionally approved. At that meeting, the CaPS Executive Committee asked that the scope of consultant work be limited to schematic design and the request for consultant fees be adjusted accordingly. A strategy to tailor the overall scope of work to Hart Houses' ability to fund the project was also requested.

At the June 3rd, 2019 the Capital Project and Space Allocation (CaPS) Executive Committee was provided an update that the consultants would be limited to Schematic Design as requested. The Capital Project and Space Allocation (CaPS) Executive Committee approved the revised consultant fees to engage consultants for Schematic Design.

At the November 19th, 2019 meeting of the Capital Project and Space Allocation (CaPS) Executive Committee, an increase to consultant fees was approved to engage the preferred consultants to initiate design services to the end of Schematic Design.

At the March 4th, 2022 meeting of the Capital Project and Space Allocation (CaPS) Executive Committee, an increase to consultant fees was approved to engage consultants to revise Schematic Design, initiate Design Development to the end of construction services for Stage 1 work, initiate services for a planning consultant, and to initiate construction management services.

Project Plan

The Hart House Infrastructure Renewal project envisions renovating Hart House to renew its infrastructure and ensure its future as a key part of the St. George Campus. Hart House is essential to the University of Toronto experience. It is an architectural jewel on the St. George campus, notable City of Toronto designated Heritage building, the largest student center on all three campuses, and one of the University's premier co-curricular learning centers. Hart House is located at 7 Hart House Circle adjacent to Queens Park Cres W. It was originally constructed between 1911-1919, and officially presented to the University on November 11th, 1919. It is located adjacent to Queens Park Cres W to the east, Wycliffe College to the north, and Hart House Circle, Back Campus Fields, and Stewart Observatory to the west

and south. Hart House celebrated 100 years as a student center as of November 2019.

The Hart House Infrastructure Project Planning Committee (PPC) was struck in 2018 in response to a series of studies from 2016 to 2018 that brought focus to Hart House's aging and failing infrastructure. It was identified that Hart House can no longer operate successfully without significant capital renewal.

The Hart House Infrastructure Renewal Project vision is centered around sustainability, resilience and inclusivity. The main objective is to ensure the future success of the building through not only an infrastructure renewal, but also to improve Hart House's commitment to accessibility and contributions to promoting a sustainable environment. Protecting the Hart House brand, protecting the services delivered to students and Hart House's campus partners, and protecting the current funding model are important goals for this project.

Due to the overwhelming costs associated with the infrastructure renewal and accessibility objectives discussed during the PPC process, it was chosen to only implement the most critical project priorities as part of this project, which include life safety, heritage asset preservation, components of accessibility improvements and aspects of sustainability, and take a phased approach to the project.

To minimize disruption to the function of the House, the project is proposed to be delivered via a phased approach with approximately 6 phases. The planned approach is to build new mechanical and electrical rooms and a new duct bank as a shell condition to set up for the next phase of installing the new mechanical and electrical system at the House in parallel to the existing systems. Future phases will then include switching over to the new system through local improvements. Additional phases (Phase 1 to 6) will be scheduled in the future over a minimum of 10 years subject to available funding. Currently Hart House is seeking approval for the construction of Stage 1. The completion of this work is critical for the future phases to be possible.

The Hart House Infrastructure Renewal project was reviewed at the University's Design Review Committee (DRC) in November 2023. The DRC membership supports the design of the project, specifically the focus on sustainability, and conserving the heritage character of the building. The project was presented to the University of Toronto Community Liaison Committee (CLC) in January 2024Project consultation with student representatives included Project Planning Committee meetings and breakout consultation sessions during the planning phase. During implementation, Hart House representatives have held consultation meetings with both neighboring Wycliffe College, and students and staff involved in the Kahontake Kitikan Garden to keep them updated, answer any questions and receive feedback on the current design.

The existing building is a total of 10,246 nasm within a gross area of 19,118 gsm. Stage 1 construction proposes approximately 577 gsm of new construction and 1,854 gsm of renovated existing space. It is estimated that the future complete project will propose a total of 9,833 nasm provided within a total gross area of 19,695 gsm. The project has completed Schematic Design for all project phases (1-6), and Design Development, Stage 1. Stage 1 100% Construction Drawings will be completed in Mid-April. The planning consultant, Brook McIlroy, contacted the City in February 2023 to apply for a Zoning Applicable Law Certificate, it was confirmed that a Site Plan Application (SPA) will not be required for this project. The heritage consultant (and prime architect) EVOQ presented the project to Heritage Planning at the City in March 2024. The City supported the approach to submit an HIA for each stage of work for Heritage Permit approval. Assuming timely review and approvals, the project is scheduled to start Stage 1 Pre-Construction Services under Construction Management delivery in July 2024. Future phases will be scheduled at a later date.

The Hart House Infrastructure Renewal Project aims to save Hart House by implementing the following total scope of work:

- Meeting sustainability targets; including sizing and planning for equipment to be compatible with

future campus nodal plant;
- Replacing mechanical systems that have reached their expected lifespan;
- Replacing inefficient steam heating systems with low temperature hot water ones;
- Upgrading domestic hot and cold water, and related venting;
- Providing new mechanical ventilation and air conditioning for the whole building;
- Replacing the branch wiring within the building providing additional outlets to serve modern requirements;
- Completing select roof repairs; and
- Improving inclusivity and accessibility of the Fitness Centre, Gallery Grills, and other Key Spaces.
- The scope does not include window replacement, the enclosure of the Quad, or the inclusion of Photovoltaics.

To allow for the future phases of work, it is critical that Stage 1 moves forward. Stage 1 includes, but is not limited to the following prioritized scope:
- The construction of a new, excavated underground addition to the east of the building, to be used as a new mechanical room, chiller room, and electrical room in the next phase;
- A new buried electrical duct bank along the north elevation; and
- Landscape work on the north and east to accommodate the new duct bank, and mechanical and electrical rooms.

The project delivery method for Stage 1 is Construction Management. Input from the Construction manager is intended to mitigate some cost and schedule risks.

Landscape

In Stage 1 the landscape and site scope of work supports the mechanical and electrical infrastructure upgrades. This will include rehabilitation of the landscape along the north elevation of the building due to the new duct bank; existing trees will be protected where possible, new planting, and new accessible walkway to be installed. An exemption to the University's Facilities & Services standards has been provided for the new duct bank to be above grade (to be encased in concrete under a sloped walkway), rather than buried below grade as typically required to help protect the roots of significant existing trees. The landscape along the east elevation of the building will be reconfigured to suit the new below grade mechanical and electrical spaces including new plantings, replacement trees, new walkway access, and provision for reinstatement of Kahontake Kitikan Garden (planting by others). There are 10 by-law protected trees to be removed, 7 by-law protected trees to be retained, and 10 new trees to be planted.

Sustainability

The University of Toronto is committed to reducing its scope 1 and 2 greenhouse gas (GHG) emissions by at least 37% below its 1990 level of 116,959 tonnes eCO2 by 2030, targeting a climate positive operating model by 2050. The Hart House Infrastructure Renewal Project was initiated prior to the introduction of the Tri-Campus Energy Modelling & Utility Performance Standard, and the requirement of a Project Charter. With consultation with Facilities & Services, the energy saving targets initially recommended in a study by BSN, *Green Heritage Renewal Study (2014 Energy Report)* were adopted and adjusted to account for the changes in the project scope. These adjustments were reviewed and approved by Facilities & Services – resulting in the 1,648,000 ekWh energy savings goal. The project has completed 100% SD for the full project scope, and 75% CD for Stage 1. The consultants have provided an Energy Modelling Report which outlines how the full project (all stages/phases) will meet energy targets. The final energy model predicts an overall annual savings of 3,234,652 ekWh compared to 2019 data, considerably more than the target set. The energy model report is to be updated at each project phase to reflect changes to the design.

The proposed mechanical and electrical upgrades will include measures to minimize energy consumption and promote sustainability. The primary energy conservation measures include (for the full project scope):

- Changing the pool dehumidification system from 100% outside air to a recycling heat recovery system.
- A water-cooled heat recovery chiller will provide cooling to the building while recovering waste heat back into the primary hot water loop.
- Converting the aging steam system to a low hot water temperature system with fully automated local controls. Additional energy savings of the automated control system includes outside air control to occupancy or CO2 measurements, stop/start control to occupancy, zone temperature control. The new systems are planned to be compatible with connecting to a future low temperature campus heating system.
- New air conditioning and outdoor air ventilation systems that include energy saving features that exceed ASHRAE 90.1 standards including;
    - Variable speed drives for all fan and pumping systems controlled to load demand;
    - Heat recovery on exhaust air and CO2/occupancy control on dedicated outdoor air systems;
    - EC motors on fan coils; and
    - Low pressure drop air handling units Interactive controls.

Key Performance Indicator	**2019**	**Proposed by Complete Project (Full project scope)**
TEUI (Total Energy Use Intensity	519.3	327.7
GHGI (Greenhouse Gas emissions Intensity)	75.3	37.0
TEDI-heating/cooling (Thermal Energy Demand Intensity)	309	117.8

It is important to note that these are the anticipated targets once all phases of work are complete (or the full project scope). Stage 1 work will have minimal impact as it is an enabling phase for future phases to be implemented.

Schedule

The proposed schedule for the project is as follows:

- Terms of Reference to CaPS Executive — August 24, 2018
- CaPS Executive Approval for Consulting Fees — April 12, 2019
- Consultant RFP Issued — June 18, 2019
- Consultant Selection and Letter of Award — November 19, 2019
- Schematic Design All Phases — December 2019 – September 2021
- Schematic Re-Design — September 2021 – July 2022
- Design Development Stage 1 - 100% — July 2023
- CM Services RFP Issued — August 30, 2023
- CM Services Selection and Letter of Award — January 9, 2024
- CM Preconstruction Services — January 2023 – May 30, 2024
- CaPS Executive Approval for Full Project Cost (Stage 1) — Cycle 6 April 2024 – June 2024
- Construction Documents Stage 1 - 100% — April 2024
- Sequential Tendering — May 2024 – June 2024
- Construction Period Stage 1 (12 months) — July 2024 – July 2025

This schedule assumes all municipal approvals can be achieved within this timeline.

FINANCIAL IMPLICATIONS:

Discussion of overall costs and sources of funds can be found in the "In Camera" document for this project.

RECOMMENDATIONS:

Be It Resolved:

THAT Subject to confirmation by the Executive Committee,

THAT the Stage 1 project scope of the Hart House Infrastructure Renewal as identified in the "Report of the Project Planning Committee for University of Toronto Hart House Infrastructure Renewal", dated April 5, 2024 be approved in principle; and,

THAT the project totaling approximately new 577 gross square metres (gsm), and 1,854 gross square metres (gsm) renovated space, be approved in principle, to be funded by Hart House Capital Reserves, Hart House Reserves, Hart House Future Ancillary Funds, Fundraising Received, Provostial Funds, and Financing.

DOCUMENTATION PROVIDED:

- Report of the Project Planning Committee for the Hart House Infrastructure Renewal, dated April 5, 2024.

I. Executive Summary

The Hart House Infrastructure Renewal envisions a multi-phase project that prioritizes replacing and upgrading failing infrastructure to ensure it's continued future as an essential University hub. Since opening in 1919, Hart House has been a vibrant centre of intellectual, cultural, social and recreational life, offering exemplary interdisciplinary opportunities for co-curricular learning, cultural production and leadership development. Hart House brings all U of T estates – students, faculty, staff and alumni – from all three campuses together in fellowship, exploration and dialogue with the broader community. It combines a fitness centre with a theatre, art gallery, library, music room, debates room, chapel and many other facilities.

The Hart House Project Planning Committee (PPC) was struck in 2018 to help define the scope of the much-needed infrastructure renewal project. Ailing infrastructure poses a major risk to Hart House. A 2018 study by VFA Canada identified that in 2018, 50% of Hart House's key infrastructure system components have exceeded their expected lifespans, the impacts of this have been experienced at the house in recent years since starting this project. Hart House's immediate and future success depends on beginning the needed infrastructural renewal. In addition to the infrastructure renewal, this project also aims to improve Hart House's commitment to accessibility and contributions to promoting a sustainable environment. Protecting the Hart House brand, protecting the services delivered to students and Hart House's campus partners, and protecting the current funding model are important goals for this project.

The Hart House Infrastructure Renewal Project aims to save Hart House by implementing the following full scope of work:

- Mechanical and electrical infrastructure upgrades that will address current infrastructure of an urgent and critical nature – those components identified as posing a potential risk to the function or operation of the House in the immediate future – to prepare the House for another 100 years of operation.
- The expansion of ventilation and air-conditioning to all areas of the House, with particular emphasis on the Fitness Centre and major programming rooms, such as Great Hall.
- Selective roof repair throughout the House.
- Accessibility improvements to select entrances, the Quad, the Fitness Centre, and the Gallery Grill.

To minimize disruption to the function of the House, the project is proposed to be delivered via a phased approach with 6 phases, over a minimum of 10 years subject to available funding. The central idea is to build new mechanical and electrical rooms, and a new duct bank as a shell condition to set up for the next phase of installing the new mechanical and electrical system at the House in parallel to the existing systems. Future phases will then include switching over to the new system through local improvements. Stage 1 is critical to allow for the future phases of work to move forward. Stage 1 includes, but is not limited to the following prioritized scope:

- The construction of a new, excavated underground addition to the sub-basement on the east of the building, to be used as a new mechanical room, chiller room, and electrical room;
- A new buried electrical duct bank along the north elevation; and
- Landscape work on the north and east to accommodate the new duct bank, and mechanical and electrical rooms.

The existing building is a total of 10,246 nasm within a gross area of 19,118 gsm. Stage 1 construction proposes approximately 577 gsm of new construction and 1,854 gsm of renovated existing space. It is estimated that the future complete project will propose a total of 9,833 nasm provided within a total gross area of 19,695 gsm. The

UNIVERSITY OF TORONTO

UNIVERSITY PLANNING, DESIGN & CONSTRUCTION
UNIVERSITY PLANNING

Report of the Project Planning Committee for
Hart House Infrastructure Renewal

Issued for Stage 1: April 5, 2024

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project has completed Schematic Design for all project phases, and Design Development and 75% Construction Drawings for Stage 1.

The proposed schedule is to begin construction for Stage 1 in July 2024 with an assumed 12-month duration.

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II. Project Background

a) Membership of the Project Planning Committee (PPC)

David Kim, Warden, Hart House (Chair)
Sherry Kulman, Chief Administrative Officer, Hart House
Peter Wambera, Senior Development Officer, Hart House
Jimmy Cheung, Director, Facilities and Capital Projects, Hart House
Hareem Haider, Student Theatre Committee Steward, Board of Stewards
Joshua Grondin, Vice-President (Student Affairs), UTSU & Student UTSU Appointee, Board of Stewards
Meredith Strong, Director, Office of Vice-Provost (Students)
Dave Lehto Chief, University Planning, Design & Construction
Christine Burke, Assistant Vice-President, University Planning
David Sasaki, Managing Director, University Planning
Costas Catsaros, Director, Project Development & Controls
Ron Saporta, Chief Operations Officer, Property Services & Sustainability
Mala Kashyap, student, St. George Campus
James Bird, graduate student, St. George Campus
Richie Pyne, student, UTM
Nana Frimpong, recent grad, UTSU
Neil Merovitch, graduate student, St. George Campus
Prof. Elizabeth Smyth, Vice-Dean, Programs, School of Graduate Studies
Professor Gretchen Kerr, Vice-Dean of Graduate Studies
Bernard Letendre, Hart House Alumni / Senior Member

The following original members have been superseded or are no longer required on the Committee: John Monahan, Warden, Hart House (Chair), Gilbert Delgado Chief, University Planning, Design & Construction, Gordon Robins, Director, Utilities, Facilities & Services, Tom Moss, Manager Recreation & Wellness, Hart House

b) Terms of Reference

The Terms of Reference (TOR) for the Hart House Infrastructure Renewal Project were presented and approved at the CaPS Executive Committee on August 24, 2018. The primary purpose of the Project Planning Committee (PPC) was to help Hart House clearly establish project priorities and scope as captured by the following terms of reference:

1. Identify and prioritize renewal elements based on critical needs and impacts assessment, describing work by category such as life safety, accessibility, and building systems.
2. Address accessibility barriers to ensure Hart House is not only AODA compliant but also a leader in accessibility and inclusion at the University of Toronto.

3. Review needs assessment for a rejuvenated and enhanced Fitness Centre facility that will be inclusive, inviting and highly functional.
4. Review previous documentation including the updated 60-year capital plan options for Hart House and prior Green Heritage Infrastructural Renewal Study (February 2017).
5. Prioritize an infrastructure renewal strategy that will provide environmental benefits and operational cost savings and recommend that the overall renovation be consistent with the Hart House heritage designation under the Ontario Heritage Act.
6. Provide a space and functional plan to accommodate Hart House activities in the areas to be renovated. The space plan should be based upon an assessment of the projected activities, usage and staffing of the House, and as much as possible, increase accessibility and washrooms.
7. Demonstrate that the proposed space program is consistent with the Council of Ontario Universities' (COU) space standards and University of Toronto space standards.
8. Determine the preferred implementation strategy, phasing and schedule for the project.
9. Determine the secondary effects of the project and the impact on the delivery and staffing of programs and activities during construction.
10. Consult widely as appropriate.
11. Determine a total project cost (TPC) estimate for consultant services for the capital project, including associated secondary effects and phasing.
12. Identify all sources of funding for the capital project and operating costs once the project is complete.
13. Address other issues and opportunities as identified by the Committee and make appropriate recommendations.
14. Complete interim Project Planning Report (PPR) by November 2018.

c) Background Information

Land Acknowledgment

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 most recently, the Mississaugas of the Credit River. 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.

History & Context

Commissioned in 1911 by Vincent Massey, Hart House on the St. George campus of the University of Toronto was gifted in 1919 to the University of Toronto as the central gathering place for students. Since then, Hart House has become the co-curricular centre of the University of Toronto: a place that welcomes both campus and community to explore cultural, intellectual and recreational activities. Aside from a wide array of events, lectures, live music and performances, Hart House offers classes for almost every conceivable interest, from filmmaking and acting to archery and dance.

Open 365 days a year, Hart House includes a range of impressive rooms for study, dining, recreation and socializing, a modern athletics and aquatics facility, the acclaimed Justina M. Barnicke Art Gallery, Hart House Theatre, complete wedding, meeting and event services, and the top-rated Gallery Grill restaurant. All are housed within a stunning, neo-Gothic building. Hart House also rents space to other entities: CIUT radio station, and The Hair Place. In addition, Hart House owns and operates a satellite farm location in Caledon, Ontario that is a favoured location for student retreats and recreational activities.

Since 1919, Hart House has been a site that brings students, faculty, staff, and alumni together, beyond the classroom walls, in an atmosphere of common fellowship. However, it would be a mistake to view Hart House as only a building that offers diverse programming. Rather, Hart House stands as a proud champion of education beyond the lecture hall. At a time when there is growing recognition both within academe and the broader community that academic achievement alone is no guarantee of success beyond university, Hart House plays an essential role in complementing students' classroom education by offering: volunteer leadership opportunities; exploration of complex social and political issues; exchange of different narratives and perceptions; development of a global mindset; opportunities for community service; artistic endeavour; and athletic achievement.

Its mandate extends to the delivery of co-curricular educational opportunities beyond its St. George campus location and includes both the University of Toronto Scarborough and the University of Toronto Mississauga.

The Contribution of Hart House: Creating the Leaders of Tomorrow

Though constrained by the high costs of maintaining its aging infrastructure, Hart House has never been more vital to the University of Toronto student experience. It is a place where all U of T students—regardless of their identity, campus, college, faculty or background—are encouraged to discover the full life-long promise of their education. Hart House stands for the education of engaged local and global citizens who become celebrated contributors to our city, country and the world. Hart House has been—and remains—essential to many of the University's most gifted contributors to scholarship, civil society, politics, arts, business and athletics.

In any given year, Hart House provides programs and services to tens of thousands of U of T students, faculty, staff, and alumni. That number grows significantly once community members are included. In 2022-2023, Hart House welcomed and hosted:

- 116,615 total visits to Hart House Fitness Centre[1]
- 2,228 registrants in Creative LifeSchool and Clubs and Music Programs[1]
- 36,916 Hart House Quarterly e-Newsletter subscribers[1]
- 3,359 events space bookings [1].

[1] 2022-23 Hart House Year in Review

Since it was gifted to the University of Toronto in 1919—in one of the great acts of Canadian philanthropy—Hart House has been synonymous with ground-breaking co-curricular education. Vincent Massey imagined Hart House as the central "unifying force" for the U of T, a headwater for the creation of diverse communities to foster a "common life" between unaffiliated students. A treasured ceremonial place, vital bridge to the local community, and preeminent experiential education champion, Hart House has been foundational to the U of T experience for nearly a century.

In addition to offering consistently superior co-curricular programming, Hart House also supports key University priorities, including initiatives that improve access to the university, such as:

- International experience: the Hart House Global Commons, brings together students from all three U of T campuses to connect virtually with students from three continents.
- Community partnerships: Hart House supports dozens of innovative community-engaged initiatives. Hart House partners with various campus groups including First Nations House, Faculty of Kinesiology and Physical Education, New College, and the Dalla Lana School of Public Health. Hart House also partners with various community groups including the Boys and Girls Club of Canada and The 519 Space for Change.
- Graduate students: as part of its five-year strategic plan, Hart House has identified graduate students as a priority student population requiring targeted outreach and programming.

Fulfilling the Deed

The original Deed of Gift from the Massey Foundation declared its desire that the University:

> *"… shall maintain Hart House in the condition in which it is handed over on completion of its construction and that as far as possible the repairs to the building and the renewal of its furnishings shall be executed and carried out in a manner in keeping with its architectural style".*

While renovations and improvements have occurred over time, including a complete redesign of the locker room in 1992 and the installation of an elevator in 2004 these improvements have enabled Hart House just to maintain the building in keeping with the original Deed of Gift, while supporting its vibrant programming and providing access more broadly. However, the House celebrated its 100th anniversary and despite repeated repairs to the building, many aspects of the fabric and infrastructure are coming to the end of their useful life. The 104-year-old Hart House building now requires extensive repair and renewal in order to ensure its endurance and ability to sustain or expand upon its current level of activity for at least another century.

It is also important to note that the building was first designed before environmental sustainability was a concern and before mechanical cooling and superior building envelope systems were imagined. For this reason, the existing mechanical heating, ventilation and control systems contribute significantly to the building's high energy use intensity and many areas of the building are not served by ventilation or air conditioning systems contributing to a lack of comfort for occupants and visitors.

Today steam heat is provided through radiators that are difficult to regulate. Whether fall, winter or spring, occupants must resort to opening windows to regulate an often overheated environment. Similarly, windows are in most cases original single-glazed steel-framed casements and are typically drafty as there is little to no weatherstipping provided. In addition to the discomfort arising from drafts, these windows are not energy efficient by today's standard and contribute to the poor environmental performance of the building.
A more comprehensive renewal is necessary to bring the building in line with contemporary standards for performance and comfort and to address life-cycle repairs. To this end, a 60-year Capital Plan was prepared by Halsall Associates for Hart House in 2008 identifying the major maintenance and repairs that could be anticipated over the following years. This report detailed the crumbling infrastructure, leaky windows and life-cycle renewal that would be necessary to maintain the House in working order. However, more than 'working order' is needed to bring this cherished ceremonial and social space into the 21st Century and beyond.

The building is not only challenged by aging infrastructure but also by outdated design principles. The House was built with the able-bodied in mind and the current built environment does not address varying accessibility needs very well.

Key Background Documents

Six key background documents have been generated as far back as 2008 to begin to address the infrastructure renewal needs of the House.

1. 60 Year Capital Plan by Halsall Associates (2008)
This is an example of a traditional approach to capital planning: patch & repair. Broad qualitative assessments of the entire building were included in the report, however very little analysis of the actual state of equipment was made. It was based on a history of drawings and repairs: a patchwork. Despite Hart House's significant annual expenditures on capital projects, in the amount of approximately $5 million per year, the rate of required repairs outpaced Hart House's ability to undertake a comprehensive approach to maintenance and the overall restoration of the building.

2. Hart House Green Heritage Renewal Study by Baird Sampson Neuert (BSN) (2014)
This document was the first modern attempt to define how to achieve renewal at the House and attempted to create a holistic view of the House weaving together elements of the needed Infrastructure renewal, the desire for new spaces, and environmental sustainability. It defined an approach to the renewal of the House: create a new mechanical room then phase in the work by phases organized by major wings in the building. The new system was proposed to run above hallways in the ceilings.

3. Project Planning Committee (PPC) Report (2015)
This was the immediate predecessor of this committee's work and took place over the course over winter 2015. It broadly affirmed the key BSN conclusions and was based on the baseline assumption that "…many aspects of the fabric and infrastructure are coming to the end of their useful life." Significant focus was given to the quadrangle enclosure in an attempt to make it a space for all seasons. Please note that this 2015 PPR was not approved in principle through University of Toronto Governance, as it was decided to pause to wait for the new Warden prior to initiating a project of this importance.

4. Hart House 5-Year Strategic Plan: *Delight in Discovery* (2016)
This document was created under the purview of the Warden who was appointed in summer 2015.
The stand 'delight in discovery' focused on key program areas of the arts, dialogue, wellness, and community engagement. It also made it a top organizational priority for Hart House's commitment to encourage students towards 'delight in discovery' to be intentionally inclusive of all students, beginning with those traditionally under-represented.

5. Hart House Culture of Belonging (2016)
An outgrowth of Hart House's 5-year strategic plan, this was a multi-stakeholder accessibility and inclusion review that resulted in 89 recommendations, including a priority listing of 63 built-environment and 26 process recommendations, to improve physical and cultural accessibility of Hart House. It soon became the key document guiding internal thinking about physical accessibility at the House and focused on fostering the integration of all users. Accessibility became critical to the strategic plan's success and was confirmed as an essential priority for any new renovation plans.

6. BSN Report (2017)
Baird Sampson Neuert were retained to update the 2014 report to reflect the new Hart House strategic plan. The 'new space' imperative was downgraded as the quadrangle enclosure was removed from the scope. Accessibility was now the key point of emphasis, especially at the Fitness Centre. It attempted to weave together elements of infrastructure renewal, accessibility, and environmental sustainability.

Three additional reports were generated as a part of this PPC to help further refine and represent the current needs of the House.

A. The Risk Model report by VFA (2018)
This was an extensive, qualitative assessment of infrastructure systems at Hart House: electrical, heating & cooling, and plumbing. VFA determined that 50% of Hart House's key infrastructure system components have exceeded their expected lifespans. In 5 years (i.e. by 2023), 56% of all infrastructure components will be older than their expected useful lifespan. Even more alarmingly, over the course of the next five years, the number of components deemed "very likely" to fail (i.e. components 50+% older than their expected useful lifespan) increases by 240% compared to 2018. If Hart House fails to act, by 2023, 35% of all Hart House's critical infrastructure will be "very likely" to fail.

Priority items were ranked according to four criteria:
1. Impact to student services and programming
2. Impact on earned revenue
3. Probability of failure
4. Timeframe to replace system components

This document helps us prioritize critical mechanical and electrical system replacement.

B. Phase & Scope Reconciliation report by Crossey Engineering (2019)
The Phase & Scope Reconciliation report prepared by Crossey Engineering aims to reconcile the VFA Risk report (urgency) with the BSN Phasing recommendations (implementation). This document acts as a road map to all major infrastructure improvements required to fix the House (to be achieved over many years or as funds become available). At the conclusion of all outlined phases of work in this report the *"Hart House mechanical and electrical systems will be renewed such that modern services are provided throughout with increased reliability and reduced maintenance and energy consumption."*

This report recommends that the most economical and expeditious way to make the necessary infrastructure improvements to Hart House through a phased approach:
- Phase 0: Building the necessary mechanical and electrical infrastructure and central plant improvements in unused areas of the sub-basement followed by,
- Phase 1 to 4: A localized sub-phase by sub-phase update to the distribution of modern services throughout the building based on the risk analysis provided in the VFA report.

These phases and their sequencing are suggested by Crossey to limit building and area shutdowns of existing systems. The work is estimated to take two years and ten months.

The Crossey report captures scope of work in three "Parts". Part 1 (infrastructure renewal) and Part 2 (accessibility enhancements) correspond with the scope of work that this project aims to achieve. These scope items are reviewed in section II.D. Project Scope Overview. Part 3 refers to the Fitness Centre refresh and redesign and will not be included in this project.

C. Memo Re: HH Renewal – Alternate Phasing Strategies by Crossey Engineering (2019)

As a follow-up to the Phase & Reconciliation Report, Crossey produced a memo to highlight two alternative options for fixing the House in an attempt to determine more cost-effective ways of proceeding with the infrastructure improvements. Initial estimated costing for the project outlined in the Phase & Reconciliation Report (a.k.a. the Base Option) was seen as financially out of reach for Hart House, and it seemed prudent to analyze other alternatives to better understand the spectrum of options available.

In addition to summarizing the Base Option, two other alternative approaches were analyzed: Alternate 1 – Full Shutdown, and Alternate 2 – Hybrid Summer Shutdowns.

Alternate 1 explores a full two-year shutdown of the House and is the most cost-effective way to realize the infrastructure renewal project from a construction standpoint. It essentially implements the Base Option in a compressed timeline. However, these effects are more-than-offset by the loss of revenue (both earned and ancillary student fee) anticipated by shutting down the House and the various indirect costs incurred by shutting down the building including millions of dollars in HR payments and costs that are harder to quantify including the loss of reputation and the loss of vibrant operations. A full commentary is provided in section II.D. which highlights the criteria used to select the best of the three alternatives explored. This option reduces the 34-month duration of the Base Option to 24 months.

Alternate 2 implements the Base Option but with full shutdown periods limited to one summer, and full shut-down of the Fitness Centre for a second summer. It attempts to find a "hybrid" approach to the infrastructure renewal project. This option reduces the 34-month duration of the Base Option to 32 months.

Project Planning Committee's Framework for Prioritizing Project Scope

The scale of Hart House's infrastructure is vast. A framework was developed to help prioritize the great number of renewal elements within the project. This prioritization will be essential to "right-size" the scope of the project to available funding.

A 5-point framework was developed by the Project Planning Committee (PPC), in order of importance:

#	Priority	Definition	Components

1	Life Safety Priorities	What systems pose the risk of causing major life safety issues at Hart House?	• Electrical • Life safety systems
2	Heritage Asset Preservation	What systems pose the risk of irreversible property damage to this heritage asset?	• Thermal systems • Roof repair
3	Accessibility	What accessibility barriers need to be overcome?	• Elevators • Ramping
4	Operational Enhancements	What other programmatic or operational enhancements are desired?	• Space improvements
5	Sustainability	What are potential opportunities to introduce environmental benefits and sustainability?	• Energy use and carbon emission reductions

Committee agreed that Priorities #1 and #2, Life-Safety and Heritage Asset Preservation, were "must-haves" before other elements could be considered, in order to avoid major life safety issues or irreversible property damage.

Determining Key Accessibility (Priority #3) Items

Hart House has an organizational mandate to improve physical and programmatic accessibility and inclusion. In terms of prioritizing accessibility, the committee agreed on the following:

- Focus on student experience first and foremost, and then
- Begin with safety issues, then
- Lower major physical barriers to most used student-spaces, then
- Lower barriers that prevent full enjoyment most-used student spaces, then
- Lower barriers to spaces less frequently visited.

The following list of issues and approaches was considered in relation to accessibility improvements:

- Single path: avoid separate paths for different users if possible
- Path analysis: prioritize barriers early in the travel sequence versus those found later in the travel sequence
- Variety of users: mobility, visually impaired, hearing impaired
- Individual accommodation: not everything is accounted for in building codes and guidelines
- Impact: which improvements will have the greatest impact on the greatest number of students?
- Opportunity: try to make improvements with every project
- Do not create new barriers

Three Project Delivery Options Considered

Three project delivery options were considered to roll out the infrastructure improvements at the House:

1. The Base Option which minimizes closure of the House;

2. The Hybrid Option which considers closing Hart House for two summers, where full closure is limited to the first summer, and full shutdown of the Fitness Centre occurs during the second summer; and,
3. The Fully Closed Option, which proposes to close Hart House for two full years.

A **decision matrix** was created to weigh various criteria against each option:

	Options (A=3, B=2, or C=1, where A is best)		
Criteria (Weight scale 1 to 5, 5 being of greater importance)	**"Fully" Open (Base Option)**	**Hybrid Open/Closed**	**Fully Closed**
Construction cost (4)	• High • C (4x1=4)	• Medium • C (4x1=4)	• Low • B (4x2=8)
Construction duration (5)	• 34 months • C (5x1=5)	• 32 months • C (5x1=5)	• 24 months • A (5x3=15)
Revenue Impact (5)	• Operations to function as "normal" except for limited (1-2 month) zone closures. • Business revenue reduced during kitchen closure for renovations. • A (5x3=15)	• B (5x2=10)	• Almost non-existent. • Only a narrow portion of Hart House activity could effectively decant to another site (e.g. Hancock lecture). • No business revenue. • C (5x1=5)
Indirect Costs (3)	• A(3x3=9) • Some offsite storage/employee relocation	• B(3x2=6) • Some offsite storage/employee relocation • Minimal severance payouts	• Software license contractual commitments • Tenant leases • Significant severance payouts • Offsite storage/employee relocation • C(3x1=3)

	Options (A=3, B=2, or C=1, where A is best)		
Criteria (Weight scale 1 to 5, 5 being of greater importance)	**"Fully" Open (Base Option)**	**Hybrid Open/Closed**	**Fully Closed**
Impacts on student users (including ancillary student fee) (5)	• Least impact on students. • 16 sub-phases offer least possible disruption. • A (5x3=15)	• B (5x2=10)	• Full loss of Hart House • Inability to fund construction project with no revenue • 2017-18, 3,778 student room/event bookings per year • Since no student access to Hart House, student fee ancillary fee must be reduced. • C (5x1=5)
Impacts on campus users (4)	• Least disruptive model. • A (4x3=12)	• Least disruptive model (given summer timing of shutdowns) • B (4x2=8)	• Most disruptive model. • Full loss of Hart House as an event venue during construction. • 2017-18, 1259 event rooms/year • C (4x1=4)
Reputational impacts (5)	• Repeat users may experience frustration with extended construction period. • A (5x3=15)	• Repeat users may experience frustration with extended construction period. • B (5x2=10)	• Hart House a unifying force for a diverse and decentralized university. Even under best decanting scenarios, unifying reputation damaged. • Expect approximately 10 years to rebuild business • C (5x1=5)

	Options (A=3, B=2, or C=1, where A is best)		
Criteria (Weight scale 1 to 5, 5 being of greater importance)	**"Fully" Open (Base Option)**	**Hybrid Open/Closed**	**Fully Closed**
HR implications (3)	• Limited • A (3x3=9)	• Modest • Moderate layoffs • Difficult to work off-site for 4 months. • B (3x2=6)	• 30 CUPE F/T layoffs • 40 USW F/T layoffs • Potential to exercise union bumping rights across University • Loss of talent and retraining costs • Severance payouts • C (3x1=3)
Disturbance (3)	• Extended period of noise and dust a challenge for spaces adjacent to local construction. • B (3x2=6)	• Extended period of noise and dust a challenge for spaces adjacent to local construction. • B (3x2=6)	• Highest degree of uncertainty connected to secondary effects • Impacts on Hart House tenants. • C (3x1=3)
Total	**90**	**65**	**51**

Base Option

- Best score from the decision matrix.
- Pro: Greatest ability to offer services during construction.
- Pro: Superlative service has potential to help offset user frustration at discrete closures.
- Pro: Continue to promote branding and protect business revenue
- Con: Longest duration.
- Con: Construction could reduce access to locker rooms in fitness center which may be difficult to manage.

Hybrid Option

- Second best score from the decision matrix.
- Pro: Larger phasing may limit degree of construction effects (i.e. noise, dust) into adjacent spaces as more contiguous spaces clumped.
- Con: High degree of difficulty for constructor to guarantee return of building at end of summer shutdowns.
- Con: Difficult to communicate complete/partial but limited shutdowns to user base.

Fully Closed

- Worst score from the decision matrix.
- Pro: Lowest direct construction cost.
- Con: Since financial model to fund construction project largely depends on student fees and Hart House business revenues, any action that significantly depresses those streams requires alternate sources of revenue
- Con: Highest indirect costs (Severance/Tenant/Software Licenses/loss of talent and skills)
- Con: Potentially take 10 years to rebuild business

From this analysis it was determined that the Base Option is the better option from a student services perspective despite having the highest construction cost associated with it.

d) Existing Space

i. Existing Facilities

House-Wide
Hart House is a three-storey high courtyard shaped building with a single storey extension on the east side and two basement levels. It contains athletic facilities, offices, a chapel, library, art gallery, theatre, Great Hall, cafeteria, restaurant and other rooms for specific and mixed purposes of meeting and gathering plus laundry rooms, kitchens and other service rooms in a total of 10,246 nasm and a gross building area of 19,118 m2 (205,779 ft2). See table below for a summary of spaces organized by COU category.

Hart House Overall	**Existing (m2)**
Gross Area (gsm)	19,118
Net Assignable Area (nasm)	10,246
Non-Assignable Area (sm)	4,558

Hart House by COU Category:

Category	**Description**	**Existing NASM**	**Existing %**
6.0	Recreation/Athletic Space	3,796	37
7.0	Food Service	1,369	13
8.0	Bookstore/Other Merchandising Facilities	21	0
9.0	Plant Maintenance	168	2
10.0	Administrative Office and Related Space	1,082	11
11.0	Non-Library Study Space	628	6
14.0	Common Use and Student Activity	758	7
15.0	Assembly and Exhibition Facilities	2,422	23
Total NASM		**10,246**	100
16.0	Non-Assignable	4,558	
Total		**14,804**	

Site elements include a landscaped interior courtyard (quadrangle) built over the theatre and squash/racquetball courts with stone patios and a grassed area and exterior stairs/ramps. The attached Soldier's Tower is considered a separate entity and has, therefore, been excluded from this project, though it should be noted that Soldier's Tower connects to the Hart House infrastructure systems.

Measuring the Likelihood of Infrastructure Failure

The ailing mechanical and electrical infrastructure poses an existential risk to Hart House. In the summer of 2018, VFA Canada performed a detailed analysis of Hart House's critical infrastructure systems:

- Plumbing distribution systems
- Mechanical systems
- Electrical systems

In total, VFA studied 232 individual system components. As per the VFA report (page 7, figure 1, VFA Hart House Risk Model 13Aug2018), these are the key findings:

- As of August 2018, 50% of all studied components were older than their expected lifespan, and in need of immediate replacement.
- In 5 years (2023), 56% of all components will be older than their expected useful lifespan. However, in that same time period, the number of components deemed "very likely" to fail (i.e. components 50+% older than their expected useful lifespan) increases by 240%. In 5 years, 35% of all Hart House's critical infrastructure will be "very likely" to fail.
- In 10 years (2028), 76% of all components require replacement, and fully 44% will be "very likely" to fail.

Summary of Rate of Decay of Hart House Infrastructure (as per VFA 2018 analysis)

	2018	**2023**	**2028**
"Very likely" to fail (50+% older than expected useful lifespan)	24	82	103
"Likely" to fail (20%-49% older than expected useful lifespan)	68	36	35
"Somewhat likely" to fail (0% to 19% older than expected useful lifespan)	23	12	39
Sum "Very likely to fail" + "Somewhat likely to fail" + "Likely to fail"	115	130	177
Total components studied	232	232	232

Sum of “Very likely to fail” + “Somewhat likely to fail” + “Likely to fail” as % of all studied components	50%	56%	76%
% all components “Very likely to fail”	10%	35%	44%

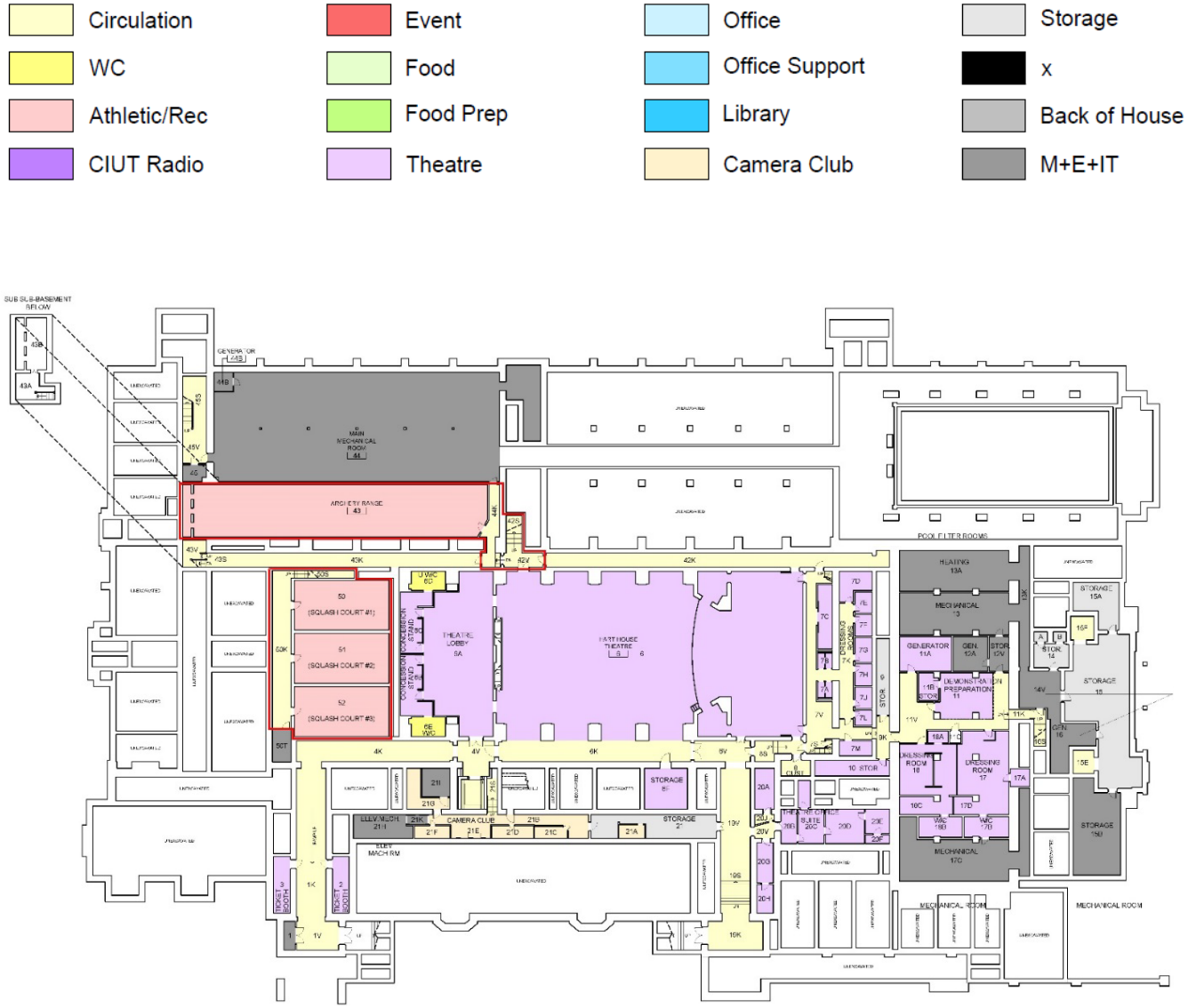
Delaminated Roof Flashing.

Air handler in sub-basement

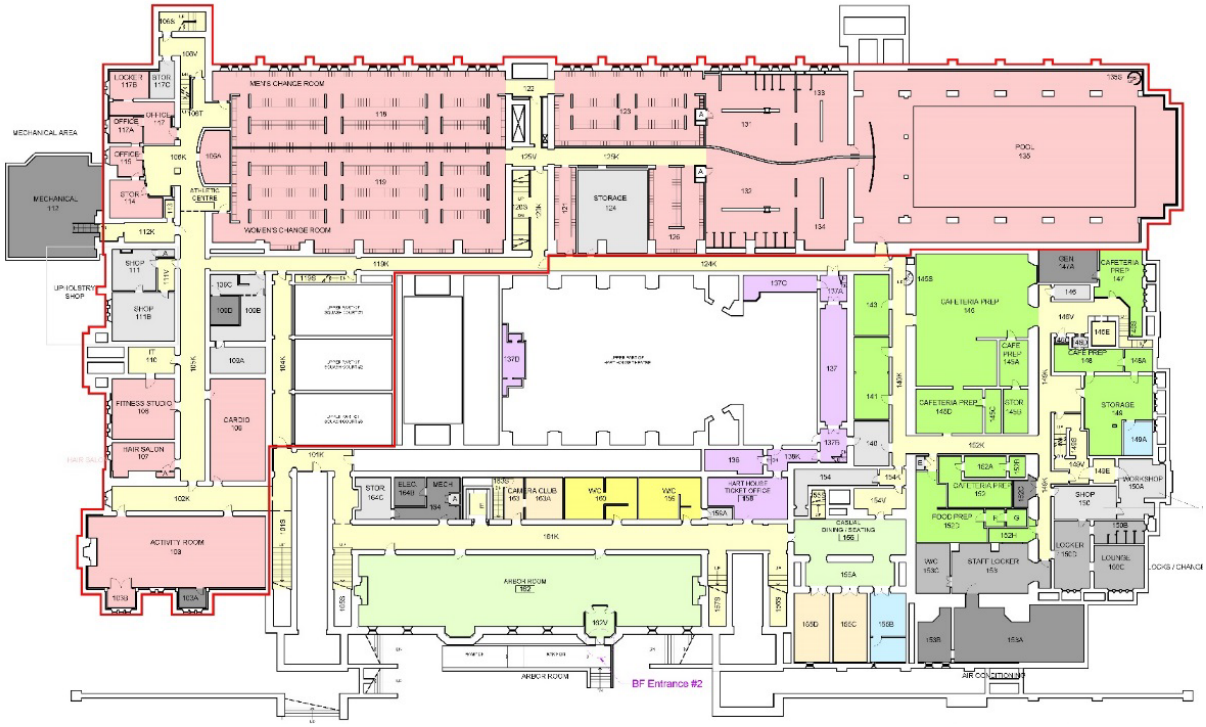
Pool room pipes – old and new

Water leaks near electrical

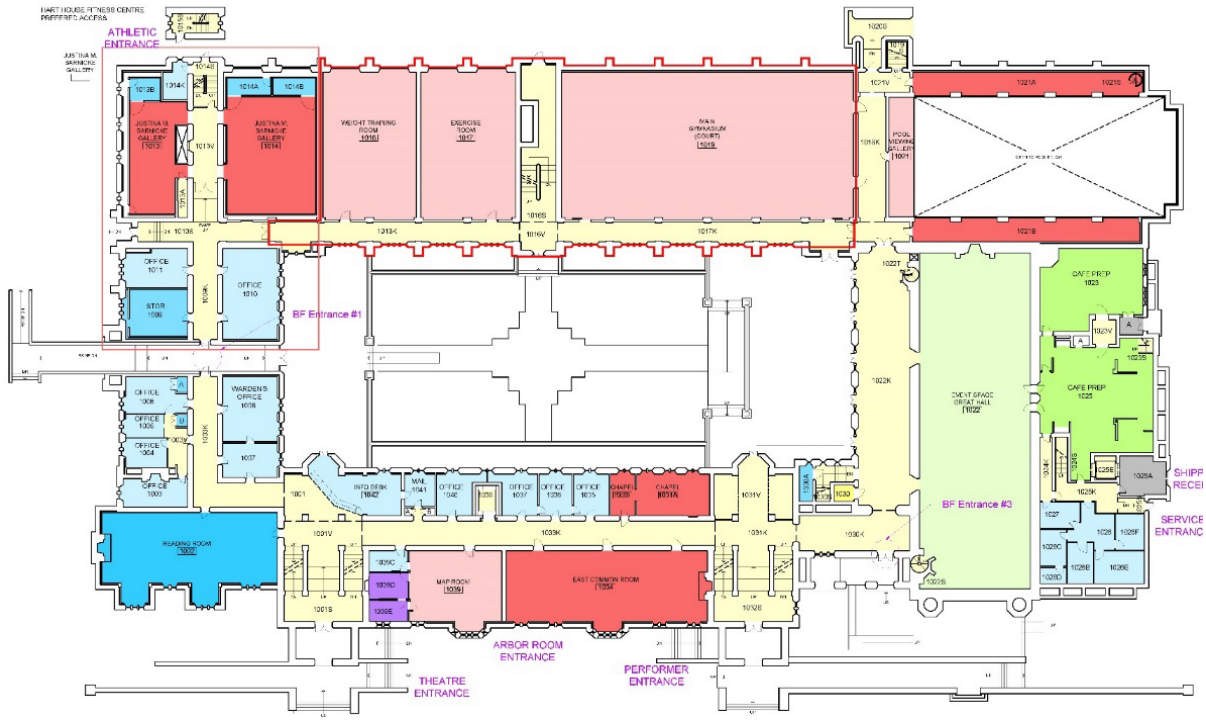
Rusting electrical components



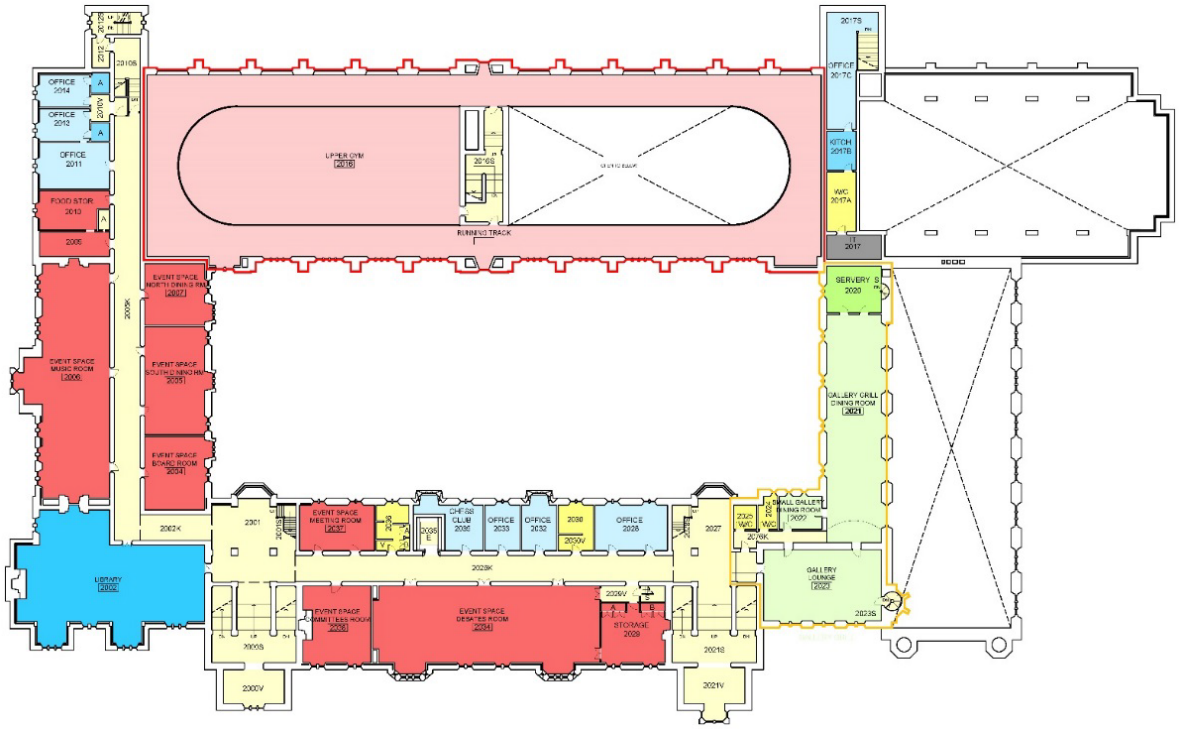
Sub-basement: Programme overview at Hart House



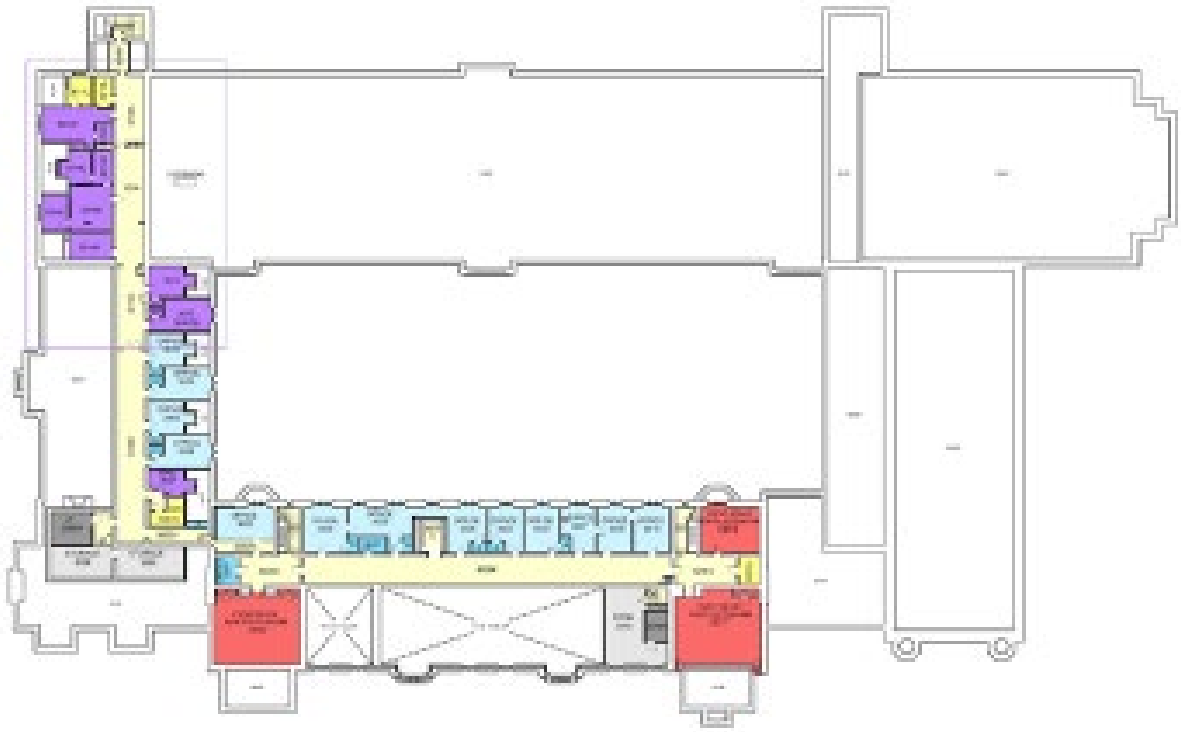
Basement: Programme overview at Hart House



Ground Floor: Programme overview at Hart House



Second Floor: Programme overview at Hart House



Third Floor: Programme overview at Hart House

Gallery Grill

The Gallery Grill offers an exceptional dining experience within the University. Open to the public from September through June, the Gallery Grill offers weekday lunch. The Grill is also available most days for booking private functions, dinners and receptions.

The Gallery Grill occupies a small footprint of 244 nasm on the second floor of Hart House. It primarily consists of the Dining Room (125 m2) with a smaller dining room off to the side (14 m2) and the café which is open daily for coffee and quicker snacks. See below for a space break-down.

Gallery Grill			
Category	**Room No.**	**Name**	**m2**
7.2	2020	Serving Area	25
7.1	2021	Gallery Grill Dining Room	125
7.1	2022	Small Gallery Dining Room	14
11.2	2023	Gallery Lounge (Café)	81
		Total NASM	**244**
16.2	2020S	Stairs	1
16.2	2021S	Stairs	58
16.2	2021V	Corridor	25
16.2	2023S	Stairs	3
16.2	2024	Washroom - Men	6
16.2	2025	Washroom - Women	5
16.2	2076K	Corridor	11
		Total Non-Assignable	**108**
		Total Area	**352**

Theatre

Hart House Theatre is a focal point for the performing arts in the University community. Over a thousand students participate each year in extracurricular drama, dance, and music performances. Hart House Theatre also mounts a full season of production featuring both student and professional actors. Blending informal and formal education in a professional theatre space, they create innovative programming which the whole community can enjoy.

This beautiful 430 seat, fully equipped, proscenium theatre resides totally underground. Hart House Theatre gave rise to the careers of such legendary performers as Donald Sutherland, Lorne Michaels, William Hutt, Measha Brueggergosman, Zaib Shaikh and many others.

Art Gallery

The Justina M. Barnicke Gallery at Hart House, part of the Art Museum of the University of Toronto, organizes and presents an intensive year-round program of exhibitions and events that foster innovative research,

interdisciplinary scholarship, and knowledge of Canadian art and its histories at a local, regional, and international level.

Hart House Hospitality Services

Most of Hart House's historic rooms and spaces are also available for private reservation. These rooms include the Great Hall, Lower Gallery and Quadrangle and rooms that range from large spaces accommodating up to 144 for receptions to medium-sized and intimate spaces accommodating smaller gatherings.

Existing Rooms Available for Booking

Room Name	Location	Category	Capacity*
Great Hall	East Wing	Signature Space	140/280/426
The Quad	Centre	Signature Space	Often booked with the Great Hall
Lower Gallery	East Wing		Typically booked with Great Hall and the Quadrangle
Debates Room	2nd floor	Large room	60/100/144
East Common Room	1st floor, South wing	Large room	60/100/133
Music Room	2nd floor, West wing	Large room	60/100/134
Arbor Room	Lower Level, South wing	Medium Room	
South Dining Room	2nd floor, West wing	Medium Room	12/30/50
Bickersteth Room	3rd floor	Intimate Room	12/20
Board Room	2nd floor, West wing	Intimate Room	14
Chapel	1st floor, South wing	Intimate Room	30
Committees Room	2nd floor	Intimate Room	16
Meeting Room	Overlooking Quadrangle	Intimate Room	14
North Dining Room	2nd floor, West wing	Intimate Room	16/25
South Sitting Room	3rd floor, South-East	Intimate Room	16/20
Hart House Farm	Caledon Hills	Unique Places	150 acres
Theatre	Beneath the quad	Unique Places	430 seats

*Note: capacity listing for large rooms is identified as follows: classroom/dinner/receptions

Hospitality Services at Hart House book these 15 rooms, and their support spaces (coat check, food services, etc.). In 2017-18, approximately 4,438 room bookings were made, with 2,528 for Hart House club and committee use as well as other Hart House Programming and internal staff meetings. Another 665 room bookings were made for other University student club use. University departments accounted for 458 room bookings during the year. Collectively the University's use of Hart House accounted for approximately 3,789 room bookings in 2017-2018, or 85% of annual bookings, with the balance coming from external clients. All room bookings for recognized student groups are free of charge.

Today Hart House is busier than ever before. Room bookings have grown by over 28% in the past 5 years but have started to level off with an increase of under 3% this past year. That said, the House is approaching capacity during peak seasons. Demand is very high for all the types and sizes of spaces. Students are often looking for meeting space while others are often looking for event spaces. While Hart House receives over fifty requests a day for space, many cannot be accommodated.

While demand is highest from September to June and July and August are typically the low season, weddings fill every weekend in the summer months. Today only two small meeting rooms are currently outfitted with air-conditioners. However, if each of the event spaces were air-conditioned, business would grow considerably in the two slowest months.

ii. Operations – Revenue

Hart House receives no direct funding from the central University administration and is considered an ancillary service. Its income is derived from two primary sources:

1. Obligatory student ancillary fees (recently APPROVED Student fees St. George full time for 23/24 for students at the St. George campus, St. George part time and significantly less for Scarborough and Mississauga students); and,
2. Revenues generated through various Hart House events such as weddings, corporate and campus bookings, fitness membership and fundraising.

Because Hart House receives funding from all University of Toronto students it is accountable to provide programs, services and spaces that are accessible and inclusive to the student body in its entirety. Hart House has a tri-campus mandate to provide programming for all three U of T campuses. In 2017/18, Hart House began "embedding" programs at UTSC and UTM on a part-time basis.

More than 50% of Hart House's revenue is derived from a tri-campus student fee, with the rest of the revenue derived from earned revenues. Hart House has a unique funding model, since it is classified as both a student and service ancillary and presents its budget to both Council on Student Services (COSS) and the Service Ancillaries Review Group (SARG). Students have always paid a mandatory Hart House fee, and until 1992, the university directly funded Hart House. Until 2001, there was also significant central support for Hart House Theatre.

III. Project Description

a) Vision Statement

Summary: A University Jewel at Critical Risk

Hart House is essential to the University of Toronto experience. It is an architectural jewel on the St. George campus, the largest student centre on all three campuses, and one of the university's premier co-curricular learning centres. However, crumbling and dilapidated building infrastructure puts Hart House in grave jeopardy. A 2018 study by VFA Canada identified that in 2018, 50% of Hart House's key infrastructure system components have exceeded their expected lifespans. In 5 years (i.e. by 2023), 56% of all infrastructure components will be older than their expected useful lifespan. Hart House can no longer operate successfully without a significant capital renewal at a scale that has not been seen at Hart House since at least the early 1970s, if ever, since construction began in 1911.

Hart House celebrated 100 years as a student centre as of November 2019. The Hart House Infrastructure Renewal Project proposes significant and transformational change that will address infrastructural challenges and accommodate additional programming necessary to meet demand and provide additional revenue streams that support programs. The infrastructural renewal proposed will be respectful of heritage while providing for current and future success.

Success of this project will be measured, in part, by: the safeguarding of this unique asset for future use, the improvement to year-round comfort of existing spaces, the expansion of accessibility and inclusion throughout the facility, the reduction of maintenance costs and the incorporation of better performing systems that generate positive returns, but also by the opportunity to bring the functions of Hart House into the 21st century to sustain, expand and support its rich mission.

Sources of possible infrastructure failure facing the facility multiply every day, but for illustrative purposes only, three include:

1. Three electrical transformers installed in 1949. They have a reasonable safe lifespan of 30 years. They are now 70 years old;
2. Steam heat distributed through crumbling and leaking pipes from dating 1915;
3. The pool skylight, in desperate need of replacement, cannot be replaced without first addressing major failures in the surrounding roof.

A decades-long under-investment in infrastructure renewal leaves Hart House facing an inevitable building closure in the near term. Such a closure would not only shatter Hart House's short-term ability to effectively serve the U of T community, but it would also foment long-term reputational damage.

Challenge: "React and Repair" Strategy Has Led to a Breaking Point

Much of Hart House's critical infrastructure is from the mid-1970s, with some components, including electrical panels and transformers, from the 1940s. There has been a persistent under-investment in the building's critical infrastructure systems, with only the most acute problems 'repaired' (as opposed to the broader idea of

'renewed'). These repairs were conducted in relative isolation. Multiple expert reports confirm that much of Hart House's infrastructure is in desperate need of replacement. A recent report examined the thermal, electrical and plumbing systems (envelope and finishes were not included). *In 2019, it was reported that fully 43% of all studied infrastructure components require immediate replacement; within two years, this number grows to 59%.*

Expert analyses, from multiple consultants and reports gathered since 2008, yield consistent data points: Hart House's infrastructure is at clear risk of failure.

For students and all other users of the House, the signs of this under-investment and repair-only strategy are far too easy to see. Today, it is a given that:

- a failed emergency power automatic transfer switch resulted in manually overriding the switch to sustain the building's life safety systems on emergency power 24/7; this place other buildings, specifically Medical Sciences Building and Sigmund Samuel Library Building at risk;
- steam pipes burst regularly;
- the roof leaks in heavy rains;
- entire rooms—including the Gallery Grill—are abandoned in summer because of heat;
- windows are opened in winter to offset the stifling heat from the radiators;
- disintegrated drainage pipes cause attendant water damage;
- exposed brick walls, travertine floors, and other finishes are cracked and stained; and
- radiators knock violently.

Hart House's critical infrastructure is now a pressing concern, due to the:

- consistency of expert evaluations calling for infrastructure renewal;
- frequency and number of mechanical breakdowns/repairs steadily increasing;
- growing costs of maintaining obsolete equipment;
- approach of layering repair upon repair becoming less and less effective;
- rendering of service rooms and corridors a warren of nearly inaccessible pipes and cables; and
- confusion created by new partial interventions installed in parallel to older enterprise systems.

Hart House has reached the point where its risks are growing, and discrete interventions can no longer sustain the building. The University risks damaging its reputation should Hart House suffer a catastrophic system failure or further allow the visible state of the building to decline.

Renewal to Serve Expanded and Diversifying Student Body

What is required to ensure that for the next 35 years (industry standard infrastructure lifespan), Hart House can continue to support the U of T's critical mission to deliver whole-person education to the University's rapidly evolving student body?

Hart House is obliged to ensure its major program areas are physically accessible. Equally, since it is only with increasing expense and risk that essential building services (heating, cooling, water, sewage, electrical, envelope, and fire safety) are kept functioning, a new approach to infrastructure renewal is required. Hart House is operating on borrowed time. A major overhaul is required to ensure:

- continued building operation;
- occupant safety; and
- necessary accessibility improvements, and improvements to the Fitness Centre.

The Hart House's Fitness Centre is arguably the busiest area of the House. In 2016-17, it welcomed 18,790 unique student visitors. (By comparison, the three KPE managed facilities on St. George received 33,754 unique student users the same year). And yet, the Hart House Fitness Centre is one of the least physically accessible parts of the House.

The fundamental requirement for all users of Hart House is that it become much more accessible and inclusive to students to all students and aging alumni, and that it remains safe from fire, water damage, decay and dilapidation. Such an infrastructure modernization effort would offer extremely valuable opportunities to conserve energy, save water, decrease carbon emissions, and drastically improve user comfort.

A Vision of Universal Accessibility & Inclusion

The University has an obligation to prepare students for the evolving world in which they will live and work, and Hart House is well-positioned to support this effort through its sustained focus on student engagement in arts & culture, debates & dialogue, recreation & wellness, and community-engaged learning. As a site of discovery, Hart House supports students in their acquisition of untapped skills and personal resources that will prove essential in their private and professional lives beyond U of T; the development of competencies to better understand and embrace difference – of identity, of position, of perspective – that will enable students to engage more effectively with a diverse world; and the discovery of their own, unique voices that, together, can enrich the University and the world beyond its walls.

There is incredible potential to update the building and its processes, policies and programming models at Hart House, and Hart House is well positioned to achieve the ambitious goal of becoming an inclusive and accessible space for all students. Indeed, there are many examples of such work already underway, and that Hart House values diversity and inclusion as integral to its learning model.

The aim is for Hart House to be not only AODA compliant but also a leader in accessibility and inclusion best practice at the University of Toronto.

- Hart House needs to address these challenges holistically and strategically. With no central assessment, coordination or budgeting functions expressly devoted to addressing physical accessibility and inclusion barriers, such issues have been recognized and resolved independently and discrepantly across House departments;
- Wherever possible built environment solutions should integrate—not segregate— users. Integrated spaces are essential to building and supporting inclusive communities;
- Universal accessible design is good design. Applying an accessibility lens to designing spaces results in greater access and agency for all users of a space, not only those with accessibility considerations. The same can be said for the importance of accessible services.

Hart House is well positioned to achieve this ambitious goal of becoming a significantly more inclusive and accessible space. Embedded in its model is the bringing together of different narratives and perceptions into learning communities where diversity and inclusion are highly valued.

This is reflected in Hart House's 2016 – 2020 Strategic Plan, where one of the objectives reads:

> *Hart House will work to provide students of all backgrounds and identities with an exemplary, inclusive and welcoming experience of exploration and discovery essential to their personal and professional development; act as a community-builder inside and outside the University; and serve as a modern, accessible, and preferred home for students, staff, faculty and members of the broader community.*

As Hart House better serves the University's richly diverse student population, the result will be greater enrichment of experiences and perspectives, and this will continue to inform the accessibility and inclusion conversation at Hart House going forward. Success will mean that:

- The diversity of the University of Toronto student demographic is fully reflected in student engagement at Hart House;
- Individuals feel safe, have agency and can act independently to navigate and use the House;
- Individuals are able to fully participate within Hart House's physical spaces and programming; and
- A respect for difference is integrated into space design.

Accessibility upgrades should address the following:

- How might different groups use this space?
- Who may not be able to access or fully participate within the space; and
- What steps need to be taken to make this space accessible to everybody?

b) Alignment with Strategic Plan

This project supports Hart House's Strategic Plan, Preparing the Table, by furthering advancements in the building infrastructure with respect to accessibility and reducing our environmental impact through the inclusion of features and equipment that are more energy efficient. At the same time, this work will expand our capacity for growing revenue generating operations, thus enabling more investment into our student-centered programs and facilities. And overall, many components of the infrastructure renewal work will enhance various aspects of the student experience within our facilities including through the promotion of inclusivity and improved environmental conditions in many of our spaces.

c) Occupant Profile

Hart House offers University of Toronto students the opportunity to come together outside classrooms and across their differences in pursuit of life-changing, community-enriching "high endeavor" through the arts, dialogue and wellness. Further, the Hart House of today continues to evolve into a more diverse and inclusive space than ever before while remaining true to its mandate.

The building accommodates several distinct clubs and committees, along with approximately 90 full-time appointed staff members and approximately 350 part-time staff. The student-led, staff guided clubs and committees of Hart House are an important vehicle for co-curricular education. Through its Standing Committee

structure, Hart House provides leadership opportunities for students and encourages the exploration of ideas, perspectives, and issues of importance to not only the House but society at large. In addition to ten Standing Committees, Hart House supports many club programs in the arts, dialogue and wellness.

In addition to the Clubs and Committees, there are 60+ staff led programs and 300+ events held throughout the year including weekly concerts, film series, workshops, speaking series, free drop-in fitness classes and several signature events.

Area	# FTE	# Casual positions (roughly)	Peak periods, seasonal cycles, use patterns
Although we are busy year-round, we have a decrease in causal contracts during the summer months.			
Hospitality	25	133	Exception - Gallery Grill which closed for summer break impacting roughly 20 people
Fitness Centre	5	114	
Integrated Learning and Community Engagement	7	30	
Hart House Theatre	5	25	
Art Museum, JMB	2	4	
Facilities	20	25	
Hub	3	9	
Finance	4	1	
HR	2	0	
Warden's Office	5	10	
Advancement	2	2	
Comms	5	1	
IT	2	0	
Total	**87**	**354**	

d) Project Phasing, Space Requirements, Program, and Functional Plan

The following sections outline the recommended project phasing, space requirements, program, and functional plan. The project's core focus is infrastructure upgrades and does not anticipate changes to Hart House's program. Any impacts to the programmed spaces and the net assignable square meters (nasm) is a result of the infrastructure requirements, and improvements to accessibility.

The existing building is a total of 10,246 nasm is provided within a gross area of 19,118 gsm. Stage 1 construction proposes 577 gsm of new construction and approximately 1,854 gsm of renovated existing space, for a total of 10,087 nasm provided within a gross area of 19,695 gsm. It is estimated that the complete project with all future phases proposes 577 gsm is new construction and 19,438 gsm is renovated existing space, for a total of 9,833 nasm is provided within a gross area of 19,695 gsm. Refer to *Space Program* section for more information on proposed changes to space. The project has completed Schematic Design for all project phases, and Design Development and 75% Construction Drawings for Stage 1.

Project Phasing

Phasing this project is critical in order to reduce the negative impact that infrastructural improvements may have to the experience of the House. Project phasing was initially recommended by Crossey, outline in the Phase & Scope Reconciliation report. EVOQ Architecture was hired in 2019 for the Schematic Design of all project phases. Below is a break-down of the phases as proposed by EVOQ, which are numbered to represent the chronological order of proposed implementation. The phases represent areas of work that can be grouped together into construction stages. The project proposes to complete Stage 1 between July 2024 – July 2026, future phases have not been scheduled but are anticipated to be completed over a minimum of 10 years subject to available funding. Due to budget constrains for Stage 1, the scope was reduced, and a portion of the work has been deferred be a future phase.

To minimize disruption to the function of the House, the project is proposed to be delivered via a phased approach with 6 phases. The central idea is to build new mechanical and electrical rooms and duct bank (Stage 1) to allow for a new mechanical and electrical system to be installed at the House in parallel to the existing systems, and then switch over to the new system through local improvements. Future phases will be scheduled in the future.

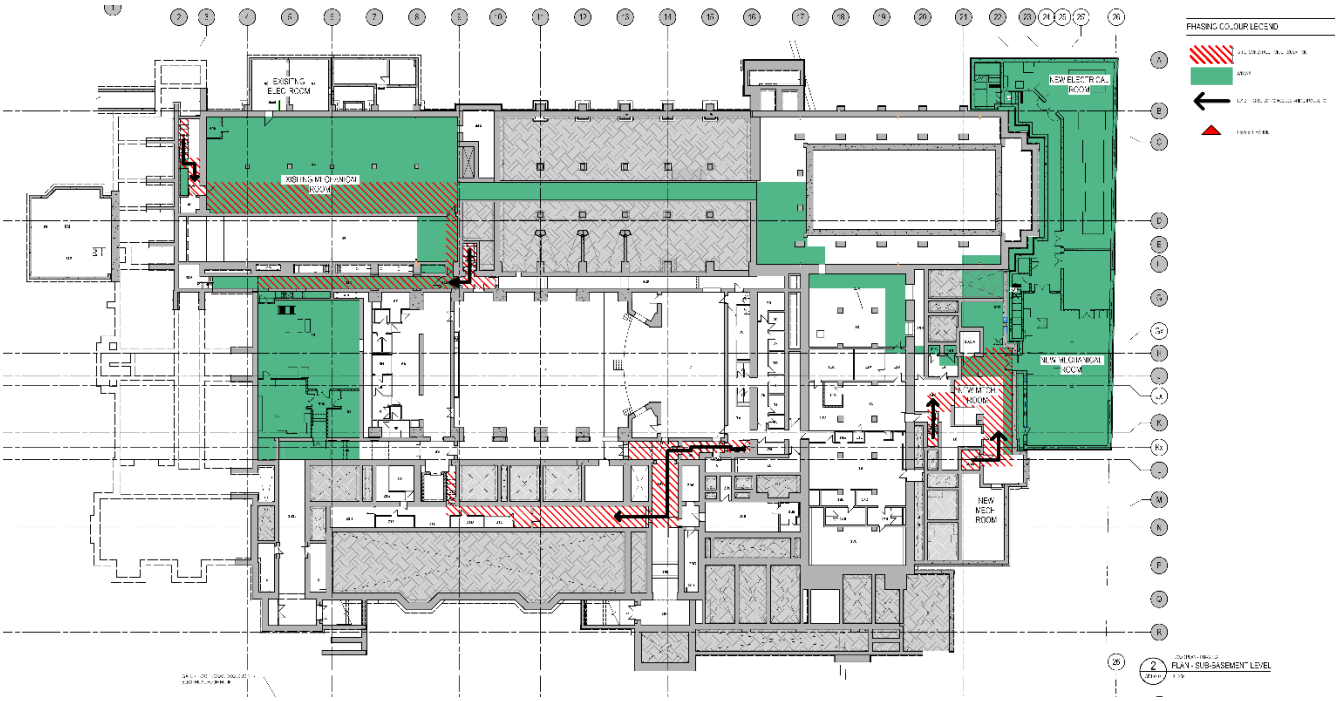
- Stage 1: Building the necessary shell structure for new mechanical and electrical rooms in sub-basement and new electrical duct bank.
- Deferred Stage 1 works: Building additional necessary mechanical infrastructure and central plant improvements in unused areas of the sub-basement, installation of new systems including new electrical substation, and distribution centres.
- Phase 1A to 6: A localized sub-phase by sub-phase update to the distribution of modern services throughout the building based on the risk analysis provided in the VFA report.

These phases and their sequencing are recommended to limit building and area shutdowns of existing systems. Phases are also proposed to be multi-level as a repair to one space essentially means that spaces below are impacted as infrastructure is brought up through the building.

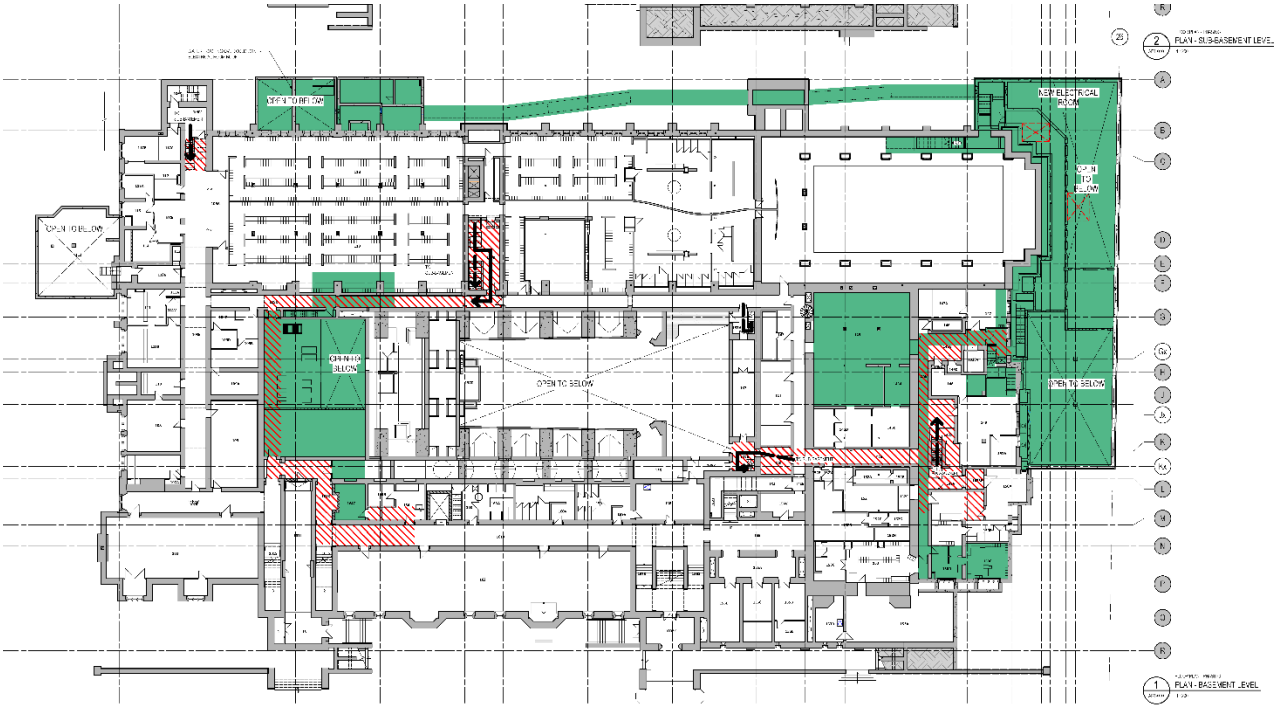
The phases are listed in the order they should proceed, each with enabling work for the next phase. It is critical that Stage 1 is completed first to allow for the localized upgrades to follow. Phases 2B, 2C, and 2D, can be completed in any order, but must follow Stage 1 – 2A. As well phases 3B, 3C, 4, 5A, and 6 can be completed in any order, but must follow the completion of Stage 1 – 3A.

The subset consisting of Phase 1A to Phase 3A can be considered the life-safety and asset-preservation *critical* phases. Though phases 3B to 6 are of lower criticality, postponing their completion would require Hart House to run parallel infrastructure systems for the foreseeable future. Similarly, balancing the new thermal systems in spaces adjacent to the old system would be challenging.

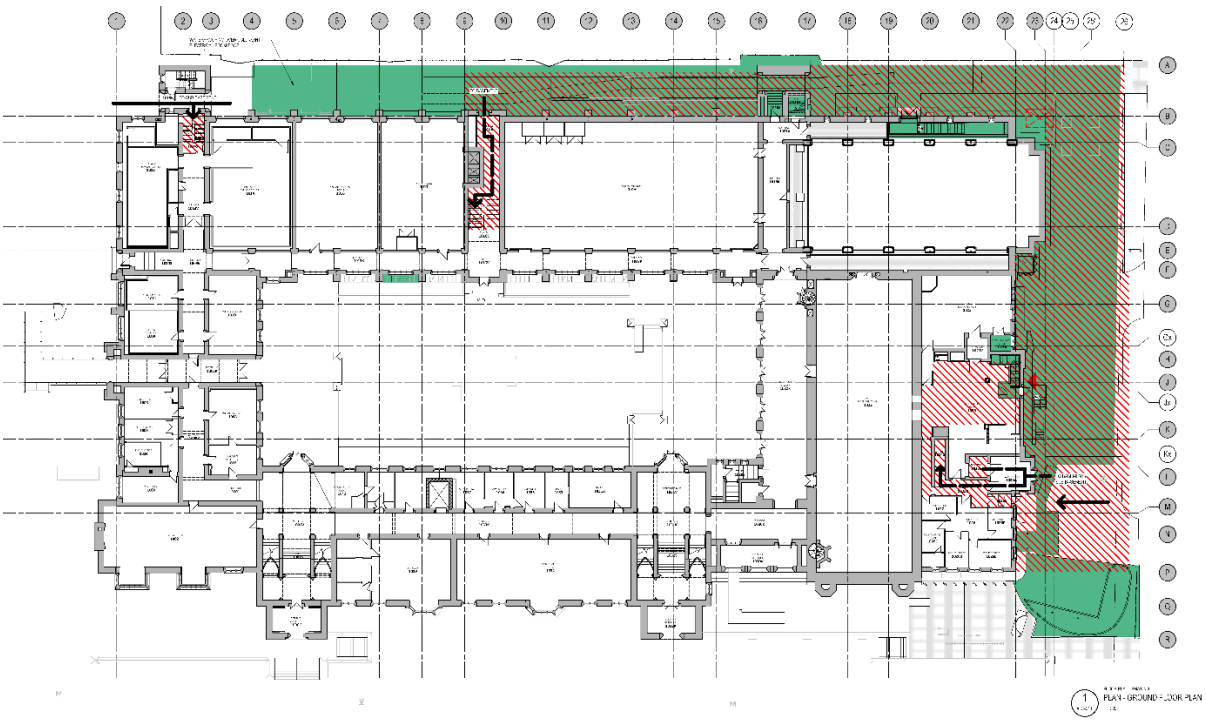
The following drawings illustrate an updated reduced scope Stage 1 that is scheduled to begin in July 2024.



Scope and Phasing – Stage 1 Sub-basement Drawing by EVOQ (March 2024)



Scope and Phasing – Stage 1 Basement Drawing by EVOQ (March 2024)



Scope and Phasing – Stage 1 Ground Floor Drawing by EVOQ (March 2024)

The following diagrams illustrate all of the recommended phasing and stages of work. The spaces highlighted in Stage 1 show both current Stage 1 and deferred Stage 1 works at this time, refer to drawings above for the reduced scope Stage 1 only.

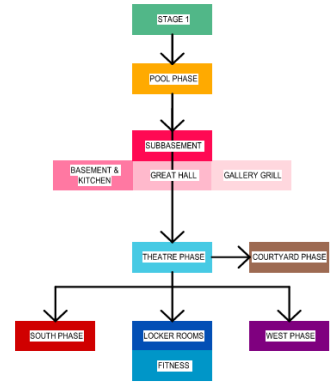
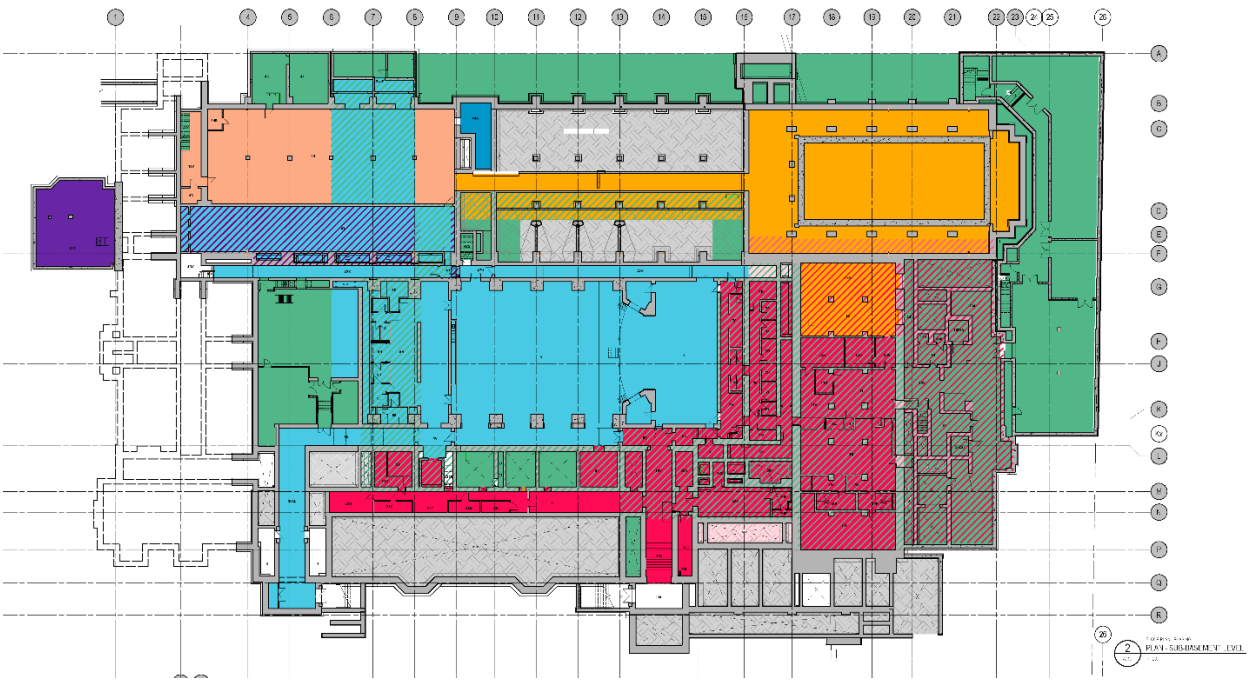
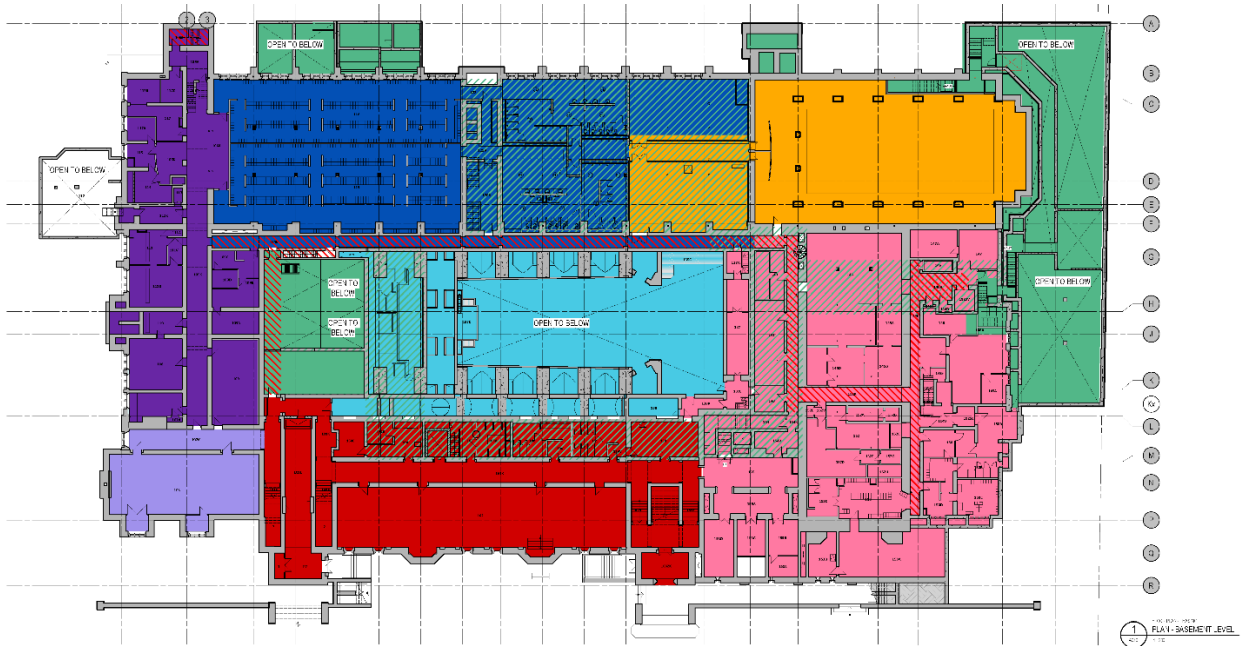


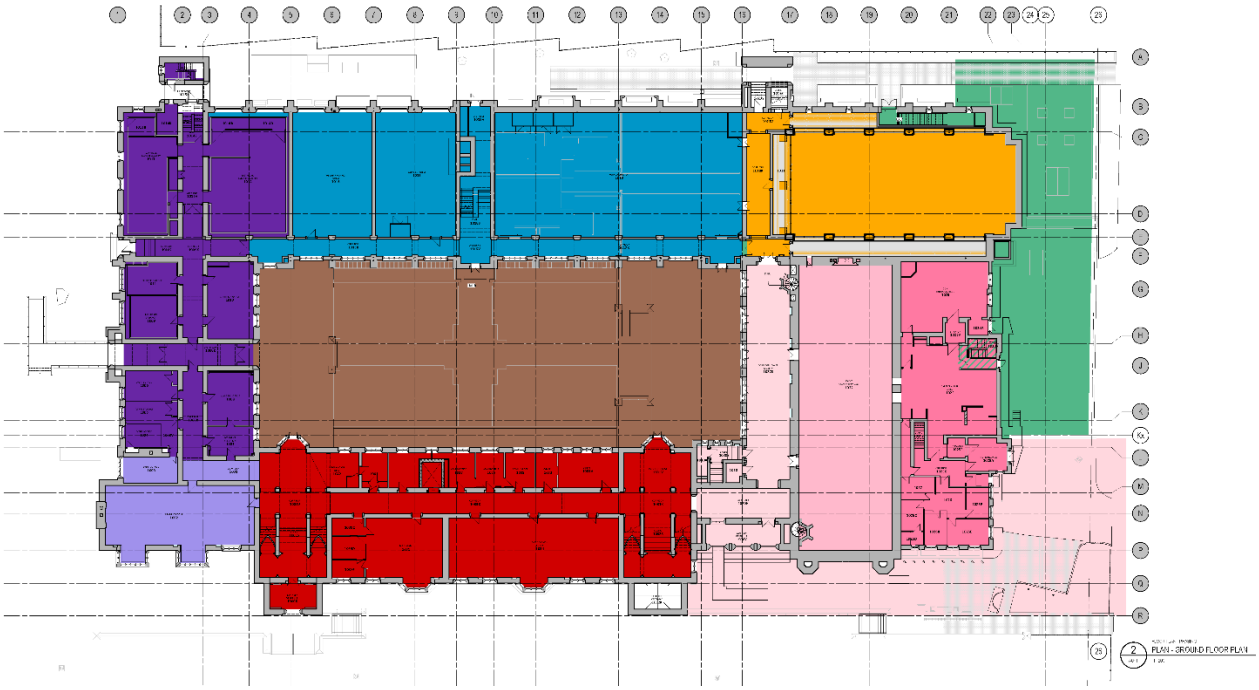
Figure 8: Sequence of construction phasing for Hart House Infrastructure Renewal (EVOQ, 2023).



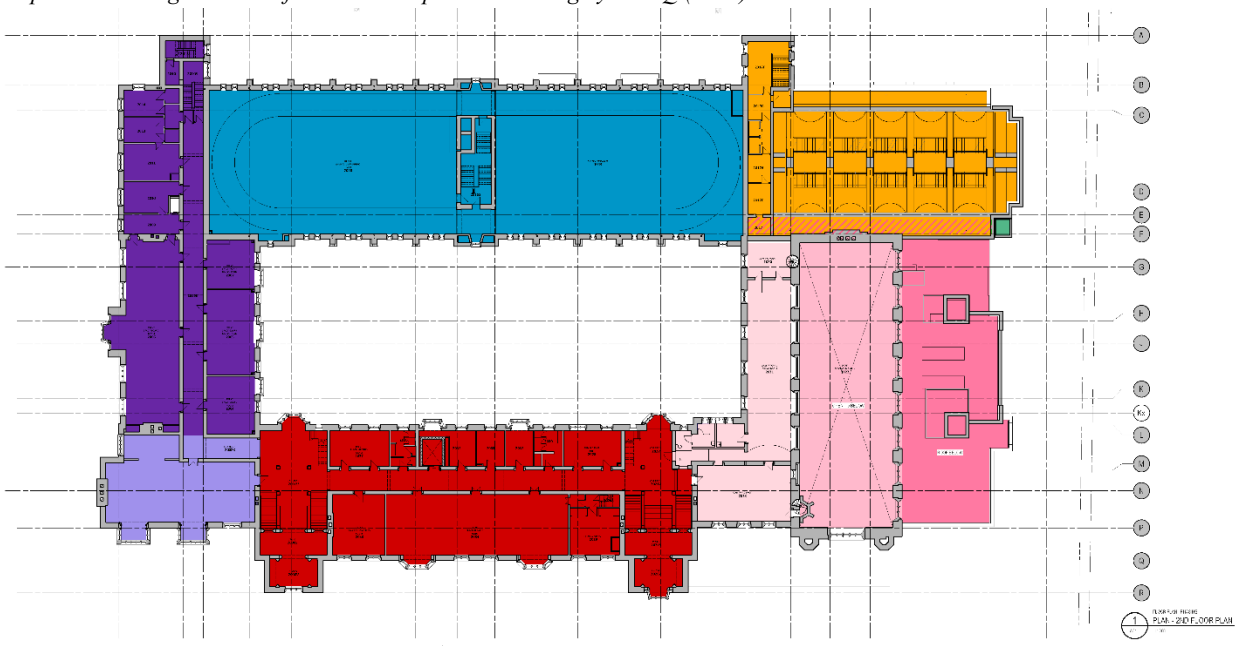
Scope and Phasing – Sub-basement all phases of work Drawing by EVOQ (2023)



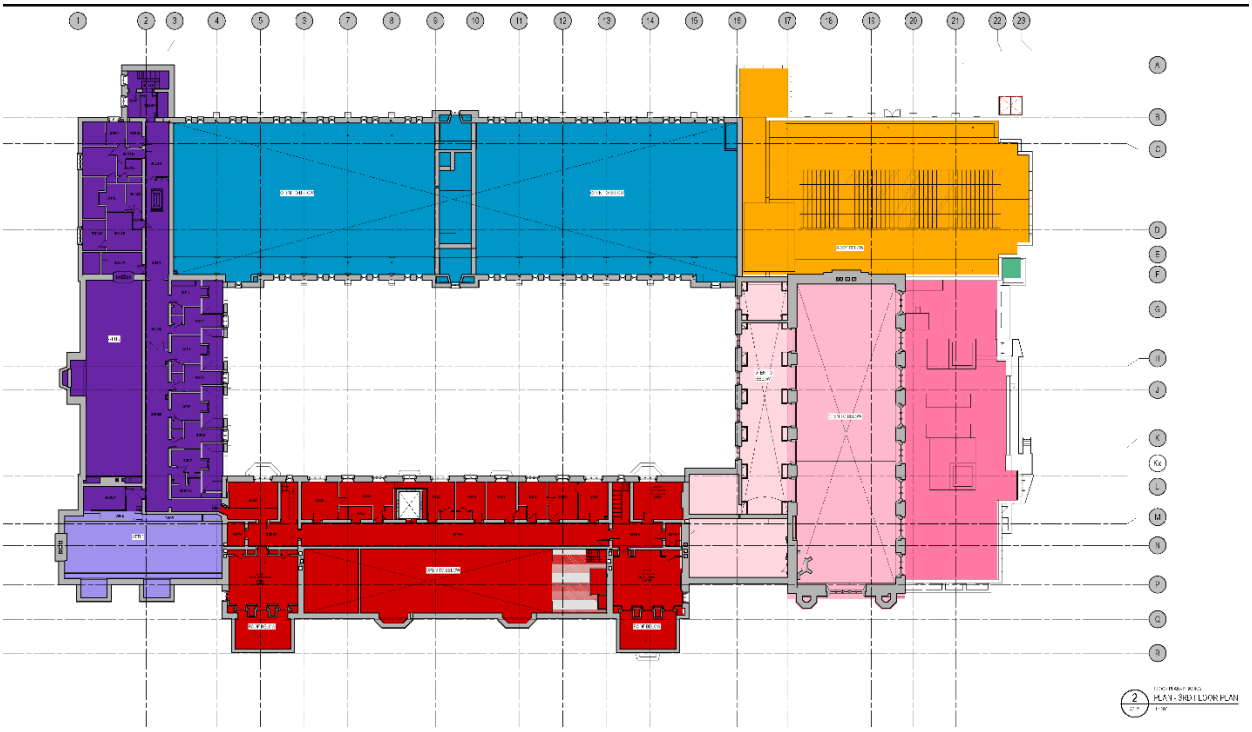
Scope and Phasing –Basement all phases of work Drawing by EVOQ (2023)



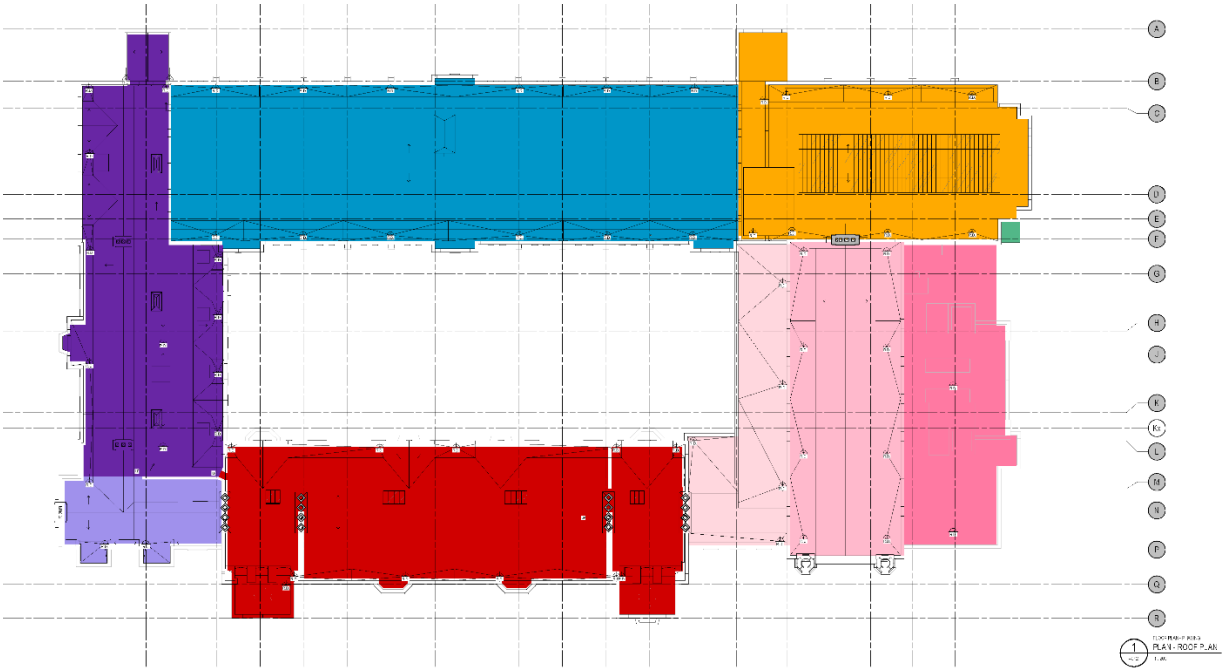
Scope and Phasing – Ground floor all local phases Drawing by EVOQ (2023)



Scope and Phasing – Level 2 local phases Drawing by EVOQ (2023)



Scope and Phasing –Level 3 local phases Drawing by EVOQ (2023)



Scope and Phasing –Level 4 local phases Drawing by EVOQ (2023)

Space Requirements

The Hart House Infrastructure Renewal Project aims to ensure Hart House's future by implementing the following scope of work:

House-Wide Scope of Work

- Complete mechanical and electrical infrastructure upgrades that will address current infrastructure of an urgent and critical nature – those components identified as posing a potential risk to the function or operation of the House in the immediate future – to prepare the House for another 100 years of operation.
    - The construction of a new, excavated underground shell addition to the east of the building (Stage 1), to be used as a new mechanical room chiller room, and electrical room (equipment fit out in future phase));
    - The conversion and lowering of a portion of the east-wing sub-station for use as mechanical and electrical spaces (future phase);
    - Conversion of the sub-basement squash courts into shell space with basic mechanical plumbing under new floor slab (Stage 1) to be used as mechanical, and electrical room, and storage rooms (equipment fit out in future phase);
    - Locating a new buried electrical duct bank along the north elevation (Stage 1);
    - Determining the optimal locations and routing for the mechanical and electrical equipment with the approach of minimal intervention and impact to the heritage building; materials and heritage spaces will be rehabilitated and repaired where required (throughout all phases of work)
- The addition of ventilation and air-conditioning to all areas of the House (to be implemented locally in future phases).
- Selective roof repair including (to be implemented locally in future phases):
    - Replacement of the west and north wing slate roof and localized repair work of the wood decking below;
    - Replacement of all flat membrane roofs and localized repair work of the wood decking below;
    - Associated flashing work and masonry rehabilitation work where adjacent to both the slate and flat roof;
    - Addition of membrane layer to the courtyard roof (to be coordinated with future phase courtyard redesign);
- A new barrier-free access ramp to be added to the West Main Entrance adjacent to Hart House Circle (to be implemented in future phase).
- Size / plan new mechanical equipment to accept geothermal feed (from the Landmark Geothermal) in the future.

Fitness Centre Scope of Work (to be implemented in future phase)

- Reconfiguration, of the Fitness Center shower and locker areas to suit new mechanical rooms;
- The reprograming of the locker room areas;
- Creation of new all gendered shower and changing areas; and
- An addition of new Fitness Centre lift, serving the basement, ground and second floors of the north wing.

Gallery Grill Scope of Work (to be implemented in future phase)
Addressing accessibility of all public spaces including:

- New entry way;
- Entrance ramp providing access to lounge and main dining room;
- Install front desk with varying heights;
- Renovation of one accessible washroom; and
- Raising the floor in the main dining room.

Other Scope Items (throughout all phases of work)

- Conservation of materials and interior features where impacted, such as refurbishment of heritage light fixtures.
- Interior work to replace the infrastructure should be inconspicuous to avoid impacts to the heritage value of the building.

Space Program

Stage 1 work is primarily focused on building new shell spaces and renovating existing spaces in the sub-basement to allow for new mechanical and electrical systems to be installed in future phases. Stage 1 anticipates a reduction to net assignable square meters (nasm), and an overall increase in gsm and non-assignable space. The reduction in nasm is due to the renovation of existing squash courts in the sub-basement to shell space during Stage 1, to be used as mechanical and electrical rooms in subsequent phases of work.

The future phase of work proposes localized renovations to connect all areas of Hart House to the new mechanical and electrical systems, renovations of existing spaces as required by mechanical and electrical space needs and select accessibility improvements. It is anticipated that the full project scope (all phases) will result in a further reduction of net assignable square meters (nasm) and an overall increase in non-assignable space. The reduction in nasm is due to the renovation of the existing Fitness Centre male and female washrooms and showers (Rooms 131-134) to be mechanical and electrical rooms. A portion of the existing male locker room (Room 123) will be renovated to be Universal washroom stalls, change rooms, and showers to meet the Fitness Centre's needs. Hart House's programs and offerings will not be limited or reduced due to reduction in overall net assignable square meters.

Hart House Overall	Existing	Stage 1 Proposed	All Phases Proposed
Gross Area (gsm)	19,118	19,695	19,695
Net Assignable Area (nasm)	10,246	10,087	9,833*
Non-Assignable Area (sm)	4,558	5,358	5,612*

Category	Description	Existing NASM	Existing %	Stage 1 Proposed NASM	Stage 1 Proposed %	All Phases	All Phases

						Proposed NASM	**Proposed %**
6.0	Recreation/Athletic Space	3,796	37	3,638	36	3,384	34
7.0	Food Service	1,369	13	1,369	14	1,369	14
8.0	Bookstore/Other Merchandising Facilities	21	0	21	0	21	0
9.0	Plant Maintenance	168	2	168	2	168	2
10.0	Administrative Office and Related Space	1,082	11	1,082	11	1,082	11
11.0	Non-Library Study Space	628	6	628	6	628	6
14.0	Common Use and Student Activity	758	7	758	7	758	8
15.0	Assembly and Exhibition Facilities	2,422	23	2,422	24	2,422	25
Total NASM		10,246	100	10,087		9,833*	
16.0	Non-Assignable	4,558		5,358		5,612*	
Total		14,804		15,445		15,445*	

*Areas to be confirmed during DD and CD of future phases of work.

Functional Plan

The overall project design for all phases of work is captured in Appendix 4 - *100% Schematic Design Drawings*. For *Phasing Plans Stage 1*, refer to Appendix 5.

e) Building Considerations

Standards of Construction

Hart House was designated as a heritage building by the City of Toronto in 1990. As one of the most important heritage structures on the St. George campus, any recommendations and proposed work must be framed to minimize impact on the heritage features of the building both within the House and its exterior.

The University College project can be considered an architectural benchmark and general standard of construction quality for the Hart House Infrastructure Renewal. For planning and costing purposes, it is assumed that renovations to Hart House will be architecturally similar to University College renovations.

The project's design and construction are to adhere to the University of Toronto's Facilities and Services and Capital Projects Design Standards to the greatest degree possible. Details can be found at: https://www.fs.utoronto.ca/projects/design-standards-and-project-forms/

Building characteristics and massing

Floor-to-Floor Heights

The project scope does not include any changes to the existing floor-to floor-heights. The new basement mechanical and electrical rooms are proposed to have 5.1m floor-to-ceiling elevation.

Structural Complexity and Built Form

The project is divided into phases, Stage 1 planned as the immediate phase to set the building up for future phases of work.

The Stage 1 structural work includes:

- Provision of structural requirements for the construction of new mechanical and electrical rooms subgrade along the east façade, including:
    - Excavation of shoring requirements;
    - Supporting and underpinning of existing foundations, columns, and pouring of new floors and slabs;
    - Construction of new exterior foundations, walls, floors, beams, columns, stairwells, and corridors;
    - Construction of new masonry openings for access to existing building.
- Conversion of Squash Courts to shell space for future mechanical/electrical rooms:
    - Pouring of new slabs.

Work to be completed in future phases includes:

- Structural requirements for the newly excavated and converted mechanical and electrical spaces in the sub-basement:
    - Supporting and underpinning of existing foundations, columns and pouring of new floors and slabs;
    - Excavation and underpinning of previously unexcavated spaces, pouring of new slabs; and
    - Construction of new floors, columns, and beams, shoring where required.
- Structural reinforcement of existing slab and beams to support new courtyard green roof in existing lightwells;
- New elevator hoist way to support new lift in the athletic north wing;
- New small exhaust shaft on east façade;
- Structural supports for new mechanical equipment;
- Supporting new masonry openings to suit routing of mechanical and electrical equipment.

Window replacement or changes are not included in the scope of this project.

Elevators

There is currently 1 passenger elevator, 2 freight elevators (ground floor to subbasement in the east wing), and 1 dumbwaiter.

No changes to elevators are included in Stage 1. As a part of this overall project, it is proposed to add one additional elevator in a future phase. One new elevator is proposed to provide access of the Fitness Centre serving the basement, ground and second floors of the north wing. This elevator will allow all levels of the Fitness Centre to be accessible. It is proposed that the elevator will be built in the Fitness Centre, Phase 3C.

It is important to note that even with the addition of this elevator, the third floor of the West wing still remains inaccessible due to a set of stairs located in corridor 3002K.

Sustainability Design and Energy Conservation

The University of Toronto is committed to reducing its scope 1 and 2 greenhouse gas (GHG) emissions by at least 37% below its 1990 level of 116,959 tonnes eCO_2 by 2030, targeting a better than net-zero climate positive) institution by 2050. To accomplish this, the University has retired the previous Energy Performance and Modelling Standard (April 1, 2019) and introduced this now-governing Tri-Campus Energy Modelling & Utility Performance Standard (refer to links listed at the end of this section). This new standard provides project-specific energy and water efficiency targets, used to calculate energy and GHG project budgets, and necessary to achieve the 2030 goal, while also introducing a streamlined modelling and documentation submission approach.

This standard is meant to inspire innovative designs based on energy and GHG targets that are used to calculate energy and GHG performance budgets according to when the building is going to be constructed and building programming. The targets become more stringent over time as cost-effective technologies and delivery methods improve in conjunction with regulatory compliance changes.

For current and future projects the tool used to define the targets and budgets is called the “Charter” and completed by U of T staff before design procurement commences. The energy and GHG performance targets for new construction are defined for the year that occupancy is scheduled in the project planning reports. The energy modelling procedures defined in the Tri-Campus Energy Modelling and Utilities Performance Standard will be used to calculate the energy and GHG performance for the designs and compared to the Charter targets throughout the design stages.

These Standards and resulting models are not post-occupancy energy or GHG predictions. They are to be used to establish and track the compliance of energy and GHG indices during the design process and as a comparative tool for building baseline and performance evaluation. Post-occupancy evaluation will be completed (12 – 14 months post-occupancy) by the U of T facilities staff and compared to the final performance model results.

Utility Performance Requirements for Capital Projects

Energy

New construction projects, as of 2021, are required to met project specific energy performance targets established in the Project Charter. The Hart House Infrastructure Renewal Project was initiated prior to the introduction and requirement of the Project Charter. CEL Gruen prepared a *100% East – SD Energy Modelling Report* for the Hart House Infrastructure Renewal Project in September 2022. Refer to Appendix for full report. The energy analysis includes:

1. Creating an eQuest Energy Model to predict existing energy consumption and calibrating that model to known energy consumption.
2. Determining the extra energy required to provide air conditioning and ventilation to areas of Hart House that do not currently have it.
3. Using the model to predict energy savings by defined infrastructure improvements.

The goal stated in the design RFP was to achieve an annual energy savings of approximately 3,470,000 ekWh (1,648,000 ekWh with adjustments). The reductions referenced in the RFP were based on the *BSN Green Heritage Renewal Study* (2014 Energy Report, see Appendix) – potential energy savings of 3,470,000 ekWh or 19% Electricity, 50% Steam, &14% Water consumption reduction. The energy savings were estimated in the 2014 energy report from the following energy and building improvements no longer part of the building scope. With consultation with Facilities & Services, the energy saving targets were adjusted to account for the removal of interior storm windows and solar collectors as part of the building scope, and to account for additional areas of the building to be air conditioned and ventilated. These adjustments were reviewed and approved by Facilities & Services – resulting in the adjusted 1,648,000 ekWh energy savings goal. The final energy model predicts an overall annual savings of 3,234,652 ekWh compared to 2019 data, considerably more than the target set. The energy model report is to be updated at each project phase to reflect changes to the design.

The mechanical infrastructure upgrades are proposed to incorporate the following measures to minimize energy consumption and promote sustainable design:

- Dedicated outside air systems for ventilation (suitable areas).
- Enthalpy recovery wheels in air handling units (AHUs) with high percentage outside air.
- Lower AHU coil velocities of 400-450 fpm, where physical space allows.
- Control of outdoor air ventilation rates based on carbon dioxide and/or occupancy sensors.
- Low temperature heating water system to allow future connection to Landmark geothermal system or other future low temperature campus heating system.
- High temperature delta cascade heating water system to minimize return water temperature to maximize efficiency of heat recovery chiller and Landmark geothermal system, or other future low temperature campus heating system, when connected in future.
- Magnetic bearing heat recovery chiller to make use of waste heat within the building when simultaneous heating and cooling loads occur.
- Variable flow pumping systems for heating water and chilled water.
- EC motors for fan coils.
- Domestic hot water preheat from low temperature heating system.
- Low water consumption plumbing fixtures.
- Conversion of pool air handling system from 100% outside air to recirculating system with dehumidification; existing steam heaters in pool roof assembly will also be removed and replaced with heaters served by low temperature heating system/heat recovery chiller.

- A water-cooled heat recovery chiller will provide cooling to the building while recovering waste heat back into the primary hot water loop.

The following additional energy conservation measures are being considered and will be further analyzed during design development and construction documents for the appropriate future phase:

- Increased use of transfer air where appropriate (e.g. from Class 1 areas to Class 2 or Class 3 areas) in order to reduce energy required to condition outside air.
- The addition of a heat recovery system to extract heat from the existing Taddle Creek municipal sewer may be considered as a heat source for the building. It is our understanding from University of Toronto's Sustainability Group that this may be permitted by the City of Toronto and that flow and temperature data will be made available. If this is designed and implemented it will be done as an additional scope to the infrastructure renewal project and may require additional funding external to the project.

It is noted that the following additional energy conservation measures that were previously proposed are no longer being considered as part of the project scope:

- Rooftop solar collectors. This was explored, it was determined that there is not adequate space for the panels at the exterior of Hart House. Sloping roofs are not ideal for Photovoltaic applications and the heritage status of the building will make this a difficult installation.
- Interior storm windows

Key Performance Indicator	**2019**	**Stage 1**	**Proposed by Complete Project (all phases)**
TEUI (Total Energy Use Intensity	519.3	TBD	327.7
GHGI (Greenhouse Gas emissions Intensity)	75.3	TBD	37.0
TEDI-heating/cooling (Thermal Energy Demand Intensity)	309	TBD	117.8

New mechanical equipment and systems will meet or exceed the requirements of OBC SB-10/ASHRAE 90.1.

It is noted that the walls and roof of the existing building do not generally have insulation or air/vapour barriers and the existing glazing is generally single pane. These elements are not being upgraded as part of the project scope. Therefore, the energy performance of Hart House should not be directly compared to other newer buildings of similar size and use. It is also noted that because significant portions of the existing building are not air-conditioned or mechanically ventilated, additional energy consumption will be required to condition outside air and provide space cooling.

New mechanical equipment should account for the potential feed from the Landmark geothermal field in the future. A buried duct bank (discussed in the Campus Infrastructure section) currently runs from front-campus under Soldiers' Tower and provides multiple services to Hart House. This duct bank can also be used to transport the geothermal feed to Hart House in the future.

UofT Climate Positive Campus

https://climatepositive.utoronto.ca/
UofT Tri-Campus Energy Modelling & Utility Performance Standard:
https://www.fs.utoronto.ca/wp-content/uploads/2022/06/Tri-Campus-Energy-Modelling-Utility Performance-Standard-July-2020.pdf
UofT Overall Design Standards:
https://www.fs.utoronto.ca/projects/design-standards-and-project-forms/
Toronto Green Standard Version 4:
https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/toronto-green-standard-version-4/]

Wellbeing and Mental Health

These principles are embedded in the goals and visions for this project.

Accessibility

The University is committed to equitable access to all building facilities by the whole campus community. New buildings and renovations will incorporate equity, diversity and inclusion as well as the principles of universal design that will allow users with diverse abilities to access and use facilities with dignity.

Projects will meet the design requirements of the University of Toronto **Facilities Accessibility Design Standards (FADS)** and barrier-free design requirements of various codes and standards, such as the **Ontario Human Rights Code (OHRC)**, **Ontario Building Code (OBC), Accessibility for Ontarians with Disabilities Act (AODA), O.Reg. 191/11 Integrated Accessibility Standard Regulation (IASR)** and the Design of Public Spaces Standard under the AODA and **CSA B651 "Accessible design for the built environment"**.

As of January 2024, upcoming updates to the AODA include the implementation of Postsecondary Education Standards recommendations specifically Barrier Area 7: Physical and Architectural Barriers and recommendations 127 to 160. The Independent 4th Review of the AODA was made public December 2023 which includes a recommendation to make all provincial buildings accessible by 2030.

Alterations to Heritage Facilities should be assessed for compliance to accessibility standards on an individual basis, to determine the most effective and least disruptive means of retrofit, where required as outlined in the general guidelines of FADS.

To help focus the accessibility and inclusivity discussion, a PPC Accessibility Sub-Committee was struck during the planning phase of this project to discuss and confirm accessible priorities for this project. From these discussions an accessibility mandate was created which highlights the overall accessibility aspirations of the House, and targets highly visible and visited areas such as the Fitness Centre and Gallery Grill for improvements. These objectives were also created by consulting an on-going list of Hart House Accessibility and Inclusion Capital Planning Items kept and maintained by the Hart House Senior Development Officer.

The main entrances to the Hart House are located from the south and Hart House Circle Road, the Theatre and to the lower-level Arbor Room and café. The recently completed Arbor Room renovation project included the addition of a barrier-free access ramp from Hart House Circle Road, providing an accessible entry to this wing of

the building. From the west along Tower Road are located entrances to the Fitness Centre and the Barnicke Gallery. The one current barrier-free accessible ramp for the building is also located along this face. From the east along Queen's Park Crescent West is located the primary service and loading dock entrance for the House.

Stage 1 of the project does not include any accessibility improvements to the interior. All new spaces being constructed in Stage 1 (and throughout the project) will follow Ontario Building Code requirements and University accessibility standards including the new Barrier Free Design Standards. Stage 1 does include changes to the exterior landscape including the following:

- New accessible walkway proposed along north lane between Hart House and Wycliffe; and
- Maintaining and reinstating barrier free parking space and barrier free drop off spot at south-east end of parking lot during and after construction of Stage 1.
- The reinstated barrier free parking space and barrier free drop off spot will generally match existing conditions and improve conditions, including widening to meet U of T standards.

Additional accessibility improvements planned in future phases include the following:

- Improvements to Fitness Centre:
    - Creation of new all gendered shower and changing areas for the Fitness Centre; and
    - An addition of new Fitness Centre lift, serving the basement, ground and second floors of the north wing.
- Improvements to Gallery Grill Scope addressing accessibility of all public spaces including:
    - New entry way;
    - Entrance ramp providing access to lounge and main dining room;
    - Install front desk with varying heights;
    - Renovation of one accessible washroom; and
    - Raising the floor in the main dining room.
- Reconfiguring the south terrace to add a new barrier-free access ramp
- Improving the accessibility of the interior courtyard by providing two new barrier-free ramps on the existing terraces.

For additional information contact the University of Toronto's AODA Office.

https://people.utoronto.ca/inclusion/accessibility/
https://teaching.utoronto.ca/resources/universal-design-for-learning/
https://people.utoronto.ca/inclusion/edi-at-u-of-t/
Facility Accessibility Design Standard (June 2023)

Personal Safety and Security

The building design must allow its students, faculty, staff and visitors' access as required and as allowed, safely and easily. At the same time, the design must be sensitive to the needs of those whose activities require security after hours. Limited areas of this building could be operational throughout the week for 24 hours a day.

Changes to security systems not planned as part Stage 1. Consultants will work with U of T Campus Safety and Sexual & Gender Diversity Office to discuss safety and security of future phases of design, specifically in terms of ongoing voyeurism issues.

Signage and Donor Recognition

This project does not include wayfinding and signage. Hart House's Marketing and Communication department is managing an ongoing signage strategy that will align with signage requirements. There is no donor recognition signage included in this project. There is a separate donor signage strategy project being managed by the Division of University Advancement running in parallel with this project.

U of T has specifications and standards for both exterior and digital signage and in some cases interior signage that the design team will be required to implement. All facilities are required to implement the Building Identification signage standard. Exterior donor recognition signage will be subject to review by Department of University Advancement, Design Review Committee, Communications, and University Planning and approvals by the CaPS or CaPS Executive Committee Approvals are required from the City of Toronto Signage By-law Unit and Heritage Preservation Services, where applicable.

Interior signage includes not only those signs mandated by the Ontario Building Code but also departmental identifications, room names and numbers, room schedules (as required) and interior wayfinding. Exterior signage includes building identification, street and road signage for pedestrian and vehicular wayfinding, and other site-specific signage (e.g. parking, loading dock instructions, etc.). As well, building may utilize digital signage or displays for the cycling of campus information, events, student services, etc.

Refer to Guidelines for Exterior Signage on St. George Campus dated September 2018.

Non-assignable Space

A part of the phasing plan requires the excavation of unexcavated basement in the subbasement to allow the new mechanical and electrical system to be built while the existing system continues to serve the House.

These spaces include new mechanical and electrical room construction at the sub-basement level on the east side of the building during Stage 1 and renovating a portion of the Fitness Centre for mechanical and electrical purposes in future phases. Refer to *Project Phasing* section for drawings indicating locations of new rooms.

Mechanical

Existing Air-Conditioning at the House

Air-conditioned spaces at the House currently include the Art Gallery, the locker rooms, Theatre, other minor rooms, and the exercise rooms. Major spaces not air-conditioned include the Gallery Grill, the Great Hall, large event spaces (e.g. Debates Room, Music Room, East Common Room), and Fitness Centre spaces.

Proposed Mechanical Upgrades

The mechanical upgrades will include measures to minimize energy consumption and promote sustainability. Measures include low water consumption fixtures, occupancy sensors, variable flow pumping systems,

maximizing equipment's efficiency, and design a heating system that can be connected to the University's future Landmark geothermal system.

The project is divided into phases, Stage 1 planned as the immediate phase to building new mechanical and electrical rooms below grade. It is planning for mechanical work to be completed throughout the building in future phases, approaching each area locally (refer to *Phasing* section for more information).

Stage 1 mechanical scope includes:

- New east side mechanical/electrical rooms:
    - Drainage for east side mechanical/electrical rooms including floor drains, piping, venting, sump pits, sump pumps;
    - Trap seal primer for new floor drains fed from existing DCW system in sub-basement;
    - Electric unit heaters and force flow heaters for east side mechanical/electrical rooms and new/renovated exits/stairs;
    - Exhaust/supply duct work and fans for mechanical room and exhaust for electrical room (North side) (EF-01, SF-02 & EF-05);
    - Mechanical consultant recommends that the openings required for future electrical room duct work to be constructed in this phase for easier duct work installation in the future;
    - New intakes for new east side (intake tower) and exhaust areaway;
    - Relocate gas meter/regulator station and incoming buried gas service; and
    - New gas line running from new gas entry location to kitchens.
- Conversion of existing Squash Courts to mechanical/electrical rooms:
    - Ventilation ductwork & fans shell mechanical room (EF-07, SF-02 & SF-04);
    - Fitness center ductwork modification for accommodating the exhaust outlet for mechanical room (between Gridlines 6-8);
    - Drainage for west side mechanical/electrical rooms including floor drains for sub-basement and mezzanine level, piping, venting, sump pits, sump pumps;
    - Trap seal primer for new floor drains fed from existing DCW system in sub-basement; and
    - New ventilation duct running from squash court window in women's locker room.

Remaining mechanical scope includes work planned throughout all project phases:

- Replacement of mechanical systems and all associated ductwork, equipment and fixtures that have reached their expected lifespan;
- Provision of mechanical ventilation and air conditioning for all occupied areas that are not currently serviced or are under-serviced;
- Replace existing steam distribution system with new independent heating system; and
- Provision of new chilled water system and equipment, including a new heat recovery chiller and cooling tower.

Plumbing

The project is divided into phases, Stage 1 planned as the immediate phase to set the building up for future phases of work. It is planned for plumbing work to be completed throughout the building in future phases, as required in

each local renovation (refer to *Phasing* section for more information). There are a limited number of items included in Stage 1 work as identified below.

Plumbing scope includes the following for Stage 1:

- Domestic water to serve new trap seal primer panels for new floor drains in newly constructed/converted mechanical and electrical spaces. New domestic cold water lines will be extended from the nearest existing piping of sufficient capacity to the new trap seal primer panels.
- Minor rerouting of existing domestic cold, hot, and recirculation piping to avoid interference and accommodate excavation and construction of new below grade rooms on the east side of the building.

Drainage scope includes the following for Stage 1:

- Underground sanitary drainage serving the new sub-basement mechanical and electrical rooms on the east side and in the converted squash courts, including sanitary drainage piping, venting, trap seal primer lines, and floor drains. Floor drains will be located based on anticipated future equipment dimensions and locations.
- Integral backwater valves will be provided for new floor drains in electrical rooms.
- Sanitary drainage serving mezzanine level of converted squash courts, including drainage piping, venting, trap seal primer lines, and floor drains.
- Above grade vent piping to serve new floor drains noted above including new roof terminations or connection to existing venting system, where suitable.
- Sanitary sump pit and pumps in sub-basement level of converted squash courts including pit venting and connection of pump discharge to existing drainage system. Sump pumps will be duplex N+1, self-priming surface mounted type.
- Sanitary sump pit and pumps in sub-basement level of new east side mechanical room, including pit venting and connection of pump discharge to existing drainage system. Sump pumps will be duplex N+1, self-priming surface mounted type.
- Sanitary drainage serving new east side outdoor intake shaft near southeast corner of pool, including accessible floor drain, heat-traced p-trap, venting, and connection to drainage system.
- Storm drainage serving new east side exhaust areaway, including drains and gravity connection to existing drainage system.
- Modification of existing storm drainage serving pool roof to accommodate construction of the new exit serving the east side.

Plumbing scope includes the following in the full project scope/future phases:

- Plumbing and drainage – Provide new sanitary drains and a source of domestic hot and cold water through a renewed piping system. To be installed in sub-basement with appropriate valves and capped connections to allow for extensions up through building.
- Plumbing fixtures – To be replaced during washroom renovations and are meant to address modernization, water conservation, and accessibility (future phase).
- Distribution – New risers to be provided (future phase).

Electrical

The project is divided into phases, Stage 1 planned as the immediate phase to set the building up for future phases of work. It is planned for electrical work to be completed throughout the building in future phases, as required in each local renovation (refer to *Phasing* section for more information). There are a limited number of items included in Stage 1 work as identified below.

Electrical scope includes the following for Stage 1:

- The new expansion to the building east for the electrical substation and mechanical rooms will be constructed in this phase. The HV duct bank between the existing substation and the substation will be constructed in this phase without the HV feeders.
- The new spaces will be left empty and be provided with basic life safety systems including lighting, power, and fire alarm devices. Equipment in the rooms will be provided in Stage 2 or future phases.
- A limited number of distribution panels, transformers, breaker panels will be provided to serve the shell space loads. The equipment provided in this stage are sized adequately for future loads when the spaces are fitted out.
- 600V temporary power will be provided from existing building distribution system to feed the new spaces. When the new electrical substation be installed in Stage 2, temporary power feeder(s) will be removed, and equipment be re-fed from the new substation.
- The existing squash courts in West wing basement and sub-basement levels will be demolished and be converted to new electrical and mechanical service spaces. The new service spaces will be left empty and will be fitted out in Stage 2 or future phases. Similarly, electrical provisions will be provided same as described in above.
- New concrete encased duct bank, cabling included in future phases.
- Exterior lighting support for rehabilitated landscaping, including relocated light standards.

Work deferred from Stage 1 scope to a future phase includes:

- The new HV feeders will be provided in this phase via the duct bank provided in Stage 1 to extend the Campus HV power grid to the new electrical substation. New electrical HV and LV headend equipment in the substation will be provided under this phase.
- The east sub-electrical room will be constructed, and equipment installed in this phase and be fed from the new substation.
- The west sub-electrical room constructed in Stage 1 will be provided with equipment and be fed from the new substation.
- Part of existing locker areas in north wing on Basement level will be converted to new mechanical service spaces. The electrical distribution equipment that will be in these new rooms will be installed and be fed from the new electrical substation.
- New lighting, branch power, power to mechanical equipment, fire alarm and data drops will be provided as required to suit the Stage 2 scope of work.

Electrical scope includes the following in the full project scope/future phases:

- Emergency lighting system upgrades in areas of new construction;
- Support for new mechanical equipment (as required throughout all phases);

- Localized electrical rooms, closets, and shafts (as required throughout all phases);
- Branch power service upgrades, new wiring, devices, and receptacles (as required throughout all phases);
- Power distribution designed to allow for future generator power support from the campus;
- Interior lighting and lighting control upgrades, including replacement of wiring, and localized replacement of fixtures, new lighting in updated and newly constructed spaces, heritage fixtures are to be conserved and reinstalled;
- Exterior lighting support including relocated light standards, new in-wall lighting, and new light bollards for the courtyard; and
- Fire alarm, IT service, and security access for renovated and newly constructed spaces.

Data

Data not included in this project. Telecom systems were recently upgrade.

Building Code, Fire Protection, and Life Safety Systems

The existing fire alarm system at Hart House has been recently upgraded, but the local audio alarm devices are very old. Fire alarm system to be extended to include new spaces. Audio and visual (now a code requirement) alarm devices are to be updated throughout the House during local renovations.

Hart House has two Siamese connections, one along Tower Road, and one along Hart House Circle. The existing sprinkler system at the House is very old (original piping still being used) and the extent of the system is believed to cover approximately 50% to 60% of space with main spaces including the theatre and main kitchen area. It is proposed that obsolete sprinklers be renewed in these areas during renovations. Based on a previous code review referenced in the 2015 PPR, the entire building need not be sprinklered under the renovation (as was proposed by BSN). During Schematic Design EVOQ and Morrison Hershfield (code consultant) confirmed the whole building does not need to be sprinklered. There is no requirement to replace the system, hoses should be replaced to meet code requirements.

Fire protection planned as part of the project scope includes:

- Stage 1:
- Full sprinkler and standpipe protection in new mechanical and electrical spaces.
- New fire extinguishers for newly constructed areas on east side, and new mechanical and electrical spaces in the squash courts.
- New fire hose cabinets to provide coverage for newly constructed areas on the east side and to maintain coverage in converted squash courts.
- Piping for new fire hose cabinets on east side will be brought from the existing header in main Mechanical Room 44.
- New wet sprinkler heads and piping to serve newly constructed areas on east side and converted squash courts. Piping for each new zone will be brough from the new flow switch, supervised valve, and the test valve located and the existing heard in main Mechanical Room 44.

- Modification of existing sprinkler piping and sprinkler head layout to avoid interference and accommodate excavation and construction of new below grade rooms on the east side of the building.
- Future phases:
- Replacement of sprinklers and standpipe in existing areas where impacted or at the end of their lives (Stage 1/throughout phases where existing impacted).

Certain existing non-conforming code related issues may need to be addressed if renovations are proposed within their area. These include the possible need for second exit/travel distance review within the track/fitness area, the Gallery Grill, and Theatre.

Magnetic locks were installed throughout the building per OBC, under permit, during a previous renovation that included the change room areas. Any changes to fire exiting routes and travel distances that occur in relation to this round of renovations may impact existing installations and will require careful review to remain compliant.

Environmental Health and Safety

The designated substances report summary on file for Hart House confirms asbestos materials are found within the building including on piping systems, mechanical equipment and duct insulation, within vinyl flooring and mastic, within windows caulking and glass putty and in drywall joint compound. Asbestos is also suspected to be found within fibrous paper applied on ceiling deck at various locations throughout the building and within locations that are presently hidden or are inaccessible.

Lead contamination is present in partial areas of the historic rifle range (now the Archery Range), within sporadic runs of drain piping and presumed within paint, solder and other coverings.

The building has not been used for any process or manufacturing and no above ground or below ground fuel storage tanks are present within the building.

As the scope of work of the proposed project will involve disturbance of some asbestos containing materials or other designated substances, an abatement phase is proposed to occur for all known and accessible areas in advance of the first phase of this project. Some additional abatement will likely be necessary as hidden or inaccessible areas are uncovered throughout the project.

Audio Video Requirements

A/V is not included in this project.

Interior Finishes

Stage 1 scope of work is focused on creating shell space for future mechanical and electrical rooms, and as such interior finishes are not a focus of the work. Future phases need to take into careful consideration of interior finishes will be necessary as part of the design phase of this project Finishes should be sensitive to the heritage

features of the building. Work performed in public facing spaces, including hallways, the Great Hall, the Chapel, etc. in Hart House especially require finishes in keeping with the grand and historic nature of the building. The University College project can be considered an architectural benchmark and reference for interior finishes for Hart House.

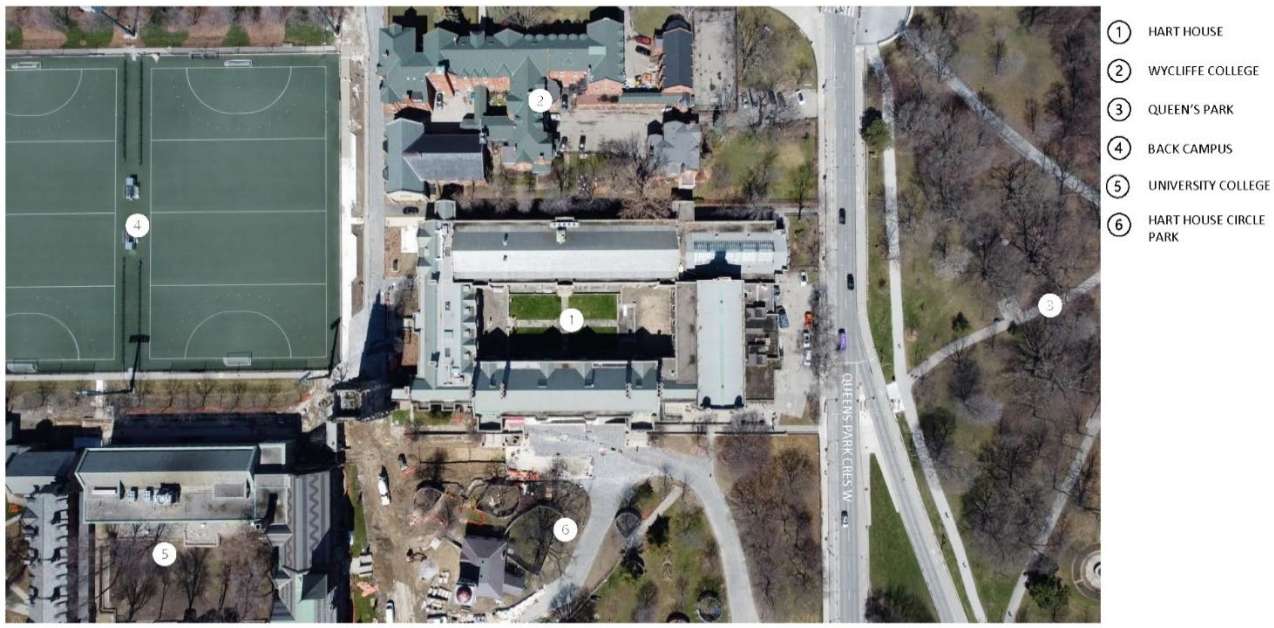
Acoustics

Stage 1 scope of work does not include any changes to acoustics at Hart House. For future phases careful consideration of acoustical properties will be necessary as part of the design phase of this project, in particular if there are opportunities to improve the acoustics in the Great Hall and other performance spaces.

Designated Substances

The University of Toronto will investigate and identify designated substances and other site-specific hazardous materials (ex. asbestos, biological, radioisotopes and chemicals etc.) present within the project area as per appropriate regulations and the Ontario Occupational Health and Safety Act.

f) Site Considerations



Site Context – Annotations by EVOQ (November 2023)

Site Context and Master Plan Framework

Hart House is located in the CentralCampus Character Area (as per the in force St George CampusSecondary Plan) in the heart of the St. George Campus. This area contains by far the greatest concentration of the University of Toronto's significant heritage resources. It is defined by the prominence of University College and

Convocation Hall and Hart House, its pedestrian character, green open spaces that are connected with landscaped links and pathways, and its collection of low-scale pavilion buildings sited in an expansive landscape.

Hart House is located on Block A in the Central Campus Character Area (as per the proposed Site Specific Urban Design Guidelines). Planned enhancements include improvements to the quality of the landscape in line with the heritage context to create a pedestrian-centred open space network that is free of at-grade parking. These changes have been captured by the Landmark Project which is referenced numerous times throughout this report. Given the heritage character of this Block, limited future development is envisioned. Sensitive building additions and renovations, and complementary landscaping, will maintain and enhance its character.

The buildings, complexes and open spaces, with predominant pavilion and quadrangle forms, reflect the University's origins in a picturesque landscape while also addressing the more urban character of the Block's western frontage along St. George Street. Development should respond to these relationships by focusing higher-scale urban form along the St. George Street Character Area to the west, while integrating low- and mid-scale forms within the Central Campus and Queen's Park Character Areas. Renovations and small-scale additions, as well as limited new, complementary low-scale and mid-scale institutional buildings should maintain and enhance the Block's enduring role within the campus, and enhancements to open spaces should improve the quality of the landscape to create a pedestrian-centred open space network.

The project should preserve the integrity, scale, functionality and monumental quality of heritage building with sensitive additions and renovations that retain character-defining elements. The project proposes to utilize high quality materials and facade details in keeping with the existing character. The new exterior additions are proposed to be distinct from the existing heritage elements, while not detracting from the existing.

There is also a desire to enhance connections across the Block through replacement of steps and curbs with gradual, accessible slopes, consistent paving material and improved wayfinding signage.

Hart House is surrounded by a lane to the North (with Wycliffe College located on the other side of the lane), Hart House Circle to the South, Queen's Park Crescent to the East (where loading facilities are accessed), and Tower Road to the South. Please see the upcoming *Landscape and Open Space Requirements* section for further details.

Planning Policies and Zoning Regulations

The University of Toronto Secondary Plan (1997) is a municipal zoning by-law (438-86) developed specifically for the St. George campus area.

Official Plan Amendment No. 582 and the Secondary Plan came into full force and effect on July 28, 2023. Block by Block site specific urban design guidelines are still in progress.

Hart House is located in a mixed-use zone (Q) as per zoning by-law 438-86, and the Hart House Green encapsulated by Hart House Circle (green space to the South) is a designated University Open Space.

Refer to *Municipal Approvals* section for more information.

Heritage Status

Hart House is designated under Part IV of the Ontario Heritage Act in the City of Toronto under By-law No.129-90 adopted by City Council on February 20, 1990. It is one of the University's most cherished architectural assets, is the venue of many important campus events, and has a prominent presence on campus. The building is recognized as an important example of Late Gothic Revival architecture based on Beaux Arts principles. It was one of the few significant public buildings in process during World War I, a period during which most construction ceased.

The principal (south) facade is identified by a continuous terrace with low stone wall, an elaborate main entrance porch with sculpture and a monumental oriel window above. Significant Gothic Revival details are the fenestration (lancet, arched, casement, bay and oriel windows) and carved stonework (hood molds, label molds, quoins, string courses and sculpture). Other important elements on Hart House are buttresses and turrets on the Great Hall, recessed secondary entrance porches on the north, west and south elevations, crenelles, and chimneys with quadruple stacks. Significant interior spaces are the Great Hall, with its hammer beam roof, wooden paneling, and corner staircase as well as the Debates' Room, Chapel, Library, Theatre, and hallways.

The heritage consultant and prime architect, EVOQ, has provided the *Hart House Conservation Strategy Report* for this project, see Appendix 1 for report.

The Conservation Strategy provides principles and guidelines to ensure that the project goals can be achieved while ensuring the integrity of the building's significant heritage values. It provides a basis of understanding to inform and guide decisions about possible changes in ways that both respect the heritage values of the building and answer the repair, upgrading, and transformative requirements. It was written in parallel to the early stages of the upgrade work. It analyses the existing heritage values. Elements, the existing heritage designation and Statement of Significance, and makes recommendations regarding the approach to preservation, restoration, and rehabilitation as understood within the Standards and Guidelines for the Conservation of Historic Places in Canada. The report is not meant to be prescriptive; it instead identifies areas requiring sensitive treatment.

To provide general guidance the report includes a heritage mapping of the whole building according to level of heritage value. The building has been categorised into three heritage zones, high, moderate, and low. Please refer to appendix to review colour coded plans and full descriptions of the zones.

The report outlines the entire scope of work for the Hart House Infrastructure Renewal, outlines all impacts of the project, and gives recommendations for each impact.

The report recommends revisions to the Statement of Significance. EVOQ's recommendations aim to clarify the heritage attributes noted and add more detail where required. Some areas and elements were previously not included, and based on their analysis these areas should be added. These include adding the Gallery Grill, Music Room, and Bickersteth Room. They recommend removing the Art Gallery as it does not reflect the heritage vales of Gothic Collegiate Style prominent at Hart House.

Archeological Status

Not applicable to this project.

Municipal Approvals

The planning consultant, Brook McIlroy, contacted the City in February 2023 to apply for a Zoning Applicable Law Certificate (ZAP), it was confirmed that a Site Plan Application (SPA) will not be required for this project.

The heritage consultant (and prime architect) EVOQ provided Heritage Planning at the City with the *Hart House Conservation Strategy Report*. University Planning and EVOQ met with Heritage Planning on March 25, 2024, to discuss. The Planner at the City supported the proposed approach to submit a Heritage Impact Assessment (HIA) with each phase of work, and to submit for Heritage Permit ahead of Building Permit for Stage 1 at the end of April 2024.

Environmental Issues, Regional Conservation, MOE

None anticipated for this project.

Approval to Discharge Pollutants: Air, Noise, and Water – Emission Reporting and Compliance Obligations. This is governed by the Ministry of the Environment, Conservation and Parks (MECP).

- The University is considered less complex and must comply with Environmental Activity & Sector Registry (EASR)
- EASR is governed by the Environmental Protection Act RSO 1990 c.e 19 and Ontario Regulation 245/11
- EASR Air Emissions (ESDM) is modelled by EHS at the University and verified by an external licensed engineer. A project with air emissions (ex. Chemicals emitted via fume hoods) will require modelling to determine its impact to the campus and surrounding area and may require mitigation measures. Currently, the primary area of concern on the St. George Campus is the Medicine and Engineering Precincts fronting College, the Huron Block fronting College, 1 Spadina, and the Arts & Science Precinct fronting Spadina up to Harbord Street. The Goldring Centre, Banting Building, and Dentistry Building are also included. The Downsview lands area is also considered an EASR Boundary. The Director, Utilities can provide a current map that highlights these areas.
- EASR Noise Emissions (AAR) is currently measured and modelled by an external consulting firm and verified by an external licensed engineer. The boundaries outlined above for Air Emissions also applies to Noise Emissions. Certain buildings such as Pratt, Sanford Fleming, Lash Miller, and Ramsay Wright are undergoing noise mitigation measures. If a project intends to add noise (Ex. via mechanical units for example) then the ability to add noise may require the elimination or abatement of existing noise. After project completion verification and monitoring is required for EASR registration.
- EASR Watering Takings. Construction site dewatering and private water discharge to conform with requirements concerning volume limits and contamination levels etc. Also, as of January 1, 2022, foundation drainage from the interception and/or extraction of groundwater from confined aquifers will not be permitted to any of the City's sewer systems. This will have design and cost implications for projects moving forward.
    - Stage 1 of the project proposes to tank the new sub-basement addition to conform to water discharge requirements.

The Director, Utilities at the University should be consulted on any project that has potential emissions. MECP applications.

Landscape and Open Space Requirements

Hart House is located within the historic core of campus and is surrounded by significant landscaped open spaces including Hart House Circle to the South, the Back Campus athletic fields to the West and Queen's Park North to the East. Construction staging has been carefully planned to minimize disruption to these historic open spaces. This project will require using a portion of Wycliffe College property for construction staging. Stage 1 of the project proposes to make good the landscape disrupted by construction activities, re-grass, and provide new trees as required. The Stage 1 exterior landscape work has been coordinated with the newly completed Landmark Project, the consultants are using materials and referencing Landmark Landscape design where possible. The future University Park project is proposed to abut with the east side of Hart House, acting as a potential extension of the Hart House landscape. Please refer to the *Other Projects in the Sector* section which contains an overview of the Landmark Project and the University Park project.

Hart House has a traditional Indigenous medicine garden called the Kahontake Kitikan Garden, located on the east side. Created in 2002, a variety of cedar, sage, sweet grass and tobacco are grown at this location and all of which are used in ceremonies at the University. They are burned during *smudging* – a way of ceremonial purification. This garden will be temporarily removed during Stage 1 construction and reinstated afterwards. The consultants and Hart House have consulted with the student group managing this space. The scope of this garden is not included in EVOQ and Plant Architects Inc. scope. Four planters have been requested, and Plant Architects Inc. has provided recommendations for material selection for the planters and the ground cover.

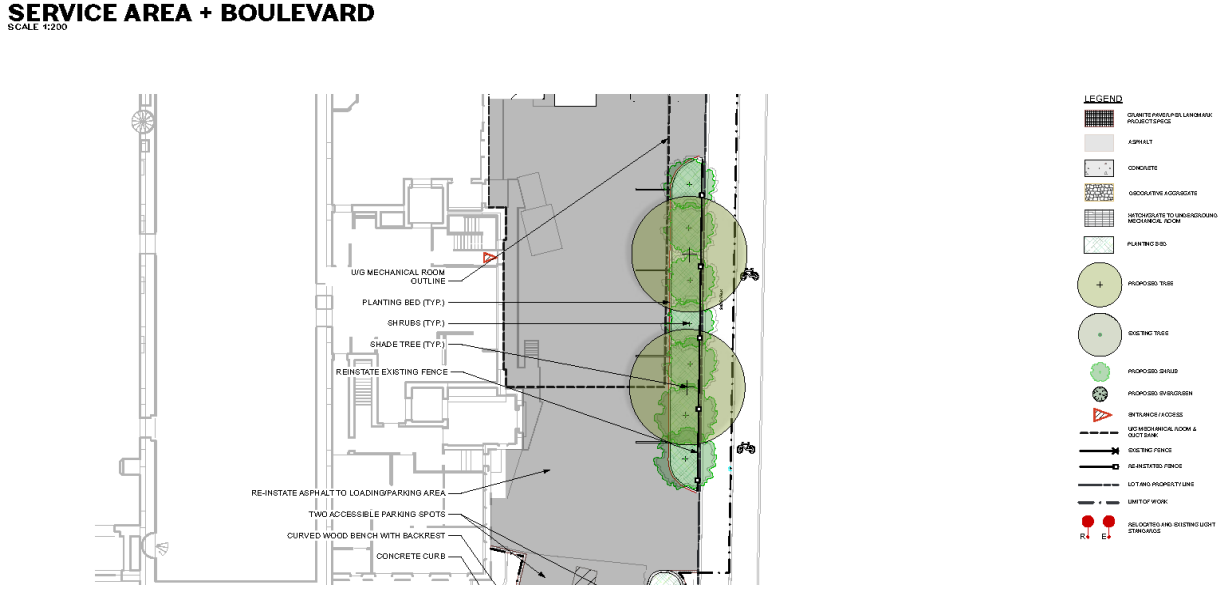
Hart House also includes a significant open space amenity within its centre, in the form of an open-air quadrangle. This space is significant to the House as a central gathering space and the focus of many adjacent spaces. This project proposes accessibility improvements to the courtyard landscape as described below.

The Stage 1 landscape and site scope of work supports the mechanical and electrical infrastructure upgrades with the following:

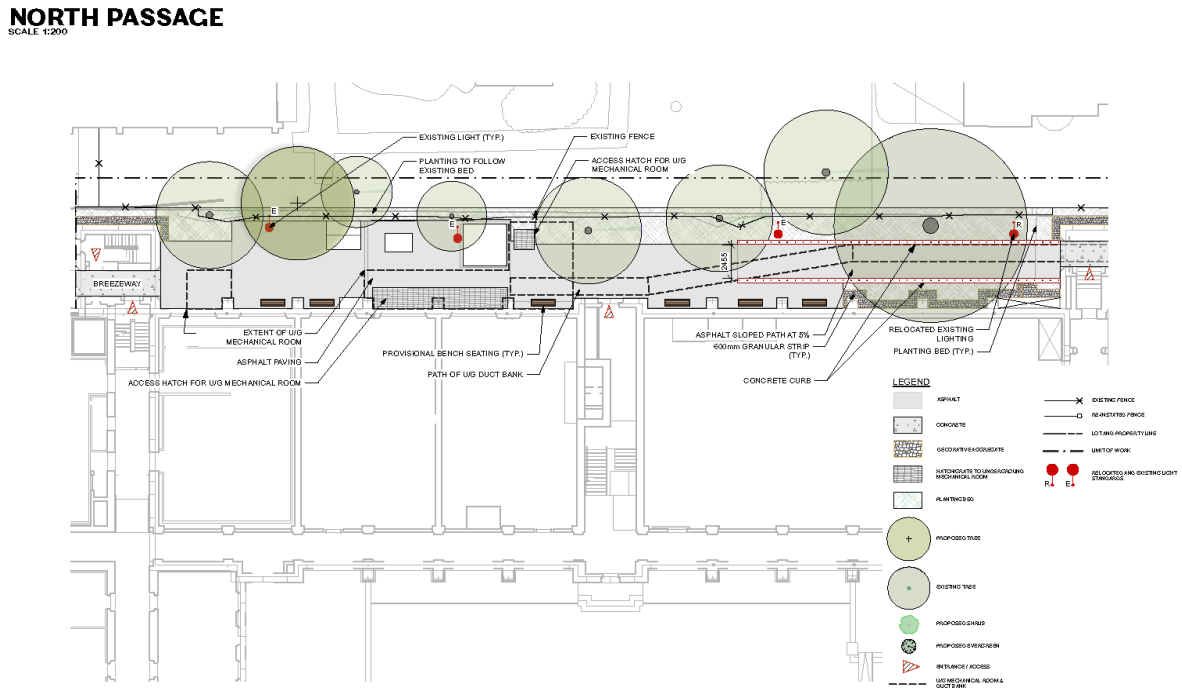
- The rehabilitation of the landscape along the north elevation, due to the new underground electrical work:
    - Existing trees to be protected;
    - New drought and shade tolerant plantings;
    - New accessible walkway and fencing proposed, light standards relocated;
    - Exemption to UofT F&S standards provided for duct bank to be above grade to help protect the existing trees;
- Reconfiguring the landscaping along the east elevation to suit new underground mechanical and electrical spaces:
    - New landscaping including hard and soft ground cover and plantings;
    - Reinstate walkway access, fencing, and lighting with original material where possible;
    - Provision for replacement of Kahontake Kitikan Garden (by others), project will provide 4 planters as requested, and reinstate existing fence; and
    - Removal and replacement of trees as described in *Existing Trees* section of this report, and in the landscape.

- New landscape elements and curbs will take into consideration deterring skateboarding where possible.
- Total renovated exterior landscape in Stage 1: 696 m²

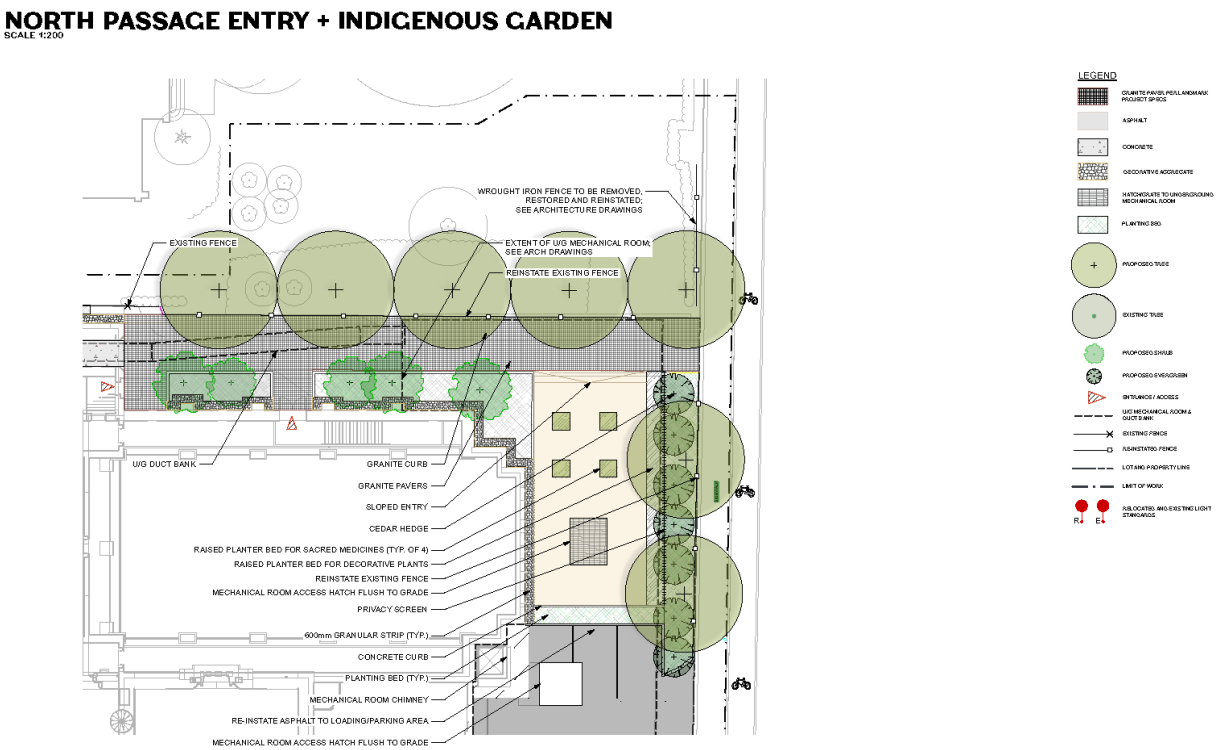
The following drawings illustrate the proposed landscape and site work as part of Stage 1:



Landscape and Site Plans: Service Area & Boulevard on east side (Stage 1) Drawing by Plant Architects (2023)



Landscape and Site Plans: North Passage (Stage 1) Drawing by Plant Architects (2023)



Landscape and Site Plans: North-East Corner (Stage 1) Drawing by Plant Architects (2023)

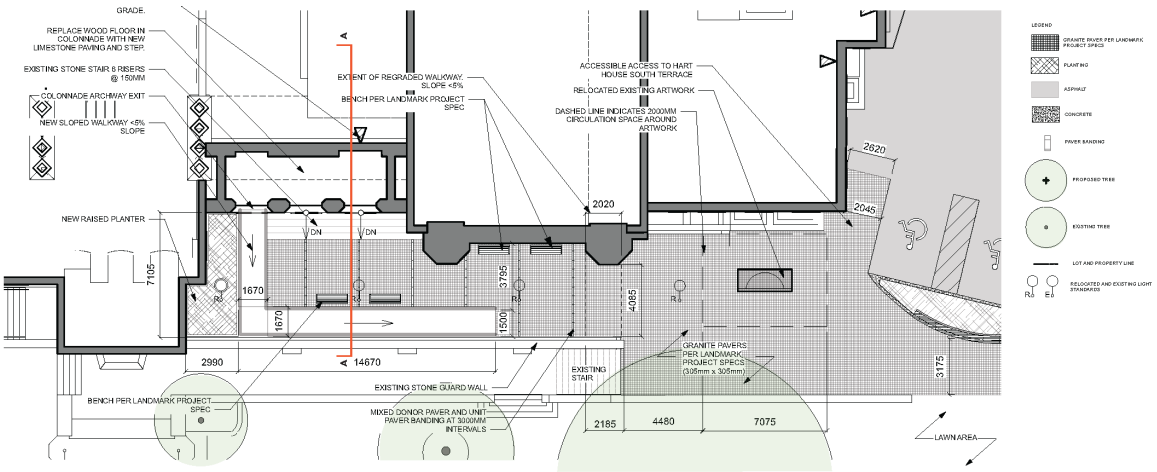
Future phases of landscape and site scope of work include the following:

- Reconfiguring the south terrace:
    - Provision of new exterior accessible ramp, new paving, accessible paths of travel to existing entrance;
    - Relocating light standards; and
    - Reinstatement of existing artwork and donor pavers.
- The rehabilitation of the courtyard landscape, to suit the installation of new membrane above the concrete roof:
    - Provision of two new accessible ramps on the terraces;
    - New sod in open courtyard, new plantings in existing lightwells; and
    - New in-wall lighting and light and power bollards.

The following drawings illustrate the proposed landscape and site work as part of future phases:

South Terrace and Accessible Entry

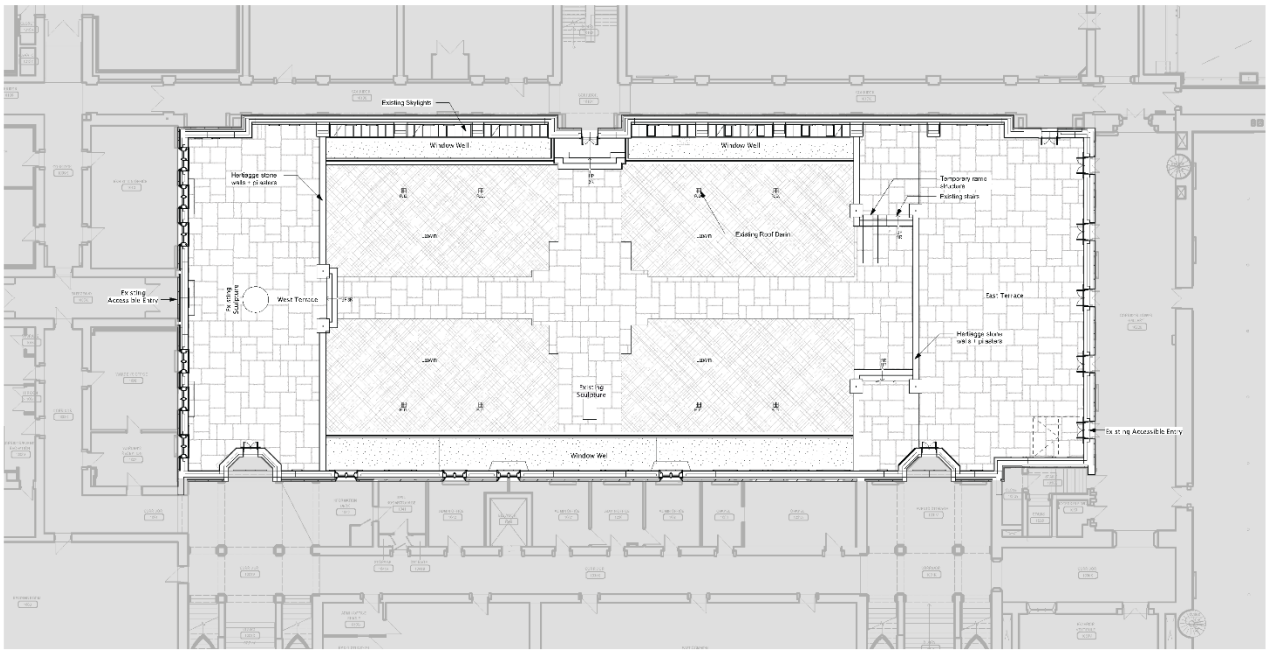
SCALE 1:200



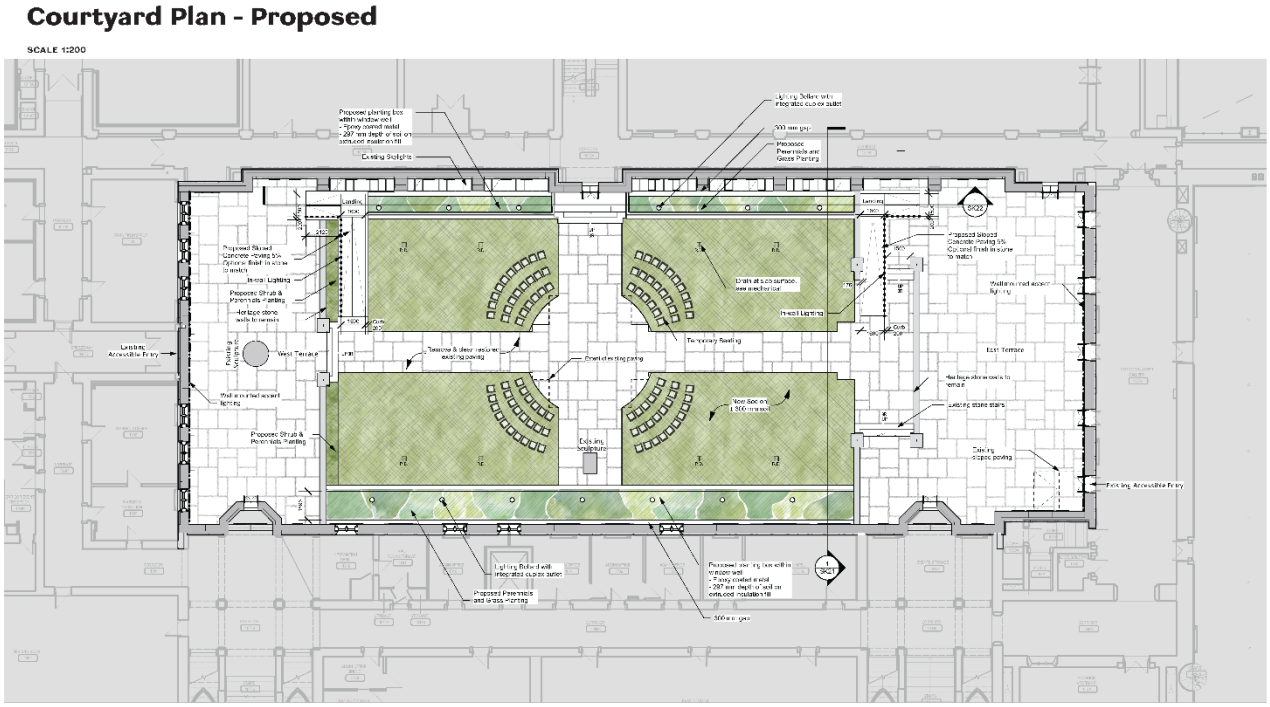
100% Schematic Design: South Terrace and Accessible Entry Drawing by Plant Architects (2023)

Courtyard Plan - Existing

SCALE 1:200



100% Schematic Design: Courtyard Plan – Existing Drawing by Plant Architects (2023)



100% Schematic Design: Courtyard Plan – Proposed Drawing by Plant Architects (2023)

Site Access

Hart House is served on three sides by vehicular roadways that provide access to the many entrances for users of the building and to provide access for service and loading.

From the south, Hart House Circle Road provides access to the main entrances to the House, the Theatre and to the lower-level Arbor Room and café. The Arbor Room renovation project, completed, included the addition of a barrier-free access ramp from Hart House Circle Road, providing an accessible entry to this wing of the building. From the west along Tower Road are entrances to the Fitness Centre and the Barnicke Gallery. The one current barrier-free accessible ramp for the building is also located along this facade. From the east along Queen's Park Crescent West is the primary service and loading dock entrance for the House. Access to the loading dock entrance will be maintained throughout construction.

Site Servicing

Future servicing of the House will not change as a result of this project. Plans for access to the loading dock are required during construction, refer to Construction Logistics Considerations section for more information.

- Shipping and receiving: During Stage 1 construction some vendors making deliveries have been asked to shift to after hours and small packages will be redirected to our south facing doors via 7 Hart House Circle.

- Loading: Currently occurs at the existing loading dock on the east side of the building. During Stage 1 construction temporary provisions are proposed to allow for loading to be undisrupted throughout construction.
- Waste / recycling pick-up strategy: Currently located at east side of building. Garbage and compactor to be temporarily relocated south closer to the loading dock to accommodate Stage 1 construction, will be relocated upon completion.
- Grounds maintenance: No change anticipated.

Site Safety and Security

The north lane/passage is being renovated, upgrades will include new accessible walkway and relocated lights, this will help maintain safety in this area.

Site Electrical

Refer to Landscape and Open Space Requirements, and Electrical sections for information.

Existing Donor Elements

Existing donor elements will not be impacted by this project.

Existing Trees

Bruce Tree Expert Company Ltd. was retained to provide a Tree Inventory for Hart House in May 2020, and completed a draft in October 2021. The Tree Inventory Report prepared addressed the current condition of all trees with a diameter at breast height (DBH) measuring equal to and greater than 1.4m located in the Hart House Area and adjacent lands. A total of 69 trees were assessed.

- 18 trees in poor condition.
- 14 trees in fair condition.
- 16 trees in poor - fair condition.
- 4 trees in good - fair condition.
- 20 trees in good condition.

Cohen and Master Tree Shrub Services Ltd. was retained to provide arborist consulting relative to the Hart House Infrastructure Renewal project. They completed a report in August 2022 that pertained to one aspect of the renewal project, the installation of an electrical duct bank along the north side of the building. The route of the proposed duct bank (by EVOQ) falls inside the Tree Protection Zone (TPZ) of a 113cm diameter at breast height (DBH) eastern cottonwood tree. It was a priority to determine the potential impacts to this tree. An air spade exploratory excavation took place along the limit of excavation for the preferred duct bank route on November 23, 2022. Within the exposed trench, one 6.5 cm diameter root was exposed, an addition three 4-5cm diameter roots were exposed to the west, and five 3-4cm diameter roots to the west. The project engineer present at the exploratory excavation site proposed the installation of the duct bank above the roots, thereby eliminating the need to prune the roots. The project team requested and was approved for an exemption from UofT Facilities &

Services requirement for duct banks to be buried. An updated draft of the Arborist Report & Tree Protection Plan is anticipated in Spring 2024 based on the final layout for the duct bank and design plans and will be submitted to Urban Forestry for review.

Stage 1 Tree Protection and Removals Plan (Refer to Appendix for further information):

- Remove: 7 Siberian Elm trees, 2 Green Ash trees, 1 Silver Maple trees, total 10 by-law protected trees
- Retain: 1 Eastern Cotton wood tree, 1 Norway Maple trees, 1 Elm sp. Tree, 1 White Ash tree, 1 Siberian Elm tree, 1 White Mulberry tree, 1 Ginko tree, total 7 by law protected trees
- Plant: 2 Freeman Maple trees, 3 American Hornbeam trees, 2 Hackberry trees, 3 American Yellowwood trees, total 10 new tress

No further changes to trees are anticipated beyond Stage 1.

Public Art

Not applicable to this project.

Soil Conditions and Subsurface Utility Engineering (SUE)

A geotechnical investigation for the Hart House Infrastructure Renewal project was prepared by Peto MacCallum Ltd. Consulting Engineers in April 2022. The purpose of the investigation was to assess the subsurface soil and ground water conditions at the subject site by advancing five sample boreholes and conducting limited lab testing. In addition, three interior and four exterior test pits were excavated to expose interior and exterior foundations to assess foundation depths. The report encompasses the results of the investigation done to determine the prevailing subsurface soil and ground water conditions and provides geotechnical engineering findings and design recommendations for the foundations, earth pressure and seismic design parameters, slab on grade and pavements.

- The soil stratigraphy consisted of pavement structure underlain by fill, followed by native till.
- Based on ground water monitoring results, the ground water levels at the site are estimated to be within an elevation range of 99.7 to 101.4.
- The new foundations will be supported approximately 9.1 m below ground surface at elevation 98.6 to 99.2.
    - At the inferred founding elevation of 98.6 to 99.2, dense to very dense sandy silt till was contacted in Boreholes 1, 3 and 4, however compact silty sand till was contacted in Boreholes 2 and 5.
    - The new footings at this elevation can be supported on conventional shallow foundations bearing on the compact to very dense silty sand till.
- The existing column and wall foundations can be underpinned by micropiles which bear within dense to very dense sandy silt/silt till which encountered below elevation 97.6 to 104.3.
- As an alternative, a shotcrete shoring system in combination with micropiles can be used to retain the earth below the existing footings and support the existing foundations rather than underpin them.

- Both helical piles and micropiles are conventionally used for underpinning existing columns in tight access conditions and low headroom. However, if obstructions such as boulders and rubble are encountered as evidenced in the test pits advanced at the building exterior, helical piles cannot be advanced through such obstructions.
- Due to the additional time involved in retracting and re-installing the helical pile and installation of additional piles, the use of helical piles at sites where boulders/obstructions are anticipated could result in project delays and additional costs.
- Micropiles can be installed using air or mud rotary drilling, impact driving, jacking, vibrating or augering machinery. The wide range of micropile drill tooling available allows flexibility to drill in many ground conditions from soft clays to hard bedrock. As a result, micropiles have the ability to penetrate obstructions.

Two hydrogeological studies in accordance with the City of Toronto requirements for the Hart House Infrastructure Renewal project were prepared by Peto MacCallum Ltd. Consulting Engineers in September 2023 and December 2023. Based on the assessments, the following recommendations were made:

- To mitigate occasional ground water leakage and uplift pressure under post-construction (long-term) conditions, it is recommended that either, (a) a subdrainage system be installed on the bottom and sides of the basement to collect ground water and relieve the pressure, or (b) the basement slab is waterproofed on the bottom and sides and consideration is given to strengthen the slab to counter the ground water uplift pressures.
- When the design is deemed to be final and dewatering discharge method considerations have been made, if an EASR is still appropriate, a Water-Taking Plan and Discharge Plan (includes discharge rates, DZOI, impact assessment, monitoring program, proposed discharge locations, methods of transfer, and erosion control measures) required for the EASR registration (MECP water taking permit) for construction dewatering must be prepared by a qualified person based on this report. PML would be pleased to provide this service.
- Since the discharge rates for the subject construction dewatering are expected to be less than 400,000 L/d, but more than 50,000 L/d, and are expected to require water taking approval from the MECP registration (EASR), it would be prudent to contact the City of Toronto regarding discharge of any pumped water to a storm sewer.
- When the design is finalized, the short-term and long-term ground water discharge rate estimates may have to be refined, if required.
- Since ground water levels vary over time, it is best to schedule the excavation for periods of low ground water levels. Dewatering methods (sumps, well points) should be no deeper than required to achieve the desired drawdown. Surface water intrusion should be minimized.
- To reduce the erosion of fines around the sump pumps or wellpoints, it is imperative that the filter packs are sufficiently designed and installed, and the discharge is monitored for fines content.
- The shoring drawings, dewatering and excavation plans and details of waterproofing membrane and subdrainage system installation (if any) should be reviewed by PML for proper implementation of the geotechnical and hydrogeological findings and recommendations presented in PML's reports.

- For discharge to a storm sewer, it is likely that treatment of the discharge water by filtration or sedimentation will reduce the concentrations of suspended solids and manganese to compliance levels. Additional confirmatory sampling and analyses of the construction dewatering discharge during a trial dewatering and during the dewatering period should be performed to confirm compliance with the quality criteria of the receiving sewer.
- Though anticipated settlement is minimal, monitoring is recommended for very close, sensitive structures.
- The monitoring wells installed during the investigations should be decommissioned in accordance with the Ontario Regulation 903, amended to O. Reg. 128/03 under the Water Resources Act upon completion of monitoring programs.

Hazardous Waste Disposal

As discussed in *Environmental Health and Safety* section, abatement at the House will be required in advance of the infrastructure renewal project.

Early Works / Site Preparation

Refer to *Construction Logistics Consideration* section for information.

Construction Logistics Considerations

Stage 1 construction will require staging space on Wycliffe College property. Wycliffe College is located on property leased from the University of Toronto. The lease will be amended prior to construction. Hart House has met with Wycliffe College throughout project planning and design to keep them informed and to come to an agreement on an area of staging that has the least impact on their grounds and operations. The line of proposed construction hoarding is indicated on the drawing below, as well as the primary access to the site through the north lane, and the trees being protected, removed, and replaced.

Stage 1 construction logistics described are to be confirmed by construction management team, Pomerleau. This is anticipated to include utility locates (gas, streetlight, traffic lights, storm, and others), installation of tree protection measures, submission of tree removal permits, relocation of plants and signage from Kahontake Kitikan Garden, and relocating accessible parking and signage.

The new mechanical rooms and electrical rooms will be located below grade under the parking lot and the Kahontake Kitikan Garden. It is essential to Hart House operations that the loading lock at the south end of the parking lot is still in operation throughout all phases of construction. It is proposed that the parking lot will be closed to only allow for deliveries, install new platform and stair to allow for a temporary truck delivery area, relocate compactor and garbage bins, install temporary handrails on platforms where required, and remove a section of existing platform and stair that will not be accessible. Temporary fencing to be installed for tree removal, removal and storage of existing black fence will be required, followed by tree removal. The north lane walkway will be open during this work.

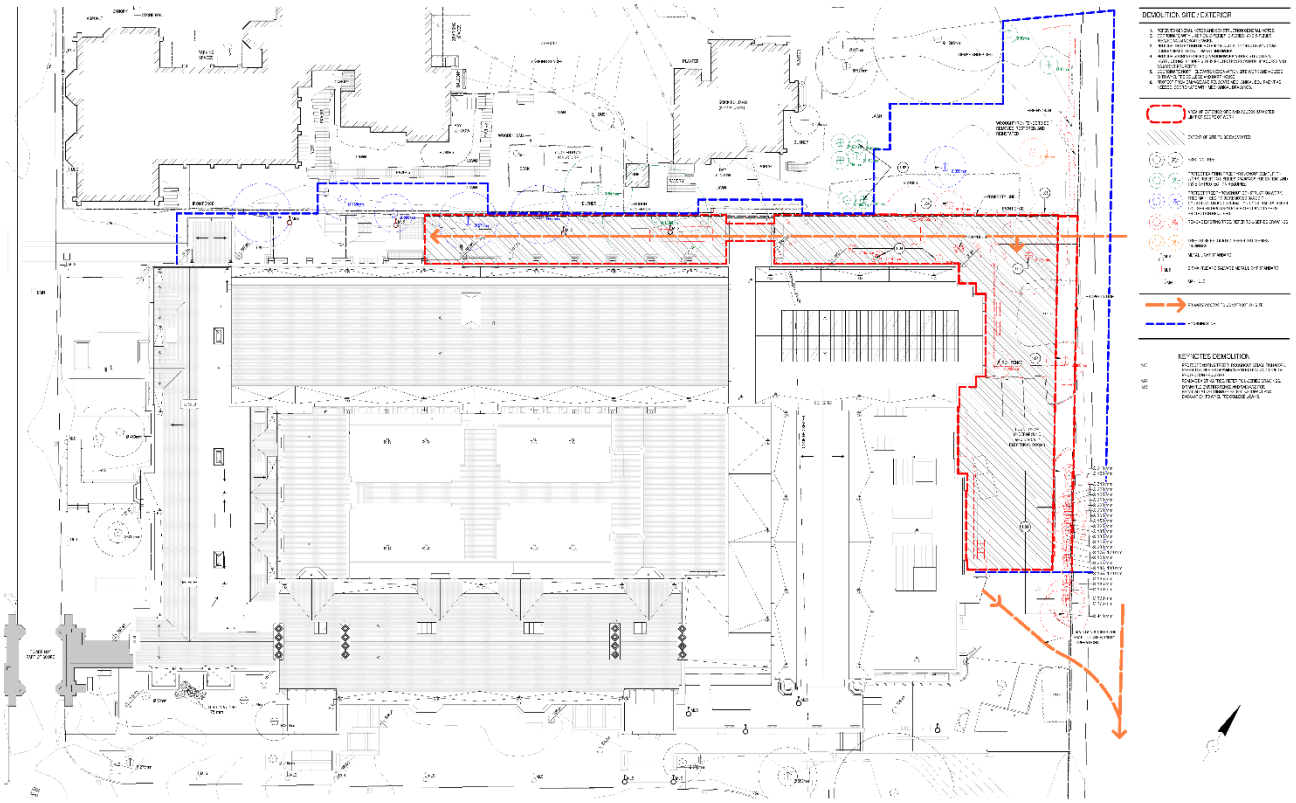
After the tree and fence removal is complete (between Hart House and Wycliffe) the gas service and main are to be relocated. The temporary fence is to be moved east and on to Wycliffe property closing the north lane, the Queen's Park W sidewalk and bike lane is to be relocated, the Queen's Park Lane width is reduced through

construction to maintain sidewalk, bike lane, and traffic lane, and the storm lines are to be relocated outside shoring zones.

Temporary streetlights are to be installed as existing overhead streetlight and traffic light cables are to be relocated during construction.

Hart House must remain operational throughout all stages of construction, including access to the loading dock.

The following diagram is a draft, logistics to be confirmed by Pomerleau.



Construction and Logistics – Draft construction demolition of exterior for Stage 1 *Drawing by EVOQ (2023)*

g) Campus Infrastructure Considerations

Utilities (Electrical, Water, Gas, Steam)

This project proposes to plan for a future connection to the new Landmark geothermal system or other future low temperature district campus heating system. It is proposed that Hart House systems will stay on the University steam system until the district low temperature water is available. The steam will be converted to low temperature water, so the new equipment selected will be suitable for the future district connection.

Most utilities service Hart House from the rear lane (North lane) from a buried tunnel/duct bank that runs North from King's College Circle, under Soldiers' Tower, and up Tower Road. This includes the campus Central Control and Monitoring System (CCMS), steam heating, and low voltage services (communications and data). It is anticipated that this tunnel/duct bank can also be used to transport the geothermal feed to Hart House in the future.

Domestic Watermain also follows the same utility path entering Hart House at the northwest corner of the building.

Sanitary runs below the House and a there is a manhole located in the Wood Room.

Please refer to the appendix for utility maps maintained by Facilities and Services for further details.

Storm Water Management and Sanitary (SWM)

This project does not anticipate any changes to the current Storm Water Management or Sanitary infrastructure beyond the building envelope bounded by Hart House Circle, Tower Road, Queen's Park and North Lane. Stage 1 of the project proposes to tank the new sub-basement addition to conform to City of Toronto water discharge requirements.

Information Technology

Not applicable to this project.

Vehicle Parking

Motor vehicle parking in the University of Toronto Area is governed by Zoning By-law 438-86. The St. George campus currently offers approximately 1,617 minimum spaces approved though minor variance on May 19, 2021 (A1199/20TEY). No parking space reductions or variances are anticipated as a result of this project.

Hart House provides seven parking spaces located at the east end of the building adjacent to the shipping and receiving area that is accessed via Queen's Park Crescent. The project will include new mechanical and electrical rooms to be located under the parking lot. The parking will be inaccessible during construction and reinstated upon completion of Stage 1 work. The future phases of work do not anticipate any changes or interruptions to vehicle parking.

The Landmark Project has removed the majority of surface parking around King's College Circle, Hart House Circle, and Tower Road. A minor amount of parking will be maintained, two spaces south of Tower Road and one space on Tower Road, plus accessible drop off. Also, accessible parking, south of Alumni House, will have access from St. George Street. The UTM shuttle will be maintained in its current location and drop off / loading will be maintained on Tower Road and Hart House Circle. Surface parking has been replaced with an underground parking structure beneath King's College Circle.

Bicycle Parking

It is not anticipated that this project will trigger any changes to bicycle parking at Hart House.

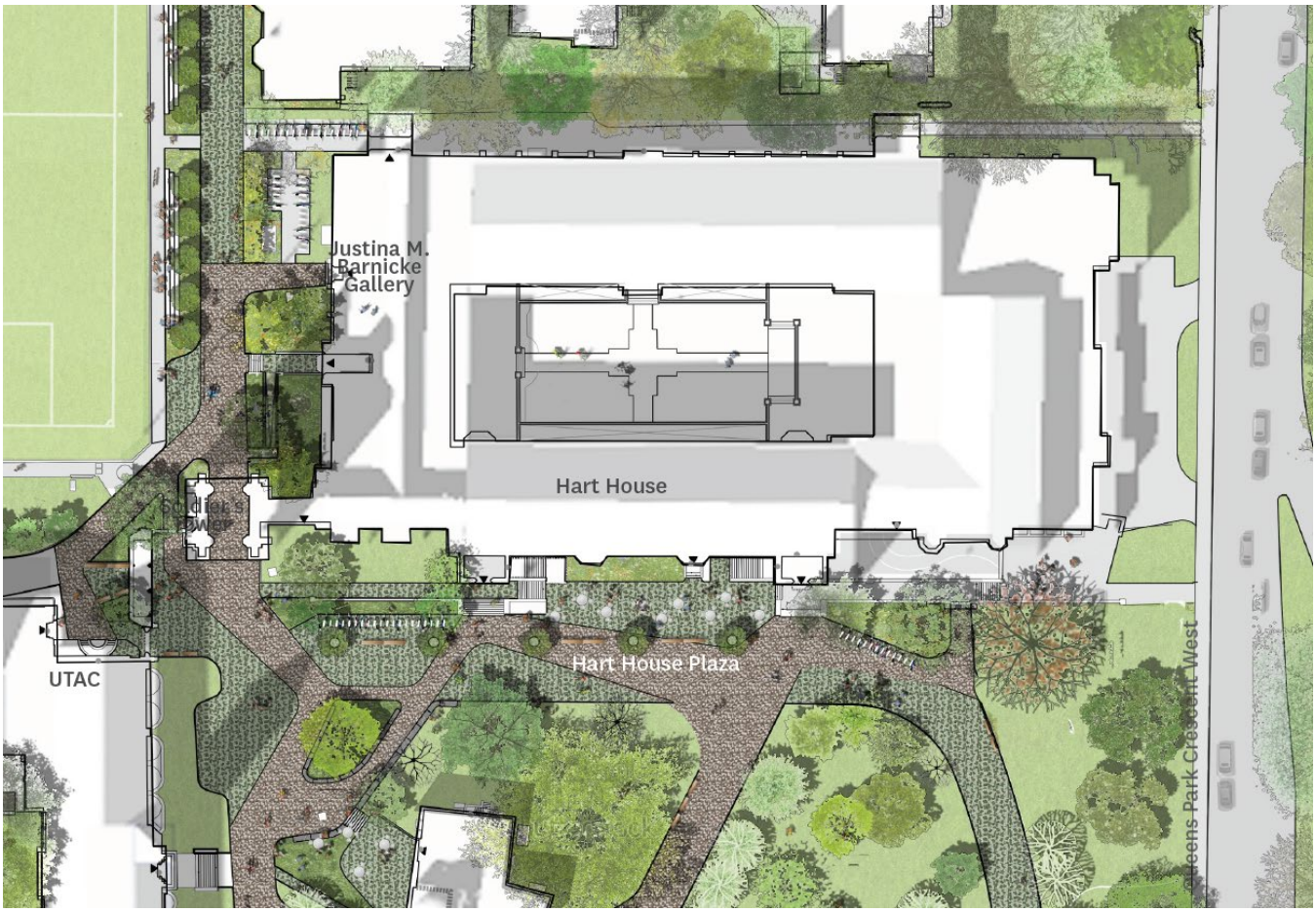
Hart House has approximately 55 bicycle parking rings located at four exterior locations:

- 14 rings near the West entrance;
- 9 rings near the Founder's Prayer (East) entrance;
- 11 rings near the south Arbor Room Restaurant entrance; and
- 21 rings southwest of main building entrance.

There are no interior (secure) bicycle parking spaces located in the House.

The Landmark Project has relocated the bicycle parking located at the West entrance closer to the lane and adjacent to the North end of the Barnicke Gallery. This will allow for the West entrance ramp to be reconfigured and brought up to current code and will provide the space to the addition of a new donor garden. The Landmark landscape project provides 125 bicycle spaces below grade.

h) Other Projects to Consider



Conceptual Graphic showing the Landscape of Landmark Quality open-space work in the vicinity of Hart House.

The Landmark Project

The Landmark Project is currently in the final stages of construction. Ongoing coordination led by Project Management and University Planning between the Hart House infrastructure renewal project and the phases of the Landmark Project must be maintained throughout the process of each. In particular, for issues of access and accessibility, and construction phasing, close coordination of efforts will be necessary.

The new landscape considers the campus through the lens of important themes including Symbolic Sense of Place, Events locations, University Sports and Recreational Use, Pedestrian, Vehicular and Bicycle Circulation and Parking and Accessibility, Service and Support Services.

The Landmark project scope included work around Hart House, and the Hart House landscape designers, Plant Architect Inc., took this into consideration when designing and selecting materials. The areas in front of Hart House and the Louis B. Stewart Observatory have been transformed with the addition of granite paving stones, five new trees and three new gardens. In Hart House Circle, south of Hart House, construction continues on "The Grandchildren's Garden" supported by Chancellor Emeritus David and Shelley Peterson, with the addition of seven new trees and a new pedestrian pathway. Stunning granite pavers will seamlessly connect at Hart House Circle and King's College Circle, and at the new Houlden-Yen Family Arrivals Plaza. To the east, the area formerly known as Hart House Green has been redeveloped as the Ziibiing project, which means 'river' in Anishinaabemowin. This new space will pay tribute to the Indigenous nations that lived alongside Taddle Creek, while creating a gathering space for Indigenous students, faculty, and community members.

Tower Road has been entirely repaved with granite paving stones and is now flanked by beautiful new trees and two new gardens set against the backdrop of the historic architecture of Hart House and Wycliffe College. To the west, work has been completed on Scace Walk, supported by Arthur and Susie Scace. This new space features concrete bleachers, trees and gardens, and will serve as an inviting space to gather and watch sporting events. Further south, the new RG Macdonald Plaza at Soldiers' Tower is now open to the public. This new space will serve as a beautiful and dignified setting for the University's Remembrance Day ceremonies and for quiet reflection and commemoration year-round.

The University Park Project

The University Park project proposed adjacent to Hart House to the east at Queens Park is in the early planning stages. This may greatly impact the east side of the site in the future and any integration is not part of this project scope.

University Park's vision for the area around Queen's Park proposes to:

- Consolidate north and south-bound vehicular traffic to the east side of Queen's Park;
- Remove the asphalt roadway and overpass on the west side of Queen's Park;
- Join Queen's Park to existing UofT open spaces along the eastern boundary of campus including along Hart House's eastern landscape;
- Create a naturalized landscape that facilitates stormwater management, flood prevention, and promotes bio-diversity along the historic course of Taddle Creek;
- Introduce a destination worthy, multi-use trail that traverses the interior of Queen's Park; and
- Improve pedestrian and cyclist safety in and out of the park.

Ongoing Projects at Hart House

Current renewal projects at the House include:

1) Infrastructure
    a. HVAC Upgrades
        i. Replaced outdoor condensing units for
            1. Great Hall Servery (Complete)
            2. Studio A Fitness Center (Complete)
            3. Replaced theater chiller (Complete)
        ii. Replaced ductless split for elevator machine room (Complete)
    b. Watermain repairs by Soldiers Tower (Complete)
    c. Fitness Center offices (Complete)
    d. IT cabling upgrade from CAT5 to CAT6 (Complete)
    e. JMB cooling/heating/humidification (Complete)
    f. Installed new emergency power transfer switch (Complete)
    g. Dumbwaiter modernization (WIP)
    h. Fire alarm panel upgrade (Complete)
    i. Pool filtration upgrade (Complete)
    j. Replaced upper gym ceiling fan (Complete)
    k. Replace domestic water plumbing, supply and drains, that are choked with corrosion (WIP)

2) Accessibility
    a. Installed door operators for 4 additional doors in the theater (Complete)
    b. Tactile indicator for stair landings (Complete)
    c. Install stair nosings (Complete)
    d. Acoustic Upgrades
        i. Gallery Grill Restaurant (Complete)
    e. Washrooms
        i. Universal Washroom on basement level (Complete)
        ii. Accessible washroom on subbasement level (Theater guests) (Complete)
    f. Stair chairs (Complete)
    g. Passenger elevator modernization (WIP)
    h. Main Information Desk renovation (WIP)
    i. Donald Burwash Room renovation (Complete)
    j. Fitness Center Desk renovation (Complete)
3) Sustainability
    a. Replace old incandescent and fluorescent lighting fixtures to LED throughout building (WIP)
    b. Conversion from water cooled to air cooled for walk in food refrigeration systems (8 units) 7 Complete, 1 WIP)
    c. Replaced defective steam traps (Complete)
    d. Replaced all shower heads to low flow (Complete)
    e. Upgrade cooling systems that run on R22 refrigerant (Complete)
4) Arbor Room Restaurant (Infrastructure/sustainability/accessibility) (Complete)

Moving forward, Hart House will implement a physical asset management policy that will rebalance the levels of deferred versus planned maintenance ultimately favoring the latter as well as the implementation of a capital asset replacement plan.

Hart House is committed to – in addition to the infrastructure and accessible renewal – preparing for future capital renewal. This will require a diversification of maintenance approaches, and a continuation of capital reserves savings.

i) Staging Requirements

None to report as part of Stage 1.

j) Secondary Effects

Stage 1 Impacts:

Wycliffe College Impacts
A portion of the landscape at the south-east corner Wycliffe College is required to be used during construction for staging of Stage 1. Upon completion of Stage 1 construction the project scope will include making good of the landscape, re-grassing the area, and planning new replacement trees as required. All costs associated with this have been accounted for in this project.

Back Campus Fields
Dust and noise may impact activities on the back campus fields located on the west side of Hart House. These fields are under the operational oversight of the Faculty of Kinesiology and Physical Education and are used for various activities such as field hockey and soccer. Regular communication with the Sports and Recreation team at KPE will be required to ensure they are aware of work that will generate significant levels of dust and/or noise.

Traditional Indigenous medicine garden: Kahontake Kitikan Garden
This garden will be temporarily removed during Stage 1 construction and reinstated afterwards. The scope of completing the reinstatement of this garden is not included in EVOQ and Plant Architects Inc. scope. Four planters have been requested, and Plant Architects Inc. has provided recommendations for material selection for the planters and the ground cover.

Future Phase Impacts:

Staff accommodated within the building will require relocation during future phases of construction. Hart House is confident that affected staff in any one phase can be accommodated through rotation within the building, and these smaller effects are intended to be absorbed by Hart house annual operating funds.

Students and members engaged with the numerous clubs and committees that use the various committee and meeting rooms will be impacted during future phases of the renewal project. It is expected that these groups will still require accommodation on campus for their meetings, rehearsals, performances, tournament needs and others. Efforts should be made to identify alternate options for accommodation within the campus.

Fitness Centre Impacts
Stage 1 will not impact the Hart House Theatre, all impacts below are for future phases.

The Faculty of Kinesiology and Physical Education (FKPE) and Hart House have drafted a Reciprocity Agreement that delineates how the two entities can be mutually supportive to one another in times of renovation and maintenance, allowing members to access either facility when there is a slated closure for the other. While such arrangements have been in place in past, this simple agreement has allowed for more consistent process and communication on how this reciprocity is managed. Opportunities for a shared plan with FKPE to manage staging during any construction or renovations to the Fitness Centre should be explored if needed.

Issues of access, egress, emergency exits, and ventilation will all impact the viable usage of the Fitness Centre. Some spaces that take their main ventilation from operable windows may not be useful for programming during construction. Similarly, interference with building entrances and hallway access to locker rooms will limit access to the various spaces. Improvements to the change facilities at the Fitness Centre will also be problematic, and it will have to be determined if change space is offered elsewhere within the House.

Justina M. Barnicke Gallery at Hart House/ Art Museum
Stage 1 will not impact the Hart House Theatre, all impacts below are for future phases.

The Hart House permanent collection which is on view in nearly every room throughout the House will be affected by vibrations and construction dust. The works on view will need to be removed and stored in an offsite location for the duration of construction. Storage space can be rented at a cost. In order to move works into offsite storage, significant lead time will be required to access the various spaces of the House.

Justina M. Barnicke Gallery operations will be affected by noise, vibrations and dust migration. Office staff will require relocation, ideally within the University of Toronto Art Centre (UTAC) space in the adjacent University College building. Depending on the extent and proximity of vibrations, works of art on view in the gallery spaces and in storage will likely need to be removed and stored in a secure offsite location. As gallery programming is planned long in advance, it is paramount to know far in advance of the onset of either dust or vibration so that the gallery can be closed in time, and so that it incurs no unanticipated changes to exhibition schedules for visitors.

Hospitality Services
Each phase of the building renewal will impact the regular business of meetings and events throughout the House. Currently every room in Hart House is used for some purpose.

The rental value of the Quadrangle may be diminished during future phases of construction due to noise and dust migration.

Stage 1 will not impact the catering kitchen and there fore has not been accounted for in the current funding model. In future phases it may be impacted and will be taken into account. Off-site catering likely won't work when kitchen / catering functions are taken off-line.

Gallery Grill
Stage 1 will not impact the Gallery Grill. The Gallery Grill is likely in the last phase of the project. It is anticipated that during that future phase of work there will be disruptive noise, vibrations, and dust/fumes – particularly during lunch hours of operation and during booked evening events will be impactful. An effort will have to be made to maintain sanitary conditions for food handling and service (i.e. no dust migration). Likewise, the wine inventory, glassware, flatware, plates, and computers will require protection from construction dust and debris.

Artwork and other historic artefacts located within the Gallery Grill are likely better removed and relocated during the future phases of the project that impact this area.

Hart House Theatre
Stage 1 will not impact the Hart House Theatre, all impacts below are for future phases.

The Theatre currently has client obligations for dozens of campus and external clients.

Careful consideration for the following will be necessary:

- Vibrations from construction can move theatrical lighting out of focus compromising the artistic product, contractual obligations and performer safety. Ideally any work that creates substantial vibrations can be performed in the dark summer months.
- Work performed in the sub-basement is keenly felt in the Theater, be it noise, excavation of material, dust or worker access. Some construction scheduling is recommended to work around the Theatre's operations with the preferred timing of construction work being overnight (midnight to 7am).

The theatre's air-conditioning will need to remain functioning when closed so that theatrical lighting does not rust. Alternatively, all lighting fixtures can be struck and moved into a smaller air-conditioned room.

During the time of closure, capital projects related to the improvement of the Theatre's infrastructure may be entertained. Separate funding will need to be sought for these upgrades and coordination with the larger project carefully considered if these improvements go ahead.

Offsite alternatives to continue some of Hart House Theatre's operations in another venue would help mitigate the effects of closure. Partnering with the Centre for Drama, Theatre and Performance Studies at the Luella Massey Studio Theatre has been suggested as a possible avenue to pursue. Operating within alternative space on campus would importantly allow for Hart House Theatre to continue its student initiatives albeit in a smaller and different manner.

k) Schedule

The proposed schedule for the project is as follows:

Terms of Reference to CaPS Executive	August 24, 2018

CaPS Executive Approval for Consulting Fees	April 12, 2019
Consultant RFP Issued	June 18, 2019
Consultant Selection and Letter of Award	November 19, 2019
Schematic Design All Phases	December 2019 – September 2021
Schematic Re-Design	September 2021 – July 2022
Design Development Stage 1 - 100%	July 2023
CM Services RFP Issued	August 30, 2023
CM Services Selection and Letter of Award	January 9, 2024
CM Preconstruction Services	January 2023 – May 30, 2024
CaPS Executive Approval for Full Project Cost	Cycle 6 April 2024 – June 2024
Construction Documents Stage 1 - 100%	April 2024
Sequential Tendering	May 2024 – June 2024
Construction Period Stage 1 (12 months)	July 2024 – July 2025

This schedule assumes all municipal approvals can be achieved within this timeline.

l) Funding Sources

Funding for this project will include a combination of sources: Hart House Capital Reserves, Hart House Reserves, Hart House Future Ancillary Funds, Fundraising Received, Provostial Funds, and Financing.

IV. Resource Implications

a) Total Project Cost Estimate

The Total Project Cost estimate includes the following items:

- Stage 1 of scope of work
- A general allowance for secondary effects
- Construction contingency at 15% of currently estimated cost of construction
- Escalation
- Demolition and hazardous material abatement
- Licenses / permits
- Insurance
- Consulting fees and disbursements
- Construction Management fees
- Testing and inspection, commissioning
- University of Toronto Project management disbursements
- Moving and staging
- Facilities & Services consultation
- Capital Project Financing Charges
- Legal Services

- Equipment: Computing
- Security and Access Systems

The Total Project Cost estimate is available upon request to limited distribution.

b) Explanation of Cost Assumptions

Not applicable to this project.

c) Operating Costs

No significant changes to operating costs are anticipated for Stage 1 work.

d) Other Related Costs

Not applicable to this project.

Appendices

1. *Conservation Strategy Report,* dated October 10, 2023, by EVOQ [available upon request to limited distribution]
2. *Root Exploration Briefing for Proposed Electrical Duct Bank at the Rear Lane at Hart House*, dated November 23, 2022, by Cohen and Master Tree and Shrub Services Ltd. [available upon request to limited distribution]
3. *100 % Schematic Design drawings,* dated Sept 9, 2022, by EVOQ [available upon request to limited distribution]
4. *100% SD-East Option Energy Modelling Report* dated September 9, 2022, by CEL Gruen [available upon request to limited distribution]
5. *Phasing Plans Stage 1* by EVOQ, dated March 28, 2024 [available upon request to limited distribution]
6. *Mechanical Design Base Memorandum Issued for 75% Construction Documents (Stage 1)* by Crossey Engineering Ltd, dated April 3, 2024 [available upon request to limited distribution]
7. *Electrical Design Base Memorandum Issued for Updated Stage 1 Scope* by Crossey Engineering Ltd, dated April 3, 2024 [available upon request to limited distribution]