Existing Campus Conditions and Needs

2

2.1 An Evolving Campus

We are at a period where significant cultural and societal shifts are beckoning a re-assessment of how to maintain Queen's competitiveness, and ensuring the campus meets the needs of today's and tomorrow's students, faculty and staff. In a time where new economies, technology, and global migration patterns have radically shifted the way people learn, research and innovate, Queen's must continue to evolve. This chapter documents the historic evolution of Queen's campus planning, provides an overview of the existing physical condition, capacity and quality analysis, and a summary of anticipated space needs and trends informing the Plan.

Since Queen's inception in 1841, the physical campus has grown and evolved incrementally, while still retaining a close physical relationship to Kingston's neighbourhoods. New spaces and facilities have responded to shifts in pedagogy, demographics, and a changing university culture.

Since the 20th Century, Queen's has been managing growth and change through a series of master plans that have responded to the issues of their time. Remnants from plans of the past can be seen in today's buildings, open spaces, and pathways. The following highlights some of the plans over the years and the legacy that they have left behind.

1841

Queen's University is established

The first formation of the Queen's campus began shortly after the young institution acquired Summerhill, the estate of John Okill Stuart in 1853. This began the formation, over the next century, of the central Queen's campus as currently understood and experienced.

1945

The Todd Campus Master Plan

Canadian landscape architect and planner Frederick Todd envisioned an east-west road between Ontario Hall and Alfred Street. While this road was never constructed, the route informed the siting of Richardson and Ellis Halls.

1961

Barott, Marshall, Merret and Barott Campus Master Plan

In response to the rise of the automobile, the Barott, Marshall, Merret and Barott Plan envisioned an inward facing campus, with surface parking lots located at the periphery. Remnants from this plan can be seen in the existing parking lot west of Tindall Field. The effects of this plan compromised the pedestrian-scaled nature of Queen's and disconnected the campus from many of its neighbouring communities.

1920

Sheppard and Calvin Campus Master Plan

The Sheppard and Calvin Plan envisioned a grouping of new buildings in what was referred to at the time as "North Campus" and the area west of University Avenue. This Plan informed the development and location of some of the buildings on the west side of University Avenue, including the current location of Ban Righ Hall.

1955

Culham Campus Master Plan

In 1955 Queen's University retained landscape architect Gordon Culham to prepare a plan for the campus lands. His plan addressed the need to re-evaluate how campus buildings addressed the pedestrian network and internal courtyards and how to more sensitively incorporate parking into University life.

1993 and 2003 Update

DTAH Campus Master Plan

DuToit Allsopp Hillier (DTAH) switched focus from modern buildings and parking lots to protecting the heritage buildings and landscapes at Queen's. Expansion was achieved through infill development, working within the existing urban street network. University Avenue and Union Street were envisioned as the centre of campus. The plan was updated in 2003, reflecting the current practice to update master plans on a five or ten year basis.

*Research courtesy of Tony Gkotsis, M.Pl '14

2.2 Determining Capacity and Promoting Renewal

In order to fully understand the potential of Main and West Campus, existing conditions were analysed through a number of different lenses to determine the places on both campuses suitable for change. This section reviews the different steps in determining the University's existing capacity.

Land Utilization

Each property has been assessed to determine sites on campus that are underutilized. Sites were considered underutilized if they are undeveloped, only partially developed, or contain low density/ obsolete buildings that could be redeveloped to perform better. Surface parking lots were also identified as sites that could be put to a better use.
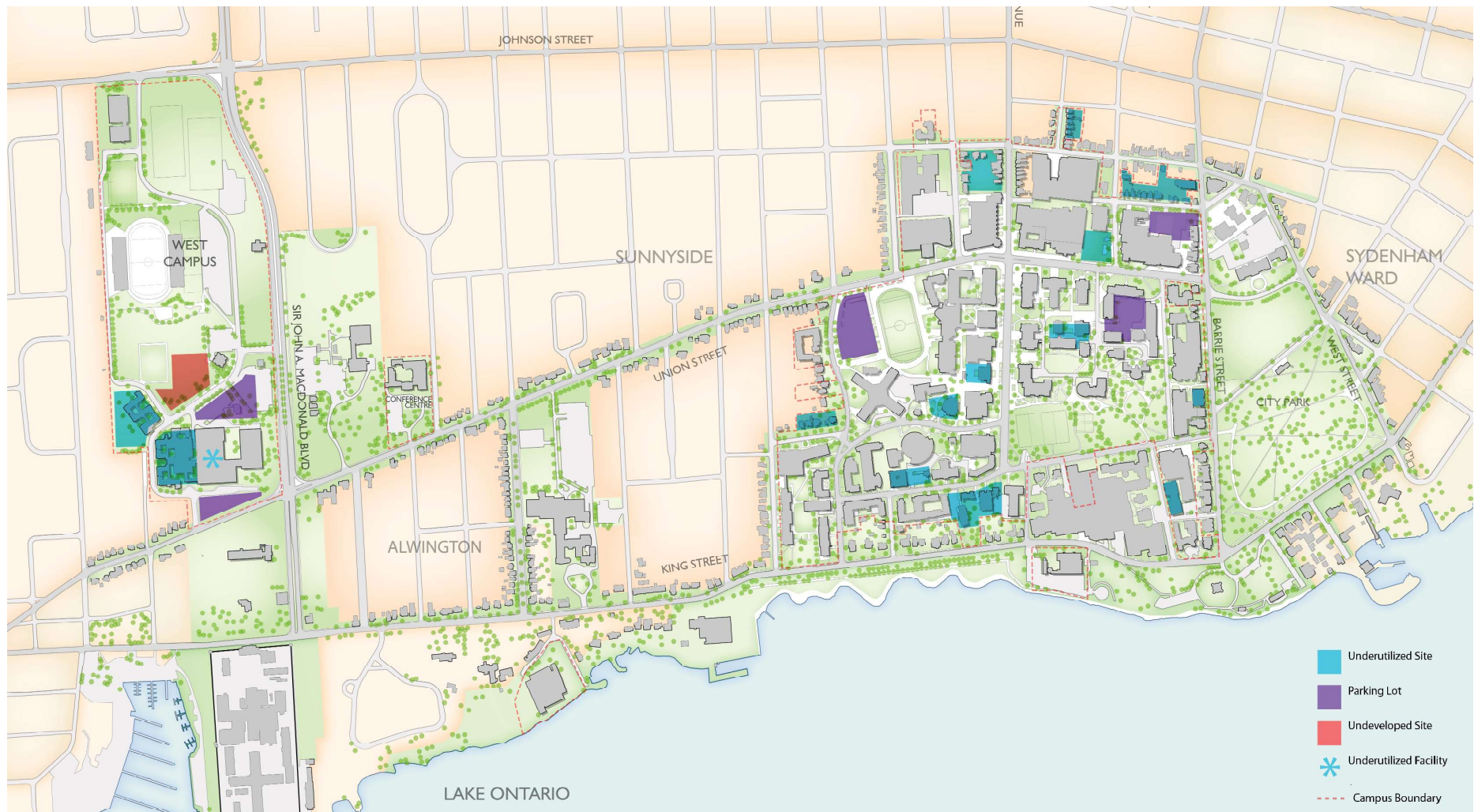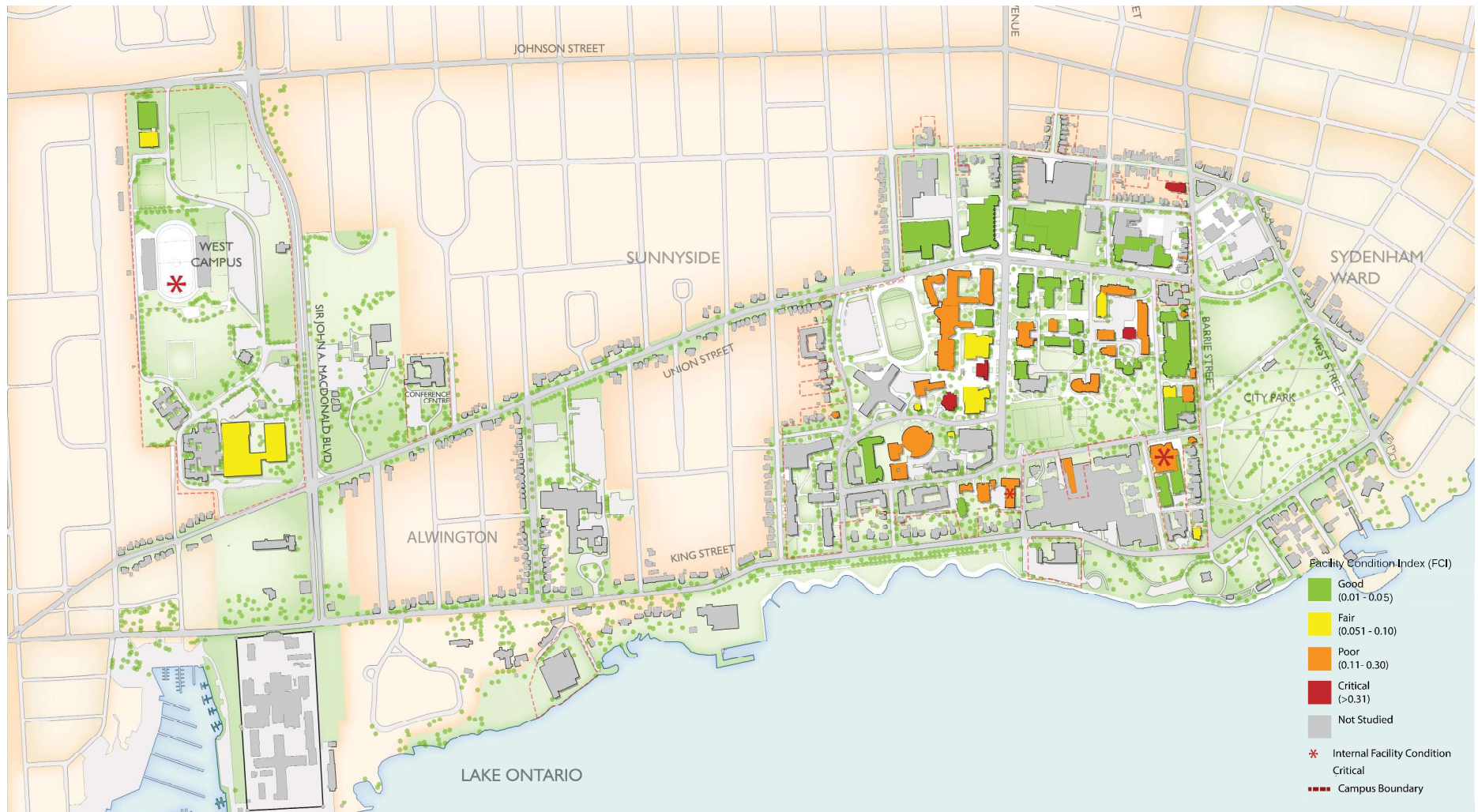

▲ Figure 2-1
Land Utilization

Building Condition

To determine if any existing buildings should be considered for renewal, the building condition of each building was evaluated using existing Building Condition Assessments that utilize the Facility Condition Index (FCI) to rank buildings on campus. The FCI is calculated using the ratio of deferred maintenance (cost of repairs) divided by the replacement value (the cost to replace the entire building in today's dollars). Based on its index, an individual building is categorized as good, fair, poor, or critical. Those buildings with a critical FCI are considered sites which may be suitable for redevelopment as the cost of repair exceeds its current value. The building condition analysis did not include recently constructed buildings or residences, as these were assumed to be in good condition. Of the 81 buildings studied, roughly 50% were assessed to be in fair or good condition.
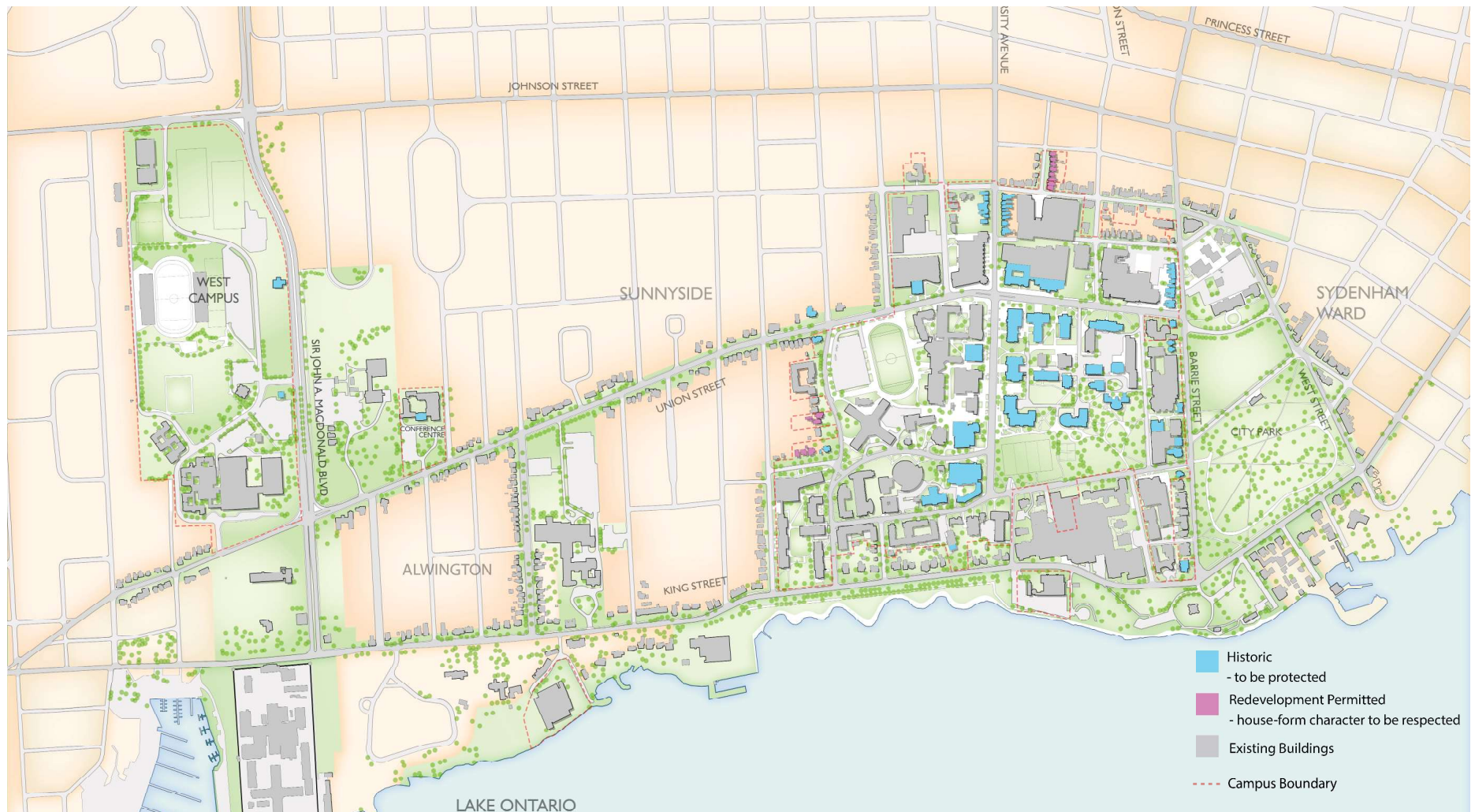

▲ Figure 2-2
Building Condition

Historic Significance

Buildings were assessed for their historic significance in order to fully understand the highest development potential on campus. Each building on campus was evaluated based on individual architectural significance, as well as its contribution to Kingston's historic landscape (the rationale in determining historic significance of buildings is described in fuller detail in Section 5.2). Buildings in the drawing below in blue are those that must be protected or incorporated into new development. Houses in purple indicate sites that may be considered for redevelopment, but will require special design attention regarding compatibility with adjacent historic neighbourhoods.

▲Figure 2-3
Historic Significance

▲ Figure 2-4   **Development Capacity on Main Campus**

Legend:
- Large Vacant Sites
- Large Sites with Considerable Constraints
- Small Sites with Considerable Constraints
- Campus Boundary

SUNNYSIDE

SYDENHAM WARD

UNION STREET

KING STREET

BARRIE STREET

WEST STREET

CITY PARK

Development Capacity

All of the determination criteria have been considered against one another to arrive at total development capacity numbers on campus. These were then conceptually modeled on a site-by-site basis to determine the total gross floor area potential across campuses. Development opportunities consist of three types of sites and have been separated across Main and West Campus:

|	Main Campus Capacity	West Campus Capacity
Large Vacant Sites: These are less-constrained sites that can be considered for more immediate and less-constrained sites for redevelopment. These are places that can accommodate modern academic buildings.	46,000 m² (495,140 ft²)	60,000m² (645,834 ft²)
Large Sites with Considerable Constraints: These are clusters of buildings and vacant land with financial or logistical constraints such as demolition, phasing, or historic buildings to be retained and incorporated into new design.	12,000m² (129,166 ft²)	29,000m² (312,153 ft²)
Small Sites with Considerable Constraints: Smaller clusters of buildings and vacant lands with similar financial or logistical constraints. None of these types of development sites exist on West Campus.	22,000m² (236,806 ft²)	0m² (0 ft²)
TOTAL	80,000m² (855,112 ft²)	89,000m² (967,987 ft²)

▲ Figure 2-5 **Development Capacity on West Campus**

2.3 Evolving Space Needs

The Queen's "footprint" has steadily increased over time, having grown an average of 9,000 to 10,000 square metres per year since World War II to arrive at its current area of 681,5000 square metres. Though Queen's has grown steadily in the past, Queen's future growth will be determined by the University's enrolment plans over coming years and other strategic planning decisions. The Campus Master Plan does not presuppose growth, but illustrates potential physical opportunities and challenges, should the University choose to grow.
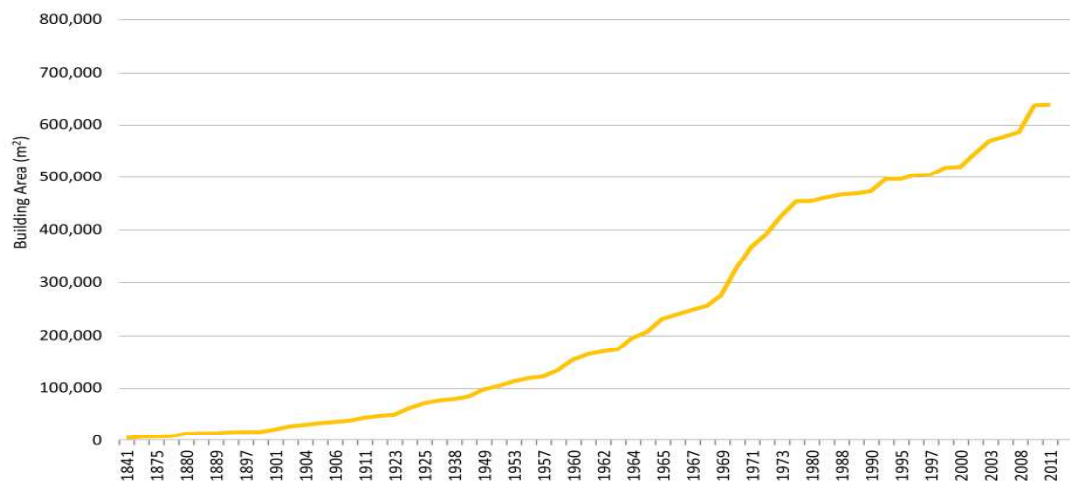
▲ Figure 2-6

Growth in the Building Area Over Time

Regardless of future enrolment, rapidly evolving pedagogy has created a need for Queen's to asses current space requirements. An analysis of space needs was conducted by Rickes Associates Inc. in August 2013* to assess existing and required facilities to support research, teaching, and campus life. The findings indicate Queen's does not have a deficit of space overall, but rather, it requires more of certain types of spaces and less of others. The renewal and retrofitting of existing spaces will be required to meet pedagogical and technological evolution.
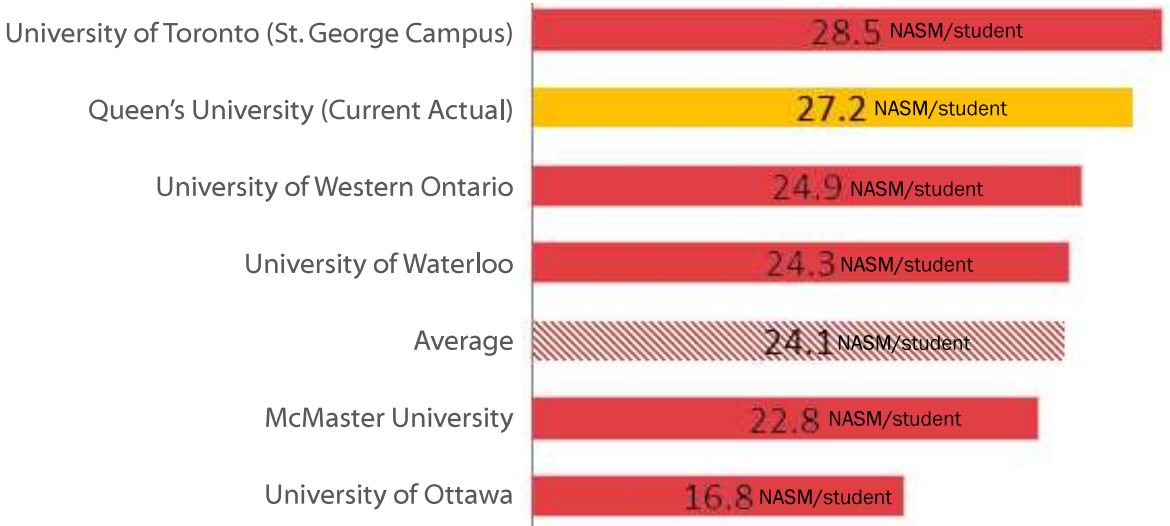
ECS is currently preparing a utilization study of both centrally and non-centrally booked classrooms at Queen's to determine whether the University has the appropriate number and mix of sizes of classrooms. This study will provide an overview of classroom inventory by building, capacity, capacity range, room type and room characteristics along with a breakdown of both time and seat utilization. This will inform the University as to whether additional teaching space is required, and if so, the approximate sizes and types of these rooms. Future analyses may include both an overall review of the quality of each of Queen's teaching

spaces (which will inform future projects that would bring these rooms up to current teaching standards), as well as a review of time utilization of existing classrooms (which may inform the decision to extend the number of hours that they are used i.e. additional evening teaching will reduce the requirement for additional construction).

Current Performance

To date, Queen's has done a relatively good job of maintaining the appropriate amount of facilities in relation to its enrolment. The space analysis used a number of points of comparison to evaluate how Queen's space supply compared to other institutions in USA and Canada, as well as Council of Ontario University standards (performance standards developed by the organization that co-ordinates and advocates on behalf of Ontario's 20 publicly funded universities). The analysis concluded that while it does have deficits for some types of space like all the other institutions, Queen's is among the top at offering appropriate amounts of space to students.

Should enrolment increase in the future, roughly 20 net assignable square metres (NASM) of space would be required per additional full time enrolment (FTE) as a general rule of thumb. This translates into approximately 30 gross square metres of development per FTE.

University	NASM/student
University of Toronto (St. George Campus)	28.5 NASM/student
Queen's University (Current Actual)	27.2 NASM/student
University of Western Ontario	24.9 NASM/student
University of Waterloo	24.3 NASM/student
Average	24.1 NASM/student
McMaster University	22.8 NASM/student
University of Ottawa	16.8 NASM/student

▲ Figure 2-7

Space benchmarking relative to other Ontario universities. This figure illustrates the amount of facility space per full time student for a sampling of Canadian universities, measured in net assignable square metre (NASM/student).

*Findings in this section refer to *The Queen's University Campus Master Plan Analysis of Space Needs,* Rickes Associates Inc., August 2013*

Space Needs

Regardless of Queen's good performance, there are still types of spaces that should be added to its campus. The University currently lacks appropriate instructional and research laboratory space, classroom facilities, and study space, as well as social spaces that support Queen's role as a predominantly residential campus. These spaces should be considered and prioritized in future development. In particular, a phasing and implementation plan should be developed identifying the specialized instructional spaces that are candidates for right-sizing, maintenance and other upgrades. This Plan would consider the enrolment, course scheduling, and potential need for expanded facilities to support new programs, adjusting as the institution changes. Ultimately, this will provide Queen's with the appropriate array of specialized instructional spaces, both now and in the future.

Renewal

Queen's challenge is not necessarily to build new facilities (though for certain types of large, purpose-specific spaces this will be necessary), but rather, how to renew and retrofit existing facilities to align with current space needs. This means re-assessing how certain spaces might be re-purposed, or performing interior upgrades and renovations.

Queen's should carefully review appropriate options for addressing current need by balancing the creation of new space with renovation of older spaces (guiding by the building condition assessment presented on page 20), and the opportunity to eliminate outdated or poorly located rooms. It is not simply a matter of having a sufficient quantity of space, but they must be of an acceptable quality if they are to be used at all.

The Nature of New Spaces

A symbiotic convergence of cultural shifts and technological changes is transforming higher education, disrupting not just the traditional "in-person" method for course delivery, but also the traditional spatial organization and disciplinary silos and the experience of academic life more broadly. These changes - inclusive of new permutations, yet to be imagined - suggest a significant need to examine the value of the physical campus and its collection of spaces. Chief among cultural shifts impacting higher education are large-scale, wide-ranging pushes toward greater collaboration and flexibility reflected and refracted in numerous ways.

As teaching and learning evolves, the nature and character of space needs are changing. Whereas campus space planning of the past focused on categorizing spaces with a particular programming purpose, new learning and research spaces are more so defined by their quality and characteristics – places for gathering or working individually, loud spaces or quiet spaces. New spaces will need to respond to existing learning trends and also be flexible to
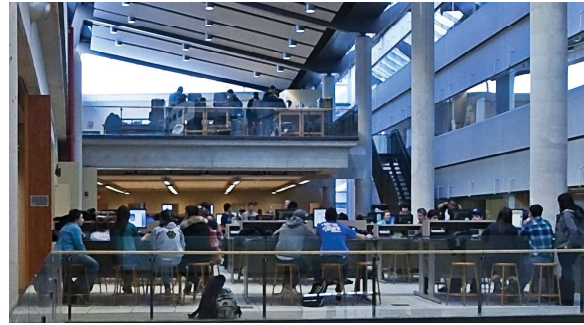
New ways of working and collaborating are changing the type and configuration of space Queen's requires.

anticipate further changes, new technologies, and the uncertain needs of both future Queen's staff and students. New spaces should prioritize flexibility, mixed and overlapping uses, multiple loci of activity, and the convergence of functions and services. By creating these sorts of "fusion spaces", the University can eliminate redundant space, increase the utilization of facilities, and potentially save future costs.

Student demographics are also changing the future. Queen's students will likely be somewhat older and increasingly diverse and Queen's will be challenged to accommodate these new students, which may include providing space for graduate students; special-interest, religious, and cultural groups, clubs and events; as well as amenities such as family housing, child care facilities and medical facilities to support adult students. Attracted by life-long learning opportunities, aging baby boomers may be attracted once again to university life, further extending the range of ages served by the campus and creating the need for specialized dining, recreational, and care facilities.

Before
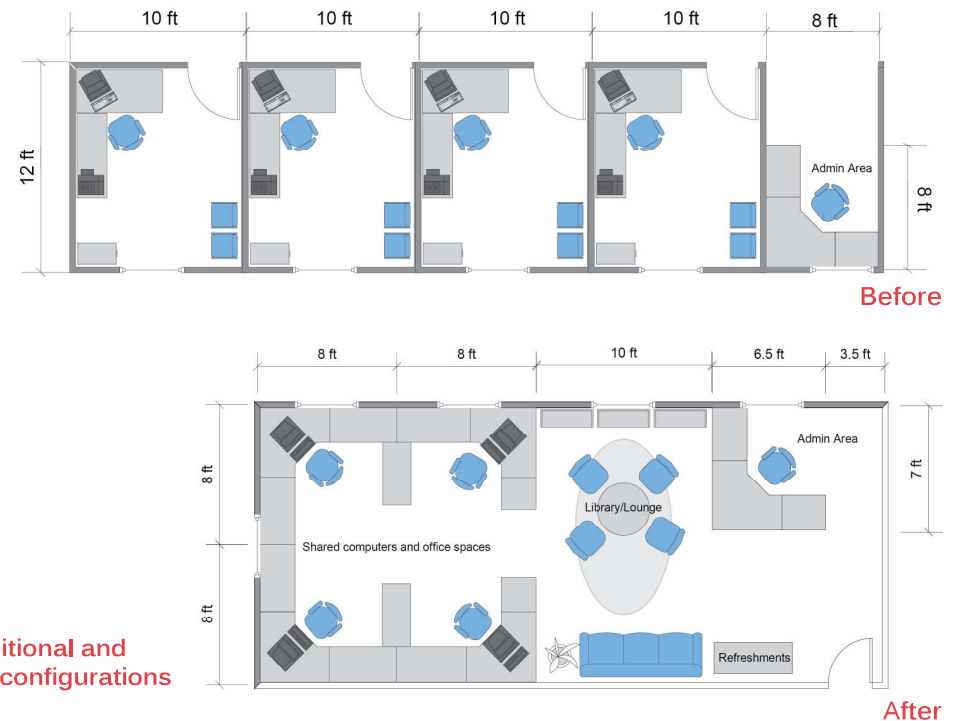
▶ Figure 2-8

A comparison of traditional and contemporary office configurations

After