

# T0core

## **BUILDING FOR LIVEABILITY** **RECOMMENDATIONS REPORT**

April 2018



Figure 1. Bird's Eye View of Downtown Toronto (image credit: Public Work)





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The report is organized as follows: Part 1 introduces the study scope and purpose, investigates the built form challenges and trends, that shape Downtown Toronto today, and outlines the visioning activity and resulting liveability framework; Part 2 includes the built form research, analysis, findings and recommendations for each element of liveability.

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## WHY LIVEABILITY?

Toronto is recognized the world over as a liveable city and a global centre of talent, commerce, culture, diversity and vibrancy. This is particularly true of Downtown where liveability has been a magnet for growth. Downtown is increasingly seen as a desirable place to live, work, learn, play visit, and invest.

But what of the future? In the face of rapid growth, intensification, and increasingly taller buildings, how can liveability be maintained and enhanced through new development? The built environment and public realm, and the experiences they foster, must contribute positively to the experience of being Downtown, whether as a resident, employee, student or visitor. The City's planning framework that guides how development is shaped and scaled, and how buildings define and support the public realm, must deliver on liveability outcomes.

The “**Building for Liveability**” study recommends a framework for delivering on liveability outcomes – comfort, vibrancy, diversity, safety and beauty – within Downtown. It is informed by innovative testing of built form performance standards for Downtown and inspired by the City's existing practices and standards, as well as other cities' planning regimes. The framework builds on Toronto's distinct characteristics and make this a “made in Toronto, for Toronto” vision for liveability of the built environment.

*Figure 2. Buildings in Downtown Toronto (image credit: Patrick Tomasso)*



# A. INTRODUCTION

## A.1 Background and Context

Downtown is the growing, multifaceted and vibrant core of Toronto. It accounts for one-third of Toronto's jobs, delivers a quarter of the City's tax base and produces half of the export-based Gross Domestic Product (GDP)<sup>1</sup>. In 2016, Downtown was home to roughly 240,000 residents. With close to 500,000 jobs, Downtown is the Canada's largest and most accessible employment centre. It is a hub for tourism, arts and culture, sports, entertainment, shopping, higher learning, health care, research and innovation, and government. On a typical weekday, more than 800,000 residents, workers, students, shoppers and visitors spend time Downtown.

Downtown requires an updated planning framework to ensure that it is sustainable, liveable and inclusive; well-connected, vibrant and authentic, for the benefit of all Torontonians for generations to come. There are also broader, far-reaching city-building objectives that underpin the work of TOcore, namely to ensure that the entire city and the population residing and working across the Greater Golden Horseshoe continue to thrive and enjoy a quality of life that ranks amongst the best in the world.

TOcore presents an opportunity to set the bar high; to think boldly, innovatively and creatively; and to chart a course towards creating a model 21st century Downtown by looking at built form through a 'people-centered' lens and focusing on shaping both buildings and the public realm to foster **liveability**.

**“What is the city but the people?”**

William Shakespeare

The purpose of this document is to identify a set of built form elements that contribute to Downtown's liveability and provide a comprehensive set of recommendations that provide input into the development of the Downtown Plan and revisions to other relevant policy planning frameworks, guidelines, standards and practices. These recommendations are supported and informed by an overview of built form trends and challenges in Toronto and abroad. They are also guided by case studies, and the experiences of the City's Planning Division staff and industry experts. The study builds on existing policies, guidelines, standards and practices and identifies recommendations to address the elements of liveability related to the scale and form of development Downtown.

The “Building for Liveability” study has been undertaken concurrently with the development of the Downtown Plan. The issues and scope of this “Building for Liveability” Study were informed by Phases 1 and 2 of TOcore, including the Trends, Issues, Intensification: Downtown Toronto report (2014) and the TOcore Proposals Report (2016). The “Building for Liveability” study served as an important input to the Proposed Downtown Plan endorsed by Council in September-October 2017 and the recommended Downtown Plan to be considered by Council in May 2018.

<sup>1</sup> City of Toronto. *TOcore Proposals Report*, 2016.



## The Study Area

The Downtown area is bounded generally by Bathurst Street to the west, the Don Valley to the east, Canadian Pacific Midtown Rail Corridor to the north, and Lake Ontario to the south. The north-eastern border of the Downtown runs along the edge of Rosedale Valley Road. The study area is comprised of parts of three municipal wards (Wards 20, 27 and 28) and is part of the City's Toronto & East York District Community Planning District.

As the City's most prominent location for development activity, the Downtown core stands out as an integral economic and cultural hub in the region. Diversity – in uses, built form, mobility, activities, jobs, homes and people – is a defining feature of Downtown. Downtown is thriving and vibrant, with a range of things to see and do at all times of the day, all year round.

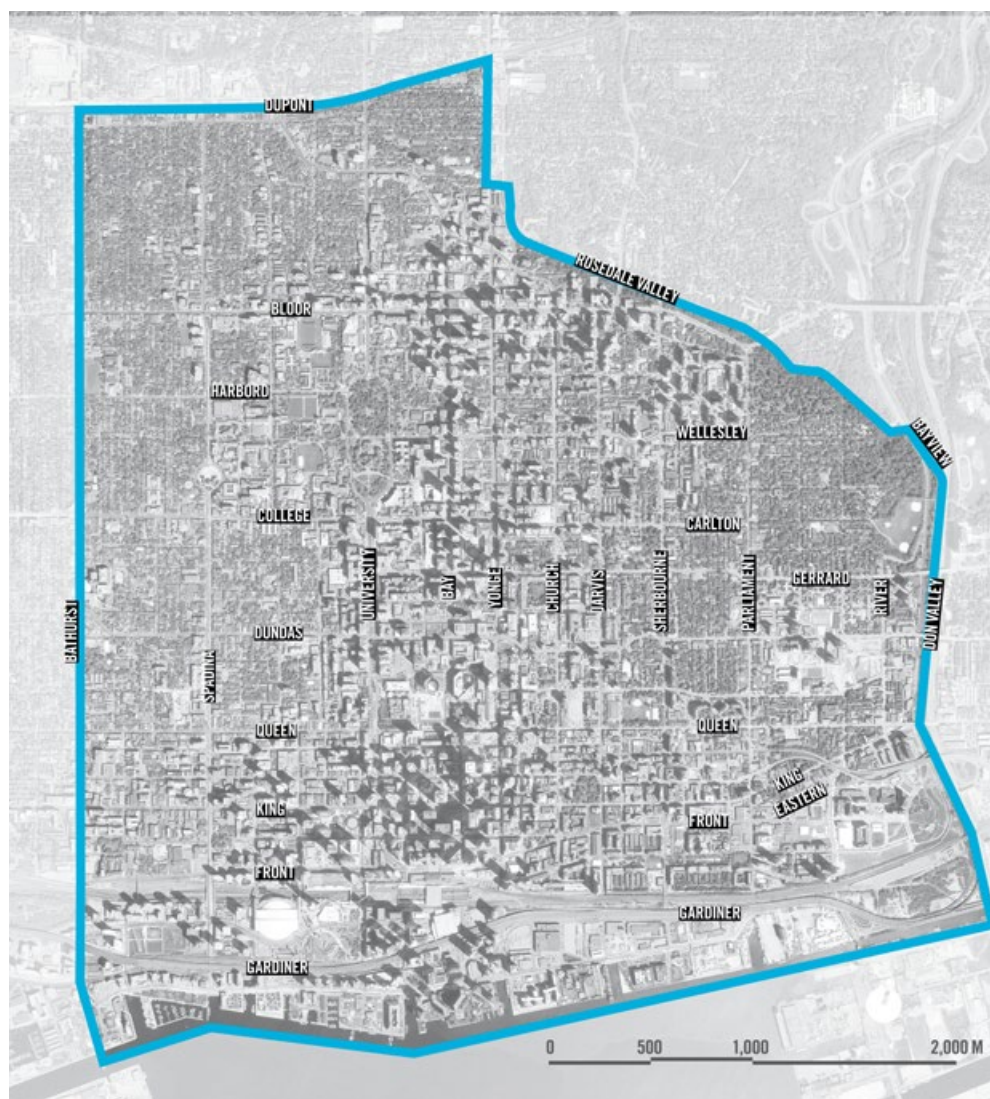


Figure 3. TOcore study area



## A.2 Existing Planning Framework

Built form is guided by the many city and provincially-approved policies, studies and guidelines. These planning tools provide a framework for built form. These policies address the liveability challenges brought on by rapid growth and new development within Downtown by providing guidance on the shape and scale of buildings. As a part of this “Building for Liveability” study, the application of these policies, studies and guidelines will be strengthened and further clarified, where applicable. The most relevant policies, studies and guidelines as they pertain to built form include:

### A.2.1. Provincial Planning Frameworks

The recommended Downtown Plan has been drafted to be consistent with the Provincial Policy Statement (2014), have regard for matters of Provincial interest listed in Section 2 of the Planning Act and conform with the Growth Plan for the Greater Golden Horseshoe (2017).

The Provincial Policy Statement (PPS) is issued under Section 3 of the Planning Act, which sets a policy direction for how strong and resilient communities can be built. The policies within the PPS promote efficient development and land use patterns to sustain financial well-being, providing a full range and equitable distribution of publicly-accessible built and natural settings for recreation, promote green infrastructure, and conserve significant built heritage resources and significant cultural heritage landscapes.

“Places to Grow” is Ontario’s initiative to plan for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life<sup>2</sup>. The Growth Plan for the Greater Golden Horseshoe (GGH) was updated and came into force and effect on July 1, 2017. As the GGH is one of the fastest growing regions in North America, the Growth Plan will ensure that it continues to provide a high quality of life. The Growth Plan acknowledges the challenges associated with growth management and establishes a long-term policy framework for where and how the region will grow.

### A.2.2. Toronto Official Plan

The City’s Official Plan provides general built form policies for the whole of the City, as well as specific guidance for each of the land uses found within the Downtown. Chapter Three of the Official Plan contains a framework for development and the measures needed to ensure that it fits, respects and improves the character of the surrounding area.

Section 3.1.3 contains specific policies for Tall Buildings, recognizing that it is a major form of intensification within the Downtown.

A recent City-initiated Official Plan Amendment and related Zoning By-law Amendments for Downtown updated the policies and performance standards for front, side and rear lot line setbacks for tall buildings in the Downtown. This policy establishes a 25 metre tower separation distance between tall towers that has implications for built form and liveability objectives.



Figure 4. Section 2.2.1 Downtown: The Heart of Toronto

<sup>2</sup> Growth Plan for the Greater Golden Horseshoe, 2017.

### A.2.3. Secondary Plans

Building on Official Plan policies, Secondary Plans provide a more detailed planning framework for a particular geography, with built form policies that are tailored to the established character and context of the specific neighbourhood. Some Secondary Plans contained within the Downtown were master planned areas, such as the Railway Lands and Regent Park and others cover areas where there is primarily infill development, such as King-Spadina and King-Parliament. Some of these Secondary Plan areas have mostly been built out, while others are continuing to undergo incremental change through infill. Within the Downtown boundary, there are ten Secondary Plans areas, including:

- Central Waterfront
- Fort York Neighbourhood
- King-Parliament
- King-Spadina (under review)
- Railway Lands East
- Railway Lands Central
- Railway Lands West
- University of Toronto (under review)
- Regent Park
- Queen-River

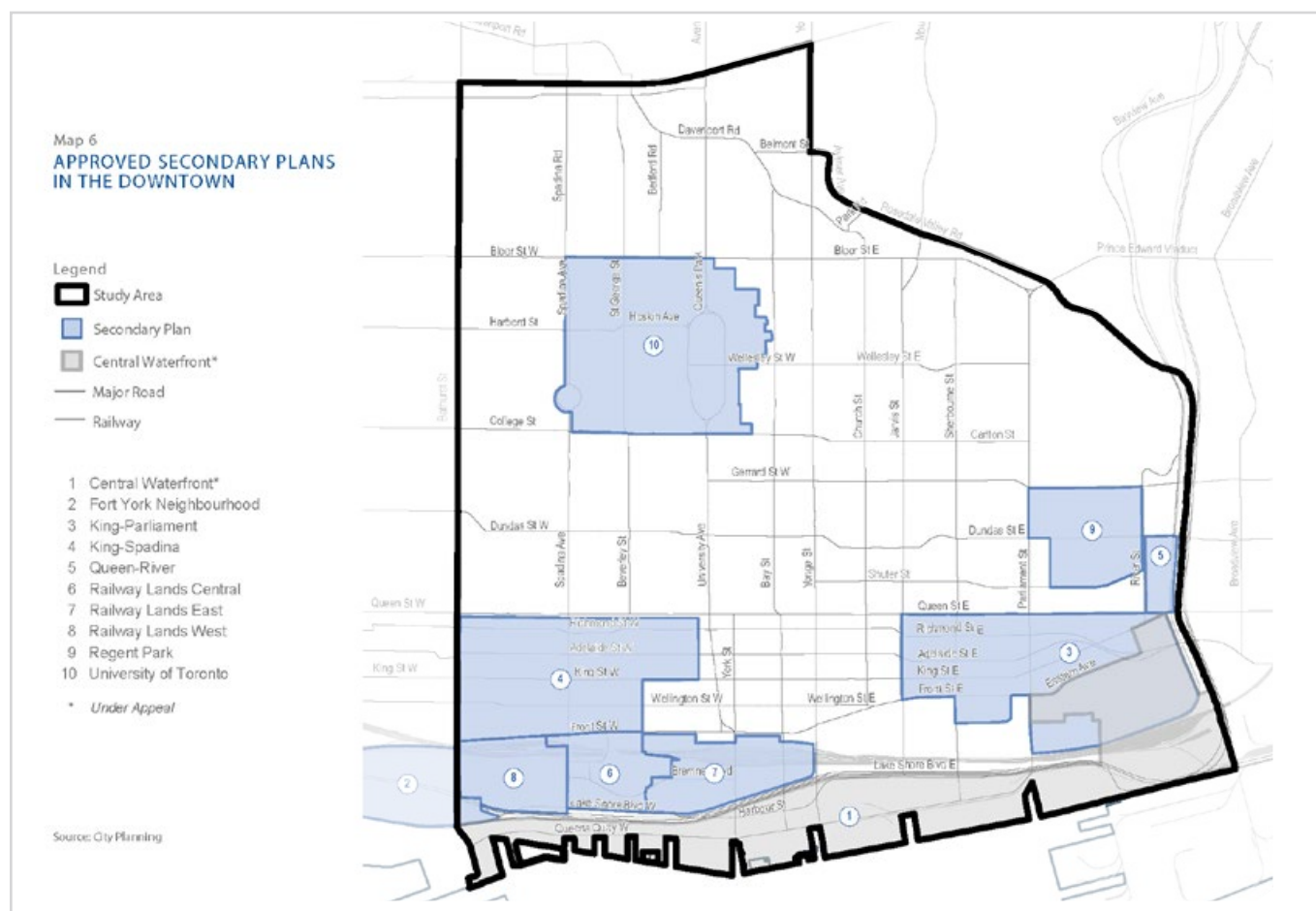


Figure 5. Approved Secondary Plans in the Downtown (image credit: City of Toronto 2014 “Trends, Issues, Intensification” report, revised by Perkins+Will to reflect updated changes)

### A.2.4. Site and Area Specific Policies (SASPs)

There are numerous Site and Areas Specific Policies (SASPs) within Downtown. Some provide detailed site-specific information, while others, like Garden District or North Downtown Yonge, provide direction for a larger geographic area.

Not all SASPs are “prescriptive”, or provide specific policies that affect built form. The prescriptive policies within the larger SASPs have been reviewed to assess the implications of broad built form recommendations on smaller planning areas.

### A.2.5. Heritage Conservation Districts

Heritage Conservation Districts guide development within areas of built and cultural heritage value. Although there are general heritage recommendations in this study, the City is not revisiting Heritage policies as part of TOcore given the recent update to heritage policies as part of the Official Plan review (Official Plan Amendment 199).

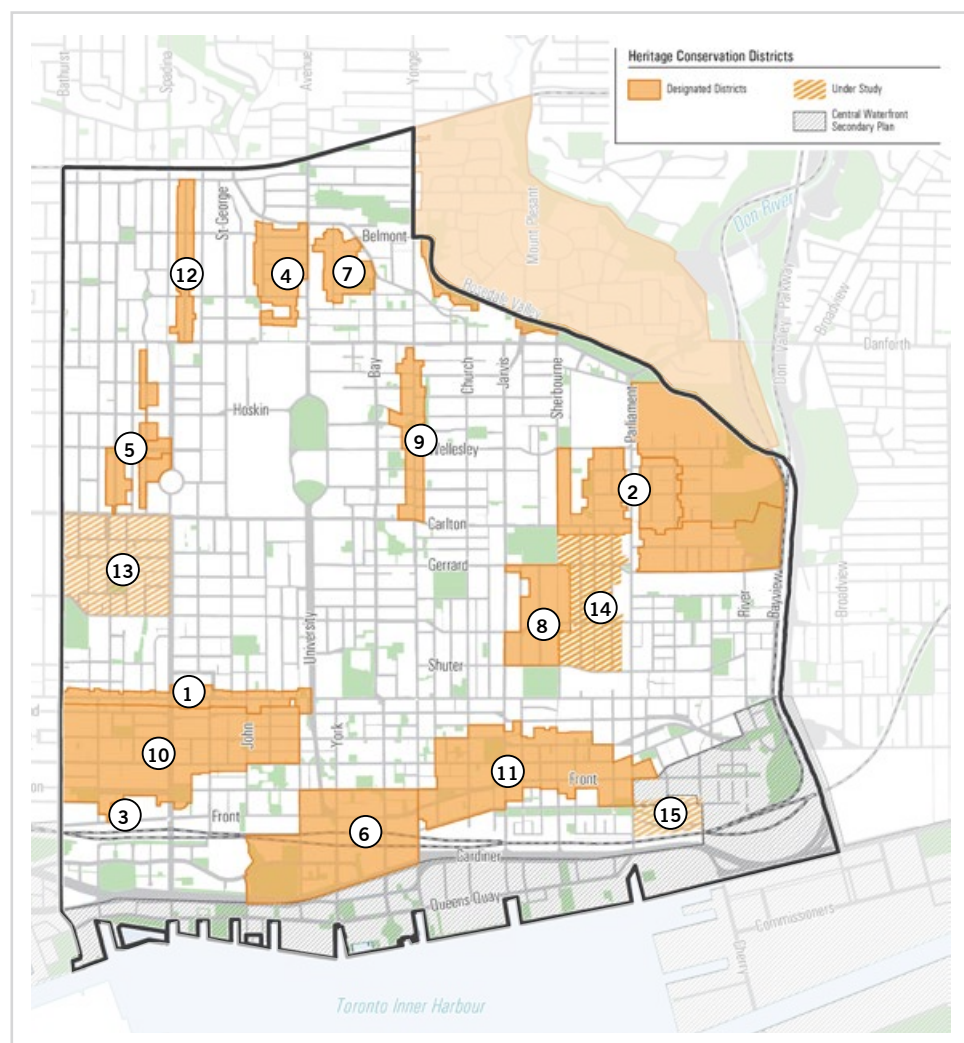


Figure 6. Heritage Conservation Districts in Downtown, (image credit: City of Toronto)

#### In-Force HCDs:

1. Queen Street West
2. Cabbagetown
3. Draper Street
4. East Annex
5. Harbord Village
6. Union Station
7. Yorkville-Hazelton

#### HCDs currently under appeal:

8. Garden District
9. Historic Yonge Street
10. King-Spadina
11. St. Lawrence Neighbourhood
12. West Annex

#### HCDs currently underway:

13. Kensington Market
14. Cabbagetown Southwest
15. Distillery District



### A.3 The Downtown Plan

The TOcore study was initiated by City Planning in 2014. It is an interdivisional study that will recommend to Council a Downtown Plan and five associated infrastructure plans and strategies. The “Building for Liveability” study has been undertaken concurrently with the development of the Downtown Plan and has informed the policy framework.

The issues and scope of this “Building for Liveability” Study have been informed by Phases 1 and 2 of the TOcore study including the Trends, Issues, Intensification: Downtown Toronto report (2014) and the TOcore Proposals Report (2016), and have been incorporated into both the Proposed Downtown Plan (October 2017) and the recommended Downtown Plan (May 2018).

#### A.3.1. Trends, Issues, Intensification Report (2014)

In 2014, the City released a report called “Trends, Issues, Intensification: Downtown Toronto”. This report provided an analysis of the implications of the growth that Downtown has been experiencing, as well as an overview of the shift in its demographic composition. It also identified a range of hard and soft infrastructure issues and policy matters to be addressed through the TOcore process.

#### A.3.2. TOcore Proposals Report (November 2016)

The Proposals Report provided a comprehensive overview of the TOcore study, including the current context, challenges and opportunities to be addressed, and policy directions for the building blocks that make up the entirety of the study.

**Liveability** was identified in the Proposals Report as an important factor for ensuring that Toronto’s Downtown continues to be a “Downtown Like No Other”. Liveability is a broad concept that touches on all facets of planning and development. Quality of life is a key driver of the unprecedented growth Downtown, but it is also at risk if such growth is not balanced with the elements that make the city liveable. The “Building for Liveability” study focuses specifically on the built form and its impact on liveability.

**Downtown’s DNA** (Figure 7) is a list of elements that captures all the unique qualities of Downtown Toronto today, some of which directly impact built form. Understanding these elements in the context of a growing and changing city is important to ensure liveability for future generations.

Section D: Building for Liveability of the Proposals Report provided preliminary policy directions that formed the basis of this “Building for Liveability” study. The key areas of study outlined in Section D include:

- Intensity of development;
- Importance of context;
- Need for public realm and streetscape improvements;
- Provision of access to sunlight;
- Assessment of built form spacing and fit;
- Reinforcement of the skyline; and
- Amenity space requirements.

As a part of this Building for Liveability study, additional research and analysis has been conducted to build upon the preliminary directions outlined in the Proposals Report and develop a liveability framework to inform policy development.

### A.3.3. The Proposed Downtown Plan (October 2017)

The Proposed Downtown Plan built on the Proposals Report by outlining proposed policies with more detail and specificity. As it pertains to built form, the headings generally followed from those included in the Proposals Report, including:

- Physical Determinants of Intensity and Scale
- Improving the Public Realm
- Privately Owned Publicly-Accessible Spaces (POPS)
- Creating a Comfortable Microclimate
- Transition in Scale
- Mid-Rise Buildings
- Skyline
- Helicopter Flight Paths
- Amenity Space

The Proposed Downtown Plan recommended policies pertaining to the different scales of growth across Downtown. Four Mixed Use Areas designations were developed to provide a finer grain of policy direction with respect to the general scale of development appropriate for a given area. The Mixed Use Areas policies work in tandem with the Plan's built form, land use and parks and public realm policies to provide further guidance on the form, scale and shape of development for individual sites.

The Proposed Plan also includes non-policy text that provides rationale for the policies as well as sidebars that provide definitions or descriptions. These policies build on existing Official Plan policies for built form.



Figure 7. Downtown's DNA (image credit: Perkins+Will)

**LEGEND**

- + increasing liveability
- decreasing liveability

## A.4 Evolution of Downtown's Built Form

Downtown is within the traditional territory of the Mississaugas of New Credit First Nation, the Haudenasaunee Confederacy, the Huron-Wendat Confederacy and the Métis people, and is home to many diverse Indigenous peoples.

Toronto, and the Downtown, have been liveable places for millennia. From the earliest First Nations settlements to today's high-rise development, liveability has played a part in attracting people and shaping the Downtown. Liveability is a key driver of migration patterns and urban growth<sup>3</sup>.

The concept of liveability continues to evolve in response to our changing demographics, evolving community needs, economy and technological innovations. This is particularly visible in the shape of our buildings and public spaces – one generation's solutions can become a future generation's constraints. This study aims at defining a standard of liveability that will remain relevant for the next 25 years of urban growth.

Below is a brief summary of the evolution of built form paradigms in the city, from pre-settlement times to the present, and how each have responded to liveability.

### A PRE-COLONIAL SETTLEMENTS OF GANATSEKWYAGON AND TEIAIAGON & THE EARLY COLONIAL TRADING FORTS



The Iroquois confederacy of five nations established two communities in the Toronto Area: Ganatsekwyagon near the Rouge River and Teiaiagon on the Humber River (Bloor Street today). These settlements sat along main lines of the 'Toronto Passage' where Toronto facilitated trade interactions. Much later in the 1600s came the first colonial trading posts including Fort Rouillé, Fort Toronto and Magasin Royal. Early colonial settlements emerged in the form of small forts and scattered towns along the Lake Ontario shoreline.

#### Elements of liveability:

- + Access and mobility
- + Trade relationships



Figure 8. Fort Rouillé (image credit: Toronto in Time)

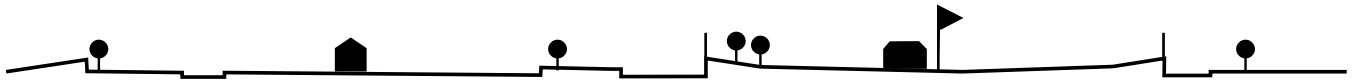


Figure 9. Map of Lake Ontario in 1688 (image credit: The Toronto Project)

<sup>3</sup> Mulligan, G.; Carruthers, J. (2011) *Amenities, Quality of Life, and Regional Development*. In *Investigating Quality Urban Life, Theory Methods and Empirical Research*; Marans, R., Stimson, R., Eds.; Springer: Dordrecht, The Netherlands - quoting in turn Keeble 1990, Ley 1996, Glaeser et al. 2000, and Liaw et al. 2002.



## B COLONIAL TORONTO: THE HARBOUR & THE FORT (1750s)



Attracted by the safe harbour at the intersection of centuries-old trade routes, York was established as a garrison town at the south-eastern corner of today's Downtown, while Fort York protected its western flank.

### Elements of liveability:

- + Safety & security
- Displacement of Indigenous populations



Figure 10. Painting of the harbour, 1793 (image credit: The Toronto Project)



Figure 11. Fort York (image credit: Canadian Encyclopedia)

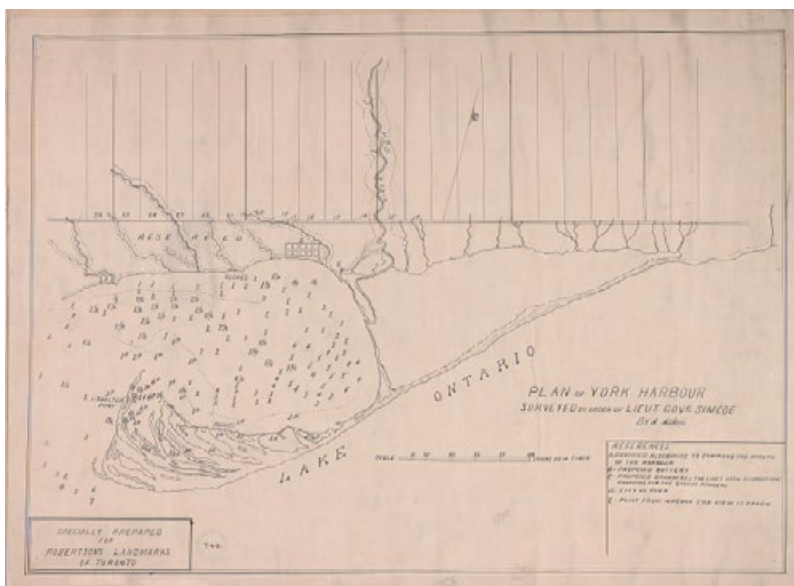


Figure 12. Plan of York harbour surveyed by order of Lieut. Govr. Simcoe by A. Aitken, 1783 (image credit: Toronto Public Library)

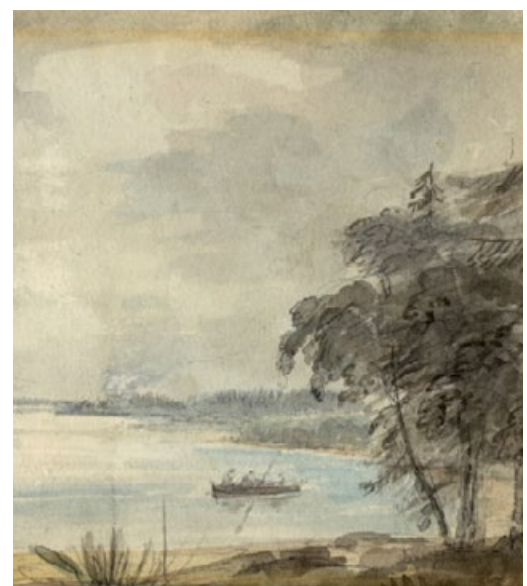


Figure 13. West view from mouth of Don River, 1793 (image credit: Toronto Public Library)

## © SETTLING TORONTO: THE CONCESSION GRID & FARM (EARLY 1800s)



The survey and agricultural settlement of the lands surrounding York, creating the grid concession of roads (e.g. Queen, Bloor, Yonge) and 200-acre farm lots that shape the urban structure of downtown.

### Elements of liveability:

- + Arable land
- + Grid of streets
- Disregard for landscape features



Figure 14. Plan of the harbour of Toronto with the proposed town and settlement, 1788 (image credit: Toronto Public Library)



Figure 15. Farm lots of Toronto Gore (image credit: Back to the Park)



Figure 16. Plan of the harbour, fort and town of York, the capital of Upper Canada, 1816 (image credit: Toronto Public Library)



## D INDUSTRIALIZING TORONTO: RAILROADS & THE WARD (LATE 1890s)



With industrialization and immigration, Toronto rapidly outgrew its original footprint. Early farms were subdivided creating small mixed-use and ethnically based neighbourhoods, including the district called the Ward<sup>4</sup>, which contained Toronto's first Chinatown and Little Italy.

### Elements of liveability:

- + Increased transit
- + Proximity to services
- Overcrowding
- Issues with public health
- Downtown is severed from the waterfront
- Environmental damage due to industrialization



Figure 18. The Ward as viewed from Eaton factory, 1910 (image credit: City of Toronto archives)



Figure 17. Celebration on Toronto streets, 1901 (image credit: BC Open Textbooks)



Figure 19. The Esplanade and Distillery, 1874 (image credit: Distillery Heritage)

<sup>4</sup> The Ward was a small neighbourhood bound by College Street, Queen Street, Yonge Street, and University Avenue; it was a highly dense mixed-use district that attracted many immigrants from 1850 to 1909.



## E STREETCAR SUBURBS: NEIGHBOURHOODS & MAIN STREETS (1890s – 1910s)



With the introduction of streetcars, subdivision of farms by real estate developers led to the creation of Toronto's characteristic Victorian and Edwardian era neighbourhoods and vibrant main streets. The beginning of the City Beautiful Movement of the early 1900s provided important landmarks throughout the city (e.g. Art Gallery of Ontario, Royal Ontario Museum).

### Elements of liveability:

- + Welcoming city
- + Walkable grid
- + Introduction of transit
- Overcrowding
- Industrial pollution



Figure 21. Yonge Street from King to Queen Streets, 1890 (image credit: Toronto Public Library)

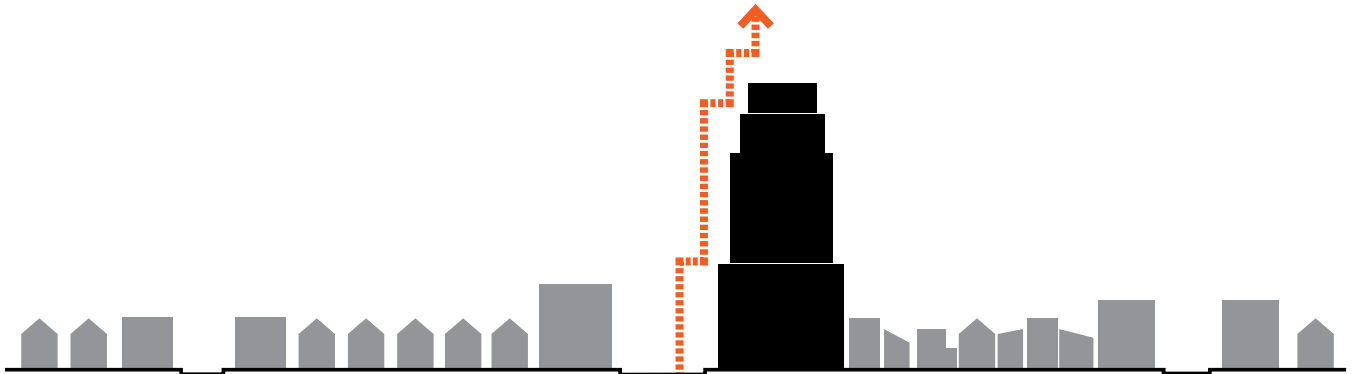


Figure 20. City of Toronto Plan, 1882 (image credit: Toronto Public Library)



Figure 22. King Street East, south side between Yonge and Church Streets (image credit: Torontoist)

## F GROWING TORONTO: EARLY TALL COMMERCIAL BUILDINGS (EARLY 1900s)



The Toronto Fire of 1904 destroyed large parts of the central city. These areas were rebuilt with increasingly taller commercial buildings, made possible by elevator technology. The centre of business activity shifted west, together with a new City Hall and Union Station. Urban renewal begins in the Ward, starting with demolition to build the Toronto General Hospital.

### Elements of liveability:

- + Improved condition for higher densities
- + Vibrant neighbourhoods
- + Centralized services
- Challenges to sunlight access, sky-views, light and privacy



Figure 23. Bloor viaduct, 1917 (image credit: Toronto Guardian)

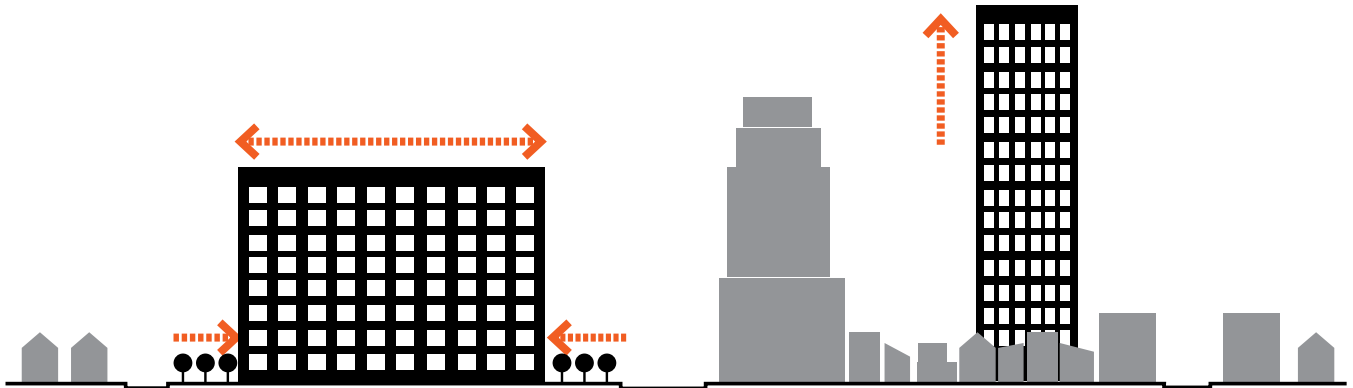


Figure 24. Union Station in 1873 (image credit: Josiah Bruce)



Figure 25. View of Toronto skyline as seen from the roof of the Maclean Building at University Avenue and Dundas Street West (image credit: Toronto Library)

## G METROPOLITAN TORONTO: TALLER AND WIDER (1950s – 60s)



After World War II, the impact of the baby boom and rising immigration encouraged rapid construction within the boundaries of the newly formed Metropolitan Toronto, creating Toronto's inner suburbs. The opening of the subway lines: Yonge (between Union and Eglinton) in 1954, University (between Union and St George) in 1963, and Bloor (between Keele and Woodbine) in 1966 led to rapid city growth. Several housing projects were built in the form of towers in the park (e.g. St. James Town). Urban renewal clears large parts of Cabbagetown to make way for Regent Park.

### Elements of liveability:

- + Improved conditions for higher densities
- + Attempt to prevent shadowing on residential areas
- Dominance of single-use areas
- Decline of street life: slab typology, no grade related spaces, etc.
- Urban renewal and loss of built form heritage



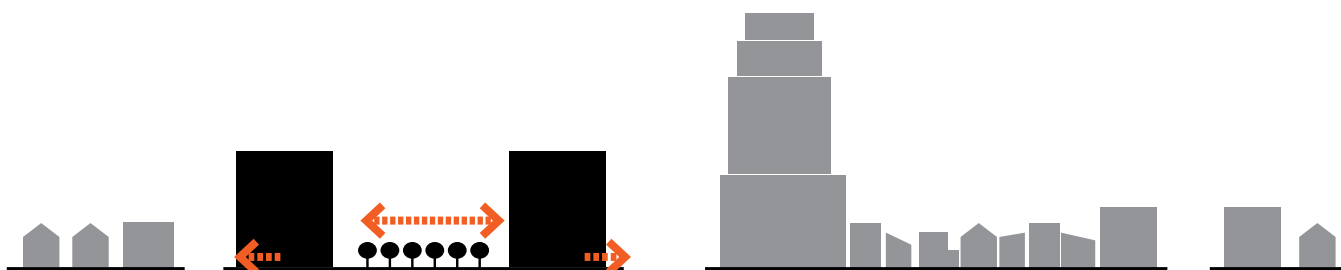
Figure 26. St James Town, as viewed from atop the Winnipeg Tower (image credit: Simon P)



Figure 27. Toronto Dominion Centre (image credit: Bjorn Utpott, MIMO)



## H REFORM TORONTO: MIXED USE COMMUNITIES & MID-RISE NEIGHBOURHOODS (1970s)



Reacting to the tall projects of the 1960s, the St. Lawrence neighbourhood redeveloped railway lands into compact mid-rise buildings, centered around a green spine and accommodating a wide mix of uses. The reform era at City Hall ushered in a new “Central Area Plan” that encourages mixed use development and the decentralization of commercial development.

### Elements of liveability:

- + Human scale
- + Crime prevention through environmental design
- + Shared amenity areas
- + Community services/facilities integrated into base buildings
- Loss of heritage fabric

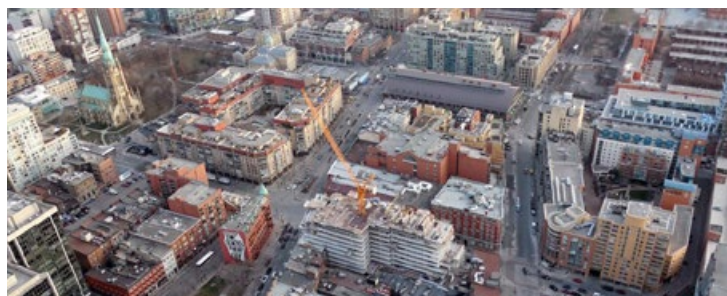


Figure 28. St. Lawrence Market Neighbourhood (image credit: Urban Toronto)



Figure 30. Yonge/College Street, 1970 (image credit: Toronto Archives)

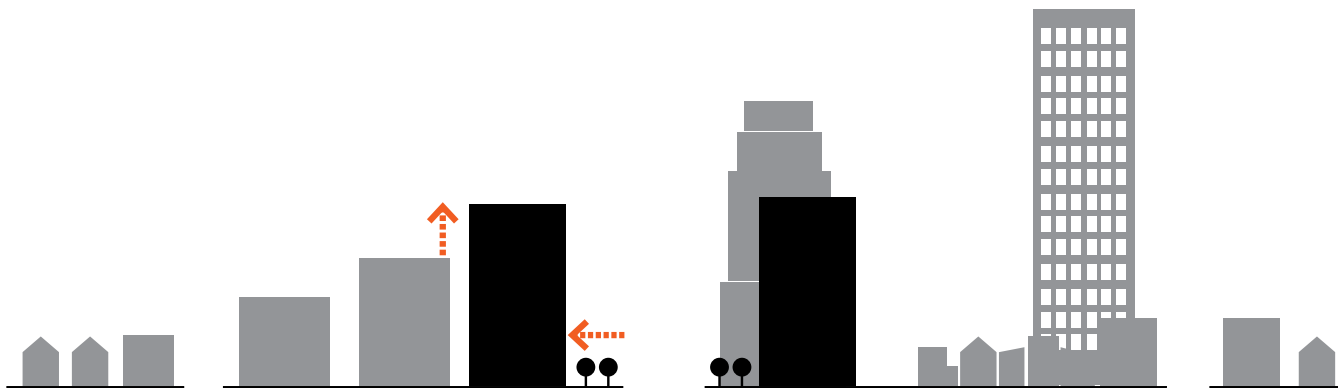


Figure 29. Toronto, 1970s (image credit: Mike Hoolboom)



Figure 31. Yonge/Queen Street, 1972 (image credit: Toronto Archives)

## ① THE RISING DOWNTOWN (1980s)



As population growth continued, mid-rise buildings grew taller and bulkier with slab-type buildings becoming more common, while parks and open spaces struggled to keep pace with growth.

### Elements of liveability:

- + Boulevard streets
- + Larger setbacks
- Buildings disconnected from the street
- Long-lasting shadows onto the sidewalks and open spaces

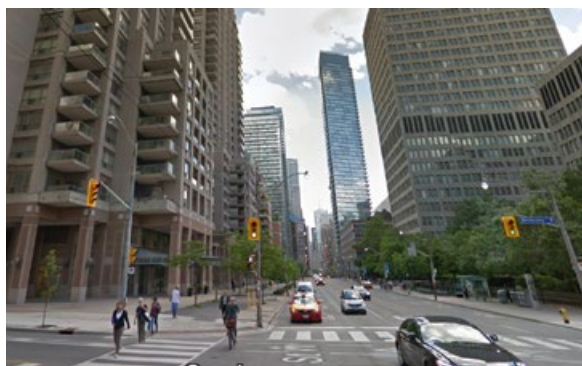
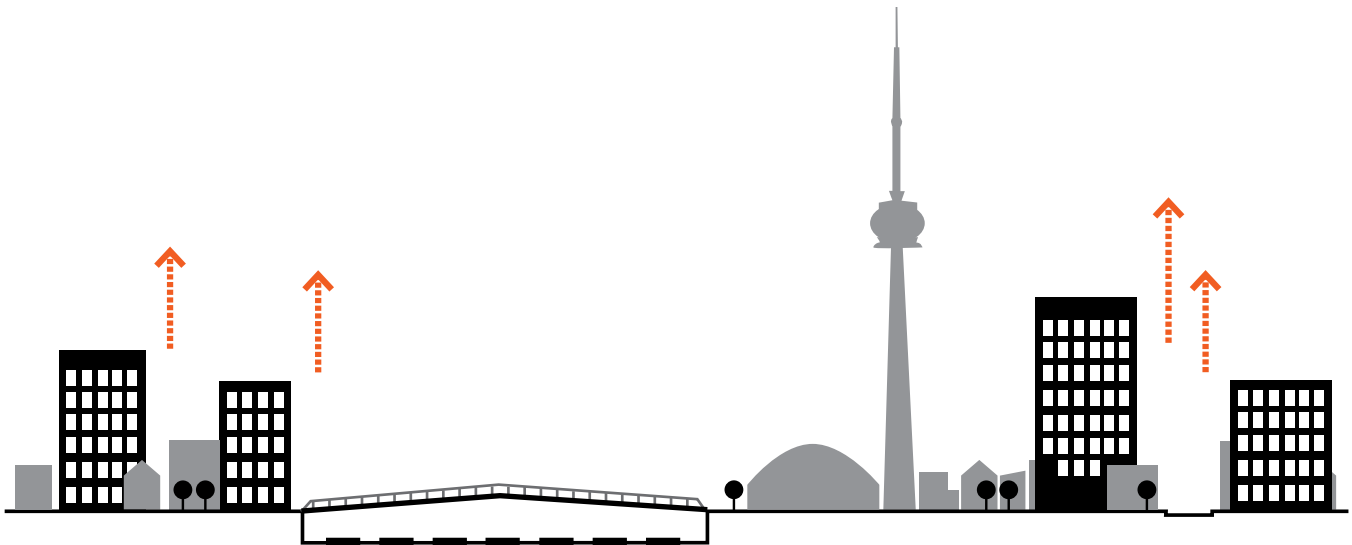


Figure 32. Wellesley Street West and Bay Street, looking south (image credit: Google Maps)



Figure 33. Slab buildings around Wellesley Street West and Bay Street (image credit: Google Maps)

## J REINVESTMENT: THE RAILWAY LANDS AND MASTER PLANNED COMMUNITIES (1980 – 90s)



The CN Tower, which was completed in 1976, was isolated for many years in what was previously a largely abandoned industrial space, owned by the Canadian National Railway. Redevelopment began in the 1980s, including the Metro Convention Centre in 1984, the SkyDome (now the Rogers Centre) which opened in 1989, and the Air Canada Centre a decade later. Into the 1990s, the remaining area also began to rapidly change with residential and commercial developments, in the form of master planned mixed-use communities.



Figure 35. CN Tower as first part of redevelopment of Railway Lands, 1975 (image credit: Library & Archives Canada)

### Elements of liveability:

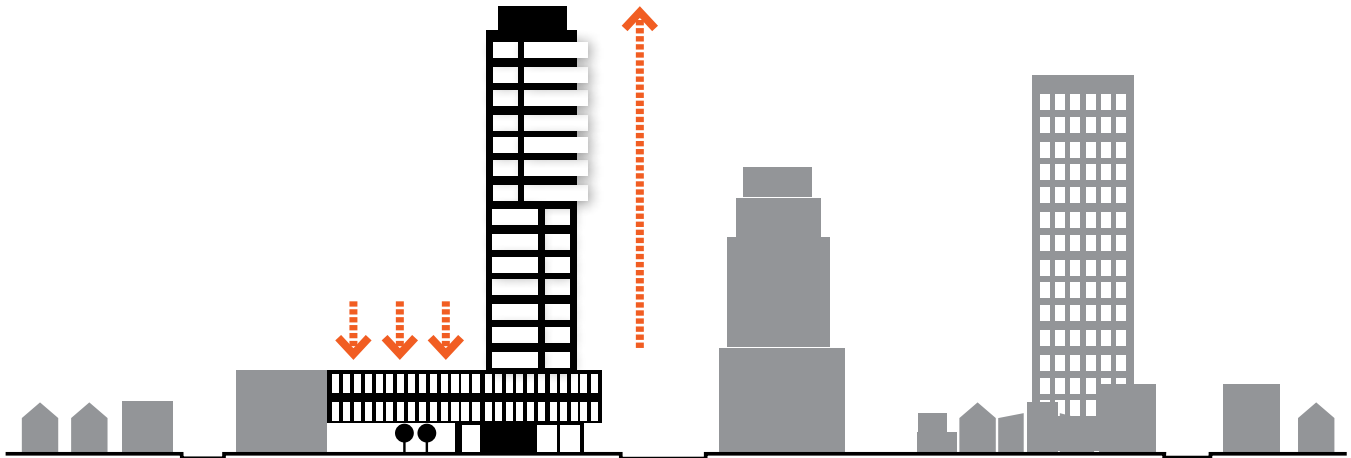
- + New residential growth
- + Transit-oriented mixed use neighbourhoods
- + Proximity to entertainment uses (e.g. Air Canada Centre, Rogers Centre)
- High-density of tower forms can result in loss of privacy or sunlight



Figure 34. Union Station and Air Canada Centre, 2005 (image credit: Bourquie)



## K TOWERS ON PODIUMS (2000s)



In response to the bulky buildings of the 1980s and 90s, the tower on podium buildings of the 2000s were designed to maintain vibrant streets with low podiums. These buildings limit shadows and maximize sky-view and privacy by concentrating density into tall, slender towers.

### Elements of liveability:

- + Human scale podiums
- + Podium permits better transitions to lower buildings and heritage
- + Shared amenity areas
- + Partnerships with cultural organizations
- + Narrower shadows
  - Cumulative shadows (concentration of tall buildings)
  - Impacts on skylines
  - Size of units
  - Lack of affordable housing
  - Privacy



Figure 36. Verve Condos (image credit: Select Condos)



Figure 37. Yonge Lakeshore Developments

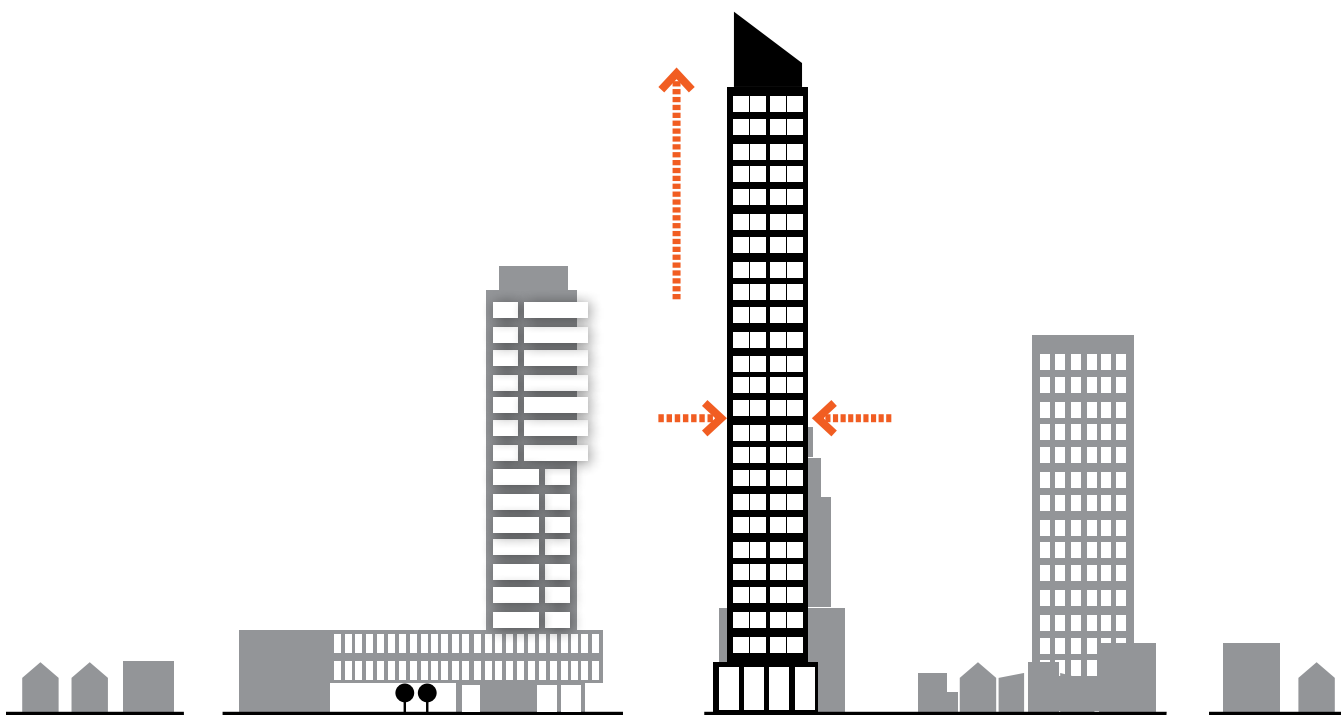


Figure 38. Daniels Spectrum with residential tower, Regent Park (image credit: Artscape)



Figure 39. CN Tower/Rogers Centre (image credit: Tom Podolec)

## L TALLER BUILDINGS (2010s AND BEYOND)



Toronto begins to see a trend of not just taller, but also slimmer buildings. Development is more frequently being proposed on infill sites, and with this comes more constraints.

### Elements of liveability:

- + Compact growth
- Insufficient provision of amenities
- Under-performing amenity areas
- Far-reaching shadows on parks, open spaces, school yards and streets
- Inadequate tower separation distances
- Size of units
- Lack of affordable housing
- Population density impacts on services



Figure 40. Skyline, 2010s (image credit: David Cooper)



Figure 41. Rendering of 156 Front Street (image credit: AS+GG Architects and B+H Architects)



Figure 42. Rendering of 2 Queen Street West (image credit: Cadillac Fairview)





## B. CHALLENGES, OPPORTUNITIES & TRENDS

### B.1 How to Build for Liveability?

Downtown is growing at an unprecedented rate. This growth will continue to impact Downtown in significant ways making it imperative built form is shaped and scaled in a manner that enhances liveability. Downtown is Canada's largest employment cluster with close to 500,000 jobs and more than 249,000 people live Downtown, with more than 7,500 residents added annually over the past five years. By 2041, Downtown has the potential to reach 475,000 residents and more than 850,000 jobs. The traditional fabric of Downtown neighbourhoods and low to mid-rise retail streets are valued assets of Downtown's current liveability and it is important to respect their walkable nature and distinct character; podium and at-grade design of new taller buildings have been one way in which to respond to this context. However, taller and more monumental buildings are becoming a prevalent form in some areas of Downtown that risk eclipsing the traditional and unique urban fabric. The rate of growth Downtown, which outpaces the rate of growth of the rest of the city, creates urgency in seeking ways to shape the built environment to handle this intensity of development without losing the distinct qualities – Downtown's DNA<sup>5</sup> – that keep the heart of the city strong and liveable.

### B.2 Toronto is a Liveable City

The distinct qualities that make up Downtown's DNA can not be taken for granted. These 'genes' are the reasons why the "idea of Downtown as the strong, healthy, and beating heart of the city and region"<sup>6</sup> remains true. The health of the entire city is underpinned by the health of Downtown. The importance of this is underscored by the fact that many surveys of global indicators and ranking systems include Toronto as one of the most liveable cities in the world. An example is the Mercer's Quality of Living Rankings survey, which highlights the wide range of metrics applicable to Toronto that help to create its liveability. In order to maintain and enhance liveability, a framework to establish the complex inter-relationships between individual metrics is valuable. This in turn provides opportunities to better comprehend the specific components that make Toronto such a desirable place to live, work and visit and the way forward to ensure its liveability continues.

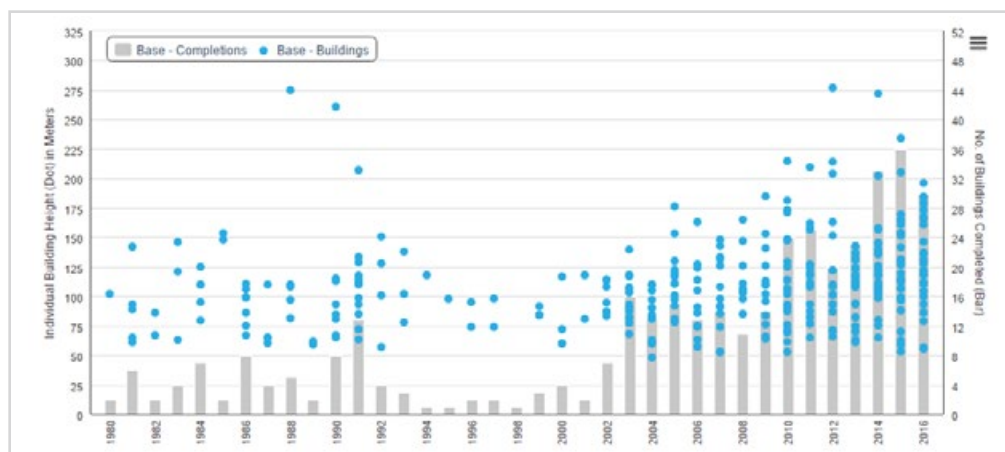


Figure 43. Number of buildings completed and individual building heights in Toronto from 1980 to 2016 from the Global Tall Building Database of the CTBUH

<sup>5</sup> TOcore Proposals Report, 2016

<sup>6</sup> TOcore Proposals Report, 2016

### B.2.1 Downtown's Built Form Challenges Today

Toronto's quality of life and economic opportunities have made it one of the fastest growing cities in North America, as observed in the development activity taking place in the City, especially within the Downtown. This growth and intensity of development cause additional pressure on services and infrastructure. As Downtown continues to grow, several key built form challenges have emerged, and are summarized on the following pages.



Figure 44. 76-storey tower at 1 Bloor Street East, Toronto  
(image credit: Great Gulf Homes and Hariri Pontarini Architects)

#### **Increasing Density and Small Sites**

Large-scale development in the form of tall buildings on small sites presents challenges. The average density of projects built Downtown between 2011 and 2015 was 730 units per hectare. In that same time frame the average density of major approved projects was 840 units per hectare. As of 2017, projects currently under review have an average density of 1,250 units per hectare, representing a significant increase in intensity. The City must consider this increase in the context of the available and projected infrastructure as well as the potential negative impact on liveability for these vertical communities.

With a limited number of large sites still vacant or underutilized Downtown, development applications for tall buildings are emerging within blocks and on sites that pose significant constraints. The majority of development occurring Downtown is now being proposed on small infill sites. Eighty-nine percent of the development sites in the development pipeline are less than one hectare in area<sup>7</sup>. The constraints of small sites limit the ability to feasibly accommodate the required amenity space, public realm improvements, setbacks, parking, loading and other factors that contribute to the liveability future occupants.

<sup>7</sup> City of Toronto. *T0core Proposals Report*, 2016.



Figure 45. Public/private integration: ground floor indoor market with a rental development in Via 6, Seattle (image credit: Pinterest)

### Interface Between the Public and Private Realm

The interface between the public and private realm occurs primarily at the base of buildings, in particular the ground floor. This is where pedestrians interact with the building and where the building can contribute to the public life on the sidewalks and streets. To achieve a seamless and vibrant interface between the public and private realm, the design of building setbacks, podiums and lower floors, massing and ground-floor uses needs to be carefully considered. Given the unique conditions of new development sites, the challenge is to ensure that new development can contribute to the spatial continuity of the public realm, and address scenarios where such continuity does not exist and is desirable. This is especially apparent in heritage areas where the historic street wall and the ground floor do not necessarily align, creating a saw-tooth pattern of façades along the street edge. Given the multitude of conditions at-grade within Downtown, there is a need to explore a variety of solutions and their appropriateness.



Figure 46. Front Street and Bay Street, Toronto (image credit: City of Toronto)

### Constrained Sidewalks and Pedestrian Spaces

As Downtown's resident, worker and visitor populations increase, there are increasing demands on sidewalks, parks and open spaces. In areas of Downtown where there is a historic fabric, or streets where buildings are built to the property line, the curb to building face width is often narrow, sometimes so narrow that pedestrians spill onto the roadway. This is exacerbated when there are venues that host large events and buildings that contain large numbers of residents and workers. In addition to this, the sidewalks have to accommodate pedestrian amenities – transit stops or shelters, street trees (more space for healthier and more trees), benches, street lights, patios or cafes, and so on. This creates conflict and does not allow or encourage pedestrian mobility, particularly for those with mobility issues. While there are many hurdles in being able to provide a generous and comfortable public realm in an intensifying downtown core, it is essential to its liveability.





Figure 47. Nathan Phillips Square, Toronto (image credit: City of Toronto)

## Access to Sunlight

Downtown's public realm, including streets, parks and open spaces, as well as private outdoor amenity spaces are important spaces for residents, workers and visitors. They become important “breathing spaces” for the growing residential and office population, and are valuable for their enjoyability and usability. Sunlight is a direct variable that influences one's ability to enjoy the public realm in the Toronto climate, and must be prioritized in a rapidly urbanising core. As a result, the thermal comfort of these spaces are dependent on access to sunlight and limiting shadows. As much of new development Downtown continues to be tall buildings, and in some areas, clusters of tall buildings, it is imperative that shadows from new buildings do not negatively impact the public realm, including parks, school yards, sidewalks, as well as other shared outdoor spaces.



Figure 48. Financial District, Toronto (image credit: Canadian Business)

## Pedestrian-Level Winds

Even on light wind days, parts of Downtown can experience a much stronger impact at the ground level. This is due to the design of the architecture in response to the street orientation; often times the taller the building, the more likely the creation of wind tunnels. As more tall buildings get built and in closer proximity to one another, there is a growing concern with uncomfortable conditions for pedestrians at street level. Additionally, on narrow streets where only tall buildings exist, the effects of wind tunnels are further exacerbated. To maintain the vibrancy of streets and comfort for pedestrians using the sidewalks, elimination of uncomfortable wind and mitigation methods need to be reinforced.



Figure 49. Radio City, Toronto (image credit: Clara Romero)

### Impacts on and around Heritage Sites and Heritage Conservation Districts

The City's identity, history, diversity and value of its culture is reflected strongly in existing heritage buildings and reinforced through Heritage Conservation Districts. As redevelopment pressures increase, the City's cultural and heritage values need to be preserved and respected. There are numerous successful examples Downtown of the integration of heritage buildings or landmarks such as Canada's National Ballet School and the Shangri-La Hotel. The challenges presented by the unique character and siting conditions of each heritage property requires unique and site-specific approaches. Heritage Conservation Districts are a tool that the City uses in sensitively managing growth and change in these unique areas, and provide a range of built form recommendations to address development of sensitive infill.

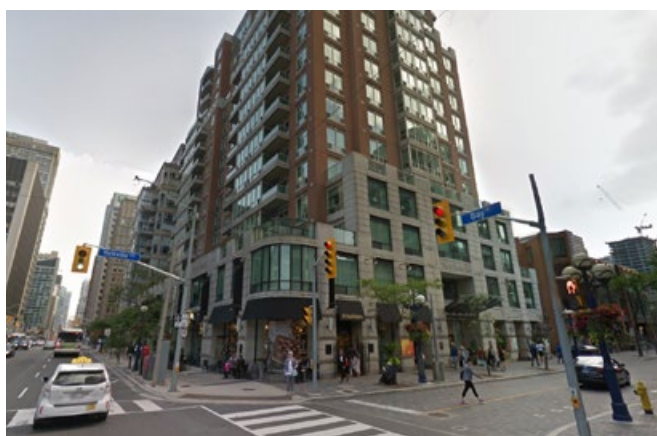


Figure 50. Non-residential buildings on the ground floor of mixed-use developments, Yorkville Avenue and Bay Street (image credit: Google Maps)

### Lack of Diverse Ground Floor Space in New Mixed-Use Developments

One of the important aspects of Downtown that makes it liveable is convenient access to daily needs, including shops, entertainment and services. Many of these uses are accommodated in Downtown's *Mixed Use Areas*, often as part of buildings that contain a vertical mix of uses, such as residential or office buildings with retail uses at grade. The success of retail space in a mixed-use building is varied and in some circumstances, results in a sterile retail environment that does not thrive or enliven the streets surrounding them. New developments must take into consideration good retail design practices to ensure that the vibrancy and character of Downtown's streets are improved and maintained. There are also built form considerations for the design of ground floors that allow new developments to fit contextually and ensure that they are resilient and adaptable.



Figure 51. Variation in units and incorporation of community services, Bayside Development (image credit: Growing Up study, City of Toronto)

### Diversity of Units in Vertical Communities

With a growing number of families with small children living Downtown, the lack of affordable family-sized units has been identified as a reason people move out of the core. For families, storage has been quoted as the top issue of living in a small-sized unit. The City's Condo Consultation identified that while the current number of small units is a result of today's market demand, there is a concern that they may be less suited to future markets. New development needs to be able to accommodate a diversity of household sizes and compositions, programming and uses, and variety in the way the building creates an interface with the public realm.



Figure 52. Towers are being built closer together due to the difficulties of a dense urban context - older renderings of Mirvish+Gehry Towers in Toronto (image credit: Projectcore Inc.)

### Lack of Tower Separation

Adequate separation distances between towers provides for sky-views, transition, sunlight on streets or open spaces. It has an impact on both the pedestrians at the ground level, as well as the residents or workers within the towers. City Council adopted Zoning By-law 1105-2016 and Official Plan Amendment 352 (currently under appeal) which update the separation requirements for tall buildings Downtown. Within the dense and growing context of Downtown, it is increasingly a challenge to provide adequate tower separation.





Figure 53. View of Toronto, looking south (image credit: Peak Aerials)

### Preservation of Skyline and View Corridors

The Downtown skyline is part of Toronto's identity. As taller forms have the ability to change the image of the skyline, it is important to ensure that new development support the city's urban structure by locating tall buildings in areas and on sites intended for growth.

The skyline and its configuration also contribute and relate to important views. Official Plan Amendment 199 identified important skyline views of the Downtown / Financial District, various landmark buildings, and natural heritage features as viewed from locations across the city. As more and more tall buildings are constructed; it is important to recognize their contribution to not only their individual sites, but to the city's skyline composition as a whole.



Figure 54. Queen Street looking north, between McCaul Street and St Patrick Street (image credit: Erik Eastman)

### Transition to Lower Scale Areas

The Downtown is comprised of neighbourhoods and areas that vary in character and scale. Downtown includes the full spectrum of building types and scales – from towers in the Financial District to the low-rise neighbourhoods that are scattered throughout Downtown. In some cases there is visible contrast between adjacent buildings. There is a need for sensitive and contextually appropriate development, particularly when adjacent to lower intensity uses such as neighbourhoods or parks and open spaces, or even from mid-rise to established low-rise neighbourhoods. Recognizing that area character can change overtime, it is important to preserve the fundamental elements that make the existing communities and neighbourhoods that are not intended for substantial growth, unique and liveable. The Official Plan recognizes the importance of transition and the various methods of creating transition between areas of varying scale. These methods will need to be reinforced and typified to ensure transitions between different conditions can be appropriately addressed.



Figure 55. Retail uses such as coffee shops on the ground floor serve the dense Downtown population, Commerce Court (image credit: BlogTO)

### Providing Amenity for Downtown Workers

In addition to the increase in the residential population Downtown, there has also been a significant increase in non-residential space. As a result of the increasing number of people both living and working Downtown, there is an increased demand on the parks and open spaces as well as other amenities, such as recreation facilities. Given this demand, there is a need to provide high-quality and functional amenity spaces in both residential and non-residential developments. These spaces are vital to improving people's overall quality of life.

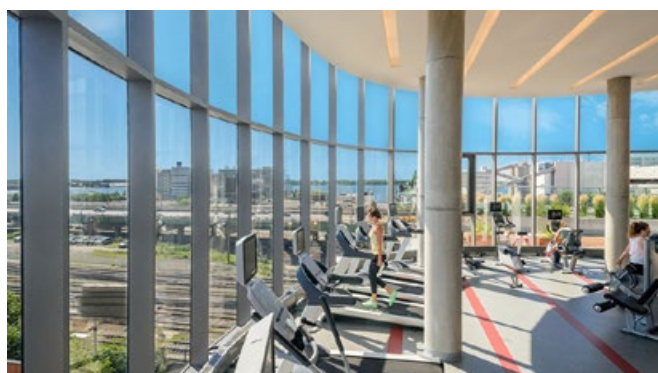


Figure 56. Two-storey gym in Market Wharf II, Toronto (image credit: YP NextHome)

### Functionality and Diversity of Amenity Spaces

The provision of usable and functional indoor and outdoor amenity spaces are important contributors to the quality of life for those living in Downtown's vertical communities. Beyond the typical condominium amenities such as gyms, there has been an increasing demand for spaces such as dog washing stations and children's play space. The increase of development on small and irregular sites will further challenge the provision of quality and well-located amenity spaces. Other challenges include small, unprogrammed spaces that are underutilized, lack natural light, or indoor spaces that are disconnected from outdoor spaces.

### B.2.2 Trends Ahead

In understanding all the elements that make Downtown a place like no other, it is important to carefully examine the challenges that exist today with the goal of protecting for liveability in the future.

Some of the challenges identified could impact the liveability of the Downtown and instigate new challenges, including: development on small and unconventional sites; ability to maintain a comfortable and quality public realm; and preservation of the diverse nature of Downtown's neighbourhoods.

As a result, this built form study, conducted through a liveability lens, will make recommendations as to how the City can proactively shape and inform development Downtown. Combined with other plans and strategies of the TOcore study, such as the Downtown Parks & Public Realm Plan, Downtown Community Services and Facilities Strategy and other infrastructure strategies, the Downtown Plan will help shape development in a way that enhances liveability for future generations.

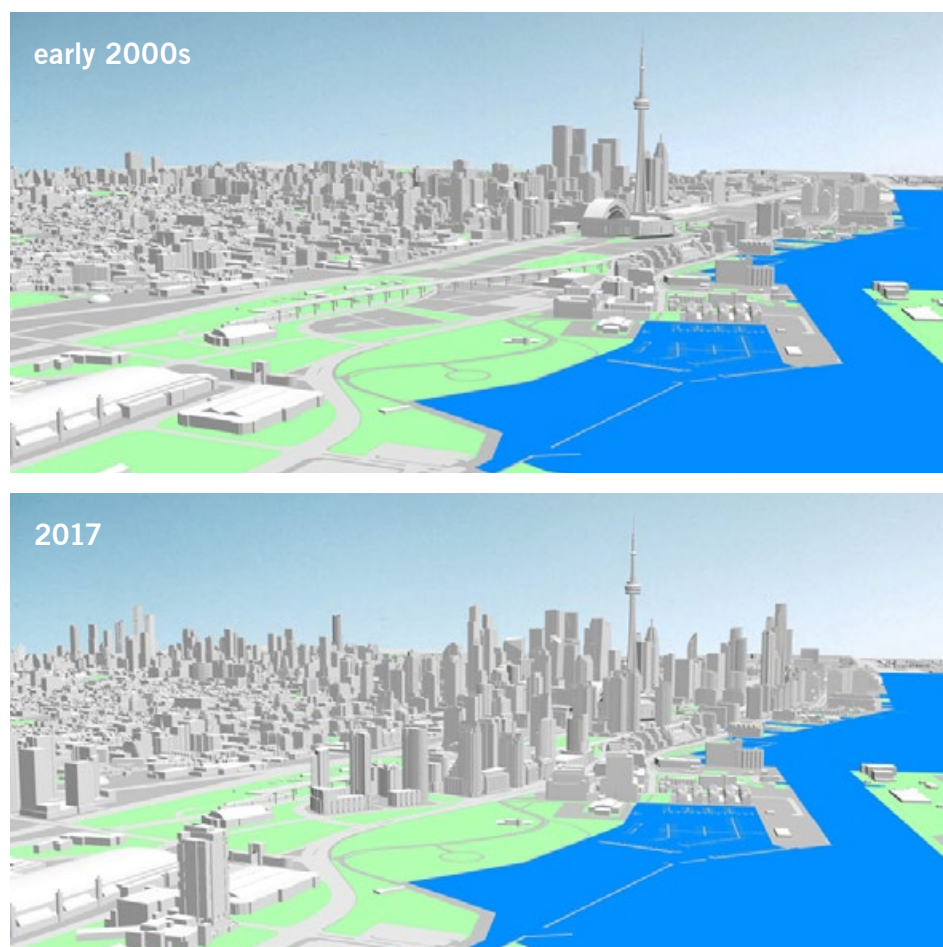


Figure 57. Downtown Toronto is rapidly growing; the design of the built form of new development must ensure the liveability of the generations to come (image credit: City of Toronto)



### B.3 Built Form Trends

To fully comprehend how the existing challenges can be addressed through built form, examples from other cities have been reviewed to identify emerging building trends or lessons learned that could inform the TOcore work. Background research, interviews conducted with architects and planners from other major cities, and case studies have identified the trends, as summarized on the following pages.

#### Podium & Tower Typology

The podium tower typology has become a modern hallmark in downtown development today, with adaptations to it becoming increasingly common. Beyond the need to improve retail design on the ground-floor, there is an increasing demand to integrate a variety of other non-residential uses into the podium. Uses such as community service facilities, schools and entertainment facilities require spatial flexibility to accommodate diverse programming needs and address how the uses can evolve over time. Additionally, office replacement policies will impact development by requiring significant office podiums that require larger floorplates when compared to smaller residential floor plates.



Figure 58. The TIFF Festival Tower podium (image credit: Urban Realty)

## A Need to Improve the Public Realm

Emphasis on the provision and expansion of quality public spaces is a high priority, especially in the Downtown context where land availability is limited but the demand for public space is ever growing. The opportunity to create new public parks and open spaces of a significant size in the urban core is rare. As a result, accommodating public spaces in small and unconventional places is becoming increasingly common. In this context, careful consideration needs to be given to the siting and massing of new development to ensure that it can contribute to the public realm – whether it is expanding a sidewalk, providing a mid-block connection, or creating privately owned publicly-accessible spaces (POPS). In addition, the buildings that frame the public realm must play a significant role in ensuring that these spaces are comfortable, vibrant and safe.

## Increase in Purpose-Built Rental

Purpose-built rental is a dominant type of multi-storey residential development in some cities, especially in the United States. This particular ownership structure tends to support a wider range of retail and commercial uses (relative to typical condominium projects in Toronto) that have specific impacts on the built form. Extensive, multi-storey publicly-accessible retail podiums can be integrated into residential buildings, while residential towers tend to have larger units, more extensive amenity spaces suited to families (often located on upper floors), and permanent sales or management offices. Encouraging more typologies that stand apart from the typical small-units and minimal or repetitive retail provisions in Toronto could allow for more complete and inclusive communities Downtown.



Figure 59. Proposed office, rental, and retail building at 19 Duncan (image credit: Hariri Pontarini Architects)

## Complex Mixed-Use Development

As vacant or underutilized land becomes more limited Downtown, there is a trend towards complex mixed-use with multiple uses stacked vertically within a single development. In Shanghai, for example, some developments typically include a vertical mix of retail, office, residential and hotel uses (sometimes stacked directly over a transit facility). In order to develop thriving vertical communities, buildings in Toronto should maximize their mixed-use potential.

## Tall, Slender Towers

There is an increasing trend in large urban centres across the world towards building taller, slender towers. This typology can be found worldwide, especially in cities like New York and Hong Kong where developable land is scarce. In New York alone for example, 18 super slender towers have been completed or are under construction. These towers range between 50-90 storeys, with the most slender having a base to height ratio of 1:23.<sup>8</sup> However, these must be done strategically, with attention to the impact on micro-climate, transitions to surrounding context, and provision of sufficient integrated amenity and community service facilities. Smaller floor plates require more careful design, to ensure that they provide more than the bare minimum of residential requirements (e.g. elevator, lobby).



Figure 60. Shanghai Tower is 632 metres, 127 storeys tall with hotel, office, retail, conference centre, public observation deck, and 'vertical neighbourhoods' that rise from individual garden atriums (image credit: the Skyscraper Center)

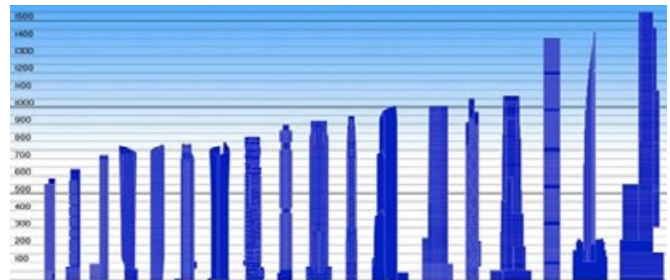


Figure 61. As of October 2017, 18 'super slender towers' were either complete or under construction (Skyscraper Museum)



Figure 62. Currently under construction, Jean Nouvel's 53 West 53rd tower has a slenderness ratio of 23:1 (image credit: Jean Nouvel)

<sup>8</sup> skyscraper.org



## C. LIVEABILITY FRAMEWORK

### C.1 Visioning Workshop with the City of Toronto Team

A workshop was held with City staff at the outset of this study to explore the idea of liveability, how it can be shaped through built form and to better define the scope of work for this study.

The workshop was divided into three sections:

- **TOcore Now and the Future:** reviewed the state of liveability Downtown. A discussion following the presentation was centered on participants identifying the top challenges facing the City from both present and projected perspectives.
- **Realms of Liveability:** Karen Alschuler of Perkins+Will provided an overview of the concept of liveability as it relates to urban life, and presented examples from Beijing, Sao Paulo, Singapore and New York that speak to liveability. Discussion followed on the vision for liveability for TOcore within the 2041 population projections.
- **Building for Liveability:** a preliminary list of “Elements of Liveability” was distilled from the TOcore Proposals Report and used to frame a discussion on the relevance of each element, in the context of this study.

The general outcomes from the facilitated discussion were:

- Agreement on and expansion of the definition of each theme as it pertains to built form
- Identification of overlaps and synergy amongst the elements
- Streamlining of the groups of ‘ideas’ to be explored in the next phase of work



Figure 63. James Parakh provided an overview of the workshop on liveability organized as a part of the CTBUH 2016 Conference (image credit: Perkins+Will)



Figure 64. Workshop on elements of liveability (image credit: Perkins+Will)



Figure 65. Comparison between how various cities are perceived by their urban form and what the level of liveability experienced by their inhabitants actually is (image credit: Erwin Soo, Blooming Expats blog, Tokkoro blog, Wikipedia Commons, Trey Ratcliff, Chinafotopress/Getty Images, PC Wall Art, and Streetsblog NYC)



## C.2 Emerging Vision

In the future, Downtown should remain a welcoming place for everyone – residents, workers, and visitors alike. For this reason, liveability must be considered through a people-centred lens.

Downtown's tall buildings must be recognized as complete vertical communities. Diverse Torontonians – families, students, immigrants and seniors – are choosing to live Downtown and opting for Downtown's amenities over large living spaces and private outdoor spaces. In order to maintain liveability, tall buildings should be planned and designed so that their inhabitants have access to a wide range of community services and facilities and amenities. It is also important that tall buildings do not negatively impact liveability of the public realm and outdoor spaces around them.

Development Downtown must provide and contribute to liveability for both their inhabitants and the Downtown as a whole. Regardless of scale or typology, development must promote, improve, and sustain a high quality of life. It is increasingly important for the high density and high-rise forms to recognize their greater responsibilities for providing the services, infrastructure and public realm enhancements necessary for residents, workers, and visitors alike. Buildings – tall buildings, in particular – form communities. The planning and design of these buildings should not focus solely on the building alone, but on the collection of buildings. Their relationship to each other, the public realm, community service facilities, local shops and places of employment, can all contribute to the creation of “complete communities”.

The emergence of vertical communities brings a new awareness of the invaluable role that our parks and streets play in the city. Downtown's new vertical communities will need to provide these open spaces in new and creative ways, and surround them with the community centres, schools, libraries, child care and community hubs that support a vibrant public life.

Furthermore, there is a need to acknowledge the impacts of climate change within the greater region and how building for liveability must include resilience. In 2016, Toronto was selected to participate in the 100 Resilient Cities network and hired a Chief Resilience Officer to lead the development of a Resilience Strategy for the city. The Toronto Green Standard and TransformTO are other initiatives that continue to ensure that immediate and long-term needs of the Downtown will be met, as the City takes action on climate change.

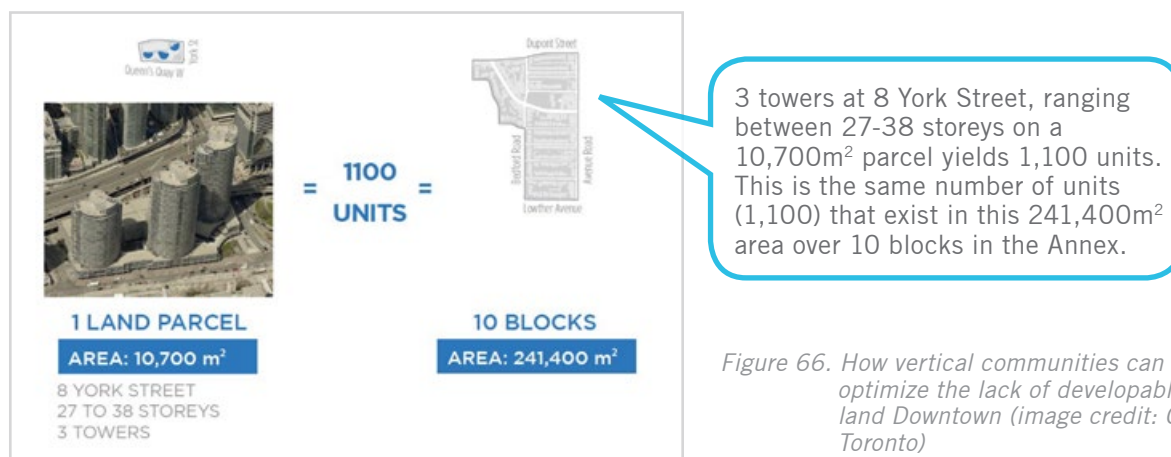


Figure 66. How vertical communities can optimize the lack of developable land Downtown (image credit: City of Toronto)



