

TO CORE BUILDING FOR LIVEABILITY EXECUTIVE SUMMARY

April 2018



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

WHY LIVEABILITY?

Toronto is recognized the world over as a liveable city and a global centre of talent, 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 all 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 “**Build 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 frameworks. 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)*

INTRODUCTION

Background and Context

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**.

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 and standards 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 Report: Downtown Toronto (2014) and the TOcore Proposals Report (2016). The “Building for Liveability” study served as an important input to the Proposed (October 2017) and Final (May 2018) Downtown Plan.

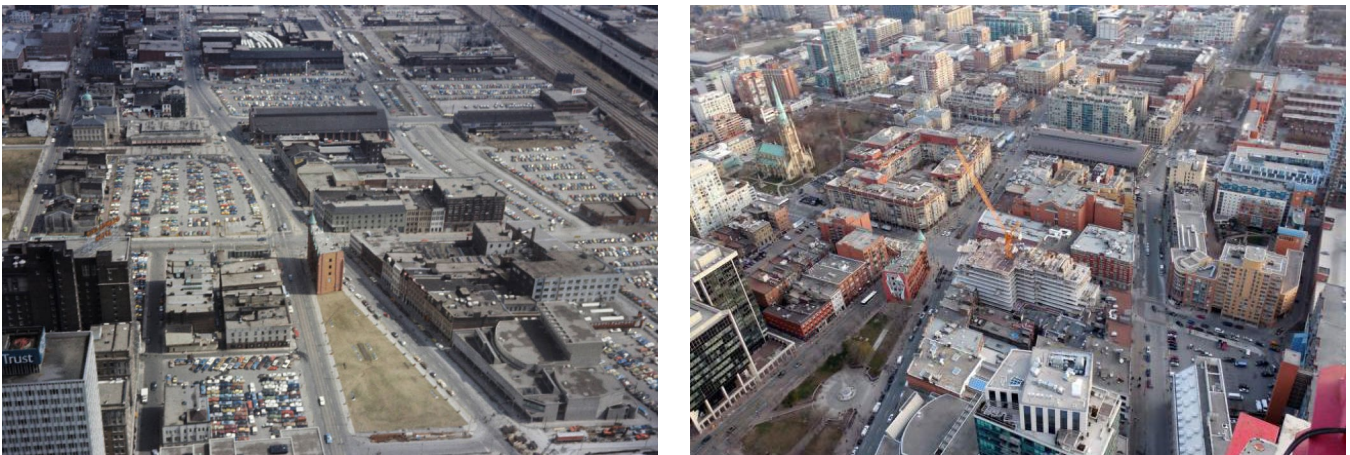


Figure 3. Evolution of the St. Lawrence Market neighbourhood, from the 1960s to today (image credit: City of Toronto Archives and Skyjacked)

CHALLENGES, OPPORTUNITIES & TRENDS

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 over 500,000 jobs and close to 250,000 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 850,000 jobs. The traditional fabric of Downtown neighbourhoods, and low to mid-rise retail streets is a valued asset 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, the taller and more monumental buildings are becoming a prevalent form in some areas of Downtown, at the risk of eclipsing the traditional and unique fabric of Downtown. The rate of growth, 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 DNA¹ – that keep the heart of the city strong and liveable.

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"² 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 must be established that recognizes the complex inter-relationships between individual metrics. This in turn provides opportunities to better comprehend the specific components that make Toronto such a desirable place to live and the way forward to ensure it continues.



¹ TOcore Proposals Report, 2016

² TOcore Proposals Report, 2016

Figure 4. Downtown's DNA (image credit: Perkins+Will)

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 Downtown. This growth and intensity of development puts additional pressure on the public realm, City services and infrastructure. As Downtown continues to grow, several key built form challenges have emerged:

- Supporting increased density on small sites
- Achieving appropriate interface between the public realm and private lands
- Expanding constrained sidewalks and pedestrian spaces
- Maintaining access to sunlight in the public realm and other spaces
- Mitigating pedestrian-level winds
- Developing diverse and engaging ground floors
- Providing sensitive transition to lower scale areas
- Maintaining openness and sky-views
- Shaping the skyline
- Providing a diversity of units in vertical communities
- Mitigating negative impacts on heritage
- Providing functional and diverse amenity spaces for both residents and workers

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 maintaining 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 components of the TOcore study, such as the Downtown Parks & Public Realm Plan and other infrastructure strategies, the Downtown Plan will help shape development in a way that enhances liveability for future generations.

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 Downtown Plan. Background research, interviews conducted with architects and planners from other major cities, and case studies have identified the following trends:

- Adapting the podium and tower typology
- Expanding and improving the public realm
- Recognizing the potential of purpose-built rental
- Incorporating complex mixed use
- Increasing the number of taller buildings



Figure 5. TIFF Festival Tower podium (image credit: Toronto Life)

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.

Developments Downtown must provide and contribute to liveability for both their inhabitants and the Downtown as a whole. Development, regardless of scale or typology, 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 that create communities. Their relationship to each other, the public realm, community facilities, 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, child care and social 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.

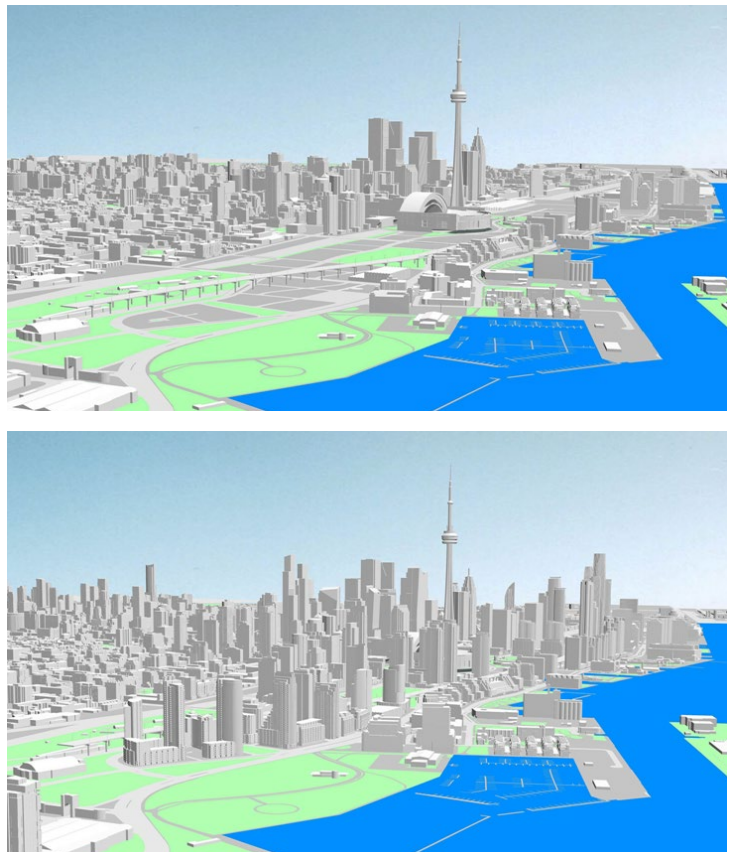


Figure 6. The Rising Downtown Skyline: 2002 (top) compared to 2016; includes development that is approved but not yet built (image credit: City of Toronto)

The “Building for Liveability” Framework

This building for liveability framework can be summarized in five overarching principles: **Comfort, Vibrancy, Diversity, Safety and Beauty**. These principles can be achieved by responding to the built form elements, identified in the following section. These are multifaceted and cannot be achieved in isolation, but instead require a comprehensive approach. Each of these principles can be addressed through built form and have been broken down further into a series of “elements of liveability” as outlined on the following pages. Chapters 01 - 10 of the full report elaborate on each of the elements. Each chapter clarifies the objective, rationale, trends and best practices related to that element of liveability, followed by a summary of findings and potential recommendations that will contribute to greater liveability, as addressed through built form.

COMFORT

Buildings will be designed to create spaces that ensure comfortable micro-climatic conditions in the spaces around and within them, by protecting access to sunlight on the public realm, daylighting into buildings, reducing and mitigating wind, providing privacy, ensuring openness between buildings and creating human-scaled streetscapes.

VIBRANCY

The public realm will be interesting and attractive and contribute to a Downtown that is pleasant, walkable and provides opportunities for a variety of experiences. This will be achieved in large part by ensuring that buildings, in particular the base and lower floors of buildings, contribute to an enhanced, animated and expanded public realm designed to improve the pedestrian experience.

DIVERSITY

The public realm will be interesting and attractive and contribute to a Downtown that is pleasant, walkable and provides opportunities for a variety of experiences. This will be achieved in large part by ensuring that buildings, in particular the base and lower floors of buildings, contribute to an enhanced, animated and expanded public realm designed to improve the pedestrian experience.

SAFETY

The quality and character of the public realm is directly influenced by adjacent buildings. Buildings should contribute to a pedestrian experience that is clearly legible, welcoming and safe and can be addressed through the quality and character of the spaces between buildings and the connections between the private and public realm.

BEAUTY

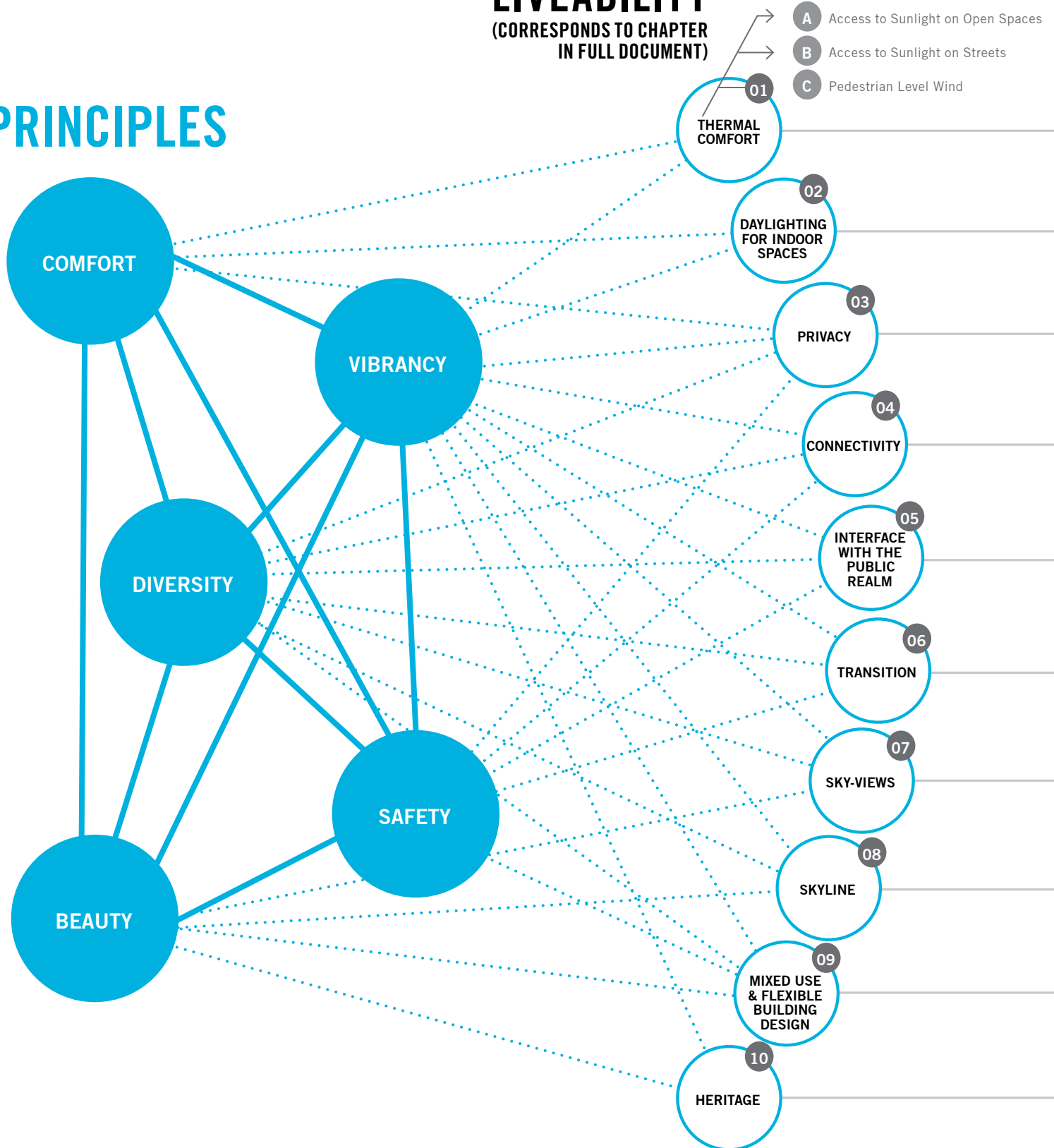
A city's beauty is much more than clean streets and stunning or unique architecture – it is a celebration of heritage, opportunities to engage and connect with nature, and reinforces for civic pride. The Official Plan identifies “Beauty” as one of the four principles of a successful Toronto - *“All successful cities astonish with their human-made and natural beauty. People choose to live and businesses choose to invest in beautiful cities”*³. Buildings Downtown should exhibit the highest standards of design excellence, materiality, heritage conservation and beauty.

³ Toronto Official Plan, Chapter 2, Page 1-4

ELEMENTS OF LIVEABILITY

(CORRESPONDS TO CHAPTER IN FULL DOCUMENT)

PRINCIPLES



OBJECTIVES

01A / B / C.

Buildings should be located, designed and massed to maximize pedestrian thermal comfort in all seasons. This includes maintaining sunlight onto the public realm, including parks and open spaces, streets and sidewalks, school yards, outdoor amenity spaces and privately owned publicly-accessible spaces (POPS).

02.

Buildings should be located, massed and designed to improve sunlight and daylight into buildings.

03.

Siting and orientation of buildings should provide access to natural light, minimize overlook and ensure privacy.

04.

Pedestrian comfort and safety should be prioritized on all streets Downtown, with buildings that support mobility, enhance and expand the pedestrian network.

05.

Base buildings, in particular the ground floors, should be designed to convey a sense of activity and liveliness, address the human scale, provide varied experiences and facilitate the interface with pedestrian-oriented uses, such as transit, retail and other active uses.

06.

Appropriate transition to the existing and planned context should be provided, both in terms of scale and building type.

07.

Buildings should be located and designed to preserve and provide openness and sky-views.

08.

The composition of the overall Downtown skyline should be considered through the review of tall building location and design.

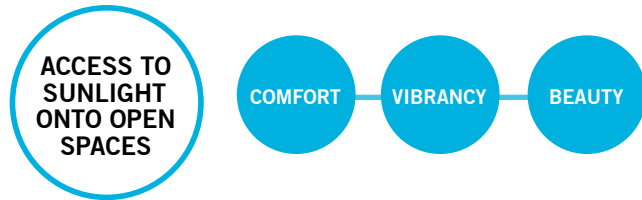
09.

New development should accommodate the wide range of services that foster a vibrant community, including schools, recreation, community facilities, etc.

10.

Buildings with historic significance should be conserved and sensitively incorporated into new developments to add to the character and variety of the urban fabric.

01A



FINDINGS

- As buildings get taller, and as more tall buildings are built in close proximity to one another, the shadows cast from these buildings become more pervasive. The shadows from tall buildings, depending on the time of day and year, can extend several blocks from its footprint.
- There are opportunities to expand the areas of shadow protection for parks and open spaces within Downtown beyond the Signature Parks, identified for the 6-hour shadow protection window found in the City's Downtown Tall Buildings: Vision & Supplementary Guidelines.
- Given Downtown's limited number of existing parks and open spaces, limited opportunities to create new parks and open spaces, and an increasing intensity of people using these parks and open spaces, it is important to protect spaces in the public realm that have sunlight, and create spaces that will have access to sunlight.
- Other cities generally evaluate shadow analysis on a case-by-case basis.

RECOMMENDATIONS

1. Minimize shadows cast on the whole of the public realm to encourage its use, providing an enjoyable and interesting experience, with a focus on prioritizing pedestrian activity and other active transportation modes.
2. Building on the City's existing policy frameworks, expand on the list of parks and open spaces to be protected from shadow, using and expanding on the criteria identified in this document.
3. Coordinate with the TOcore Parks and Public Realm Plan to identify other criteria for inclusion in the areas for no net-new shadow. Location within a "Park District" as identified in the Parks and Public Realm Plan should also be considered as part of the criteria as these parks and open spaces are important public realm amenities within their respective neighbourhoods.
4. Review the potential for additional parks and open spaces to be added to the Sun Protected Parks and Open Spaces map through local area studies by referring to the criteria identified in this study.
5. Include new parks and open spaces as they are planned and secured, on the list of Sun Protected Parks and Open Spaces where they align with the criteria and testing as identified in this study.
6. Protect school yards from shadow as part of the public realm and open space network Downtown.
7. Evaluate the location and design of new parks and open spaces by using the analysis, criteria, and testing as outlined in the study to determine their sunlight access.
8. Encourage the location of new outdoor amenity spaces, POPS and other private open spaces for good sunlight access.
9. Consider the impacts of new development on existing outdoor amenity spaces, POPS and other private open spaces.
10. Evaluate the acquisition of land for the creation of new public parks by considering the location and opportunity for sunlight access.
11. Provide and maintain the City model, with frequent updates, currently available to applicants to ensure a standardized process for analyzing sun and shadow impacts of new proposed developments, including: detailed, accurate massing; and topographical information.
12. Update the Sun/Shadow Study Terms of Reference in the City's Development Guide to clarify the datasets and assumptions for the model.
13. Explore other architectural and massing techniques employed by other precedent cities as a strategy to ensure sunlight access on parks and open spaces.

01B

ACCESS TO
SUNLIGHT
ONTO
STREETS

COMFORT

VIBRANCY

FINDINGS

- From the analysis of existing sunlight access conditions, there are many streets which have high sunlight access, and others, mainly in the Financial District, that have low sunlight access. Many of the areas outside of the core have good access to sunlight, with 4 or more hours of sunlight onto the street.
- Most of the precedent cities studied use transition policies and angular planes to control sunlight on streets, as the prevailing built form is mid and low-rise.
- Some precedent cities with tall building areas use indirect policies, such as separation distances and floorplate sizes, to control the density of shadows, or protect sunlight on streets through a case-by-case evaluation.
- As the overall height of tall buildings increases, the span of their shadows lengthen, and the shadow cast from a tall building several blocks away may start to impact low and mid-rise areas that would otherwise have good sunlight access based on their adjacent built form. These far-reaching impacts make it difficult to regulate sunlight on streets by simply regulating the built form fronting onto adjacent streets.
- Shadows from groupings of tall buildings, when close to each other, may amalgamate and cover streets as one larger shadow for a longer period of time.
- The modelling exercise demonstrated that sunlight protection onto a street may hinder the potential for taller buildings located generally south of low and mid-rise areas.
- To-date, the City-Wide Tall Building Design Guidelines' direction has generally informed the height and shape of base buildings only to provide for sunlight onto streets, and indirectly reinforced by tall building separation distances.

RECOMMENDATIONS

1. Continue to shape and scale the base or podium of tall buildings to allow for sunlight access to streets.
2. Balance access to sunlight on streets with the recognition that sunlight access policies will impact the overall height of buildings beyond the street on which they are located.
3. Continue to shape and scale mid-rise buildings to allow for sunlight on streets as per the direction in Performance Standard #4A from the Avenues & Mid-Rise Buildings Study, through the application of the angular planes and step-backs.
4. Ensure that development applications provide sufficient detail and geographic context to enable City Planning to review the impacts of sunlight on streets beyond the immediate site for all areas within Downtown, given the complexity of understanding, predicting and regulating sunlight on streets.
5. Amend the Development Guide's Sun/Shadow Study Terms of Reference to include consideration for sunlight protection on streets for mid-rise and tall buildings, by requiring a broader geography for review.
6. Define the area of the street to be protected from shadow, consistently across all documents in a measurable fashion. The recommended areas for consideration are the areas between the right of way and the offset of such line to the maximum width of the boulevard within the block, in order to protect for the potential future expansion of the sidewalk if the street were to be reconfigured.
7. Protect the area between the right of way and the offset of such line to the maximum width of the boulevard within the block, in order to protect for the potential future expansion of the sidewalk if the street were to be reconfigured.

01C

PEDESTRIAN
LEVEL WIND

COMFORT

SAFETY

FINDINGS

- As buildings get taller, and as tall buildings are clustered in close proximity to one another, the built environment will continually impact and change how winds are experienced at the pedestrian level. The dynamic nature of wind speaks to the need to understand the cumulative impact from multiple developments in a given area.
- The Terms of Reference for Pedestrian Level Wind Studies in the City's Development Guide does not provide sufficient detail to ensure consistent information is provided through all application submissions, and does not include targets for evaluation.
- The submission of the detailed Wind Impact Assessment at the Site Plan Application stage does not allow for more substantial changes to be made to the building orientation and massing.

RECOMMENDATIONS

1. Amend the Terms of Reference in the City's Development Guide for Pedestrian Level Wind Studies to:
 - Develop comfort categories that respond to specific geographies (parks, priority retail streets) or activities (sitting, standing);
 - Require Wind Impact Assessments, rather than opinion letters, to be submitted at the early stages of the planning application review process i.e. at Zoning By-law Amendment stage, so that the evaluation of pedestrian level winds can assist to shape the development in order to reduce negative impacts;
 - Require all development applications to provide a Wind Impact Assessment that: measures Gust Equivalent Mean; applies evaluation criteria that assesses wind impacts on the pedestrian level; and uses standardized graphics and displays; and
 - Require Wind Impact Assessments to include a broad geography and existing and planned development context to evaluate the cumulative existing and future wind conditions in an accurate manner.
2. Require architectural responses such as: altering the footprint of tall building elements; increasing step-backs and separation distances; and re-orienting building footprints when the Wind Impact Assessment demonstrates negative impacts on the pedestrian environment.
3. Consider mitigation measures such as fencing, wind screens and landscaping, once other architectural responses have been exhausted.

FINDINGS

- The Ontario Building Code (OBC) contains provisions that require every room used for sleeping in any building be provided with windows, but makes no reference to hours of sun or shadows received on windows.
- Most regulations reviewed focus on daylighting of private spaces (units) rather than shared spaces (amenity spaces).
- Most regulations reviewed focus on providing daylighting for new spaces (units), rather than preventing interruption of daylighting for existing spaces.
- Most regulations studied were designed to best control the provision of daylight on low to mid-rise neighbourhoods.
- For areas of high density, sophisticated computational tools have been designed to predict the daylight availability of building interiors. However, to date, simpler design and regulatory tools that can be applied have not been developed.
- Testing indicates that the higher a window is located in a wall, the deeper the sunlight penetration is into the interior space.
- Implementation of alternative metrics is difficult to achieve comprehensively Downtown, particularly given the limitations of City Planning to regulate interior layouts for units and buildings.

RECOMMENDATIONS

While the OBC requirements for minimum glass area in units do not protect for daylighting, reasonable opportunities for daylighting in residential units may be achieved by applying separation distances and setbacks between tall buildings. From a technical perspective, a wide range of alternative metrics exist to ensure daylighting within units.

1. Encourage new developments, particularly on small sites, to incorporate additional setbacks and step-backs to maintain existing levels of daylighting in existing buildings.
2. Encourage new development to strategically locate outdoor amenity spaces (e.g. courtyards, large forecourts) and POPS to optimize daylighting into adjacent interior amenity spaces.
3. Consider measures that encourage daylighting of interiors of buildings through the application review process, including the following:
 - Encourage taller floor to ceiling heights in the base of buildings to: permit more daylight to enter the interior; allow for flexibility or future conversion of uses; and optimize sunlight for non-residential uses through a minimum 4 metre floor to ceiling height;
 - Measure the percentage of sunlight received between set time frames to optimize daylighting;
 - Evaluate glazing or glass area requirements to optimize daylighting dependent on the use (e.g. higher transparency for retail uses, lower for residential); and
 - Orient buildings to maximize daylighting, where there is more than one building is proposed on site.
4. Reflect the targets outlined in the OBC, with respect to the provision of minimum glass areas, for new amenity areas and non-residential spaces.

03

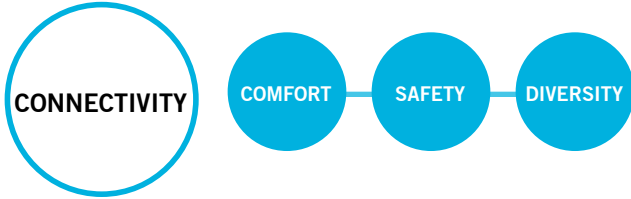


FINDINGS

- The need for privacy exists at two scales:
 - Overlook between tall or mid-rise buildings and the areas around them (e.g. respond through building orientation, separation and design); and
 - Between the public and private realm at grade (e.g. respond through at-grade setbacks and design).
- The City-initiated Official Plan Amendment and Zoning By-law for Updating Tall Building Setbacks Downtown (2016) in part helps to improve privacy for inhabitants of tall buildings by providing minimum separation distances between tall buildings.
- Façade design and buffering can also assist in providing privacy. Options such as inset balconies and use of more solid materials help achieve this. Other measures such as fencing, plantings, and screening may also be helpful at the lower levels.
- Limiting the height at which residential uses can face onto a major street or active uses can help protect for privacy.

RECOMMENDATIONS

1. Ensure transition in built form through separation distances, step-backs or angular planes between tall and mid-rise buildings and other low-scaled areas to minimize overlook and enhance privacy.
2. Increase the minimum separation distance of 25 metres between towers to ensure privacy, particularly where:
 - Privacy and overlook issues cannot be resolved; and/or
 - The existing context indicates more than 25 metres is appropriate.
3. Orient buildings to offset overlook and maximize privacy. This requires careful consideration of the site and its potential, and a commitment to achieving the best possible living conditions. Buildings should be oriented on sites in such a manner as to maximize privacy and minimize overlook, while balancing other site opportunities and constraints.
4. Increase privacy and reduce overlook through various methods, including:
 - Use of inset fenestration and screening of balconies;
 - Angling facing building walls, avoiding parallel faces, or reducing the amount of parallel overlaps; and
 - Where overlook is unavoidable, encouraging fencing and planting on the ground level of tall and mid-rise buildings can assist to reduce overlook and enhance privacy from neighbouring areas and streets.
5. Enhance privacy for at-grade conditions (e.g. where residential units front onto a main street) through increased setbacks, changes in grade, and other buffering methods, such as landscaping.
6. Increase privacy for residential units that face onto main streets by providing vertical separation from the street level, by limiting residential units in the base or lower floors of buildings.



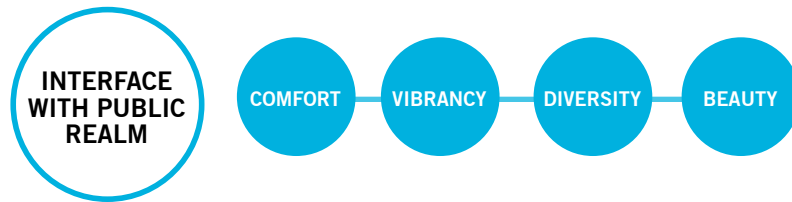
FINDINGS

- Pedestrian connectivity is increasingly important in the Downtown context, given the finite space in the rights-of-ways, and the increased demand for walking, cycling and surface transit. Given the increased number of pedestrians, there is a need to enhance and expand the sidewalk network.
- Downtown's small blocks and narrow rights of ways enhance connectivity. Connectivity is further enhanced through mid-block connections and breaking up of blocks by the introduction of open spaces.
- Connectivity can be enhanced by the number of connections, but is also greatly influenced by the design and programming of the buildings that frame the experience (e.g. design of the façade).
- The PATH and other climate-controlled pedestrian networks provide a strong network of connections and reduce the intensity of pedestrians on Downtown sidewalks, particularly during business hours and in inclement weather.
- Decreasing personal car ownership, increasing use of ride-sharing programs and the potential use of autonomous vehicles will increase the need for drop-off locations for both people and goods. This could challenge the continuity of the pedestrian realm and bicycle infrastructure.
- In most cities, 'connectivity' is rarely thought of as a complete multi-modal system, but rather as separate networks of cycling, walking, transit, and vehicular traffic. This can result in gaps for transfers between modes.
- When Toronto's planning framework is compared to those of other cities, the current requirements for the provision of pedestrian circulation spaces associated with new developments requires a higher and more detailed level of classification space, as seen in New York City's Zoning Regulation (e.g. arcade, plaza, entrance area, etc.).
- Laneways serve an important transportation capacity function. The increased use of laneways for pedestrians and cyclists can contribute to connectivity, provided it does not negatively impact the utility, safety, and function of the space.

RECOMMENDATIONS

1. Increase the pedestrian space at-grade by requiring a minimum 6-metre sidewalk or boulevard between the building face and curb throughout Downtown.
2. Require more than 6 metres where increased pedestrian intensity and activity is anticipated.
3. Limit building frontages to a maximum of 100 metres to maximize pedestrian connectivity and break up long building frontages with midblock connections, open spaces, atriums or breezeways.
4. Design and mass buildings to contribute positively to legibility of the pedestrian circulation system, through wayfinding and building design.
5. Promote connections to the PATH and other climate-controlled pedestrian networks.
6. Promote the use of publicly-accessible interior communal spaces, such as atriums and wintergardens.
7. Encourage the use of underutilized laneways to provide public, intimate pedestrian spaces that permeate the urban fabric and provide higher connectivity, safety and accessibility.
8. Develop a classification of pedestrian circulation spaces (e.g. arcade, plaza, entrance areas, etc.) to encourage new developments to provide connectivity in various forms, such as differentiating plaza spaces from pathways.
9. Require new developments to contribute to pedestrian connectivity through provision of on-site connections and responding to the block and broader context.
10. Allocate drop-off spaces within buildings to reduce the need for at-grade turnarounds or lay-bys, thereby improving the public realm.
11. Design residential and visitor cycling amenities to ensure that they are convenient, visible and accessible, including providing signalization and the opportunity to be operated remotely.

05

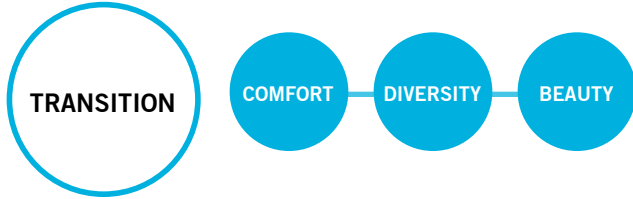


FINDINGS

- The pedestrian experience is significantly influenced by the design of the public realm and the lower floors of buildings that directly interface with the public realm. The quality of the public realm can be shaped through the use of high quality and durable materials and by promoting design excellence.
- Current policy and practice has been successful at implementing standardized improvements to the public realm as part of on-going redevelopment. However, the design of active ground floors that support the public realm has been a challenge.
- In other precedent cities, most planning documents provide broad guidance on the design of the pedestrian realm in an attempt to not be site specific. Many guidelines underestimate the value of beauty and design excellence as important contributors to the public realm experience.
- The New York City Retail Guidelines are an example of how to highlight the importance of the design of the horizontal plane, which is shaped by the human experience. City of Toronto policies do not include a definition of what areas require further visual interest for pedestrians.

RECOMMENDATIONS

1. Develop guidelines for high-quality at-grade building design that is responsive to context, including:
 - Expansions of the public realm through the use of setbacks that support higher volumes of pedestrian traffic and street life;
 - Provision of greater setbacks and step-backs to provide openness and transition to respect the pedestrian level experience;
 - Framing of important public spaces and connections through the use of building massing or design elements (e.g. canopies, arcades, entrances or recesses);
 - Use of materials, proportions and design that reflects the human scale to create comfort and interest, and strengthen the identity and character of an area; and
 - Careful placement of street furniture and other pedestrian amenities to enhance legibility, safety and navigation.
2. Develop design guidelines for various retail formats.
3. Clearly define the public realm elements that require higher levels of visual interest to support an active pedestrian realm.



FINDINGS

- Downtown's built form is not homogeneous in age, scale or typology. In some areas there is a consistent pattern and scale, while in other areas, there is a mix of building types and scale, even within a single block. Each of these areas has its own distinct character, which can be respected and reinforced through a transition in built form.
- In "as-of-right" cities, transitions are mostly controlled with maximum heights and regulatory setbacks; other precedent cities regulate transitions by using more qualitative policies, using concepts of scale and fit. When not explicitly described using metrics or standards, the application of transition can be misinterpreted.
- The City's Official Plan provides general direction only on how new development should 'fit' into its existing and planned context. Typological design guidelines for mid-rise and tall buildings provide further detail on what transition means for each building type, and how to achieve such transition to various scales of development as well as to parks, open spaces and streets. Secondary Plans and SASPs may provide additional site specific details for certain locations and conditions.
- In Downtown, most conflicts around transition occur either between different land uses (e.g. Mixed Use Areas adjacent to Neighbourhoods), or within a Mixed Use Area (eg. tall buildings adjacent to main street typologies), as defined by the Land Use Map in the Official Plan.
- The City of Mississauga provides more general language, and defines and ensures 'transition' through the proposed development's composition or attributes (e.g. size of area, street width, adjacent open space, etc.) rather than by building typology.

RECOMMENDATIONS

1. Develop a policy definition that: defines transition; rationalizes the importance of 'transition'; and identifies various methods to achieve transition.
2. Identify an approach to transition that allows buildings to adopt characteristics from both the existing and planned context and heritage character if applicable, without necessarily replicating the form or design precisely.
3. Provide further built form direction for Downtown's Mixed Use Areas through site-specific studies.
4. Demonstrate different built form adjacencies or typologies and identify tools (e.g. angular planes or setbacks) for creating transitions.
5. Translate existing typological transitions from guidelines into policy where appropriate.

07

SKY-VIEWS

VIBRANCY

BEAUTY

FINDINGS

- Sky-view is an important consideration for the evaluation of tall and mid-rise buildings.
- The setbacks and stepbacks required by Updating Tall Building Setback in Downtown provide a minimum best practice, but do not embody an absolute standard that will suffice in all contexts. As well, the street wall and step-back proportions are defining features of the character of a street or area, and the sky-view contributes to that character. There are examples in other local studies that have expanded on the separation to increase openness and sky-views, including:
 - The North Downtown Yonge SASP: included a 10-20 metre step-back to maintain the consistent low-rise quality of Yonge Street; and
 - The Lower Yonge Precinct Plan: identified Tower Area Ratios as a method of prescribing a fixed amount of openness while maintaining for a collection of towers as part of a larger master plan. Tower Area Ratio is a useful tool for analyzing or quantifying openness as an indicator of sky view, independently from other factors such as tower separation or setbacks.
- In other precedent cities, view regulations generally focus on the protection of views and view corridors to a particular monument, building or geographical feature.

RECOMMENDATIONS

1. Identify opportunities to provide increased sky-views or openness. Suggestions for appropriate locations include:
 - Infill within apartment building neighbourhoods where the open space context should be retained;
 - In areas where there is a low to mid-rise streetwall that should be retained;
 - On deep lots that do not have a pre-existing tall building character; and
 - Development applications that include or are adjacent to a heritage building/structure.
2. Develop a standardized approach to assess sky-view as part of the development application review process.
3. Identify the appropriate level of sky-view and openness for different blocks or neighbourhoods through local area plans.



FINDINGS

- The skyline is a symbolic representation and image of the city. Downtown’s skyline has historically been defined by the clustering of tall buildings in the Financial District, and then later, by the addition of the CN Tower and dome.
- The Downtown skyline is dynamic and will continue to evolve.
- Although the skyline has generally retained a “curve” with the height peaks at CN Tower and in the Financial District, the planning framework for tall buildings has not adhered to a skyline concept but rather the Downtown skyline has been a result of policies used to direct growth along with other built form parameters.
- There are a variety of ways in which other precedent cities consider their evolving skylines. Some prioritize landscape elements where the skyline will typically follow the shape of its natural features.
- Other precedent cities recognize the need to differentiate between a skyline “concept” and skyline “control parameters”:
 - Concepts: absolute height (Paris), view corridors and significant backdrop that prioritizes landscape elements (Vancouver), viewing cones (London); and
 - Control parameters: building as-of-right (New York), Tower Area Ratio (Lower Yonge Precinct), proximity to transit.

RECOMMENDATIONS

1. Consider the composition of the skyline as it pertains to identifying maximum building heights and their reflection of the urban structure and growth areas.
2. Develop evaluation criteria for reviewing tall buildings and their contribution to the ensemble of the skyline as a beautiful and harmonious composition.
3. Continue to provide more specificity as to the characteristics, patterns and areas of protection for the skylines views identified on Official Plan Map 7A as perceived from their respective viewpoints.
4. Review tall building proposals with regard for their contribution to the overall skyline and how they demonstrate beauty in relation to both the natural and cultural contexts.

09

MIXED
USE &
FLEXIBLE
BUILDING
DESIGN

VIBRANCY

DIVERSITY

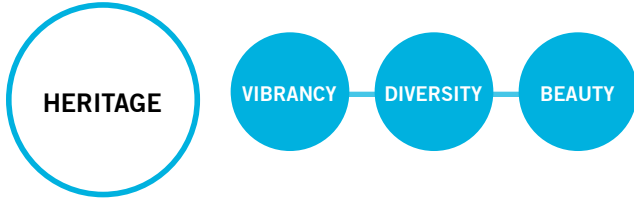
FINDINGS

- The City of Toronto Official Plan includes a “Mixed Use Areas” land use designation but does not provide further direction on the breakdown or percentages of the uses (i.e. does not provide formulas to define balance between non-residential and residential uses).
- Mixed use buildings are a common building typology Downtown.
- It is generally accepted that the location of non-residential uses at the base and lower levels of mixed-use buildings positively contribute to the liveliness and activity on the street, while benefitting from high exposure and visibility to the public.
- Current market trends indicate that the location of residential uses in podiums of taller buildings is not desirable as the required depth of the footprint is not conducive to residential layouts.
- The location of residential uses in the lower levels of buildings can be affected by noise and lack of privacy from both the uses at-grade or on the street; particularly true for developments within dense areas.
- In some zones in Hong Kong, non-residential uses are permitted in the lower three floors of residential buildings.
- Given the rising cost of urban land across cities in North America, the global trend is moving away from stand-alone facilities for public facilities and services (e.g. schools, hospitals, community centres), and including them in the base of private buildings.
- In Toronto, the current regulations do not specify conditions and guidelines related to the provision, location and configuration of community uses within new developments. The provision of amenities is typically secured, designed and approved through consultation with City staff on a case by case basis.
- As community uses are usually purpose-built with specific program and design requirements, design guidelines for these types of facilities typically do not exist.
- The precedent case studies indicated that the most successful incorporation of public urban amenities into private development occurred when:

- proposed on generous sites; and/or
- municipalities and/or institutions participated; and/or
- partnerships with NGOs for operation were negotiated; and/or
- building design allocated sufficient room to be made available at-grade; and/or
- building design incorporated multi-programming spaces at-grade.
- While the balance of uses both within areas and buildings has significantly contributed to the success of Downtown as a place to work, live and play, the proliferation of single use residential buildings has challenged the ability of the office sector and landmark institutions to expand, due to the limited supply of appropriate development sites.
- Buildings designed with generous ceiling heights, large spans and centralized services (e.g. elevator cores, garbage, servicing, loading) are flexible enough to be used for both residential and commercial uses, or even for some less-restrictive types of public facilities, and do not need to be tied to a specific land use over time. While this is particularly true at ground level, it is still relevant for the full structure of the building, as seen in the extremely successful adaptive reuse of several buildings in the Downtown in recent years.

RECOMMENDATIONS

1. Limit residential uses in the base or lower floors of mixed use buildings, to provide opportunities for a variety of non-residential uses in the podium of mixed use buildings.
2. Require taller floor-to-ceiling heights in the base or lower floors of buildings to provide opportunities for a variety of non-residential uses and flexibility/adaptability over time.
3. Consideration should be given to the prioritization of replacement, expansion and enhancement of office space Downtown, particularly within mixed use development.
4. Provide further design direction for a variety of grade-related retail typologies.
5. Provide further design direction for grade-related non-residential or community uses that are appropriate for streets other than Priority Retail Streets.
6. Consider tools to provide incentives for the provision of public community uses in the base and lower floors of buildings.
7. Identify opportunities for the provision of community uses as part of development applications, with regard for minimum site sizes and encourage lot consolidation where there are opportunities within a block to accommodate these community uses.



FINDINGS

- The Ontario Heritage Act is the primary legislation for heritage protection in the Province.
- The Provincial Policy Statement supports the preservation and appropriate adaptation of heritage resources and recognizes that Ontario's prosperity, environmental health and social well-being is linked to the protection of cultural heritage and archaeology.
- Heritage conservation crosses boundaries of sustainable development, livable cities, cultural and economic well-being, and accord with First Nations and Métis heritage.
- The City of Toronto has updated its Official Plan and theoretically harmonized its heritage and downtown development objectives to include heritage conservation objectives and the preservation of context for the community.
- Conservation is not just about buildings, it also relates to commemoration and interpretation, to preservation of communal memory, to streetscapes, public realm, open spaces and views and vistas.
- Demolition and alteration of heritage resources that occurs as part of infill development do not always fully respond to the historical context of the urban fabric.
- There is an increase in the use of listing, designation and HCD Plans to regulate the protection of heritage resources, but many of the City resources have not been included on the inventory of heritage properties, resulting in collaboration with developers, to ensure buildings are not lost.
- HCD Plans provide common threads for conservation of districts, character areas and streetscapes.
- Findings in the United States show that across 50 similar sized urban centres the conservation of older buildings in combination with new development has had a positive effect on economic, social and cultural activities in those

cities, and that these areas are more successful than areas dominated by larger, newer buildings.

- Older areas of Mixed Use designations contain hidden density that are already as high as some new development. Density should be achieved through changes in zoning and regulation of use. There is a higher concentration of small and new businesses in older buildings, and more concentration of affordable housing.
- The emphasis should be on context-driven conservation oriented solutions entailing streets or blocks rather than on individual buildings.

RECOMMENDATIONS

1. Link conservation and adaptation of the City's heritage to its liveability and to a resilient, economic, social and cultural development, to a sustainable future and city building objectives.
2. Develop a Downtown-wide heritage character analysis, to understand how protection outside of HCD Plan areas could be established.
3. Align streetscape and public realm design with the goals of conservation of historic context.
4. Recognize and celebrate good examples of heritage preservation and conservation, including residential, commercial, institutional and industrial additions and infill.
5. Promote education of existing heritage policy framework to help unlock roadblocks between the City's Heritage Preservation Services Staff and development interests.

SUMMARY OF FINDINGS

01A

ACCESS TO SUNLIGHT ONTO OPEN SPACES

COMFORT

01B

ACCESS TO SUNLIGHT ONTO STREETS

01C

PEDESTRIAN LEVEL WIND

VIBRANCY

02

DAYLIGHTING FOR INDOOR SPACES

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PRIVACY

DIVERSITY

04

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INTERFACE WITH PUBLIC REALM

06

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08

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09

MIXED USE & FLEXIBLE BUILDING DESIGN

BEAUTY

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HERITAGE

- As buildings get taller, and as more tall buildings are built in close proximity to one another, the shadows cast from these buildings become more pervasive. The shadows from tall buildings, depending on the time of day and year, can extend several blocks from its footprint.
- There are opportunities to expand the areas of shadow protection for parks and open spaces within Downtown beyond the Signature Parks, identified for the 6-hour shadow protection window found in the City's Downtown Tall Buildings: Vision & Supplementary Guidelines.
- Given Downtown's limited number of existing parks and open spaces, limited opportunities to create new parks and open spaces, and an increasing intensity of people using these parks and open spaces, it is important to protect spaces in the public realm that have sunlight, and create spaces that will have access to sunlight.
- Other cities generally evaluate shadow analysis on a case-by-case basis.
- From the analysis of existing sunlight access conditions, there are many streets which have high sunlight access, and others, mainly in the Financial District, that have low sunlight access. Many of the areas outside of the core have good access to sunlight, with 4 or more hours of sunlight onto the street.
- Most of the precedent cities studied use transition policies and angular planes to control sunlight on streets, as the prevailing built form is mid and low-rise.
- Some precedent cities with tall building areas use indirect policies, such as separation distances and floorplate sizes, to control the density of shadows, or protect sunlight on streets through a case-by-case evaluation.
- As the overall height of tall buildings increases, the span of their shadows lengthen, and the shadow cast from a tall building several blocks away may start to impact low and mid-rise areas that would otherwise have good sunlight access based on their adjacent built form. These far-reaching impacts make it difficult to regulate sunlight on streets by simply regulating the built form fronting onto adjacent streets.
- Shadows from groupings of tall buildings, when close to each other, may amalgamate and cover streets as one larger shadow for a longer period of time.
- The modelling exercise demonstrated that sunlight protection onto a street may hinder the potential for taller buildings located generally south of low and mid-rise areas.
- To-date, the City-Wide Tall Building Design Guidelines' direction has generally informed the height and shape of base buildings only to provide for sunlight onto streets, and indirectly reinforced by tall building separation distances.
- As buildings get taller, and as tall buildings are clustered in close proximity to one another, the built environment will continually impact and change how winds are experienced at the pedestrian level. The dynamic nature of wind speaks to the need to understand the cumulative impact from multiple developments in a given area.
- The Terms of Reference for Pedestrian Level Wind Studies in the City's Development Guide does not provide sufficient detail to ensure consistent information is provided through all application submissions, and does not include targets for evaluation.
- The submission of the detailed Wind Impact Assessment at the Site Plan Application stage does not allow for more substantial changes to be made to the building orientation and massing.
- The Ontario Building Code (OBC) contains provisions that require every room used for sleeping in any building be provided with windows, but makes no reference to hours of sun or shadows received on windows.
- Most regulations reviewed focus on daylighting of private spaces (units) rather than shared spaces (amenity spaces).
- Most regulations reviewed focus on providing daylighting for new spaces (units), rather than preventing interruption of daylighting for existing spaces.
- Most regulations studied were designed to best control the provision of daylight on low to mid-rise neighbourhoods.
- For areas of high density, sophisticated computational tools have been designed to predict the daylight availability of building interiors. However, to date, simpler design and regulatory tools that can be applied have not been developed.
- Testing indicates that the higher a window is located in a wall, the deeper the sunlight penetration is into the interior space.
- Implementation of alternative metrics is difficult to achieve comprehensively Downtown, particularly given the limitations of City Planning to regulate interior layouts for units and buildings.
- The need for privacy exists at two scales:
 - Overlook between tall or mid-rise buildings and the areas around them (e.g. respond through building orientation, separation and design); and
 - Between the public and private realm at grade (e.g. respond through at-grade setbacks and design).
- The City-initiated Official Plan Amendment and Zoning By-law for Updating Tall Building Setbacks Downtown (2016) in part helps to improve privacy for inhabitants of tall buildings by providing minimum separation distances between tall buildings.
- Façade design and buffering can also assist in providing privacy. Options such as inset balconies and use of more solid materials help achieve this. Other measures such as fencing, plantings, and screening may also be helpful at the lower levels.
- Limiting the height at which residential uses can face onto a major street or active uses can help protect for privacy.
- Pedestrian connectivity is increasingly important in the Downtown context, given the finite space in the rights-of-ways, and the increased demand for walking, cycling and surface transit. Given the increased number of pedestrians, there is a need to enhance and expand the sidewalk network.
- Downtown's small blocks and narrow rights of ways enhance connectivity. Connectivity is further enhanced through mid-block connections and breaking up of blocks by the introduction of open spaces.
- Connectivity can be enhanced by the number of connections, but is also greatly influenced by the design and programming of the buildings that frame the experience (e.g. the design of the façade)
- The PATH and other climate-controlled pedestrian networks provide a strong network of connections and reduce the intensity of pedestrians on Downtown sidewalks, particularly during business hours and in inclement weather.
- Decreasing personal car ownership, increasing use of ride-sharing programs and the potential use of autonomous vehicles will increase the need for drop-off locations for both people and goods. This could challenge the continuity of the pedestrian realm and bicycle infrastructure.
- In most cities, 'connectivity' is rarely thought of as a complete multi-modal system, but rather as separate networks of cycling, walking, transit, and vehicular traffic. This can result in gaps for transfers between modes.
- When Toronto's planning framework is compared to those of other cities, the current requirements for the provision of pedestrian circulation spaces associated with new developments requires a higher and more detailed level of classification space, as seen in New York City's Zoning Regulation (e.g. arcade, plaza, entrance area, etc.).
- Laneways serve an important transportation capacity function. The increased use of laneways for pedestrians and cyclists can contribute to connectivity, provided it does not negatively impact the utility, safety, and function of the space.
- The pedestrian experience is significantly influenced by the design of the public realm and the lower floors of buildings that directly interface with the public realm. The quality of the public realm can be shaped through the use of high quality and durable materials and by promoting design excellence.
- Current policy and practice has been successful at implementing standardized improvements to the public realm as part of on-going redevelopment. However, the design of active ground floors that support the public realm has been a challenge.
- In other precedent cities, most planning documents provide broad guidance on the design of the pedestrian realm in an attempt to not be site specific. Many guidelines underestimate the value of beauty and design excellence as important contributors to the public realm experience.
- The New York City Retail Guidelines are an example of how to highlight the importance of the design of the horizontal plane, which is shaped by the human experience. City of Toronto policies do not include a definition of what areas require further visual interest for pedestrians.
- Downtown's built form is not homogeneous in age, scale or typology. In some areas there is a consistent pattern and scale, while in other areas, there is a mix of building types and scale, even within a single block. Each of these areas has its own distinct character, which can be respected and reinforced through a transition in built form.
- In "as-of-right" cities, transitions are mostly controlled with maximum heights and regulatory setbacks; other precedent cities regulate transitions by using more qualitative policies, using concepts of scale and fit. When not explicitly described using metrics or standards, the application of transition can be misinterpreted.
- The City's Official Plan provides general direction only on how new development should 'fit' into its existing and planned context. Typological design guidelines for mid-rise and tall buildings provide further detail on what transition means for each building type, and how to achieve such transition to various scales of development as well as to parks, open spaces and streets. Secondary Plans and SASPs may provide additional site specific details for certain locations and conditions.
- In Downtown, most conflicts around transition occur either between different land uses (e.g. Mixed Use Areas adjacent to Neighbourhoods), or within a Mixed Use Area (eg. tall buildings adjacent to main street typologies), as defined by the Land Use Map in the Official Plan.
- The City of Mississauga provides more general language, and defines and ensures 'transition' through the proposed development's composition or attributes (e.g. size of area, street width, adjacent open space, etc.) rather than by building typology.
- Sky-view is an important consideration for the evaluation of tall and mid-rise buildings.
- The setbacks and setbacks required by Updating Tall Building Setback in Downtown provide a minimum best practice, but do not embody an absolute standard that will suffice in all contexts. As well, the street wall and step-back proportions are defining features of the character of a street or area, and the sky-view contributes to that character. There are examples in other local studies that have expanded on the separation to increase openness and sky-views, including:
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 - The Lower Yonge Precinct Plan: identified Tower Area Ratios as a method of prescribing a fixed amount of openness while maintaining for a collection of towers as part of a larger master plan. Tower Area Ratio is a useful tool for analyzing or quantifying openness as an indicator of sky view, independently from other factors such as tower separation or setbacks.
- In other precedent cities, view regulations generally focus on the protection of views and view corridors to a particular monument, building or geographical feature.
- The skyline is a symbolic representation and image of the city. Downtown's skyline has historically been defined by the clustering of tall buildings in the Financial District, and then later, by the addition of the CN Tower and dome.
- The Downtown skyline is dynamic and will continue to evolve.
- Although the skyline has generally retained a "curve" with the height peaks at CN Tower and in the Financial District, the planning framework for tall buildings has not adhered to a skyline concept but rather the Downtown skyline has been a result of policies used to direct growth along with other built form parameters.
- There are a variety of ways in which other precedent cities consider their evolving skylines. Some prioritize landscape elements where the skyline will typically follow the shape of its natural features.
- Other precedent cities recognize the need to differentiate between a skyline "concept" and skyline "control parameters":
 - Concepts: absolute height (Paris), view corridors and significant backdrop that prioritizes landscape elements (Vancouver), viewing cones (London); and
 - Control parameters: building as-of-right (New York), Tower Area Ratio (Lower Yonge Precinct), proximity to transit.
- The City of Toronto Official Plan includes a "Mixed Use Areas" land use designation but does not provide further direction on the breakdown or percentages of the uses (i.e. does not provide formulas to define balance between non-residential and residential uses).
- Mixed use buildings are a common building typology Downtown.
- It is generally accepted that the location of non-residential uses at the base and lower levels of mixed-use buildings positively contribute to the liveliness and activity on the street, while benefiting from high exposure and visibility to the public.
- Current market trends indicate that the location of residential uses in podiums of taller buildings is not desirable as the required depth of the footprint is not conducive to residential layouts.
- The location of residential uses in the lower levels of buildings can be affected by noise and lack of privacy from both the uses at-grade or on the street; particularly true for developments within dense areas.
- In some zones in Hong Kong, non-residential uses are permitted in the lower three floors of residential buildings.
- Given the rising cost of urban land across cities in North America, the global trend is moving away from stand-alone facilities for public facilities and services (e.g. schools, hospitals, community centres), and including them in the base of private buildings.
- In Toronto, the current regulations do not specify conditions and guidelines related to the provision, location and configuration of community uses within new developments. The provision of amenities is typically secured, designed and approved through consultation with City staff on a case by case basis.
- As community uses are usually purpose-built with specific program and design requirements, design guidelines for these types of facilities typically do not exist.
- The precedent case studies indicated that the most successful incorporation of public urban amenities into private development occurred when:
 - proposed on generous sites; and/or
 - municipalities and/or institutions participated; and/or
 - partnerships with NGOs for operation were negotiated; and/or
 - building design allocated sufficient room to be made available at-grade; and/or
 - building design incorporated multi-programming spaces at-grade.
- While the balance of uses both within areas and buildings has significantly contributed to the success of Downtown as a place to work, live and play, the proliferation of single use residential buildings has challenged the ability of the office sector and landmark institutions to expand, due to the limited supply of development sites.
- Buildings designed with generous ceiling heights, large spans and centralized services (e.g. elevator cores, garbage, servicing, loading) are flexible enough to be used for both residential and commercial uses, or even for some less-restrictive types of public facilities, and do not need to be tied to a specific land use over time. While this is particularly true at ground level, it is still relevant for the full structure of the building, as seen in the extremely successful adaptive reuse of several buildings in the Downtown in recent years.
- The Ontario Heritage Act is the primary legislation for heritage protection in the Province.
- The Provincial Policy Statement supports the preservation and appropriate adaptation of heritage resources and recognizes that Ontario's prosperity, environmental health and social well-being is linked to the protection of cultural heritage and archaeology.
- Heritage conservation crosses boundaries of sustainable development, livable cities, cultural and economic well-being, and accord with First Nations and Métis heritage.
- The City of Toronto has updated its Official Plan and theoretically harmonized its heritage and downtown development objectives to include heritage conservation objectives and the preservation of context for the community.
- Conservation is not just about buildings, it also relates to commemoration and interpretation, to preservation of communal memory, to streetscapes, public realm, open spaces and views and vistas.
- Demolition and inappropriate alteration of significant heritage resources continues to occur, and infill development is often inappropriately related to historic contexts.
- There is an increase in the use of listing, designation and HCD Plans to regulate the protection of heritage resources, but many of the City resources have not been included on the inventory of heritage properties, resulting in unanticipated confrontations with developers and building loss.
- HCD Plans provide common threads for conservation of districts, character areas and streetscapes.
- Findings in the United States show that across 50 similar sized urban centres the conservation of older buildings in combination with new development has had a positive effect on economic, social and cultural activities in those cities, and that these areas are more successful than areas dominated by larger, newer buildings.
- Older areas of Mixed Use designations contain hidden density that are already as high as some new development. Density should be achieved through changes in zoning and regulation of use. There is a higher concentration of small and new businesses in older buildings, and more concentration of affordable housing.
- The emphasis should be on streets or blocks rather than on individual buildings.

SUMMARY OF RECOMMENDATIONS

COMFORT

01A

ACCESS TO SUNLIGHT ONTO OPEN SPACES

1. Minimize shadows cast on the whole of the public realm to encourage its use, providing an enjoyable and interesting experience, with a focus on prioritizing pedestrian activity and other active transportation modes.
2. Building on the City's existing policy frameworks, expand on the list of parks and open spaces to be protected from shadow, using and expanding on the criteria identified in this document.
3. Coordinate with the Töcore Parks and Public Realm Plan to identify other criteria for inclusion in the areas for no net-new shadow. Location within a "Park District" as identified in the Parks and Public Realm Plan should also be considered as part of the criteria as these parks and open spaces are important public realm amenities within their respective neighbourhoods.
4. Review the potential for additional parks and open spaces to be added to the Sun Protected Parks and Open Spaces map through local area studies by referring to the criteria identified in this study.
5. Include new parks and open spaces as they are planned and secured, on the list of Sun Protected Parks and Open Spaces where they align with the criteria and testing as identified in this study.
6. Protect school yards from shadow as part of the public realm and open space network Downtown.
7. Evaluate the location and design of new parks and open spaces by using the analysis, criteria, and testing as outlined in the study to determine their sunlight access.
8. Encourage the location of new outdoor amenity spaces, POPS and other private open spaces for good sunlight access.
9. Consider the impacts of new development on existing outdoor amenity spaces, POPS and other private open spaces.
10. Evaluate the acquisition of land for the creation of new public parks by considering the location and opportunity for sunlight access.
11. Provide and maintain the City model, with frequent updates, currently available to applicants to ensure a standardized process for analyzing sun and shadow impacts of new proposed developments, including: detailed, accurate massing; and topographical information.
12. Update the Sun/Shadow Study Terms of Reference in the City's Development Guide to clarify the datasets and assumptions for the model.
13. Explore other architectural and massing techniques employed by other precedent cities as a strategy to ensure sunlight access on parks and open spaces.

01B

ACCESS TO SUNLIGHT ONTO STREETS

1. Continue to shape and scale the base or podium of tall buildings to allow for sunlight access to streets.
2. Balance access to sunlight on streets with the recognition that sunlight access policies will impact the overall height of buildings beyond the street on which they are located.
3. Continue to shape and scale mid-rise buildings to allow for sunlight on streets as per the direction in Performance Standard #4A from the Avenues & Mid-Rise Buildings Study, through the application of the angular planes and step-backs.
4. Ensure that development applications provide sufficient detail and geographic context to enable City Planning to review the impacts of sunlight on streets beyond the immediate site for all areas within Downtown, given the complexity of understanding, predicting and regulating sunlight on streets.
5. Amend the Development Guide's Sun/Shadow Study Terms of Reference to include consideration for sunlight protection on streets for mid-rise and tall buildings, by requiring a broader geography for review.
6. Define the area of the street to be protected from shadow, consistently across all documents in a measurable fashion. The recommended areas for consideration are the areas between the right of way and the offset of such line to the maximum width of the boulevard within the block, in order to protect for the potential future expansion of the sidewalk if the street were to be reconfigured.
7. Protect the area between the right of way and the offset of such line to the maximum width of the boulevard within the block, in order to protect for the potential future expansion of the sidewalk if the street were to be reconfigured.

01C

PEDESTRIAN LEVEL WIND

1. Amend the Terms of Reference in the City's Development Guide for Pedestrian Level Wind Studies to:
 - Develop comfort categories that respond to specific geographies (parks, priority retail streets) or activities (sitting, standing);
 - Require Wind Impact Assessments, rather than opinion letters, to be submitted at the early stages of the planning application review process i.e. at Zoning By-law Amendment stage, so that the evaluation of pedestrian level winds can assist to shape the development in order to reduce negative impacts;
 - Require all development applications to provide a Wind Impact Assessment that: measures Gust Equivalent Mean; applies evaluation criteria that assesses wind impacts on the pedestrian level; and uses standardized graphics and displays; and
 - Require Wind Impact Assessments to include a broad geography and existing and planned development context to evaluate the cumulative existing and future wind conditions in an accurate manner.
2. Require architectural responses such as: altering the footprint of tall building elements; increasing step-backs and separation distances; and re-orienting building footprints when the Wind Impact Assessment demonstrates negative impacts on the pedestrian environment.
3. Consider mitigation measures such as fencing, wind screens and landscaping, once other architectural responses have been exhausted.

VIBRANCY

02

DAYLIGHTING FOR INDOOR SPACES

1. While the OBC requirements for minimum glass area in units do not protect for daylighting, reasonable opportunities for daylighting in residential units may be achieved by applying separation distances and setbacks between tall buildings. From a technical perspective, a wide range of alternative metrics exist to ensure daylighting within units.
 2. Encourage new developments, particularly on small sites, to incorporate additional setbacks and step-backs to maintain existing levels of daylighting in existing buildings.
 3. Encourage new development to strategically locate outdoor amenity spaces (e.g. courtyards, large forecourts) and POPS to optimize daylighting into adjacent interior amenity spaces.
 - Consider measures that encourage daylighting of interiors of buildings through the application review process, including the following:
 - Encourage taller floor to ceiling heights in the base of buildings to: permit more daylight to enter the interior; allow for flexibility or future conversion of uses; and optimize sunlight for non-residential uses through a minimum 4 metre floor to ceiling height;
 - Measure the percentage of sunlight received between set time frames to optimize daylighting;
 - Evaluate glazing or glass area requirements to optimize daylighting dependent on the use (e.g. higher transparency for retail uses, lower for residential); and
 - Orient buildings to maximize daylighting, where there is more than one building is proposed on site.
 4. Reflect the targets outlined in the OBC, with respect to the provision of minimum glass areas, for new amenity areas and non-residential spaces.

03

PRIVACY

1. Ensure transition in built form through separation distances, step-backs or angular planes between tall and mid-rise buildings and other low-scaled areas to minimize overlook and enhance privacy.
 2. Increase the minimum separation distance of 25 metres between towers to ensure privacy, particularly where:
 - Privacy and overlook issues cannot be resolved; and/or
 - The existing context indicates more than 25 metres is appropriate.
 3. Orient buildings to offset overlook and maximize privacy. This requires careful consideration of the site and its potential, and a commitment to achieving the best possible living conditions. Buildings should be oriented on sites in such a manner as to maximize privacy and minimize overlook, while balancing other site opportunities and constraints.
 4. Increase privacy and reduce overlook through various methods, including:
 - Use of inset fenestration and screening of balconies;
 - Angling facing building walls, avoiding parallel faces, or reducing the amount of parallel overlaps; and
 - Where overlook is unavoidable, encouraging fencing and planting on the ground level of tall and mid-rise buildings can assist to reduce overlook and enhance privacy from neighbouring areas and streets.
 5. Enhance privacy for at-grade conditions (e.g. where residential units front onto a main street) through increased setbacks, changes in grade, and other buffering methods, such as landscaping.
 6. Increase privacy for residential units that face onto main streets by providing vertical separation from the street level, by limiting residential units in the base or lower floors of buildings.

DIVERSITY

04

CONNECTIVITY

1. Increase the pedestrian space at-grade by requiring a minimum 6-metre sidewalk or boulevard between the building face and curb throughout Downtown.
 2. Require more than 6 metres where increased pedestrian intensity and activity is anticipated.
 3. Limit building frontages to a maximum of 100 metres to maximize pedestrian connectivity and break up long building frontages with midblock connections, open spaces, atriums or breezeways.
 4. Design and mass buildings to contribute positively to legibility of the pedestrian circulation system, through wayfinding and building design.
 5. Promote connections to the PATH and other climate-controlled pedestrian networks.
 6. Promote the use of publicly-accessible interior communal spaces, such as atriums and wintergardens.
 7. Encourage the use of underutilized laneways to provide public, intimate pedestrian spaces that permeate the urban fabric and provide higher connectivity, safety and accessibility.
 8. Develop a classification of pedestrian circulation spaces (e.g. arcade, plaza, entrance areas, etc.) to encourage new developments to provide connectivity in various forms, such as differentiating plaza spaces from pathways.
 9. Require new developments to contribute to pedestrian connectivity through provision of on-site connections and responding to the block and broader context.
 10. Allocate drop-off spaces within buildings to reduce the need for at-grade turnarounds or lay-bys, thereby improving the public realm.
 11. Design residential and visitor cycling amenities to ensure that they are convenient, visible and accessible, including providing signalization and the opportunity to be operated remotely.

05

INTERFACE WITH PUBLIC REALM

1. Develop guidelines for high-quality at-grade building design that is responsive to context, including:
 - Expansions of the public realm through the use of setbacks that support higher volumes of pedestrian traffic and street life;
 - Provision of greater setbacks and step-backs to provide openness and transition to respect the pedestrian level experience;
 - Framing of important public spaces and connections through the use of building massing or design elements (e.g. canopies, arcades, entrances or recesses);
 - Use of materials, proportions and design that reflects the human scale to create comfort and interest, and strengthen the identity and character of an area; and
 - Careful placement of street furniture and other pedestrian amenities to enhance legibility, safety and navigation.
2. Develop design guidelines for various retail formats.
3. Clearly define the public realm elements that require higher levels of visual interest to support an active pedestrian realm.

06

TRANSITION

1. Develop a policy definition that: defines transition; rationalizes the importance of 'transition'; and identifies various methods to achieve transition.
 2. Identify an approach to transition that allows buildings to adopt characteristics from both the existing and planned context and heritage character if applicable, without necessarily replicating the form or design precisely.
 3. Provide further built form direction for Downtown's Mixed Use Areas through site-specific studies.
 4. Demonstrate different built form adjacencies or typologies and identify tools (e.g. angular planes or setbacks) for creating transitions.
 5. Translate existing typological transitions from guidelines into policy where appropriate.

SAFETY

07

SKY-VIEWS

1. Identify opportunities to provide increased sky-views or openness. Suggestions for appropriate locations include:
 - Infill within apartment building neighbourhoods where the open space context should be retained;
 - In areas where there is a low to mid-rise streetwall that should be retained;
 - On deep lots that do not have a pre-existing tall building character; and
 - Development applications that include or are adjacent to a heritage building/structure.
2. Develop a standardized approach to assess sky-view as part of the development application review process.
3. Identify the appropriate level of sky-view and openness for different blocks or neighbourhoods through local area plans.

08

SKYLINE

1. Consider the composition of the skyline as it pertains to identifying maximum building heights and their reflection of the urban structure and growth areas.
 2. Develop evaluation criteria for reviewing tall buildings and their contribution to the ensemble of the skyline as a beautiful and harmonious composition.
 3. Continue to provide more specificity as to the characteristics, patterns and areas of protection for the skylines views identified on Official Plan Map 7A as perceived from their respective viewpoints.
 4. Review tall building proposals with regard for their contribution to the overall skyline and how they demonstrate beauty in relation to both the natural and cultural contexts.

09

MIXED USE & FLEXIBLE BUILDING DESIGN

1. Limit residential uses in the base or lower floors of mixed use buildings, to provide opportunities for a variety of non-residential uses in the podium of mixed use buildings.
 2. Require taller floor-to-ceiling heights in the base or lower floors of buildings to provide opportunities for a variety of non-residential uses and flexibility/adaptability over time.
 3. Consideration should be given to the prioritization of replacement, expansion and enhancement of office space Downtown, particularly within mixed use development.
 4. Provide further design direction for a variety of grade-related retail typologies.
 5. Provide further design direction for grade-related non-residential or community uses that are appropriate for streets other than Priority Retail Streets.
 6. Consider tools to provide incentives for the provision of public community uses in the base and lower floors of buildings.
 7. Identify opportunities for the provision of community uses as part of development applications, with regard for minimum site sizes and encourage lot consolidation where there are opportunities within a block to accommodate these community uses.

BEAUTY

10

HERITAGE

1. Link conservation and adaptation of the City's heritage to its liveability and to a resilient, economic, social and cultural development, to a sustainable future and city building objectives.
 2. Develop a Downtown-wide heritage character analysis, to understand how protection outside of HCD Plan areas could be established.
 3. Align streetscape and public realm design with the goals of conservation of historic context.
 4. Recognize and celebrate good examples of heritage preservation and conservation, including residential, commercial, institutional and industrial additions and infill.
 5. Promote education of existing heritage policy framework to help unlock roadblocks between the City's Heritage Preservation Services Staff and development interests.