Kitchener is to be designed as an inclusive city and to reinforce the idea that it is a welcoming, thoughtful and purposefully created place for people of all cultures and identities. From the city core to new subdivisions, from office and industrial areas to parks and open spaces, Kitchener is to be safe, accessible, comfortable and appealing for all who live, work, play and visit here, including women, the LGBTQAI+ community, Indigenous Persons, new Canadians, children, older adults, and persons of different physical abilities and mental health needs.

As city builders we have a responsibility to support under-represented groups, to accommodate and celebrate a diverse range of cultural traditions, to welcome all new community members and to positively support social change as we evolve.

The purpose of the City-Wide Design section of the Urban Design Manual is to set forth the universal design expectations which apply to all of Kitchener. These are urban design objectives that are relevant to all geographies and building typologies. This section of the manual has been created to limit the duplication of guidelines, to streamline the manual’s length and avoid potential conflicts. Where conflicts do occur, prioritize first the standards in Part C of this manual, followed by the relevant Built-Form section, followed by the related Urban Structure section, and then lastly, the City-Wide Design guidelines.

Kitchener’s City-Wide Design guidelines are divided into two sections; Community Design and Site Design. Community Design involves the broader principles of urban design that create our streets, built-form and parks and open spaces. Site Design provides more specific direction for on-site access, circulation, public art and landscaping, among other objectives.
Community Design

PART A CITY-WIDE

COMMUNITY DESIGN

INCLUSIVE DESIGN

Creating an inclusive city is not possible without first creating a safe city. City builders have a responsibility to maximize the real and perceived safety of all who live, work, and play in Kitchener. Safety is a critical, city-wide design parameter for all buildings, streets and shared spaces.

Prioritize safety for pedestrians, cyclists, public transit users and motorists in that order. Prioritize passive, integrated design techniques (site lighting, landscaping, built-form, parking and access) over physical barriers and security technologies wherever possible.

Use Crime Prevention Through Environmental Design (CPTED) principles to design all spaces, including transit stops, to a high standard for safety. A CPTED Report may be required for any development, to be approved by City staff.

No building, street or shared space is to be designed in isolation from its surroundings. Design for the specific contextual constraints and opportunities of a site and consider both current and planned future conditions for the area when designing for safety.

Design sites to provide clear, continuous and highly visible pedestrian pathways that connect the public realm with building entrances, are barrier-free, and minimize conflict with vehicles.

Design all public spaces to increase the presence of people, and design all sites and buildings to maximize the ability of occupants to provide natural surveillance onto the public realm.

When designing the built form and site function elements on a project, do not create any potential entrapment areas, dead-ends, or hidden/obscured spaces. Building users and/or the public should always have multiple means of egress should a potentially unsafe situation arise.

Design all elements of a site to be identifiable and clearly delineated. This should be performed through passive design elements but may also include appropriate signage.

Building entrances and exterior shared spaces should be clearly defined and visible from the public realm, evenly lit, human scaled and under natural surveillance from building occupants.
Community Design

An inclusive city is one in which all spaces are designed to be equitable and flexible for all users. Wherever possible, design spaces such that all users are able to encounter, navigate and experience the space without restriction. Where this is not possible, all users should have equivalent means to use these spaces, and no one should be singled out or excluded.

Design all spaces to serve the full range of users’ physical, mental and sensory abilities, including such things as; anticipating differences in pace of movement and types of mobility; minimizing the physical effort required to use the space; being sensitive to varying reactions to visual and auditory stimuli and; providing texture and tactility for the sensory impaired.

Design spaces with a margin for error by minimizing potential hazards, providing redundancies and making it easy to correct or overcome any accidental or unintentional actions.

Design spaces such that they are intuitive, welcoming and safe to use for persons of all abilities, backgrounds, cultures, languages and identities. This means designing for visual clarity for people unfamiliar with Kitchener, including visitors and newly arriving Canadians. It includes intuitive wayfinding that doesn’t rely on complex written direction and provides clear visual delineation between different types of spaces (public, private, front-of-house, back-of-house).

Integrate Universal Design measures into the architectural expression of the building and the urban design of the site, including all ramps, handrails and other barrier free measures. No one should be made to feel that their needs are an afterthought or a burden on the design process.

Ensure that the site user experience is created for the enjoyment of all, including consideration of sight lines for children and users of wheelchairs and other mobility aides.

Emphasize life safety, mobility independence, and quality of life measures for those who are most vulnerable to potential hazards.

Affordability

Pursue all opportunities to incorporate affordable housing into residential and mixed-use projects.

Avoid “Poor doors”, or separate entrances/lobbies for affordable units (where a mix of affordable and market units exist within a multi-residential or mixed-use building).

Likewise, access to shared spaces and other common amenities is to be provided equally to all residents regardless of status.

Affordable housing should be provided in a full range of unit sizes, types and tenures.
Age and family friendly design practices are those which enhance the mobility, independence and quality of life for older people and families at the Neighbourhood, Building and Unit scales. They promote active lifestyles, encourage social interaction and instil a sense of community pride. Age and family friendly design prioritizes the ability for older adults to age-in-place, and for families to grow-in-place.

All development in Kitchener should be designed as age and family friendly. Where seniors and/or children are not intended users or the target demographic, their needs must still be addressed, to ensure equitable and flexible use of the urban environment for all.

The Neighbourhood Scale

Design for the mobility independence of children and older adults.

Provide a mix of housing types, sizes and tenures in each neighbourhood, including seniors housing options for both independent and assisted living to create options for aging-in-place.

Locate retirement, long term care homes and institutional uses in the neighbourhood centre and in close proximity to community services, personal services and commercial uses.

Provide small but frequent community spaces to promote and advertise volunteer opportunities and community events.

Locate child care facilities and schools near pedestrian, cycling and transit routes to maximize mobility autonomy. Consider adjacency to parks, community centres and recreation facilities.

Design comfortable streets that encourage older adults and families to linger and socialize.

Provide a range of public art as well as park, open space and shared space elements that are flexible, educational, interactive and inclusive to allow for a range of activities including; resting, walking, socializing, physical activity and access to nature. Accommodate imaginative play, encourage a sense of adventure and reward curiosity in people of all ages and abilities.

Design the public realm with frequent rest areas, including barrier-free seating, weather protection and shade trees. Ensure comfortable wind conditions for users.

Maintain the public realm with adequate lighting and curbs that are suitable for barrier-free travel, including tactile surfaces for the visually impaired. Ensure that site works involving utilities in the public right-of-way do not encumber users’ ability to navigate their urban environment.

Provide frequent crosswalks that are intuitively designed for pedestrians and obvious to drivers.

Prioritize winter maintenance for those most impacted by adverse conditions, including persons with mobility aides and families with strollers.

Create opportunities for cycling to be the preferred choice for trips that are less than 5 km. Support an all ages and abilities cycling network, particularly near schools.

Design for ‘last-mile mobility’, to ensure that there are no unintentional barriers between transit stops or pedestrian pathways and user destination points that may discourage active transit use among sensitive users.

Where feasible, public washrooms and water fountains should be provided and open year-round. They are to be universally accessible, include family washroom and changing facilities that support safe and equitable access for persons of all identities and abilities.
Age & Family Friendly Design (con’t)

DYK? Needs and demographics change over time, and it’s important for buildings to stay responsive to these changes throughout their life-cycle. Designing units for potential future conversion (size, amenity, storage, tenure, etc.) or changes in use (e.g. from structured parking to office space) is a more sustainable approach to city building, and new buildings should be expected to endure and remain viable in the long term.

Something as simple as providing space for an entryway storage bench can assist mobility by giving families and seniors a comfortable and low-effort place to put on their shoes.

Photo_ The Splash Circle at The Boardwalk includes formal and informal seating, public art that is well integrated into the urban environment, an accessible play area, accessible washroom facilities, and other features.

The Building Scale

Provide a mix of unit types and sizes (studio, one, two and three-bedroom units) to accommodate all types of people and families and to provide up-sizing and downsizing opportunities for those who want to remain in place throughout different stages of life.

Provide indoor and outdoor amenity areas with a variety of activities for all occupants. Consider ways in which amenity spaces can be designed to accommodate the needs of older adults and young people simultaneously, as positive social interaction between generations can have significant mental health benefits for all.

Locate amenity spaces adjacent to circulation spaces and with the greatest degree of permeability possible, prioritizing both real and perceived safety.

When planning a site with multiple buildings, maximize the utility of amenity spaces by sharing facilities among all users, where possible.

Building lobbies and other interstitial spaces should be large and flexible enough to accommodate social encounters and to avoid frustrating the movement of those with mobility aids, families with child equipment or individuals carrying groceries.

Where feasible, provide additional communal or individual storage, prioritizing floors with larger units. Explore opportunities for stroller or mobility device storage in the base of buildings where the floorplate tends to be the largest.

The Unit Scale

Provide generous in-unit storage areas and entryways that can accommodate mobility aids, strollers, circulation for multiple people and other sensitively designed elements.

Provide private outdoor spaces where possible and design them to maximize sunlight, accessibility, safety, flexibility and to minimize uncomfortable wind conditions.

Consider the provision of oversized balconies, patios and terraces with screening that extends living space to the outdoors.

Design for future adaptability to changing demographics and lifestyles. Consider ways in which units can be specialized for different user needs and adapted for an individual user’s preferences.
Hostile design, or any kind of urban design intended to control, coerce, discourage or prohibit undesired or unintended interactions in public space, is unacceptable in Kitchener. Kitchener is and will continue to be a place where we welcome everyone in our public spaces and protect for the equity and dignity of marginalized groups.

Social infrastructure such as libraries, community centres, healthcare and educational institutions should provide space and programming for people of all ages, abilities, backgrounds and identities.

Community services and facilities should be welcome in all neighbourhoods, particularly those which provide for the more vulnerable members of our community. Social services for those in need should be fully integrated into urban life.

Affordable housing should be integrated within local communities and neighbourhoods to protect against the marginalization and segregation of persons with lower-income.

Public spaces of all types and sizes are to be designed to accommodate events, cultural celebrations, and art installations. Private shared spaces are encouraged to do the same.

Investigate opportunities for the temporary use of vacant commercial space for community gatherings, gallery or event spaces. Consider designing otherwise unusable or remnant building spaces in creative ways which accommodate artistic and cultural installations.

New buildings should consider the provision of gallery, community or event space.

The City, developers and private landowners should partner with local artists when commissioning public art or activating the public realm with art.

Public art installations and community arts and culture spaces are to be accessible and inclusive.
Kitchener/Waterloo is a globally recognized centre for innovation, a leader in high-tech manufacturing, and home to an enviable talent base and leading-edge resources. Positioning Kitchener as a leader in Smart City Design is a natural evolution of our growing identity as an innovation hub, leveraging some of our existing talent and resources to focus on municipal issues.

Smart cities employ data collection and other methods to supply information which is used to enhance services and manage assets and resources more efficiently and effectively. Smart City design is not just about finding technological solutions to problems; it’s about providing better, more adaptive service through all available means.

All projects should contain sufficient, planned space for current and anticipated future needs for technology infrastructure, materials and structures. Spaces for the support of fixed cabling and other infrastructure should be easily accessible in order to facilitate future changes in use.

New buildings, public infrastructure projects and the public realm should be designed to be as functionally flexible as possible, specifically in respect to access, infrastructure and configuration of interior space in order to facilitate future changes in use.

Temporary measures, including changes to the urban environment, should be explored when testing smart technologies. Technology evolves quickly and the city should be open and adaptable to experimenting with new ideas designed to improve the quality of life.

New developments should demonstrate that their design takes account of the latest, best and emerging practices and patterns for smart cities, digital urbanism and placemaking.

Planning and other policies governing the use of urban space and structures should facilitate innovation and changes in use, including temporary changes of use.

Technology changes in mobility, such as e-bikes, e-scooters, on-demand ride hailing, autonomous vehicles, etc. have been changing the way we use urban spaces. Transportation is evolving and needs to be in a position to embrace that change.

Consultation on plans, projects or new developments should explore the capabilities of social media and other relevant engagement technologies to ensure that local communities are given appropriate opportunities to contribute to their design.

Smart city initiatives are far reaching and can vary greatly with respect to cost, ease of implementation, the value and useability of the resulting data, etc. Following are several broad applications for Smart City Initiatives that should be considered where appropriate.
Smart city initiatives are far reaching and can vary greatly with respect to cost, ease of implementation, the value and useability of the resulting data, etc. On this page are several broad applications for Smart City initiatives that should be considered where appropriate.

**CITY-WIDE**

**PART A**

Community Design

**Intelligent waste collection** that could include dispatch and operation management, system tracking and control and reporting.

**Smart systems** which make local information more readily available to visitors, newly arriving Canadians and persons with special needs to address language or communication barriers and make it easier to participate in City-led processes, initiatives and events.

**Smart visualizations** of existing and planned urban conditions and smart mapping initiatives including LIDAR, pictometry, and advanced data sets. This can include viewers, browser portals and other options for data sharing that promote and enhance the City's Open Data initiatives.

**Walkability and accessibility** data collection and analysis to improve pedestrian connectivity.

**Data collection portals** for citizens to provide specific, targeted feedback on city services.

**Smart city applications** which improve existing municipal processes by finding redundancies, efficiencies and unexplored opportunities, as well as smart reporting systems which provide real-time feedback on various municipal issues.

**Smart city infrastructure** including public wifi, smart information kiosks, and access to and interaction with emerging technologies including smart sensors and Internet of Things products.

**Smart sustainability initiatives** such as monitoring energy use, planning transitions to renewable energy sources, and other applications which adapt to and mitigate climate change.

**Smart Arts and Culture initiatives** including virtual library, museum and art gallery resources, augmented reality public art and access to information about arts and culture as well as cultural and natural heritage resources, including a reporting system to provide feedback.

**Disaster management** and extreme weather event resources, such as smart dispatching and real-time reporting of conditions such as outages, and closures.

**Social media monitoring and analytics** to evaluate the popularity of topics, identify issues and opportunities and leverage citizen insight into municipal issues.

**Smart streetlight management** which prioritizes safety, energy efficiency and maintenance.

**Smart parking initiatives** including vehicle detection to monitor and report on parking patterns and habits, supply, availability, etc.

**Crowdsourcing** such as collecting information on self-reported road safety issues, to prevent collisions, to identify areas of poor snow removal or landscape maintenance practices, etc.

**Smart utility initiatives** including monitoring and reporting, capacity analysis, etc.

**DYK?**

LIDAR uses laser light to measure distances, creating a 3D point-cloud of information that can be used for many applications. Pictometry is an aerial image capture process that obliquely captures building elevations and ground features in 3D.

**Photo**. A sample of the City of Kitchener LIDAR data, showing Kitchener City Hall.

**Photo**. A demo from the Kitchener Innovation Lab showing an augmented reality 3D model of Kitchener City Hall.
Sustainable design is an increasingly necessary focus of responsible city-building. We now find ourselves in a critical moment to limit the worst impacts of climate change and to provide the groundwork that will allow future generations to inherit a clean, healthy, thriving Kitchener.

On Monday, June 24th 2019, Kitchener City Council unanimously declared a climate emergency. Adapting to and mitigating against climate change is perhaps the biggest challenges facing municipalities, and we have a responsibility to use the power of design to help create our sustainable future.

Design communities to support and encourage walking and cycling. Provide compact block patterns and highly connected street networks. Promote safe, active transportation and public transit use as a priority travel option.

Provide green spaces, gathering places, and recreational facilities and opportunities for persons of all ages, identities, abilities, and cultural traditions. Conserve and enhance existing public spaces.

Provide street trees along all streets with sufficient soil volume to ensure a healthy, mature canopy. Maximize tree planting wherever possible. Ensure natural and built shade features are available at outdoor public spaces.

Ensure safe and convenient access to health care, social services and healthy food options.

Mitigate against noise-related impacts, including noise created by vehicular traffic, building construction, incompatible land uses and site access/servicing areas.

Create complete communities that include mixed densities and affordable housing options for people of all ages and socioeconomic status.

Provide safe, convenient access to social, educational and faith-based community resources.

Provide thoughtful outdoor recreation opportunities for people of all ages including children's playground equipment, sport and fitness equipment, programmed areas such as basketball courts, volleyball pits, skate-parks, skating rinks, climbing walls, and other creative options which encourage participation and provide for easy access, use and participation.

There are two types of measures that can be applied to designing for climate change; Adaptation and Mitigation. Adaptation measures are actions that help reduce the urban environment's vulnerability to the impacts of climate change. Mitigation measures are actions that can be taken to reduce and limit greenhouse gas (GHG) emissions.

Mitigation includes things like increased energy efficiency, greater use of renewable energy, better public transit and other low-carbon design initiatives such as encouraging adaptive reuse over demolition, deploying recycled and energy efficient materials, and designing compact, walkable communities.

Adaptation includes site design which addresses the security of built form and infrastructure with regard to potential natural disasters, natural and resilient landscaping that can withstand severe climatic conditions, and preventative and precautionary strategies for dealing with flooding and extreme weather events along with climate related migrations.

There are several ways for development to address climate change, including through strategies outlined by the Canada Green Building Council in categories such as Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, and Innovation in Design. Integrate these strategies from the beginning of the design process including neighbourhood design.

Design sites to maximize their relationship to sustainable transportation options, prioritizing pedestrian and cyclists utility and public transit access.
Incorporate renewable energy where feasible, including solar, geothermal, and wind-generation. Preserve for and accommodate new technologies as they are developed.

Pursue district energy opportunities for feasible locations at the multi-site and neighbourhood scales.

Optimize building design for energy performance, particularly through passive daylighting and ventilations techniques which limit the burden on mechanical systems. Buildings should target an energy performance standard 25% above building code requirements and are strongly encouraged to target net zero energy and carbon neutral design standards.

Use renewable, sustainably manufactured and locally sourced materials, wherever possible.

Use reclaimed and recycled materials, particularly those which may be salvaged on-site.

Avoid demolition of buildings which may be adaptively reused and have good design elements, particularly larger buildings for which demolition and removal is expensive and wasteful. Instead, incorporate these buildings into new development through renovation and addition.

Design new buildings to withstand climate change by being resistant to extreme weather conditions, anticipating increased cooling demands through sustainable natural ventilation and efficient mechanical systems, and by being adaptable to changes in the needs of occupants over time as new technologies and lifestyle choices evolve.

Design lighting, landscaping, HVAC and other building systems and material finishes to enhance sustainability by being highly-efficient, low-emitting and adaptable through the smart controllability of systems (lighting, thermal comfort, natural light/shading, ventilation, etc.)

Design for water efficiency including Low Impact Design (LID). Prioritize a reduction in overall water use, innovative stormwater management, and grey water collection and re-use. All new development shall comply with the City of Kitchener’s Integrated Stormwater Management Master Plan criteria for stormwater design.

Use green or high-albedo roofs for any large, flat roof surfaces. Green roofs covering at least 25% of the total roof surface are preferred and should be implemented wherever possible. Exterior green walls should also be implemented where opportunities exist to do so.

Design for pedestrian, cyclist and transit user adaptation to climate change through built form and landscaping which provides access to sunlight and shade, respite from heat, and protection from cumulative wind impacts.

Design for climate resiliency, including increasingly frequent and extreme weather events.

Provide LED lighting or newer, even more efficient lighting technologies.
A wide array of birds and wildlife share our urban environment, and their needs should be appropriately considered when designing for Kitchener so that they may continue to thrive.

All site and landscape design should conserve, enhance and promote biodiversity of all forms and at all scales.

All development is to meet a Dark Sky compliant standard by using full cut-off fixtures with no uplighting (U0). A Dark Sky standard reduces light pollution, improving the well-being, health and safety of both people and wildlife and resulting in less energy usage.

Orient and place fixtures in such a way as to project light only on non-reflective surfaces. This will help reduce light pollution from reflections and glare off of glass.

Migratory birds move through cities at night. In order to preserve dark skies and to lessen migratory bird strikes, consider automated lighting to reduce unnecessary interior light.

Any architectural lighting at the top of buildings is to have an automated timer shut-off.

Design the first 12m of a building to prevent bird strikes by limiting the potential for reflection of trees and sky through material choice and detailing.

Where glazing is prominent on the first 12m of a building, consider the use of treatments which can be applied to the glass surface, creating visual markers for birds.

Use awnings, canopies, recessions, projections and other architectural interventions to disrupt the reflection of trees and sky in ground floor windows.

Ventilation grates on a site also present a deadly hazard for birds. Ventilation grates should have a porosity no larger than 2cm x 2cm or should be covered with netting in order to prevent birds from falling through.

Design sites to accommodate existing migratory paths for local wildlife.

Where possible, schedule tree removals in winter to minimize impacts on seasonal wildlife habitats, including birds, bats, bees and other fauna.

Consider the needs of wildlife, particularly migratory wildlife, when designing green roofs or other sustainable infrastructure. It is often possible to achieve multiple sustainable design objectives through a single intervention when that intervention is considered holistically.
Mitigate against unwanted microclimatic impacts including wind, snow and shadow. Accommodate walking, cycling and transit use during all anticipated weather conditions and provide shelter and refuge for pedestrians.

Staff may require Wind and/or a Shadow studies wherever potential impacts may exist. The recommendations from these studies are to be implemented through the site and building design.

Wind studies can generally take three forms. The first is a desktop analysis which can provide basic information on potential impacts and might be appropriate for a project at the earliest schematic stages to help inform building placement, massing, and other design elements. The second is a Computational Fluid Dynamics (CFD) study, which simulates impacts digitally. This type of study may be appropriate for Mid-Rise buildings or other forms where potential wind impacts can be expected to be relatively minor. The third is a Wind Tunnel Study, involving a physical model of the proposal and sensors which provide readings of actual air flow. This type of study should be required of Tall Buildings or other forms where potential wind impacts are significant or difficult to discern.

Design buildings to mitigate cumulative wind impacts through base design, stepbacks, projections, balcony design, building massing and architectural articulation. Additionally, include site wind mitigation measures such as vegetation and wind screening features.

Provide for pedestrian and public refuge through canopies, colonnades and sheltered areas to offer protection from rain, wind, snow, and to provide shade.

Create compact, sensitively designed built forms which limit shadowing on the public realm and adjacent properties.

Design to limit the need for ‘extra’ mitigation measures such as screens and trellises which may not suit the project’s architectural vision.

Design all buildings, streets and open spaces with regard for Kitchener’s year-round weather conditions including local prevailing winds, wind speeds, precipitation trends including both rain and snow, and average access to sunlight.

Locate major glazing areas and transitional indoor and outdoor spaces—including patios and porches—to maximize passive solar gain and access to sunlight. Add sun shades to receive the best combination of winter warming, summer shading and daylighting potential.

 Employ colourful, warm (3000k max), human-scaled site lighting and architectural accent lighting to enhance safety at night and provide a more pleasant pedestrian experience.

Bold, colourful materials and accents can also be employed to help brighten the urban environment during grey, dim winter conditions.

Give preference to deciduous trees to the south and southwest of buildings or shared space where shade is desired. Deciduous trees will provide shade in the summer while allowing sunlight to filter through in the winter.

Give preference to coniferous vegetation on the north and west sides of open outdoor spaces to protect areas from prevailing winter winds.

Strategically deploy masonry, concrete and other heat absorbing materials to act as either interior or exterior heat-mass walls, absorbing heat during the day and radiating it back out at night.
Complete Streets enable safe, attractive and comfortable access and travel for all users--including pedestrians, cyclists, transit riders and motorists, Complete Street design is a balanced approach, serving an array of mobility, social, recreational and ecological needs.

Each street is unique and reflects the required roadway function, the era of completion, spatial constraints, and the character of its buildings and open spaces. Complete Street design is not a 'one-size-fits-all' approach; the desired form and feel of a street will ultimately influence its design.

Design new-- and enhance existing-- streets to include the following attributes, where appropriate:

**Safety.** Support safety and security with predictable, unobstructed routes that are connected by readily apparent and convenient crossings. Design streetscapes to promote a perceived and actual safe experience through at-grade active uses, lighting, slow vehicular movement speeds and other CPTED (Crime Prevention Through Environmental Design) measures.

**Multi-Modal Access.** Provide safe access and offer convenient travel choices for users of all modes of transportation within the right-of-way.

**Pedestrian & Cyclist Use & Comfort.** Prioritize these users with comfortable spaces and appropriate access to transit, while creating conditions that promote convenience and walkability.

**Spaces For Public Life.** Create visually interesting and flexible public spaces for social, commercial and recreational activities that encourage people to spend time in the public realm. Provide for creatively designed, well integrated, easily accessible public bicycle parking and/or bike sharing stations.

**Memorable Experiences.** Create a distinctive, recognizable identity that provides meaning, assists wayfinding, reflects local history and supports a broad range of cultural traditions and identities.

**Ecological Sustainability.** Extend the urban forest to enhance the community’s long-term ecological function and assist in increasing tree canopy coverage. Minimize environmental impacts created through the design, construction and maintenance of streets.

**Convenient Connections.** Facilitate efficient, convenient connections among all travel modes to all destinations. Provide for safe and convenient temporary conditions during periods of construction.

**Barrier-Free Access.** Facilitate ease of use and access for all users by incorporating universal design principles and meeting or exceeding Kitchener’s standards for accessibility.

**A Sense of Enclosure.** Establish appropriate proportions of street width to abutting building facade height to create a sense of enclosure and comfort for pedestrians.

**Maintainable.** Plan and design for the ongoing maintenance of streetscapes, including trees/landscaping, sidewalks and bike lanes within the public realm.

**Improve Public Health.** Design streets in ways that incorporate physical activity and health-conscious living into people’s everyday routines, by considering the movement needs and desired amenities for active users.

**Coordinated.** Design streets to accommodate the full range of utilities in a coordinated, comprehensive manner to ensure an attractive, uncluttered streetscape that is designed for people. This includes trees, stormwater management, natural gas, hydro, telecoms, and any other utilities.
Create and conserve a modified grid street pattern based on a hierarchy of streets that ensures connectivity and provides opportunity for efficient transit routes.

Create and conserve walkable block lengths that provide the greatest possible connectivity for pedestrians between potential destinations and transit stops.

Create and conserve a minimum grid of protected cycling infrastructure.

Minimize points of conflict between pedestrians, cyclists and vehicles, always prioritizing pedestrians and cyclists (in that order).

Locate transit stops at gateways, planned commercial and employment areas, higher density housing blocks, live-work areas and parks. Seamlessly integrate stops into the site design.

Use creative street alignments to reinforce focal points and priority streets, to sensitively address cultural and natural heritage assets, and to create interesting public realm opportunities.

Provide street trees with the goal of creating a continuous mature tree canopy wherever possible.

Provide additional trees, planters and other soft landscaping elements, featuring a sensitive, diverse and attractive mix of plant species that are durable, easy to maintain and designed to meet the needs of all users (including wildlife) throughout all four seasons.

Provide surface treatments with a coordinated mix of colours, textures, and materials.

Provide frequent seating areas, public washrooms and fountains with appropriate weather protection and a variety of seating options for persons of all needs and abilities.

Provide creatively designed, well integrated, easily accessible public bicycle parking.

Provide public art, wayfinding and educational elements to create streetscapes with a greater and more varied sense of civic utility and public interest.

Place seating, building entrances, retail and other areas of activity facing the street, concentrated at major transit stops and integrated into the design of the public realm.

Use buildings, landscaping and other design elements to create continuous, vibrant and creative streetscapes that encourage exploration, interaction and reflection. Ensure that natural surveillance is always provided into the public streetscape.

Design the public realm to be human-scaled, varied, visually appealing and landscaped.

Protect existing natural features and provide sufficient soil depth, volume and growing medium for new trees.

Provide unobstructed, accessible and high quality pedestrian pathways and seating areas;

Provide energy efficient, pedestrian-scaled lighting along primary pedestrian routes.

Provide pedestrian-oriented street furnishings, public art, and interactive features.

Design streetscapes to satisfy the needs of a diverse range of users by providing access, safety, comfort, mobility, and leisure for people of all ages and abilities.

Design streetscapes to optimize the pedestrian experience for any time of day or night, extreme weather conditions, nearby activities and events, and other contextual considerations.

Ensure weather protection elements, such as overhangs and canopies, are well-integrated into the building design, detailed and scaled to support the streetscape, and positioned to maximize function and pedestrian comfort.

On large sites, enhance existing or create new publicly accessible mid-block pedestrian connections that are direct, logical and continuous.

Design mid-block connections with high-quality, universally accessible and sustainable surface materials, furnishings, landscaping and pedestrian-scale lighting.
Focal Points & Gateways

**Focal Points** are built or natural features that draw attention and help define a city’s character. **Gateways** are built or natural features that act as an identifiable threshold between different parts of the city.

Use massing and architectural expression to create landmark structures in locations that terminate views or streets. Use Viewshed Analysis for prominent developments to empirically determine their visual impact and design with this in mind.

Protect existing views and vistas to and from existing and planned built and natural landmarks.

Create new opportunities for focal points and gateways through the location of streets, intersections, walkways, lookouts, built form and site design.

Frame intersections by locating buildings and concentrating mass close to the street corner.

Provide public art in prominent locations to create recognizable focal points and gateways.

Wayfinding

Proper wayfinding helps orient and direct all users by providing navigational information throughout the public realm. Wayfinding elements are communication tools to facilitate movement, connectivity, discovery, and to reinforce a sense of place.

Design wayfinding as part of a comprehensive system that is primarily oriented towards pedestrians, cyclists and transit users, to provide navigation in the public realm to key destinations and prominent sites, whether part of the road, trail or park network.

Consider ways to make wayfinding elements accessible to all users, including persons of all abilities, ages and levels of familiarity with Kitchener, including foreign language speakers.

Ensure the physical placement, installation and illumination of signs and other wayfinding elements is suitable for all users.

Effective wayfinding systems may incorporate markers, maps, public art installations, unique surface treatments, street furnishings, landmark buildings, and/or significant natural features.

Design wayfinding systems to be barrier-free, user-friendly, clear, consistent, coordinated, and placed in strategic and predictable locations.

Provide frequent directional cues throughout the wayfinding system, particularly at decision points along journeys in all directions.

Photo: A combination of wayfinding and public art, this installation at The Boardwalk uses embedded lettering and steel rail to demarcate the boundary between Kitchener and Waterloo.
Create, conserve and enhance a city-wide, interconnected open space network with a variety of park and open space types and uninterrupted pedestrian and cyclist travel wherever possible, including options for commuting via walking or cycling along trails and through open spaces.

Prioritize pedestrian and cycling access and traversal of the open space network.

Design equitable barrier-free options for accessing and traversing the open space network.

Provide access to the open space network within walking distance (5 minute walk) to most homes, prioritizing higher density areas.

Create and conserve a continuous off-street, open space community trail network with frequent connections to the on-street active transportation network and key transportation nodes. Connect to community facilities and destinations.

Front buildings onto parks and open spaces to frame park and open space boundaries.

Use high quality, durable and easily maintained landscaping and maximize tree planting to ensure parks add significantly to Kitchener’s urban tree canopy.

Provide a comfortable environment for users year round. Provide for access to both sunlit and shaded areas and design for four-season wind conditions.

Integrate artistic, interactive and informative design elements into parks, including sculptures, murals, wayfinding, installations, water features and interactive or participatory elements.

Design parks and open spaces to serve community members of all ages, identities, cultural traditions and abilities.

Park design should be generated through a collaborative process, including consultation with City staff stakeholders and with reference to the City's established guidelines and standards.
Render Good compatibility and transition contributes toward a harmonious urban fabric.

**Scale & Transition**

A compatible city pursues development that exists in harmony with its surroundings. This includes scale, massing, architectural rhythms and compositions, transitions between forms and to lower-scaled established neighbourhoods and the suitability of height, building size, materials, and details within a neighbourhood context.

Compatibility is to be provided while respecting Kitchener’s eclectic mix of styles, eras and forms. The pursuit of compatibility should not be interpreted as desiring replication or sameness.

Provide transitions in mass, height and density between areas of different scales and densities in order to mitigate potential impacts and preserve compatibility.

Use periodic breaks in the street line facade, architectural variety in materials, massing and detailing or minor variations in building setback, rhythm and alignment to add interest to the streetscape, and to provide spaces for activities adjacent to the sidewalk.

Provide strongly articulated buildings and respect the rhythm and pattern of the existing and planned context of the area. This can be accomplished through the design of openings, materials, architectural features, details and projections, and balcony/amenity space design.

Stepback the upper floors of taller buildings to create a human-scaled public realm, provide access to sunlight and create adequate separation.

Concentrate height and mass at nodes, street corners, and along corridors and arterial streets.

Use thoughtful and creative landscape design to create compatibility. This includes the size, placement and style of public and private open spaces, using landscaping to provide screening and help established a human-scaled streetscape, and using planting beds, trees, shrubs and other landscaping to enhance setbacks and reinforce boundaries and thresholds.

Refer to the Mid-Rise and Tall Buildings sections of this manual for compatibility guidelines related to buildings of between 4 and 8 storeys, and 9 storeys and above, respectively.

**New Development In Existing Neighbourhoods**

Design infill buildings at a compatible scale with existing and planned surroundings. New buildings should respect planned and established heights and setbacks in the neighbourhood.

Ensure compatibility by providing appropriate building mass, design features and materials.

Use materials that are compatible with those found in the existing neighbourhood and maintain the rhythm of existing building separations and other spatial relationships.

Complement existing facade openings (size, dimension, orientation, rhythm and articulation), horizontal and vertical massing elements, architectural features, stepbacks and materiality.

Use design elements compatible to those within the existing neighbourhood, but do not replicate.

Vehicular parking and circulation is to respect existing and desired neighbourhood conditions.

DYK? A compatible city pursues development that exists in harmony with its surroundings. This includes scale, massing, architectural rhythms and compositions, transitions between forms and to lower-scaled established neighbourhoods and the suitability of height, building size, materials, and details within a neighbourhood context.
Cultural Heritage Resources

Conserve cultural heritage resources including buildings, views and vistas, structures, districts, streetscape and landscapes using the following strategies:

**Preservation**: protect, maintain and stabilize the heritage value of a cultural heritage resource including its context and setting.

**Rehabilitation**: repair or replace heritage attributes, construct compatible and reversible additions, integrate the cultural heritage resource or components of the cultural heritage resource into a new development, or adaptively reuse the cultural heritage resource.

**Restoration**: accurately reveal, recover or represent the state of a historic place or individual component as it appeared at a particular period in history, while protecting its heritage value.

New development on a site with a cultural heritage resource and additions to cultural heritage resources should integrate new, contrasting building materials in ways which respect the integrity of the cultural heritage resource. Conserve heritage value by being physically and visually compatible with, subordinate to, and distinguishable from the cultural heritage resource.

Sensitively rehabilitate cultural heritage resources to ensure equitable and inclusive usability for all while mitigating impacts on heritage attributes.

Design for the long term conservation of natural heritage resources.

Protect and create views to natural heritage resources.

Locate, connect and integrate parks, open spaces and community facilities with natural heritage resources to provide a range of recreational opportunities. This could include schools, stormwater management ponds, community gardens and trails.

Consider providing public access to and through natural heritage areas, where such connections serve to extend pedestrian networks, and where access and public use of the area can be implemented and managed without impacting the natural heritage resource.

Locate single-loaded local roads along the edge of natural heritage areas. Avoid fragmenting natural heritage areas with road or infrastructure crossings.

Preference should be given to fronting residential units onto natural heritage areas.

Locate public realm infrastructure between development blocks and natural heritage areas.

Locate multi-use trails and pathways outside of buffers and vegetation protection zones.

Locate infrastructure, buildings and impervious surfaces outside of vegetation protection zones.

Avoid locating parking, servicing and loading areas directly adjacent to natural heritage areas.

Utilize green infrastructure and low impact development techniques such as permeable surfaces, green roofs and bioswales for development adjacent to natural heritage areas.

Mitigate negative impacts to adjacent natural heritage features caused by shadow, lighting or wind.

Incorporate stormwater management facilities and LID technology within or adjacent to natural areas as featured design elements. Minimize the use of fencing.
SITE DESIGN

BUILT FORM

**Massing**

Design massing to conserve and enhance local contextual conditions, including significant buildings, open spaces, civic resources and pedestrian safety and comfort.

Concentrate height and mass where it creates the best public realm opportunities and the fewest unwanted impacts on surroundings.

Use projections, recesses, arcades, awnings, colour, materials and textures to reduce or diversify a building’s perceived massing.

Design massing to create visual interest, forge a sense of identity and reinforce a human scale.

Locate primary building entries to be visible and directly accessible from the public street.

Design all elevations to provide transparency, architectural continuity, visual interest and natural surveillance onto surrounding public and shared spaces. Consider the privacy of building occupants and neighbours when designing all elevations. Avoid blank walls or underdeveloped facades, as most buildings have visual impacts in all directions.

Changes in material or colour alone are not enough to provide articulation on a building. Such changes should accompany changes in the building mass, or at a minimum, be separated by significant three-dimensional architectural elements.

Design street facing facades with greater transparency and articulation at a human scale.

Design the built form with regard for adjacent properties to create coherent streetscapes.

Design the scale of buildings to offer a welcoming environment for pedestrians. Large blocks should be broken up with multiple buildings, generally not longer than 70m each.

In most circumstances, buildings should occupy the majority of the lot frontage.

Ensure that all accessory building features and components are well integrated into the building design and do not negatively impact the streetscape.

**Materials & Uses**

Design buildings that are contemporary and which reflect current cultural standards, technological innovations, sustainability objectives, and local, national and international standards for architecture and urban design.

Vary architectural details, materials, colours and textures to support a human scaled public realm and to distinguish between different building volumes and uses.

Place active uses on the ground floor along street facing elevations. Active uses include retail, personal services, lobby space, shared interior amenity spaces, community spaces, and residential units directly accessible from the street.

Where active uses are not possible, enhance the pedestrian experience through the rhythms, materials, articulation and massing of the built form.

Incorporate a range of building and unit types, uses, and built forms, tenures, and styles.

Highlight prominent built form elements with enhanced architectural treatments for all facades visible from the public realm.

Provide pedestrian weather protection for rain, sun and wind such as colonnades, canopies, awnings and balconies.

All visible elements of a building, including utilities (meters, conduits), HVAC (a/c units, vents) and loading/servicing areas are to be integrated into the design of the building and shown on elevation drawings as part of the building elevation approval process.
Design amenity spaces with high quality materials and features that are attractive, flexible and adaptable to various programming opportunities and seasonal conditions. Prioritize pedestrian comfort, safety, and barrier-free accessibility.

Amenity areas are to be safe, directly accessible from primary building entrances and physically and visually separated from vehicular traffic. Amenity space users must not have to cross drive aisles or parking areas to access amenity areas. Where such conflict is unavoidable, design priority pedestrian crossings with a high-contrast, alternate material which includes changes in colour, pattern and texture.

Delineate between communal and private areas and provide well-designed thresholds through thoughtful landscaping, low feature walls, changes in paving or ground cover or similar methods. Outdoor amenity areas are to be carefully designed for wind, sun and weather conditions.

Do not place amenity areas adjacent to vehicular or servicing areas such as loading and parking. Provide natural surveillance into shared amenity areas.

Orient balconies to maximize access to sunlight and views and to minimize overlook into surrounding private spaces.

Sensitively designed sustainability features may be integrated into amenity space design. Spaces intended for public use must be designed to be accessible without requiring permission to access. Likewise, public amenity spaces must not be designed to restrict access, discriminate against any user or user-type, or employ hostile design elements.

Do not create small, narrow, unassigned open spaces around and between buildings. Shared outdoor amenity space is to be provided at-grade wherever possible. Employ a mix of individual balconies/patios, shared at-grade amenity and shared rooftop amenity spaces to create a variety of recreation options and programming opportunities.

Place and orient outdoor amenity spaces to take advantage of natural lighting and wind conditions. Southern and easterly exposures give access to high-quality morning and mid-day light and can also allow the built-form to provide shelter from prevailing westerly and north-westerly winter winds.

Provide individual dwellings with direct access to their corresponding private open space. Use landscaping, low walls, or other passive screening techniques to buffer private open spaces from public and private shared spaces. Avoid fencing wherever possible.

Design private open spaces to have direct access to generous and well designed landscaped areas and to mitigate impacts from public realm.

Outdoor amenity areas are to be useable year-round and their quality is not to be impacted by other site functions. Provide physical separation between amenity spaces and snow storage/waste collection/delivery servicing areas.

Design shared spaces to provide multi-use functionality that encourages gathering and play (e.g. community gardens, shade structures, barbecues, water features, play areas, seating).

Connect shared spaces to existing streets, pedestrian connections, parks and natural areas. Shared spaces should not be surrounded by parking, loading or servicing areas and points of conflict between pedestrians and vehicles should be avoided.

Position windows and other buildings openings onto shared spaces to provide natural surveillance and encourage pedestrian animation.
Use continuous landscaping to reinforce pedestrian areas within a site.

Select vegetation with regard for their tolerance to urban conditions, such as road salt or heat. Give preference to native species and a mixture of vegetation that provides visual interest and wildlife habitat and aligns with objectives for screening, safety and four season design.

Utilize landscape design to mitigate microclimatic impacts and enhance four-season viability.

Design landscape and hardscape elements to provide colour, having regard for seasonal changes.

Provide a minimum 3.0m wide landscape area, in addition to any walls or fences, at the edges of sites adjacent to residential or institutional properties.

Plant trees, shrubs, and ground cover on any unbuilt portions of the site that are not required for other site functions. This includes any areas reserved for future phases of development.

Use green, low impact development (LID) and stormwater management technologies wherever appropriate.

Protect and feature heritage, specimen and mature trees on site by minimizing grade changes, protecting against construction impacts and preserving permeable surfaces.

Provide landscape areas between the building and the sidewalk with plant beds, planters, trees, street furniture and walkways to the public sidewalk.

Where trees are proposed within landscaped areas, adequate soil volumes are to be planned in order that trees may achieve a mature canopy size.

Coordinate and integrate all landscaping with above and below grade utilities, telecom equipment and transit infrastructure including stops and waiting areas.

Provide landscaping that positively contributes to Kitchener's urban forestry objectives.

Provide enhanced boulevard treatment by planting large canopy street trees where adequate soil volumes are available or can be provided, consistent with the City's urban forestry objectives.

Where boulevard locations and lot frontages are restricted, consider a range of alternative suitable locations for public and private trees.

Retain and incorporate existing trees and other natural features into new development planning where possible, using tree protection and conservation techniques to protect the integrity of the root soil zone as well as the existing growing and drainage characteristics of the site.

Design buildings to accommodate signs that respect building scale, cultural heritage resources, architectural expression and established streetscape design objectives.

Avoid visual clutter, but allow for variety and visual interest including different media, font styles, colours and design inspirations.

Design sign illumination to be task oriented and avoid glare/light spillover onto adjacent areas.

Locate and design ground-mounted and wall-mounted signs to complement the character and scale of the area and promote an active, pedestrian-friendly environment. Integrate all signage into the landscape design an architectural expression of buildings.

Allow for retailer identification where there are multiple buildings and uses on a site but avoid allowing individual corporate image, colour and signs to dominate either the site or public spaces.

All signs must comply with the City of Kitchener Sign By-law and any applicable design report.
Site Design

Public Art

Public art (size, location, medium) is to be planned in the conceptual stage of the development in order to integrate art works into the building and site design.

While public art may be a stand-alone element, integration as a part of a building design or the public realm is preferred, and can include architectural features and facade treatments, surface materials, street furnishings, lighting, information displays and utility elements. Public art can be multi-functional, providing seating, shade, landscaping and other enhancements.

Where public art is proposed along a wall or building facade, it is to be integrated into the site plan design process and architectural expression of the building, including massing, materials, landscape and lighting design. A mural or other post-construction public art element should not be used to justify the existence of blank walls or otherwise unactivated spaces.

Public art installations may be publicly or privately owned. It is strongly encouraged that private developers incorporate some public art elements within their developments to create a focal point in the development and become a prominent landmark for the community.

Public art should be sited in a manner which does not jeopardize other design objectives such as inclusivity, sustainability, barrier-free access or safety.

Public art is encouraged to be site specific, connecting with the location of the proposed artwork and drawing on natural and living heritage, culture and the local environment.

Public art is encouraged throughout the city, particularly within intensification areas, gateways, parks and open spaces and along multi-modal trails and pathways.

Public art must be installed in a manner that achieves a positive relationship in scale, spacing and materials with adjacent building massing, materials and architectural elements and, where applicable, open spaces and natural features.

Where appropriate, accent lighting is encouraged to highlight a public art installation. Lighting is to be controlled such that it minimizes impacts on dark-sky objectives.

DYK? Public Art is accessible from, visible from or located within the public realm and can range in size, form and medium. Good public art makes communities more engaging by creating distinct character and identity within neighbourhoods, providing key interpretations of local history, traditions, social issues and culture, fostering creativity, and instilling a sense of civic pride.

Lighting

Design site lighting for all building and user needs, including the public realm, pedestrian and amenity areas, transit stops, parking areas, servicing areas and building entry and egress areas.

Supplement site lighting with human-scaled lighting fixtures (either standalone or affixed to buildings) in order to accentuate and animate buildings and shared spaces, provide enhanced safety for pedestrians and increase opportunities for active use programming.

Design lighting to minimize glare and light spilling onto surrounding areas. All site lighting—including porch and other wall mounted lighting— is to be full cut-off (uplight zero or U0) and dark sky compliant.

Provide lighting that is appropriate to the street character and ground-floor use, with a focus on pedestrian areas.

Use pedestrian scaled lighting to clearly identify pedestrian routes, and illuminate public spaces.

Provide uniform lighting by installing a greater number of fixtures at lower wattages and mounting heights.

Site lighting is to have a correlated colour temperature (CCT) maximum of 3000K, or demonstrated equivalent.

Provide lighting that is consistent and human-scaled. Ensure that site lighting comprehensively addresses safety objectives. Avoid creating glare, ‘hot spots’ or excessively shadowed areas.

Using energy efficient lamps and avoid over-lighting, while prioritizing safety.

Use bollards, wall-mounted or lower-scale pole fixtures along pedestrian paths to provide human-scaled and ambient lighting.
Plan parking areas to be flexible and adaptable to future conditions including decreasing dependence on private vehicles, increasing usage of carshare, rideshare, public transit, active transportation, electric and self-driving vehicles, increasing severe weather events brought on by climate change, and the increasing scarcity and value of land.

Avoid placing parking between a building and the street or anywhere within the front yard.

Provide parking at the side and rear of buildings.

Clearly define primary vehicle routes on the site through the use of signage, curbing, bollards, and line painting. Separate parking areas from primary vehicle routes and driveway entrances to streets.

Provide conveniently accessible and easily visible locations for bicycle parking.

Locate parking areas for barrier-free parking spaces in close proximity to building entrances.

Parking areas are to accommodate the safe movement of pedestrians both on and off site.

Provide landscaping around the perimeter of parking areas and laneways.

Use landscaping to screen parking areas, to avoid illumination of adjacent properties and the public realm from automobile headlights.

Provide raised traffic islands to break up large parking areas, to a suitable scale and sized to accommodate shrub and tree planting. Select planting material that is easy to maintain, hardy and pollution and drought tolerant.

Ensure parking lot planting does not obstruct views of approaching traffic, pedestrians and cyclists.

Avoid the creation of entrapment areas and dead end parking aisles.

Provide adequate lighting levels and uniform coverage in parking areas, service utility areas, and beneath cantilevered portions of the building.

Link parking areas on abutting commercial properties to provide for movement between lots.

Provide intuitive and comfortable access for park-and-ride or multi-modal transit users, particularly if a transit stop is adjacent to or located on a site.

Above grade structured parking has similar impacts on the urban environment as any other building typology or use and will be held to the same design standards. See the Design for Structured Parking section of this manual for more detailed guidelines.

Driveway access should be located off of side streets or lanes wherever possible.

Share and consolidate vehicular access to parking areas between adjacent properties in order to reduce the extent of interruption along the sidewalk and the streetscape.

Maximize the distance between site access driveways as well as the distance between site access driveways and street intersections. Locate driveways with regard for the function of the site and the public right-of-way.

Ensure pedestrian and cyclist safety and maximize visibility.

Driveways are not to conflict with transit stop locations.

Provide pedestrian crossings over driveways in a contrasting, alternative material.
Integrate emergency access requirements into the site and landscape design.

Provide on-site vehicle circulation and parking which does not conflict with the use of emergency access routes.

Provide clear, unimpeded, continuous pedestrian passage to and from the building to enhance emergency access and egress.

Provide all required signage, hydrants, and other emergency access infrastructure such that it is integrated into the site, building and landscape design.

Maximize efficiencies by sharing or consolidating service and utility areas between different utility providers.

Enclose all service and utility equipment within buildings or screen them from both the street and neighbouring properties. This includes loading bays, utility boxes, garbage and recycling container storage, loading bays, utility metres and ramps and air conditioner compressors.

Eliminate conflict between service/loading areas and vehicle/pedestrian routes, prioritizing pedestrian safety, convenience and mobility.

Design on-site circulation to eliminate reversing or maneuvering on public streets.

Screen industrial/commercial outdoor storage from public streets and adjacent residential uses.

Locate continuous or frequent sources of noise and odour away from sensitive adjacent uses.

Use noise attenuation measures where necessary.

Design all access and servicing elements to contribute positively to the architectural expression of the building.

Where feasible, locate utilities underground to improve the appearance of a site, where appropriate and feasible.

Design air intake and exhaust elements into the architecture of the building. Minimize their visibility, especially from the public realm. Show all such elements on the elevation drawings.

Design the site to accommodate waste pickup, deliveries and servicing vehicles with turning radii that allows for complete turning movement/maneuvering on-site with minimal impacts to the public realm, the street, or pedestrian and cycling infrastructure.

Place waste locations, roll out areas and sorting areas so that there is no potential for conflict between users and vehicular traffic.

Provide adequately sized waste and recycling rooms which allow for sorting. Provide for the recycling of organics wherever possible.

Public-use receptacles should be conveniently located for pedestrians and attractively designed.

Design sites for practical functionality including snow removal and snow storage. Snow storage locations cannot interfere with required amenity spaces, pedestrian pathways or cycling infrastructure.

Place snow storage areas where they are in direct mid-day sunlight throughout the winter and spring months where possible. To encourage melting, snow storage areas should never be located in continuously shaded areas. Similarly, provide smaller, more frequent snow storage areas to increase melting speed, where doing so does not interfere with the quality of the public realm, pedestrian routes, or private outdoor amenity spaces.

Snow storage areas are to be placed such that they will not inhibit pedestrian movement even if they ‘overflow’ their demarcated area in times of heavy snowfall.