Promote site and building design that contributes to high quality living environments and attractive, walkable, diverse neighbourhoods and communities."

2.4.3 Enhancing the public realm, Municipal Development Plan

4.0 THE DEVELOPMENT GUIDE

IN THIS SECTION:

PUBLIC OPEN SPACE INTERFACE

Urban Design Objectives

- **Integrate** all parks and open spaces to form the Centre City **Green Loop** (see 2.5)
- **Preserve** and **enhance** existing parks and open spaces
- Increase **usable** public and private open spaces and tree planting
- Preserve **sunlight** access to all parks and open spaces
- **Activate** parks and open spaces and their edges
- Create **built form** that gives a strong sense of enclosure for parks and open spaces
- Incorporate **innovative** stormwater management practices wherever possible

Policy References

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- The City of Calgary's Environmental Policy
- Centre City Plan
- Land Use Bylaw

Guideline Sections

- 2.4 The Riverfronts
- 2.5 Parks and Open Spaces
- 3.1.3 Frontage Zone
- 3.2 Streetscape Elements
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.3 Green Infrastructure

4.1 Contextual Design Elements

4.1.1 Public Open Space Interface

DESIGN GUIDELINES

1. For buildings adjacent to public open space:
   a. Develop continuous street wall definition at public open spaces and Riverfront interfaces to generate a strong sense of enclosure for such open spaces and green areas.
   b. Site and shape these buildings to optimize sun exposure at the public open spaces adjacent to them.
   c. Provide a high degree of transparency at the building interfaces to maximize views for occupants to enjoy and passive surveillance of the adjacent public open space.
   d. Do not locate main building and/or lobby entries at public open space interfaces. Orient such entries towards the street.
   e. Provide secondary entrances along open public spaces to increase permeability and active edges while improving natural surveillance. Do not have fire exits and/or fire escape stairways, or service access and entrances as secondary entrances.

The building interface surrounding public open space should ensure optimum sun exposure.

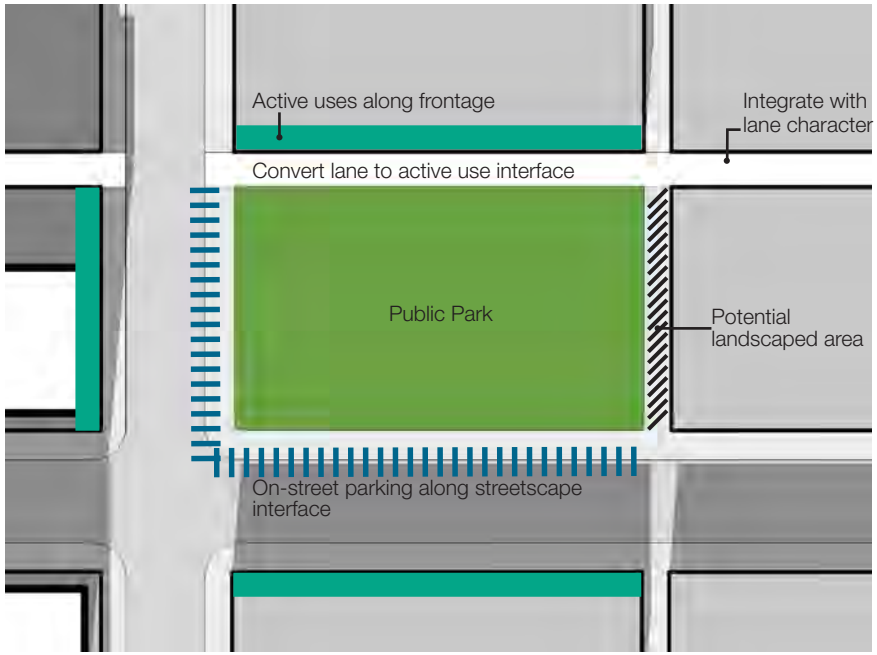
f. Keep the ground level of commercial building interfaces at the same level as the public open space.

g. Separate the ground level of residential building interfaces from the public open space to maximize resident privacy.

h. Activate the south-facing, non-residential building interfaces with preferable uses like cafés and restaurants at grade.

i. Provide semi-private landscaped areas like patios and courtyards at residential building interfaces at grade, with greater setbacks if necessary, for the transitioning of public open space to private residential space.

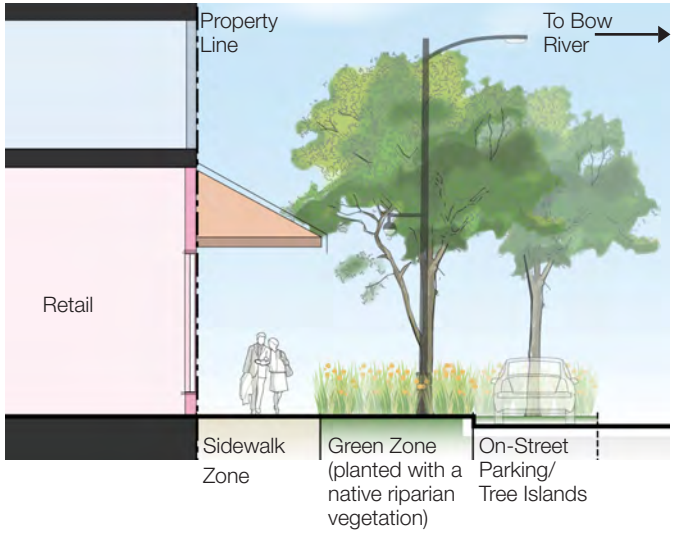
j. Activate building frontages along lanes that are between the buildings and the public open space, relating the uses here to the context of the lane character.

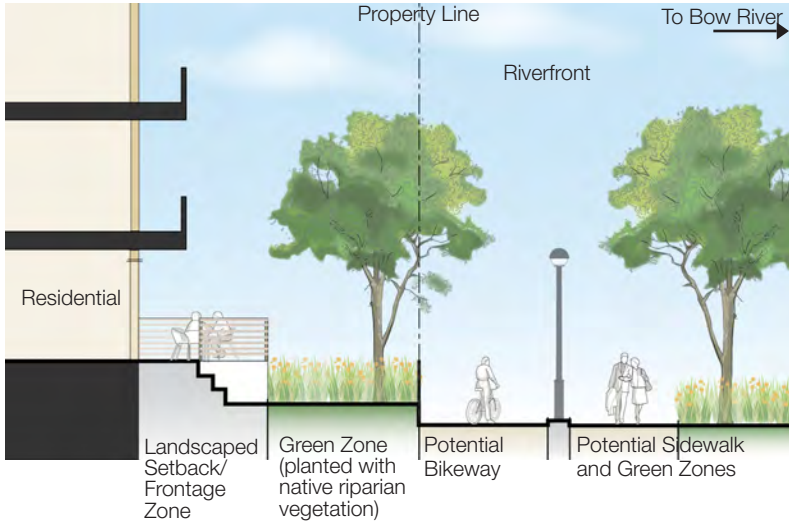


A partial block public park interface treatment

Provide active edges to buildings that face onto a public park or plaza. Set buildings back to provide good sunlight access to the public open space.

2. Buildings adjacent to the Riverfront:
   a. Locate active uses at the ground floor level of building frontages at strategic nodes along the Riverfront. Such nodes include Eau Claire, East Village, Peace Bridge and the Louise Crossing.
   b. Create 'green zones' for both commercial and residential building interfaces with the Riverfront, where desired. Use such 'green zones' to reinforce the natural riparian character while providing an additional green buffer between the buildings and the open space of the Riverfront.
   c. Use low maintenance, native plant/landscaping materials to reinforce the riparian character of the Riverfront.
   d. Preserve sunlight access and landscape views to the riverfronts.
   e. Reinforce green and active pedestrian and bike connections to the riverfronts.
   f. Design for flood resilience without compromising on pedestrian comfort.
   g. Apply design measures to mitigate bird-window collisions.





The top diagram shows an active use Riverfront interface section. The lower diagram shows a green Riverfront interface section.

ON-SITE OPEN SPACE

Urban Design Objectives

- **Integrate** all parks and open spaces to form the Centre City **Green Loop** (see 2.5)
- **Preserve** and **enhance** existing parks and open spaces
- Increase **usable** public and private open spaces and tree planting
- Preserve **sunlight** access to all parks and open spaces
- **Activate** parks and open spaces and their edges
- Create **built form** that gives a strong sense of enclosure for parks and open spaces
- Incorporate **innovative** stormwater management practices wherever possible

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Access Design Guidelines
- Public Art Policy

Guidelines Sections

- 2.4 The Riverfronts
- 2.5 Parks and Open Spaces
- 3.2.5 Street Trees
- 4.1.4 +15 Skywalk System to 4.1.6 Pedestrian and Vehicular Access
- 4.2.1 Frontage to 4.2.5 Street Corner Building Design Treatments
- 4.3 Green Infrastructure

4.1.2 Private and Publicly Accessible On-site Open Space

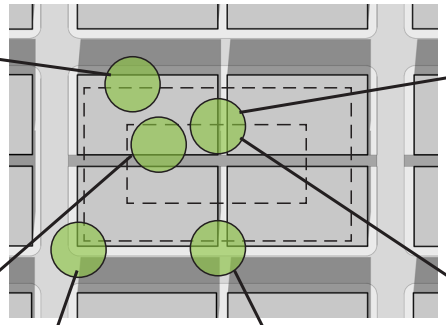
DESIGN GUIDELINES

1. General
   a. Design attractive, engaging and functional on-site open spaces with high quality, durable and contemporary materials, colours, lighting, furniture and signage at the Centre City.
   b. Integrate all publicly accessible private space with public open space to create a seamless contiguous public realm in the design of both their layout and function.
   c. Carefully locate, scale and maintain all on-site open space so that it allows for direct and/or convenient public access and accommodates active uses at grade.
   d. Frame on-site open space with retail frontages and have this space and the ground floor uses at the same level.
   e. For all residential units adjacent to on-site open space, elevate these units above grade so as to maximize privacy to occupants. This also allows for passive surveillance of the open space.

Locate open space for gathering people at sunny locations that offer optimum sun exposure.

On-Site Open Space Typologies

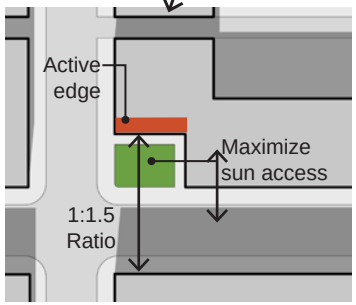
Typical Block



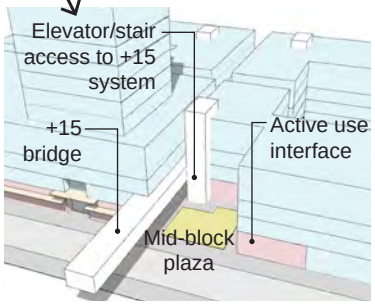
Landscaped setbacks with grade separation from sidewalks to enhance the privacy of residents.

Mid-block pedestrian connection with residential interface.

Courtyard/landscaped amenity roof.

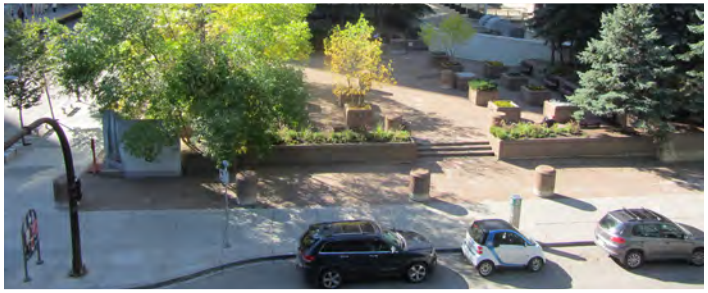


Sunny corner plaza.

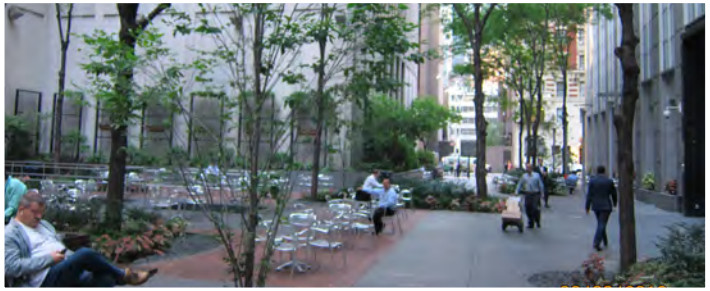


Mid-block plaza.

Mid-block pedestrian connection with commercial interface.



Sunny corner plaza.



Mid-block plaza.

f. Locate open spaces and gathering spaces at sunny locations that can offer optimum sun exposure.

g. Use landscape elements (e.g. adding trees) and transparent facade treatments (e.g. screens) to mitigate negative wind impacts at on-site open space when necessary.

2. Corner Plazas

a. Provide strong architectural corner design treatment at all street intersections. Treat corner plazas using various design interventions such as:

i. Locating corner plazas at the north-east corner of intersections;

ii. Animating corner plazas with active uses at the ground level; and

iii. Ensuring a comfortable, pedestrian-scale environment at corner plazas that is proportionate to the adjacent street right-of-way. A ratio of 1:1.5 between the east-west avenue right-of-way width and the plaza is recommended. (See lower left illustration of On-Site Open Space Typologies diagram)

3. Mid-Block Plazas and Pedestrian Connections

a. Locate mid-block plazas at sunny locations along the north sides of east-west avenues, where possible.

b. Integrate mid-block plazas with access points to the +15 system at the Downtown Core, where possible. (See 4.1.4 +15 Skywalk System)

c. Provide mid-block pedestrian connections with a comfortable, pedestrian-scale environment that responds to the surrounding built form height at the recommended enclosure ratio range of 1:1 to 1:2. (See 4.2.2 Street Wall).

Animate corner plazas with active uses to provide a comfortable and safe pedestrian environment.

d. Edge all mid-block pedestrian connections at commercial and/or mixed-use areas with active uses such as cafés, restaurants, shops and live/work units.

e. Activate mid-block pedestrian connections in residential areas by orienting residential units here directly onto the pedestrian connections.

4. Landscaped Setbacks

a. Landscape all required building setbacks on residential streets. If desired, locate private patios and/or gardens within these landscaped setback areas.

b. Provide private patio areas adjacent to residential units with usable, functional and attractive outdoor living space. Locate such private patios at the same level of the residential units, at the street level, or at a level in between these two levels depending on the patio location and the building setback width.

5. Courtyards and Landscaped Roofs

a. Optimize sun exposure at all residential courtyards and above-grade landscaped roofs used as both private and/or communal open space for residents.

b. Provide at-grade courtyards over underground parking where possible, with readily accessible connections from these to streets and lanes.

c. Provide residents with green space through landscaped roofs where above-grade parking is unavoidable. Design access points to such landscaped roofs from the street and lane with careful consideration of all user needs.

6. Urban Community Gardens

a. Create community gardens at grade, in sunny, non-windy locations, or on podiums or roofs, particularly in residential development to support social and economic activities. Include pedestrian lighting and sitting areas to enhance such community gardens as additional amenity space.

b. Use urban community gardens as gateway features for different neighbourhoods where possible.

The overlooking of private and community green amenity allows for natural surveillance and increases the sense of safety and security of its users.

HERITAGE INTERFACE

Urban Design Objectives

- **Conserve** historical resources and cultural landscapes, and sensitively **integrate** any new development
- **Respect** the context of areas that have heritage character and resources
- Support the retention and **adaptive reuse** of historical resources
- Build new developments that have **exceptional** architectural merit or great **sensitivity** in a heritage context
- Apply **contemporary** interpretations of traditional designs and details in new developments
- Use historically **authentic** materials that are robust and of high-quality

Policy Reference

- Standards and Guidelines for the Conservation of Historic Places in Canada (2010)
- Calgary Heritage Strategy and Policy
- The City of Calgary's Environmental Policy
- Land Use Bylaw

Guideline Sections:

- 2.7 Historic Resources
- 2.8 Character Areas
- 4.1.4 +15 Skywalk System
- 4.2.1 Frontage to 4.2.5 Street Corner Building Treatments
- 4.3 Green Infrastructure

4.1.3 Heritage Interface

In areas of the Centre City where new development will be integrated into the context of, or be adjacent to, historic resources, the following guidelines will apply.

DESIGN GUIDELINES

1. Integration of New Development in a Heritage Context

   a. Ensure that the new development is 'contextual' with adjacent heritage buildings and/or the existing heritage character of the block as per setback, scale, massing, street-wall height and landscaping character. The land use bylaw specifies the rules for such contextual features. However, the historical contextual character will be respected to the maximum degree while aligning with the land use bylaw.

   b. Divide the massing of large developments to reflect the generally smaller, human scale of existing heritage buildings in the area. This can be achieved by dividing the mass of a large new development into smaller modules to reduce the new building's sense of scale. The massing should feature facades with height and width proportionate to contextual heritage buildings. The taller portion of the new building will be placed away from the street.

Whilst the building in the middle of the above photo is clearly a contemporary building, it exists side-by-side harmoniously with historical buildings, using high-quality and compatible finishes.

c. Design new developments to be physically and visually compatible with, subordinate to and distinguishable from the existing heritage character of the immediate context.

d. Align the redevelopment of heritage buildings, including the incorporation of heritage buildings within new developments, with the Standards and Guidelines for the Conservation of Historic Places in Canada (2010).

e. When it is not possible to retain a heritage building in its entirety, pursue the partial retention of the building and its facades, to have these incorporated in the new development. If such a development approach must be taken, the development, in general, should showcase and emphasize the remaining heritage building. This may be accomplished in numerous ways, including setting back the new development and keeping as many structural bays behind the heritage building's facade as possible.

Exceptional Architectural Merit

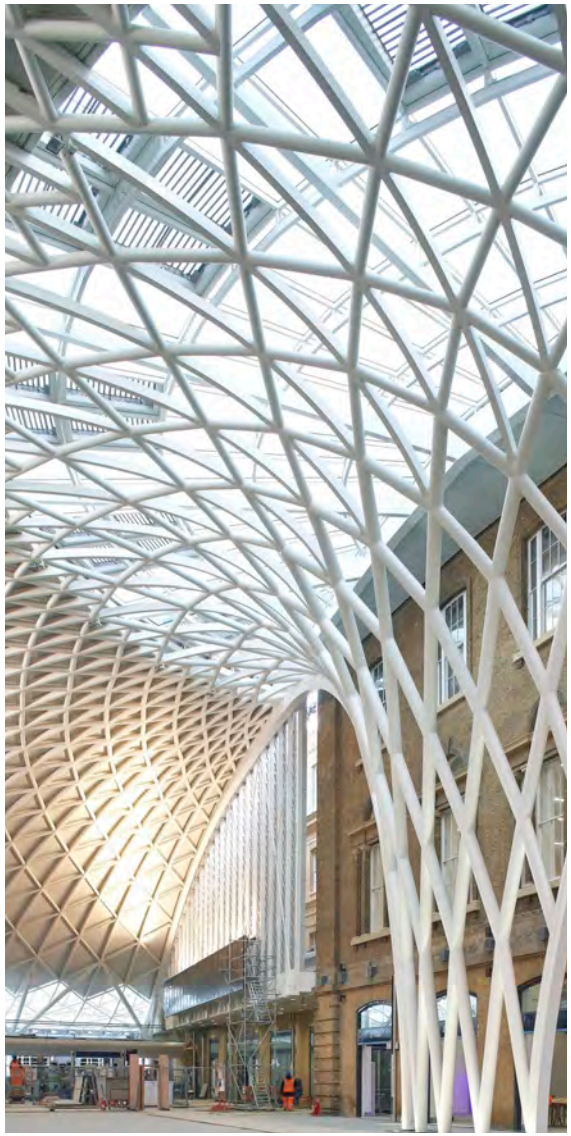
Recognize new development of 'exceptional' architectural merit that may not closely align with some of the guidelines in this section. Valued heritage-character areas throughout the world - present and in the past - have evolved and are enriched by exceptional developments that have deviated from the existing character of an area. Permit such exceptions in the Calgary's Centre City areas with heritage character. Exceptional architectural merit constitutes highly original and innovative design, and high-quality materials.

This new development reduces its perceived scale through differentiated vertical and horizontal articulation in its massing and facade treatment. Its design, including the use of high-quality, traditional materials, is respectful of the historical context.

This contemporary development is respectful of the adjacent heritage building to its left, using compatible fenestration (or window treatment), cornice lines, awnings and cladding materials.

2. Materials and Facade Elements of New Developments
   a. Echo the historical stylistic and design features of the area in any new development to respect the context. Such features include window patterns and placements, roof slopes, floor levels, building finishes and materials. Specifically for commercial contexts, incorporate features such as cornice lines, roof lines, storefront alignment, entrance placements and other adjacent historic architectural features in the new development.
   b. Use high-quality materials of a long-lasting/ permanent nature - and employ high-quality design of our own time - so that one day new development may become heritage itself. Materials which are historically authentic and are proven to be of a long-lasting/permanent nature include brick, stone, terra-cotta, wood siding (solid), wood shingles and cement stucco (residential use); such materials may be used in creative and contemporary ways.
   c. Avoid copying or mimicking the design of heritage buildings in the area to create a false sense of heritage character; contemporary interpretations of traditional design and detail are encouraged.

The finishing of this new building shows how historically authentic high-quality and long-lasting materials can be used in contemporary design.



This new development shows exceptional architectural merit whilst promoting the retention and reuse of a historic resource.

+15 SKYWALK SYSTEM

Urban Design Objectives

Public Realm Integration and Connectivity

- Provide better **integration** of the +15 system with the surrounding uses, adjacent streets and public spaces
- Ensure **sensitive** and **creative** design of +15 bridges
- Respect and maintain key view corridors (see 2.6)
- Ensure overall **pedestrian connectivity** within the +15 boundaries with emphasis on retail areas (see 2.3)
- Discourage +15 links to areas outside of the +15 boundaries
- Create seamless and enjoyable pedestrian movement throughout the +15 system
- Optimize **visual connectivity** in the design of the +15 system

Animation and Quality Consistency

- **Animate** the design of +15 bridges using lighting, colours and dynamic structure and form (see 2.12)
- Locate retail and other **active uses** at strategic locations to animate the +15 system (see 2.3)
- Manage quality event **programming** to activate the +15 system
- **Maintain** the existing +15 system well, with sensitive retrofitting where needed
- Create quality space through The City's provision of "**bonusable**" public amenities (see Bylaw 33P2013)
- Incorporate "open to sky" walkways in the +15 system designed as **amenity roofs**

Policy Reference

- +15 Policy
- Downtown Retail District Strategy
- Centre City Illumination Guidelines
- Access Design Standards
- Bylaw33P2013

Guideline Sections:

- 2.9 +15 Skywalk System
- 4.1.2 Private and Publicly Accessible On-site Open Space
- 4.1.5 Seasonal Design and Sunlight Access
- 4.2.1 Frontage

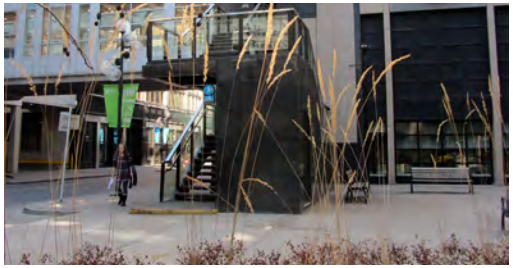
4.1.4 +15 Skywalk System

DESIGN GUIDELINES

The +15 Skywalk System provides weather-protected links between buildings, but may lessen street activity at grade. This section provides various design strategies to positively create and strengthen relationships between the public realm and the +15 system at the building frontages.

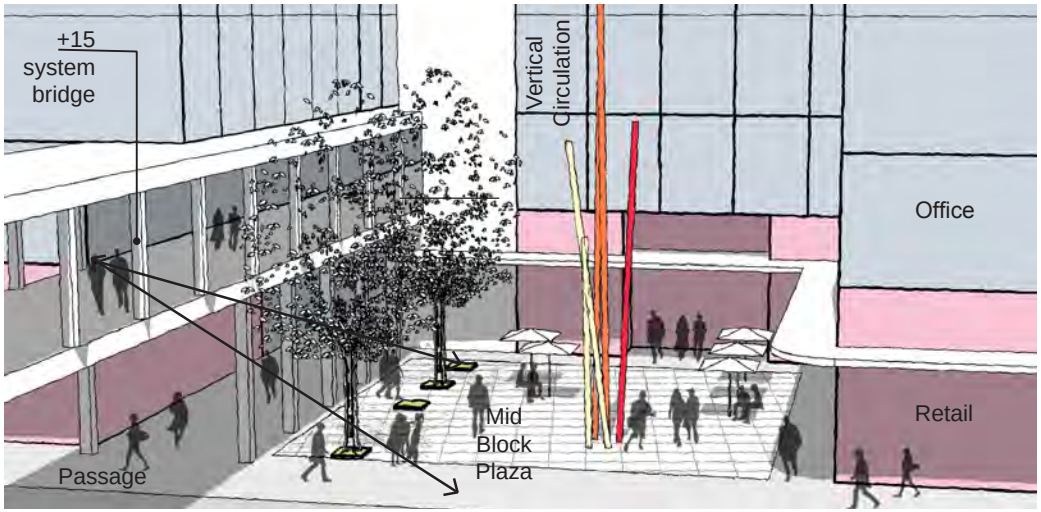
Also see:

- 2.9 for +15 system urban context map and key considerations
- Bylaw 33P2013 for "bonusable" public amenities including +15 bridge, feature access and active walkway



The +15 system connects to the streetscape through a corner plaza.

Active uses and weather protection animate connections between the +15 and the public realm.



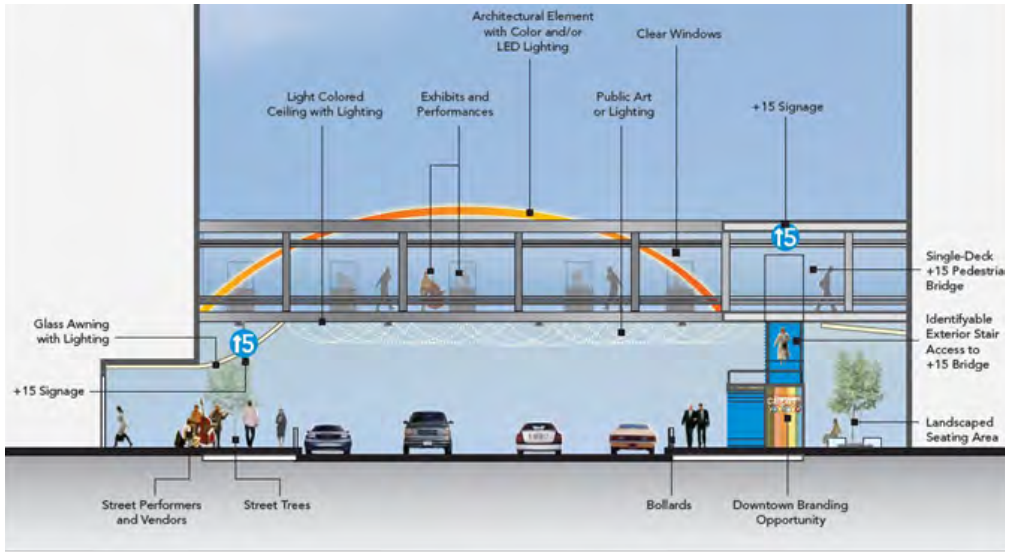
A +15 street-level access point that is well integrated with the streetscape through at-grade mid-block plaza.

1. Street Access to +15 System
   a. Increase street-level entrances to the +15 Skywalk System through publicly accessible spaces that are transparent and sheltered or enclosed (see also 4.2).
   b. Ensure all connections between the +15 system and its street-level access points are direct and well-animated.
   c. Incorporate animated, at-grade plazas that are lined with active uses and have good sun exposure, where possible, in the design of active street-level entrances to the +15 system.

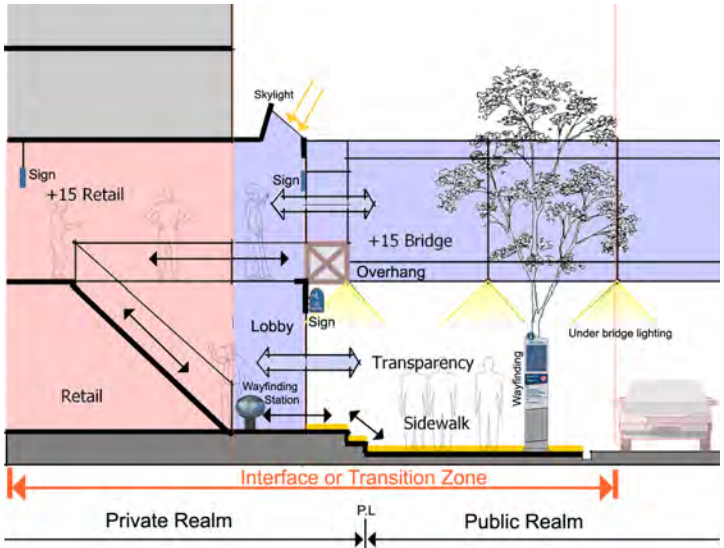
See Map 17 +15 Skywalk System for opportunities to establish such active and direct connections with streets. These include:

- Major transit corridors/LRT Stations
- High-density mixed-use office complexes (15.0 to 20.0 FAR)
- Parks and open spaces
- High Streets
- Major public parking structures
- Streets along the +15 boundaries

2. +15 System Design Treatment
   a. Scale the design of +15 bridges so that they are highly transparent and visually lightweight, with minimum dimensions as follows:
      i. minimum clearances of 4.75m over roads and lanes for both +15 bridges and lane links;
      ii. minimum clearances of 6.0m over LRT corridors at intersections;
      iii. minimum clearances over CPR right-of-ways, determined on a site-specific basis;
      iv. minimum unobstructed widths of 4.5m for +15 bridges, walkways and lane links; and
      v. minimum unobstructed widths of 2.0m for +15 stairs.
   b. Maintain visual access between the +15 system and both the streets and adjacent open space.
   c. Design the +15 system with elements that brighten, animate and enhance the appearance of the system from the street level, through the following ways:
      i. special lighting treatment;
      ii. temporary and/or permanent public art installations; and
      iii. contemporary, high-quality materials with unobtrusive colours and textures and other streetscape elements to complement the design of the +15 system.



The design treatment of a +15 bridge and its access point at the street-level entry.



A +15 Skywalk System complete with both vertical and horizontal connectivity.

SEASONAL DESIGN AND SUNLIGHT ACCESS

Urban Design Objectives

- Preserve and optimize **sunlight** access to all public and private realm
- **Orient** and **design** buildings to minimize shadow impact on streets, open spaces, parks and neighbourhoods.
- Mitigate negative **wind** impacts
- Design for **snow** storage and removal
- Encourage **seasonal**, decorative and experiential lighting installations
- **Program** a variety of events to activate the public and private realm throughout the year
- Design for safe pedestrian **movement** and **comfort** in the winter season

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Public Art Policy
- Beltline ARP
- Land Use Bylaw

Guideline Sections

- 2.12 Seasonal and Night Design
- 3.2.5 Street Trees
- 4.1.2 Private and Publicly Accessible On-site Open Space
- 4.2.1 Frontages to 4.2.6 Upper Building Level Impacts
- 4.3 Green Infrastructure

4.1.5 Seasonal Design and Sunlight Access

People enjoy streets, buildings and places that are well designed and responsive to the weather and seasonal variations. For a winter city like Calgary, the success of any public realm lies in the careful consideration of winter conditions in its design. The following design guidelines aim at designing great public spaces for all day use through the different seasons, with optimized sun access to these places.

DESIGN GUIDELINES

1. Weather Protection
   a. Apply weather protection treatments to help mitigate wind impacts in all developments. Minimize adverse wind impacts to the public realm using sensitive site design, building form, massing and enclosure, landscaping, continuous street wall heights, various forms of sheltering and recesses.
   b. Provide canopies along building frontages whenever possible to shelter pedestrians from the weather. Incorporate various at-grade, transparent and sheltered or enclosed publicly accessible spaces, such as covered pedestrian walkways/gallerias, indoor parks, winter gardens or colonnades.

Use continuous canopies on key retail streets for weather protection as well as to enhance human scale.

Calgary Sunlight Access Parameters

Design new development to minimize shadowing of streets and open spaces. In all development applications, demonstrate how the tower and building massing are designed to minimize shadowing impacts. Consider the following in the sun access/ shadow impact analysis:

i. Shadow casting and sun access at the spring/fall equinox at 10 a.m., noon, 2 p.m. and 4 p.m.

ii. All pertinent information for sites where adverse shadow impact is a major concern

iii. Calgary's time zone of Mountain Daylight Time (-7), latitude of 51˚6' and longitude of 114˚1'

Use decoration and lights to enhance pedestrian experience of seasonal changes at parks and open space.

Remove snow for safe pedestrian movement during winter.

See guidelines in 4.2.4 Facade Articulation on design considerations for canopies and colonnades.

c. Consider pedestrian winter needs in the design of all pedestrian amenities such as sidewalks, crosswalks, bikeways and the +15 system. Enhance pedestrian comfort through the following features and conditions:

   i. communal heaters and heat lamps at ground level within transit station waiting areas; sheltered fire pits; heated steps and ramps; canopies/extended glass awning over patios, colonnades, gallerias, operable/retractable transparent windows;
   ii. street furniture suitable for all seasons, such as wooden seats instead of concrete;
   iii. sensitive location of street seating amenities, responsive to the local climate conditions;
   iv. generous pedestrian lighting;
   v. covered bike parking to increase usability in winter;
   vi. durable paving materials that tolerate freeze-thaw cycles;
   vii. transit amenities with generous shelter and space to accommodate drifting snow and wintry conditions;
   viii. snow-melt systems at key, high-use areas;
   ix. careful street tree planting to avoid shadowing and icing over of paved surfaces in winter, as well as to mitigate negative wind impacts;
   x. strategic placement of high canopy deciduous trees for summer shade and winter heat; and
   xi. frequently spaced planting islands and boulevards for snow storage and melting or removal, in addition to stormwater management.

d. See street-level sheltered or enclosed connections guidelines in 4.1.4 +15 Skywalk System.

e. Use encroachment agreements to enable the provision of weather protection where infringement on The City ROW by weather protection installations is unavoidable.

2. Sunlight Access
   a. See Map 21 Shadow Sensitive Areas (under 2.12).
   b. Optimize sun access in general, to adjacent public realm, such as the opposite street frontage, public open space and on-site open space. Consider:
      i. stepping back the higher levels of building podiums and/or the upper parts of street walls to optimize sunlight access to the podium level of the building facade especially on the north side of east-west avenues;
      ii. sculpting the form of upper building levels to optimize sun access to the public realm on larger sites;
      iii. using creative solutions, such as directing reflected light, to allow sunlight access to the public realm especially on smaller sites and neighbouring, north-facing buildings; and
      iv. placing and spacing towers, and orienting mid-rise buildings to minimize adverse shadowing of opposite internal courtyards and building frontages, while ensuring natural light access, views and privacy, especially for residential units.
3. Experiential and Decorative Features
   a. Incorporate light, texture, colours and the application of contemporary technology and materials creatively in the design of people-gathering spaces to animate these places. Such places include high streets, parks, open spaces, urban plazas, +15 Skywalk System, the Stampede Parade route, potential locations for sPARKs and Neighbourhood Centres and the identified Gateways to the Centre City.
   b. Use audio-visual, kinetic and other interactive features to reflect seasonal changes and/or events to enhance pedestrian experience and use of the public realm.
   c. Provide event programming to activate public gathering spaces and streets such as pop-up parks, street vending, temporary or seasonal farmer markets, food trucks, artisan exhibitions and street performances.

PEDESTRIAN AND VEHICULAR ACCESS

Urban Design Objectives

- Minimize pedestrian and vehicular **access** conflicts
- Design for **safe** and convenient pedestrian movement for all ages and abilities, in all seasons
- Design for **pedestrian comfort** especially in the winter season
- Promote **natural surveillance** of streets and lanes
- Create **visual cues** to facilitate pedestrian and vehicular navigation

Policy Reference

- Access Design Guidelines
- Public Art Policy
- Land Use Bylaw

Guideline Sections

- 2.1 Streetscape Characters
- 3.1 Streetscape Zones
- 3.2.1 Public Sidewalks
- 3.2.5 Street Trees
- 3.3 Lane Character Typologies
- 4.1.2 Private and Publicly Accessible On-site Open Space
- 4.1.4 +15 Skywalk System
- 4.2.1 Frontage to 4.2.4 Facade Articulation
- 4.3 Green Infrastructure

4.1.6 Pedestrian and Vehicular Access

DESIGN GUIDELINES

1. Accessibility and Wayfinding
   a. See guidelines in 3.2.1 Public Sidewalks.
   b. Integrate wayfinding features with clear directional signage into the design of all new development wherever possible and needed. Ensure signage design is legible and accommodates the needs of the aging population.
   c. Place services frequently used by the public at visible, prominent and convenient locations, such as at entries or along the street front.
   d. Provide direct pedestrian access to parking from streets. Ensure stairs for such access are highly visible at all levels, from the street.
2. Safety And Security
   a. See guidelines in 3.2.1 Public Sidewalks.
   b. Use appropriate materials in paving treatment for safe pedestrian and vehicular movement. Consult with The Advisory Committee on Accessibility for advice on alternative paving treatments that would allow persons with mobility challenges to reasonably manage their travels.
   c. Provide multi-sensory features to minimize vehicle-pedestrian conflict, such as textured paving, warning lights and sounds and similar safety devices. Areas of potential vehicle-pedestrian conflict include vehicle access points to parking facilities and service access points.
   d. Provide lighting for safety on buildings and at the private and public realm to illuminate sidewalks, entrances, pedestrian pathways and amenities.
   e. Place doors, windows, balconies and street-level uses to provide lines of sight for natural surveillance of the street, private and public realm.


Use attractive vehicular entry doors at a street frontage.

   f. Ensure a high degree of transparency at street-level where appropriate, to provide views into spaces behind walls or plantings, at corners and along lanes or narrow passageways.
   g. Provide temporary and/or alternative uninterrupted safe pedestrian movement when construction is underway in all new developments.
   h. To manage access and security needs, indicate clearly the extent of and boundaries between publicly accessible private open space and private open space.
3. Vehicle Access
   a. Avoid locating vehicle access on the short sides of city blocks along north-south streets, especially on key retail streets.
   b. Provide all service and parking access through service lanes in all new developments, appropriate to the character and function of the lane typology. Ensure safe, efficient movement of private and service vehicles through all lanes, except enhanced lanes. This would help ensure contiguous public realm and sidewalks for

unimpeded pedestrian movement and connectivity. It also allows for better street wall continuity and definition.

c. Do not close lanes except for enhanced lanes with limited or no vehicular access.

d. Where there is no lane and/or reduced lane access:

i. limit vehicle access to 2 per the standard city block length on east-west avenues;

ii. locate vehicle access at a minimum of 30.0m away from corners or intersections, and from other vehicle access points; and

iii. share the use of vehicle access in multiple ownership circumstances.

e. Locate all loading docks and ramps to prevent physical obstructions and/or interference to the public realm.

f. Keep the size of vehicular entrances to the minimum width and height feasible for access.

g. Screen all vehicle access points with attractive garage doors and/or gates that contribute positively to the street and/or lane character and the public realm.

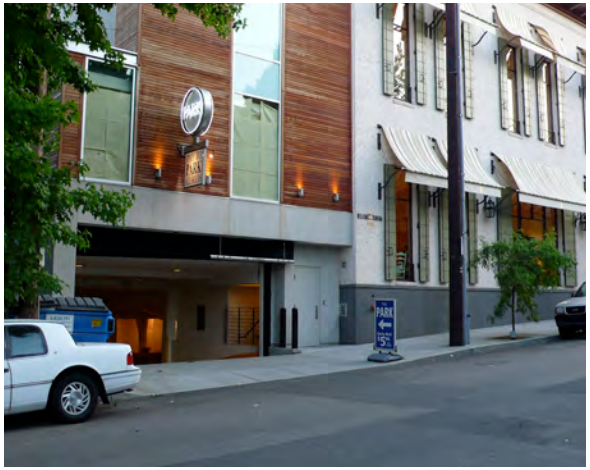
4. Parking

a. Provide below-grade parking for all required on-site parking.

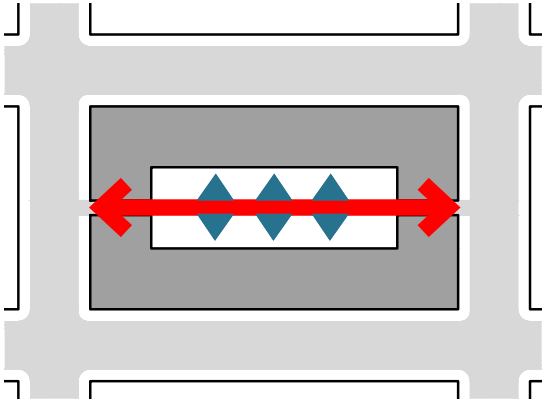
b. Where above-grade and/or structured parking is unavoidable, line the parking facility with active and/or retail ground floor uses throughout the entire length of its street frontage. Screen all building levels above ground of such parking facilities with quality architectural and/or landscaped facade treatments. This is to conceal the parking use at grade or at the street level.

c. Reduce the visual impacts of parking facilities, their entrances and related signs and equipment as much as possible.

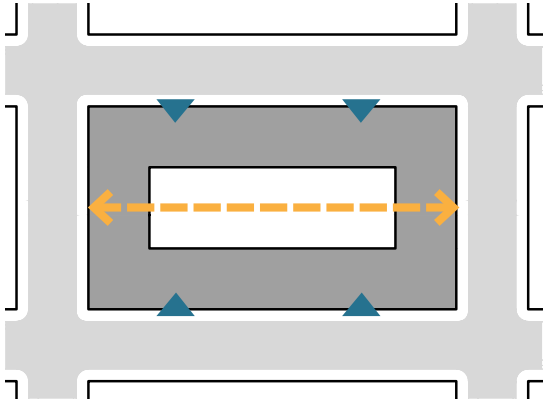
d. Break large parking areas into smaller areas, and screen them using trees, other landscaping and/or fencing.



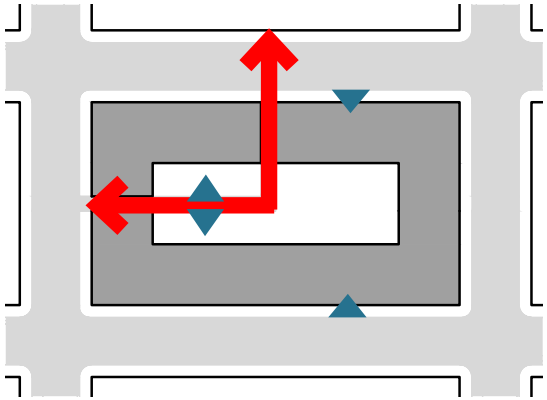
Limit the number and width of vehicle entries along a street frontage to maximize continuity of street wall and the public realm.



Full Vehicle Lane Access



No Vehicle Access at Lane with Pedestrian Access Only

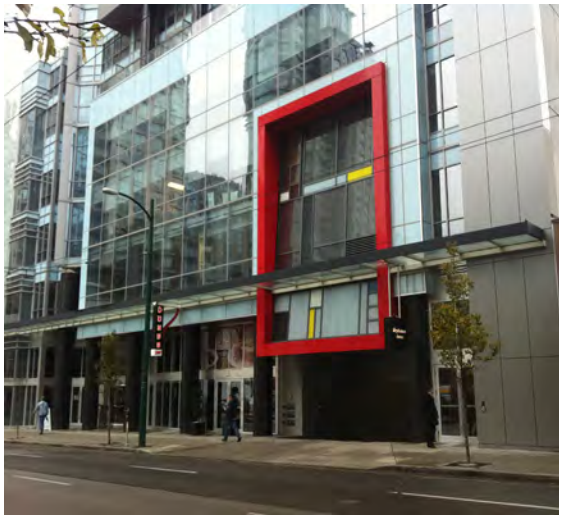


Reduced Vehicle Access at a Partial Lane

Legend ▼ Parking/Service Entry ↔ Parking/Service Access ↔ Pedestrian-Only Access

The above figures show different parking and service lane access options at a city block.

Line above-grade parking facilities with active uses at the street level.



Use bold colours and signage to clearly indicate parking entries.

e. Design at-grade and above-grade parking structures to integrate architecturally with the rest of the building and streetscape.

f. Design parking areas to allow for multiple uses in multi-residential development, such as children's play spaces, outdoor gathering areas, sports courts or recreational space for residents.

5. Services and Utilities

a. See guidelines in 3.2.9 Utilities.

b. Place and design service entries, loading docks, recycling and waste facilities away from pedestrian areas or in a less visible location of the development site to reduce impacts on pedestrian circulation and building aesthetics.

c. Maintain attractive and safe edges through screening, planting, or other design treatments where service facilities abut pedestrian areas or the perimeter of the property.

d. Locate building utilities such as meters, mechanical boxes and ventilation shafts within the development site, in a building alcove, or a landscaped area that is fully screened from view of the public realm.

FRONTAGE

Urban Design Objectives

- Create **attractive**, **fine-grain** and **animated pedestrian-friendly** street frontages that encourage and support active, safe, engaging and healthy street life and events for all ages
- Create attractive and **multi-functional** building frontages with lanes through active retail and/or residential uses at street level
- Design building frontages that promote the safe use of **streets** and **lanes** for both **pedestrians** and **vehicles**

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Slope Adaptive Development Guidelines Policy
- Land Use Bylaw

Guideline Sections:

- 2.3 Retail Nodes and Corridors
- 2.8 Character Areas
- 3.1.3 Frontage Zone
- 3.2 Streetscape Elements
- 4.1.1 Public Open Space Interface
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.3 Green Infrastructure

4.2 Built Form

4.2.1 Frontage

Design buildings to create and support high quality pedestrian environments in the Centre City:

- at a scale that relates well to the neighbourhood context;
- with street walls that have articulation and frontages to generate active and attractive streets and open spaces; and
- that provide sunlight and privacy for their occupants.

DESIGN GUIDELINES

1. Commercial and Residential Street-Level Interface
   a. General
      i. Use a minimum floor-to-floor height of 4.5m for ground floor heights, to accommodate the possibility of future retail uses.
      ii. Minimize building setbacks to achieve street wall consistency where possible and/or desired, and reinforce the intentions of existing Area Redevelopment Plans (ARPs) in all building setbacks. Accommodate underground parking at building setbacks where and when allowed.

A sensitive treatment using gently sloped ramp and clear step placement at a street corner to accommodate grade change.

Gently sloping surfaces provide zero level change at the building entrance and accommodate grade-separation requirements of a site at the floodplain. This development shows a seamless interface treatment between private development and the public ROW.

iii. Orient all primary lobby entrances and active ground floor uses towards the street.

iv. Provide frequent building entrances to suit the surrounding use intensity, at-grade building uses and streetscape type, as follows:
   - On streets requiring a fine-grain rhythm of shop-fronts and/or residential access, space the building entries to no more than 20.0m apart.
   - On streets where a coarser grain of residential and/or office entries is acceptable, space building entries to no more than 40.0m apart.

v. Buildings located at the floodplain are required to be elevated in accordance with the Land Use Bylaw and the Alberta Environment Regulations. This is to ensure protection from the 1 in 100 year floods. Where grade changes are unavoidable, such as in areas with these floodplain restrictions:
   - locate ramps and steps clear of the main path of pedestrian movement, away from building corners, minimizing their sizes and appearance;
   - incorporate sloped and/or ramped floors using the zero level change principles in their design; and
   - preferably, use interior steps and ramps to accommodate the grade changes.

vi. Incorporate at-grade active uses (such as retail use, commercial display space, urban plazas, interactive public art, lighting, blade signage, etc) to activate the building frontage.

vii. Provide building and site lighting to ensure all grade separated areas are well lit.

viii. Use multiple smaller levels to avoid having single retaining walls that are large and blank.

ix. Scale grade separations to act as seating walls wherever possible, for pedestrians to rest.

x. Use transparent glazing to provide visual access or views to internal uses.

xi. With large format retail development, when located at grade, line this with smaller shops to reduce its building bulk, increase fine grain in its street frontage and prevent blank wall frontages.

xii. Do not set back buildings along all key retail streets where possible, especially at the Downtown Core.

xiii. See 4.1.1 (2) for interface treatment of buildings adjacent to the Riverfront.

Provide outdoor dining at key retail streets to enhance street level activation.


In areas requiring floodplain considerations, accommodate shop access through the careful design of stairs and/or ramps within the building or tenancy.

b. Ground Level Retail Interface

i. Provide street level retail uses relevant to the identified retail nodes and corridors.

ii. Provide a seamless grade transition between shops and the sidewalk.

iii. Locate outdoor dining and retail uses on retail-oriented streets to animate and activate the streetscape, where possible.

iv. Create a fine-grain rhythm of multiple shop fronts, frequent entrances, shop display windows, architectural design articulation, canopies and signage along retail streets.

c. Ground Level Office Interface

i. Do not extend building entries/access points to towers beyond 30 per cent of the length of their facades at grade, along street frontages.

ii. Avoid having sheer towers extend directly onto adjacent sidewalks so as to minimize impacts on pedestrian-scale and amenity quality of the streetscape. This would also mitigate wind impacts at the street level.

iii. Maintain active uses like retail frontages where possible, at all office and live/work streets.

iv. Where continuous retail use is not immediately viable in key commercial areas such as the Downtown Core, locate interim uses and amenities like public art, cultural space and exhibition areas at grade.

v. Should continuous retail use be not immediately viable at transition areas like the Beltline, activate the ground level through internal uses. Examples include having continuous transparent windows at street level and/or locating internal active uses such as office and cafés along the street interface.

Keep entrances and entrance lobbies to towers within 30 per cent of the facade at grade along street frontages.

Line large format retail uses with smaller shops at grade to reduce building bulk, with fine grain street frontages to prevent having blank walls along street frontages.

d. Ground Level Residential Interface

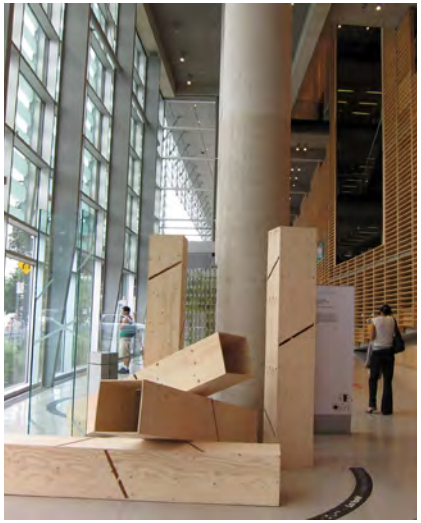
i. Provide a grade separation between the ground floor level of residential units and public sidewalks, to offer privacy for residents. The optimal range of grade separation is 0.5m to 0.9m. Where grade separation greater than 0.9m is unavoidable, increase the setback distance to allow for a soft landscaped buffer treatment with a pedestrian-friendly interface at the adjacent sidewalk. Similarly, where grade separation less than 0.5m is unavoidable, provide greater setbacks with soft landscaped buffer to ensure privacy for residents.

ii. To accommodate such grade separations, use appropriately scaled stair access (or ramp in the case of accessible units) and landscaped terraces consisting of small vertical walls, low and visually permeable fences, and CPTED-aligned (Crime Prevention Through Environmental Design) horizontal and vertical landscaping. Avoid using high walls and fences.

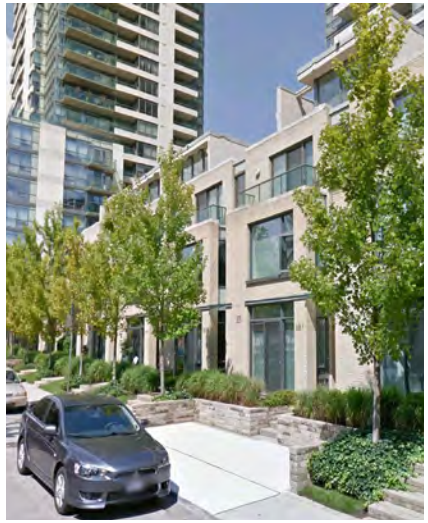
iii. Accommodate building projections such as balconies and/or insets at building setback areas where possible. Determine sensitively factors like location, intensity of use and safety in the design of these building components.

iv. Provide private open space for dwelling units like patios, terraces and gardens within building setback areas where possible.

v. Provide separated or individual primary access to the street from each dwelling unit, whenever possible.



Consider interim uses at grade such as public art, cultural and/or exhibition space at areas with less intensity of use.



Provide grade separation and greater landscape setbacks between the sidewalk and ground floor of residential units to increase privacy for residents.

A retail street frontage with a fine-grain rhythmic repetition of active uses, multiple shop and lobby entrances, all oriented towards the street.

STREET WALL

Urban Design Objectives

- Establish appropriate **street wall heights** to maximize street definition and a sense of **enclosure** for streets and open spaces
- Allow for optimal access of **sunlight** to and sky **view** from sidewalks and open spaces
- Provide for great **pedestrian** comfort and **human scale** street experience

Policy Reference

- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Slope Adaptive Development Guidelines Policy
- Land Use Bylaw

Guideline Sections:

- 3.1.3 Frontage Zone
- 3.2 Streetscape Elements
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.3 Green Infrastructure

4.2.2 Street Wall

DESIGN GUIDELINES

1. Street Wall Height to Street Right-of-Way Width Ratios

   a. Design buildings to form a consistent and strong edge to streets, especially at the first 9.0m from grade. This generally consistent minimum building height helps to establish a street wall, creating a sense of enclosure for streets and the public realm.

   b. The proportion of the height of street walls to the width of a street's right-of-way determines the character of the street and the quality of the pedestrian experience. Best practices show good street definition and enclosure are achieved using the optimal ratios of street wall height to street right-of-way width of between 1:1 and 1:2.

   c. Refer to the street right-of-way widths for the Centre City as identified by The Transportation Department at The City of Calgary. Use these identified street right-of-way widths and the optimal street proportions/enclosure ratios ranging between 1:1 and 1:2 to determine the appropriate street wall heights needed to maximize street definition and enclosure for a pedestrian-scale public realm.

   d. Vary building heights along a block length to increase street wall height diversity, as well as allow access to sky view, where appropriate. Heights varying between 1 and 2 storeys are preferred. Opportunities for such variations of street wall heights include:

      i. residential neighbourhood streets and high streets – where the optimal ratio could be reduced to emphasize pedestrian scale;

      ii. an open space – where the optimal ratio could be reduced to provide a better sense of enclosure, enhance human-scale and allow more sunlight access; and

      iii. where street wall height diversity is preferred to avoid uniformity and monotony in the street frontage treatment, or to integrate with historical street frontages and buildings.

   e. Step back street walls by a minimum of 2.5m at the upper levels of buildings to allow sunlight access to sidewalks, open space and building podium amenity spaces to the north of east–west avenues. The sunlight access would also enhance the growth and health of street trees.

   f. Use varying design details, different wall surface treatments and modulations as well as different materials to create street wall facades that contribute positively to pedestrian experience of the streetscape.

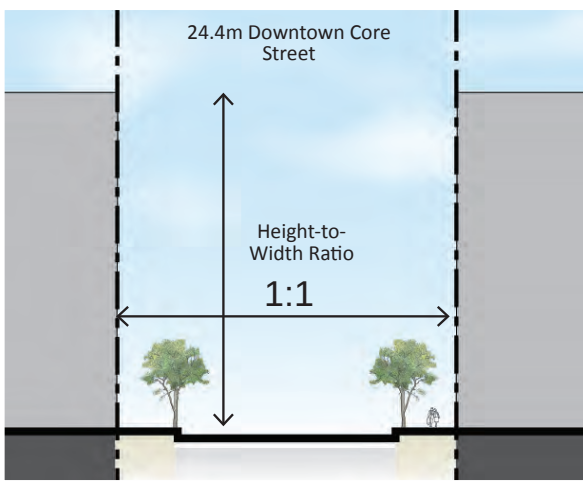
   g. Reinforce the intended street wall character by extending the street wall facade treatment to wrap around corners on sites fronting onto street and lane intersections.

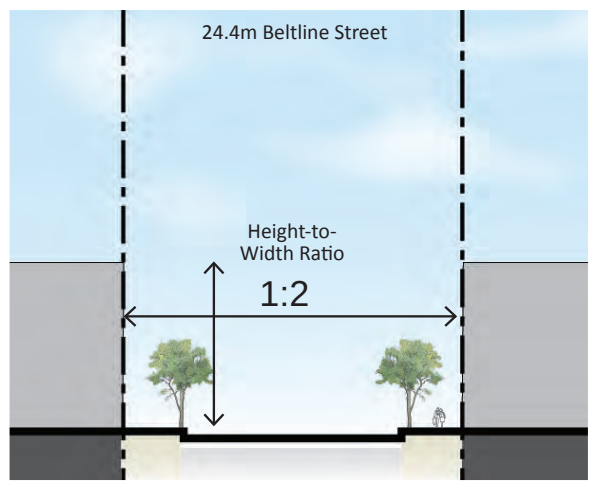
   h. Seamlessly incorporate the building's access elements (such as stairs, stoops, ramps and lifts) within the building envelope to preserve street wall alignment. If this is not possible, mitigate level changes in the street frontage by setting the building back by several metres from the street and increase the visual interest of the building frontage using slopes, landscaping, public art and other amenities or site design solutions.

   i. For all new developments along an underpass street, refer to the Downtown Underpasses Urban Design Guidelines for further details.

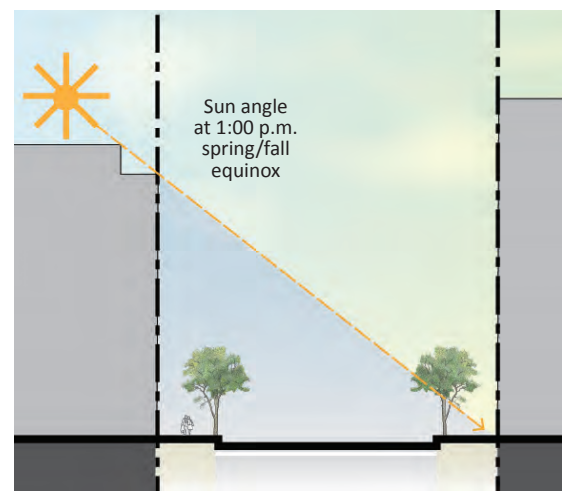
Use a street wall ratio of 1:1 for a location that has a high intensity of use such as this multi-residential development.

Provide maximum sun access to opposite street facade at spring/fall equinox.





The above figures show the optimal street wall height to street right-of-way width proportions (or enclosure ratios) of 1:1 to 1:2.



This figure shows the recommended street wall height, on east-west avenues, that offers maximum sun access.

Street proportion is the ratio of the height of buildings along the edges of the street and the width of the space between the buildings. Street proportion gives a measure to certain qualities of the street including its access to sunlight and sky view.

Toronto Official Plan 2010

This illustration shows the street wall to street width ratio and its impact on (i) the quality of street definition, (ii) sense of street enclosure and (iii) pedestrian environment at the street level.

BUILDING MASSING

Urban Design Objectives

- Create **building forms** that reinforce the street wall and contribute positively to the streetscape and the public realm as well as the skyline
- Design the **upper floors** of buildings to mitigate impacts on surrounding context, adjacent streets and open spaces
- Shape building forms and envelopes to create positive complementary impacts on the **streetscape** and **public realm**
- Use diverse **design articulation** treatment of building forms to reduce building bulk and generate attractive permeable edges that enhance pedestrian street experience

Policy References

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Land Use Bylaw

Guideline Sections:

- 2.1 Streetscape Characters
- 2.6 Skyline, Gateways, Landmarks and View Corridors
- 2.7 Historic Resources
- 2.8 Character Areas
- 3.1.3 Frontage Zone
- 3.2 Streetscape Elements
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.3 Green Infrastructure

4.2.3 Building Massing

DESIGN GUIDELINES

1. Massing and Scale
   a. Design buildings to the following massing categories in terms of storeys:
      i. podium (or base building) – generally of 1 to 6 storeys;
      ii. mid-rise – generally of 7 to 10 storeys; and
      iii. tower – generally of more than 10 storeys. For buildings above 10 storeys, articulate their towers in accordance to the tower articulation guidelines in 4.2.4 c. Mid-Rise and Tower Articulation.
   b. For full block building development:
      i. design multiple building volumes that are in proportion to and distinctive from one another; and
      ii. create transitions in the bulk and scale of the buildings.
   c. Distinguish building volumes using a variety of architectural expressions or forms to avoid monotonous building forms.
   d. Design building forms with:
      i. lower floors that reinforce the street wall and create a strong sense of enclosure at the street level; and
      ii. tall, slender, well-proportioned upper floors, with step backs, to offer a human-scale public realm at the street level.

A retail podium that has residential tower and a fine grain appearance at grade.

Commercial tower.


Residential podium (or base building).

Residential mid-rise building.


Residential tower.

2. Podium Articulation

   Consider the following:

   a. Express podiums (or base buildings) clearly, where desired, as distinct from upper building massing. This can help reinforce the desirable street wall heights.

   b. Vary the physical form of building facades at the podium level along streets to (a) minimize the overall building bulk; and (b) create a fine-grain human scale street frontage. Consider using a variety of vertical articulation in the building facades, including projecting bays and insets, to distinguish and reinforce the building design.

   c. Emphasize building entries at podiums using building elements such as canopies and vertical architectural features.

   d. Locate active uses at the ground level and other levels of podiums where possible, to animate the streetscape.

3. Mid-Rise and Tower Articulation

   Consider the following:

   a. Articulate the building form of mid-rise buildings that exceed 60.0m in length, to reduce the perception of building bulk at the street level.

   b. Differentiate the mass of a building tower from the podium (or base building) by stepping back the tower a minimum of 3.0m from the street edge of the podium. Generally, the taller the building is, relative to its podium, the greater is the stepping back. This is to reduce the negative impacts of the taller building on the surrounding context and adjacent streets.

   c. Use materials, colours, or architectural expressions of the building facade to distinguish the upper building levels from the podium (or base building).

Articulate buildings using bays and insets to minimize building bulk and create fine grain street frontages that are human-scale and pedestrian friendly.

d. Accentuate the design of building entries using architectural articulation such as continuous recesses or projections running vertically up the building facade of the upper building levels.

e. Incorporate roof caps, terraces and/or other architectural expressions or forms at the upper building levels of towers to provide the Centre City with an interesting skyline. Avoid flat-topped roof profiles that could make a building look top heavy.

f. Design the tower massing to clearly express a middle building shaft and building top that are complementary to the scale and materiality of the building podium.

4. Roofs
    a. Integrate vents, mechanical equipment, and elevator penthouses into the roof design or its architectural treatment. Alternatively, consider using materials compatible with the buildings to screen these building elements.
    b. Design the roofs of podiums and mid-rise buildings preferably, as sustainable and active amenity space enhanced with quality landscape treatment.
    c. Design the roofs of podiums and mid-rise buildings that are not actively used, with materials and colours to make them visually attractive when viewed from above.

A mid-rise building with interesting building articulation massing, using spatial volumes to mitigate building bulk and scale.

Stepping back the tower to define the building podium and the street walls. This also reduces the negative impacts of taller building parts on the adjacent streets and surrounding context.

A commercial podium with colonnade at the ratio of 2:1 and a street wall height to street width ratio of 1:2. The step-backs at the upper building parts help to mitigate adverse shadow impact on adjacent public realm, sidewalks and surrounding building facades.

Design buildings with careful setbacks and tower placement to ensure sunlight access to on-site open spaces.

Design landscaped roofs to look attractive from above.

Use landscaped roofs to provide private on-site open space for building occupants to enjoy on smaller sites.

FACADE ARTICULATION

Urban Design Objectives

- Design visually and physically attractive building facades to enhance the **public realm** and the **streetscape**
- Enhance facade design treatment with diverse building **materials**, surface **textures**, **colours** and complementary **building elements** such as canopies, building lighting, building signage and bike racks, as well as street furniture and public art

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Land Use Bylaw

Guideline Sections:

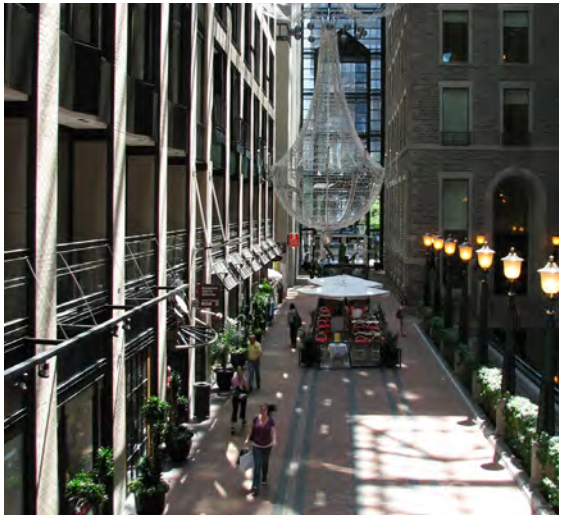
- 2.1 Streetscape Characters
- 2.7 Historic Resources
- 2.8 Character Areas
- 3.1.3 Frontage Zone
- 3.2 Streetscape Elements
- 3.3 Lane Character Typologies
- 4.1.1 Public Open Space Interface
- 4..1.2 Private and Public Accessible On-site Open Space
- 4.3 Green Infrastructure

4.2.4 Facade Articulation

DESIGN GUIDELINES

1. General
   a. Introduce vertical breaks and step-backs to break up the facades of building frontages that exceed 60.0m in length. This also helps develop the fine grain quality desired, especially at key retail street frontages.
2. Texture and Building Materials
   a. Maximize transparency in building facades at the ground level to support visual interaction between the active uses in the buildings and the surrounding street context.
   b. Avoid blank walls at ground level. Use public art, architectural features or details and landscape to mitigate the negative visual impact of blank walls, should such walls be unavoidable.
   c. Generate fine-grain facade articulation using different architectural configurations of vertical and horizontal planes and breaks, insets and projections in the facade treatment.
   d. Create rhythms, variations and diversity in the facade design through window and curtain walling configuration and placement.
   e. Design facades using high quality materials that are durable and contemporary. Use locally sourced materials to help contribute towards a “Calgary character”, as well as sustainability initiatives.
   f. Add visual interest to facades as well as building massing using contrasting and saturated colours. This will also provide visual vibrancy in winter.
   g. Consider designing building facades to sensitively provide desired reflected light into streets, open space and onto north-facing neighbouring buildings, especially in winter.

Use windows, walls, materiality and colours to articulate building facades so as to create fine-grain street frontages. Articulate the building form with set-backs or insets to help reduce the impact of building bulk on adjacent sidewalks.



Use reflected light and allow daylight through skylights and clerestory windows to increase sunlight access to plazas and sidewalks in between buildings.

Integrate on-site bicycle racks with the design of the building envelope at ground level.

Mixing local sandstone materials with contemporary materials like steel and glass makes for a very interesting contemporary design of this building facade.

Use a wrap-around wall treatment with interplay of materials and accent colours to reduce bulk and add fun to a building facade.

3. Integrating Facade Elements

   a. On-site bicycle racks:

      i. See guidelines in 3.2.3 Bike facilities.

   b. On-site public art:

      i. See guidelines in 3.2.8 Public Art.

   c. Canopies and Colonnades:

      Consider the following in the design of canopies and colonnades:

      i. Angle canopies back towards the building with heating devices to melt snow accumulation at the building face.

      ii. Ensure canopies are designed to withstand snow loads, as well as to prevent the formation of icicles.

      iii. Locate canopies at primary building entries to both protect users and define entries.

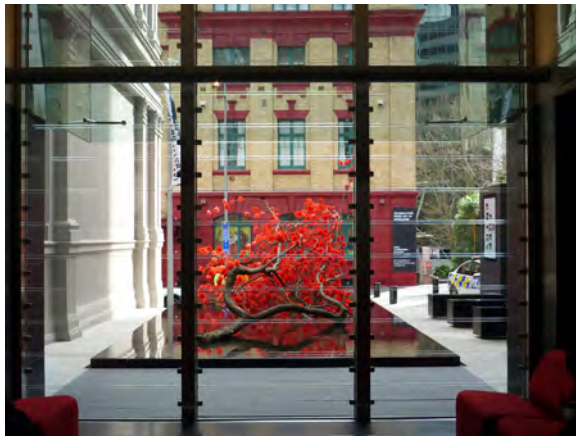
      iv. Keep canopy heights to a maximum of 3.0m to protect pedestrians effectively from weather elements. This would also offer a good pedestrian scale at the street level.

      v. Orient and angle canopies to shed snow into the furniture zone without posing any hazard to pedestrians at streets and open spaces.

      vi. Use transparent and visually light canopies to allow for passive surveillance of the street from upper building levels.

A mixed-use development of housing above and supermarket at grade, with building facade treatment that reflects the different retail and residential uses.

Use on-site public art to complement facade articulation and enhance pedestrian experience at the street level.



Carefully placed on-site courtyards with attractive vibrant public art provide for both views from the building interiors and visual interest at the street level.

Integrate on-site public art into the building facade treatment.

vii. Use colonnades only at sunny locations along key retail streets. Design colonnades using the height-to-width ratio of 2:1 to allow sun access to the internal facade of the colonnaded area.

viii. Provide transparency at the internal facade of the colonnade through the use of large windows. This will allow indirect sun light into the building interiors as well as passive surveillance of colonnaded area.

d. Use encroachment agreements to enable the provision of weather protection where infringement on The City ROW by weather protection installations is unavoidable.

4. Building Lighting

a. Install building lighting to enhance the safety of building users and pedestrians.

b. Design building facades to allow for easy identification of pedestrian and vehicular entrances at night.

c. Use building lighting to complement and enhance lighting in any adjacent public realm.

d. Use a hierarchy of lighting levels suitable for different uses in a building.

e. See also guidelines in Section 3.2.7 Lighting.

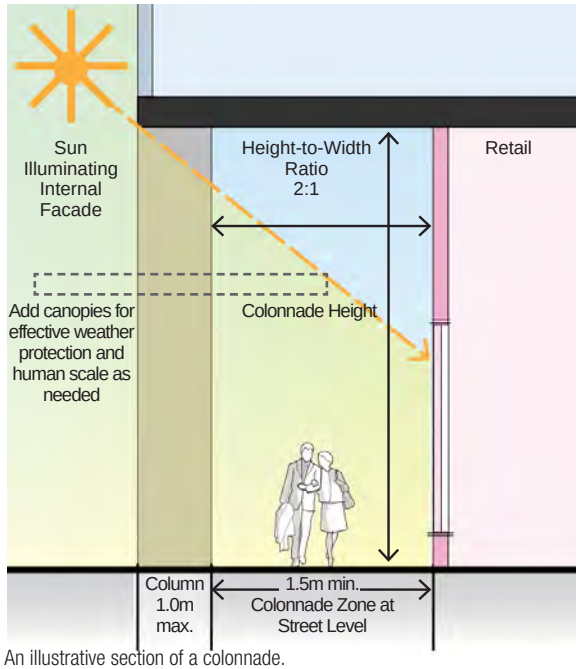
5. Building Signage

a. Design the building signage to enhance a building's identity and its wayfinding system.

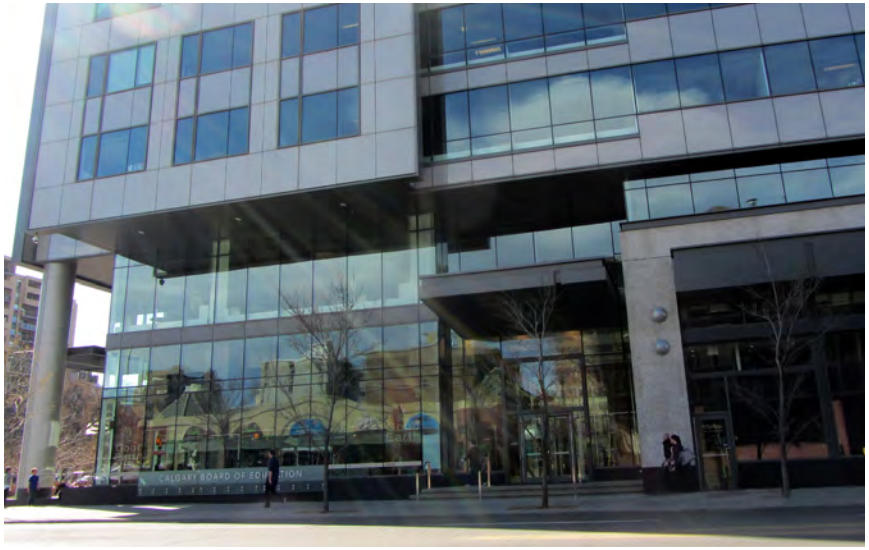
b. Integrate the design of the building signage with the design of the building facade, with consideration of the building's architectural details, materials and colours.

c. Consider using digital building signage whenever it is appropriate, to add visual vibrancy at key retail streets. Minimize any impact of digital building signage on residential development.

d. See also guidelines in Section 3.2.6 Signage.



An illustrative section of a colonnade.



Articulate facades using different planes to heighten the 3-dimensional visual interest of a building, with a canopy to accentuate the building entrance as shown here.

Locate colonnades on key retail streets, preferably at areas with good sun exposure.

Use weather protection canopies to define primary building entries in addition to enhancing the human-scale effect at the pedestrian level.

Colonnades providing sun access to the internal facade by having a 2:1 height-to-width ratio like 3.0m:1.5m. For high colonnades, provide canopies no higher than 3.0m in height, to protect pedestrians from weather elements effectively.

Easily distinguishable building entrances.

Building lighting that enhances adjacent public realm.

An example of building signage that is well integrated into the facade.

Using digital signage on a building facade at a retail street.

STREET CORNER BUILDING DESIGN TREATMENT

Urban Design Objectives

- Optimize the use of street corners as nodes of **social interaction**, offering opportunities to pedestrians to pause and congregate
- Design **built forms** that strongly define the spatial and visual quality of street corners and support the **gathering functions** here

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Slope Adaptive Development Guidelines Policy
- Complete Streets
- Land Use Bylaw

Guideline Sections:

- 2.1 Streetscape Characters
- 2.3 Nodes and Corridors
- 3.1.3 Frontage Zone
- 4.1.1 Public Open Space Interface and 4.1.2 Private and Public Accessible On-site Open Space
- 4.2.3 Building Massing
- 4.2.4 Facade Articulation
- 4.3 Green Infrastructure

4.2.5 Street Corner Building Design Treatment

DESIGN GUIDELINES

1. General
   a. Design buildings to strongly define the space at corners by:
      i. positioning retail entrances well-accentuated with facade articulation here; and
      ii. treating the building facades here with a cohesive vertical form or plane, expressed throughout the podium, mid and upper levels.
   b. Locate active uses, such as cafés and shop/retail entrances at street corners, to animate the intersection/node. Wrap such active uses around the building at grade to activate both street frontages that street corners enjoy.
   c. Use public art and special lighting to further enhance building corners.
   d. Locate residential and office entrances away from street corners.

A good corner building design treatment showing emphasis of building corner, through the use of colours and transparency in the facade treatment. Such design treatment activates and promotes building corners as sites for people to gather and socialize.

Street corners should be designed to enhance gathering space and maximize social interaction.

The vertical architectural treatment accentuates this building corner, promoting a strong visual sense of the building's presence at the street level.

UPPER BUILDING LEVEL IMPACTS

Urban Design Objectives

- Position upper building levels to maximize **privacy**, **views** and **sun access** to the public realm, while contributing to an attractive **skyline**

Policy Reference

- Centre City Parks & Public Realm Enhancement Plan
- Sustainable Development Guidelines for Trees, Shrubs and Groundcovers
- Complete Streets
- Land Use Bylaw

Guideline Sections:

- 2.6 Skyline, Gateways, Landmarks and View Corridors
- 2.8 Character Areas
- 2.12 Seasonal and Night Design
- 3.1.3 Frontage Zone
- 4.1.1 Public Open Space Interface
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.2.3 Building Massing
- 4.2.4 Facade Articulation
- 4.3 Green Infrastructure

4.2.6 Upper Building Level Impacts

DESIGN GUIDELINES

1. General

   a. Ensure tower separation distances, floor plate sizes, all building setbacks and step backs are in accordance with the current Land Use Bylaw provisions.

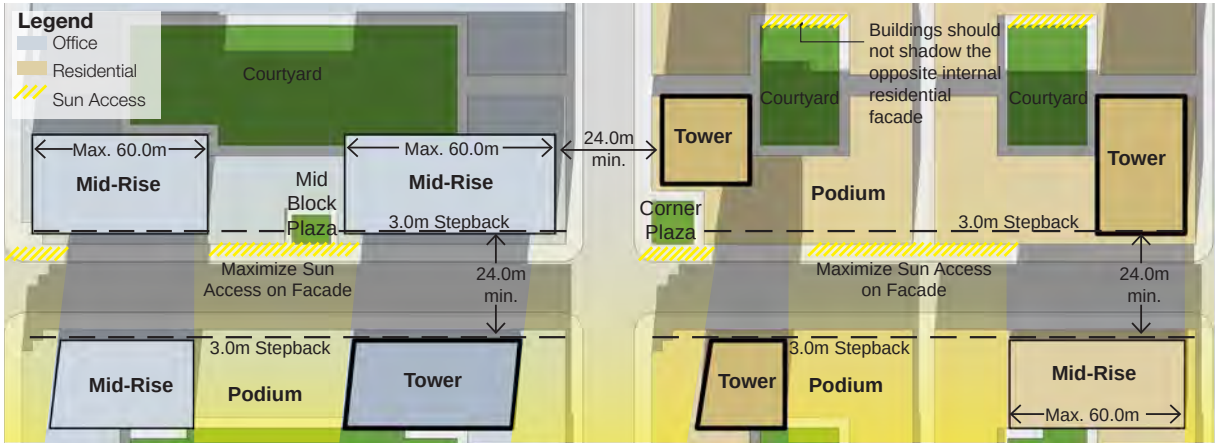
   b. Design towers and mid-rise buildings to minimize adverse shadowing and wind impacts on the public realm. See 4.1.5 (1) Sun Access for design considerations for maximizing sun access.

   c. Offset upper building levels of towers and mid-rise buildings to maximize privacy, especially between office and residential uses. 24.0m is the typical minimum tower separation required for ensuring privacy.

   d. The diagram below shows how the spacing and orientation of the upper levels of tower and mid-rise buildings could help mitigate impacts on adjacent buildings and surrounding areas, including the public realm.

   e. See 4.2.4 (3) on design considerations for mid-rise and tower building articulation.

Keep towers separated at a minimum of 24.0m to maximize privacy and sun access.



These impacts diagrams Illustrate possible tower and mid-rise configurations and their shadows depicted at 1 p.m. on the spring/fall equinox.

SUSTAINABLE URBAN DRAINAGE

Urban Design Objectives

- Enhance **storm-water management** by employing a **sustainable** form of **urban drainage system** for all development within the Centre City

Policy Reference

- Calgary – A City of Trees: Parks Urban Forest Strategic Plan
- The City of Calgary's Environmental Policy
- Stormwater Management and design Manual
- LID Technical Guidance Manual
- Citywide Stormwater Targets
- Land Use Bylaw

Guideline Sections

- 2.4 The Riverfront
- 2.5 Parks and Open Spaces
- 3.1.3 Frontage Zone
- 3.2.5 Street Trees
- 4.1.1 Public Open Space Interface
- 4.1.2 Private and Public Accessible On-site Open Space
- 5.2 Areas of Particular Concern

4.3 Green Infrastructure

4.3.1 Sustainable Urban Drainage

DESIGN GUIDELINES

1. Topography and Site Layout

   a. Begin a development by fitting its design to the site features and the natural drainage so as to minimize site disturbance and/or accommodate the existing drainage flow paths. This helps to preserve the pre-development drainage conditions of the site, while reducing the amount and cost of required underground drainage infrastructure.

Integrated Design Approach

Engage an integrated design approach to resolve and accommodate multiple building and/or development objectives through green infrastructure and sustainable measures in all development. For example, installing a landscaped or green roofing system as a solution to:

- **manage storm-water;**
- **reduce energy consumption; and**
- **increase the attraction and comfort of amenity areas and public realm, and add green open space at the Centre City.**

This figure illustrates an integrated sustainable design approach that addresses multiple building and development objectives.

2. Low Impact Development (LID)
   a. Incorporate all-season and on-site low impact development (LID) solutions into the design of streets, open spaces and buildings to:
      i. reduce overall surface run-off volumes leaving the site;
      ii. control the rate of drainage flow; and
      iii. improve water quality before it enters any water course or storm sewer system.

   See examples of LID solutions or measures as shown here.
3. Surface Treatment
   a. Reduce paved surfaces by (a) concentrating density in compact forms of development, especially on larger sites; and (b) co-locating services into shared spaces, such as shared driveways and utility or servicing areas. This will minimize storm-water run-offs from paved surfaces.
   b. Maximize permeable paving to increase on-site natural infiltration of storm-water run-off by using permeable inter-locking concrete pavers, plastic or concrete grid paving systems, or pervious concrete or porous asphalt, where possible. Suitable applications of permeable surface treatments include low traffic roads, driveways, parking lots, pedestrian plazas and walkways.


Permeable pavers at a lane with well-vegetated edges and gardens, all part of a sustainable drainage system.


Landscaped curb extension.

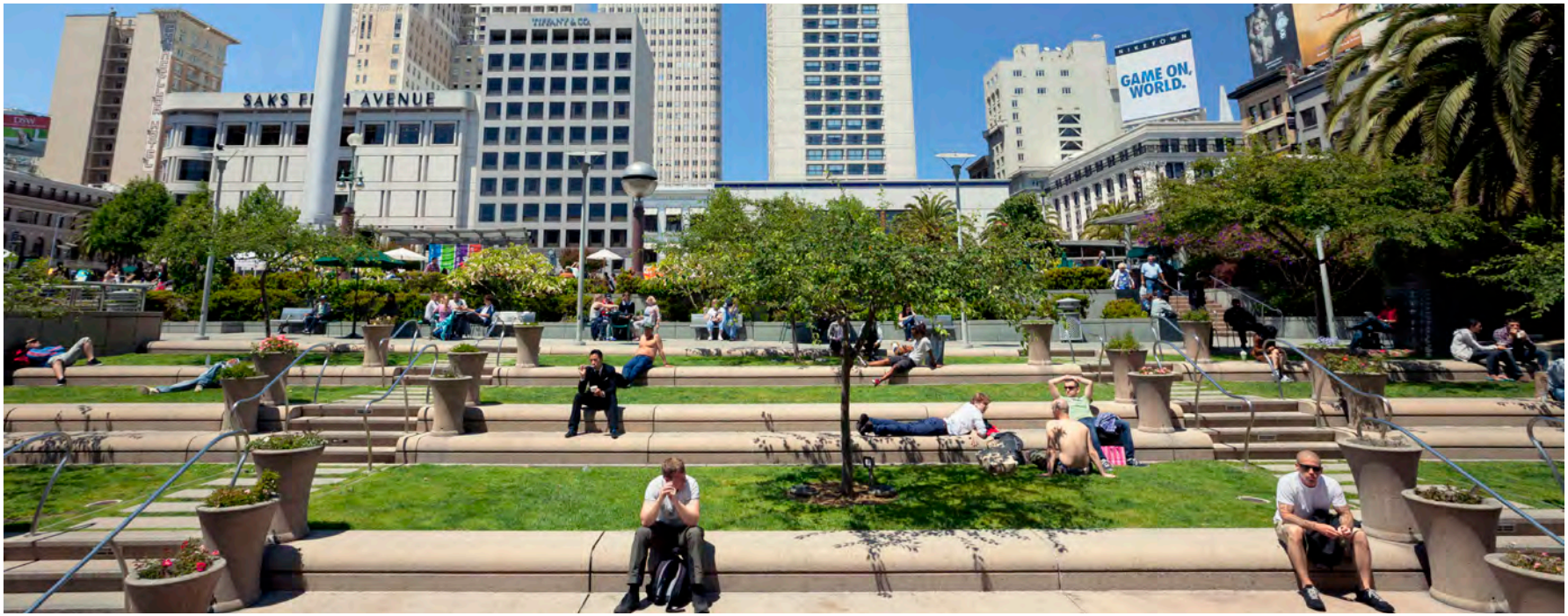

Grass permeable paving.


Flowthrough planters.


Structured swales.


Bio-retention swales.

4. River Flooding
   a. Consult with The Water Resources Business Unit at The City of Calgary at the onset of all development projects at the Centre City planning area to:
      i. confirm the applicability of all River Flooding policies and related regulations that could potentially impact development plans and schedules;
      ii. minimize accrual of incremental safety, property and environmental risk under flood conditions; and
      iii. protect riparian functions, water quality and aesthetics of the shoreline interface of the Bow and Elbow Rivers.
   b. Consider ice effects of the Bow and Elbow Rivers on the design and location of watercourse crossings, utilities and their related infrastructure in the vicinity of these rivers. Use appropriate building forms, structural and foundation drainage design, bank protections and geotechnical measures to mitigate such impacts.
   c. Generally, ensure no structural and/or topographical modification of the floodways. Comply with all flood proofing and setback requirements specified in the Land Use Bylaw for all development at the flood fringe areas.
   d. Address all regulatory requirements in The Water Act, Fisheries Act, and Navigable Waters Act for the design of paths, promenades, landscaping, plantings, and/or other features in the floodway areas, from the earliest conceptual design stage of any development project.
   e. Use vegetative treatments of a softer (or biological) engineering approach, where possible, to ensure bank stability when bank rehabilitation works are required at or near shorelines of rivers.



Union Square, San Francisco - example of an underground parking structure with its roof designed as a green open space and urban plaza at-grade for amenity purposes. This also aids sustainable storm-water drainage and heat island mitigation.

Application of Sustainable Urban Drainage Features by Location at Right-of-Way

Where to apply	Paving	Bioretention			Conveyance		Other	
	Permeable Paving	Rain Gardens	Flow-through and Infiltration Planters	Infiltration Bioswales	Swales	Channels and Runnels (including Vegetated Gutters)	Infiltration and Soakage Trenches	Vegetated Buffer Strip
Private Driveways and Frontage Zone	✓	✓	✓	✓	✓	✓	✓	
Boulevard Areas	✓	✓	✓	✓	✓	✓	✓	
Curb Extensions	✓	✓	✓	✓	✓	✓	✓	
Laneways	✓		✓		✓	✓	✓	
Bike Lanes								
Through Lanes								
Medians*	✓	✓	✓			✓	✓	✓
Traffic Circles*	✓	✓	✓	✓	✓	✓	✓	

*Limited potential for rain gardens/water collection areas at these locations.
Vegetated gutters are best used where there are few driveways or curb cuts.

Application of Sustainable Urban Drainage Features by Location at a Development Site

Sustainable Urban Drainage Features	Where to Apply							
	Roofs	Walls/ Vertical Cladding Systems	Open Spaces/ Pedestrian Plazas and Walkways (at-grade and elevated)	Private Access Roads/Curb Extensions	Surface Parking Lots/Driveways/ Drive Aisles/ Gutters	Channels and Runnels (including Vegetated Gutters)	Landscaped Areas	Building Frontage Zone
Sustainable Urban Drainage System (including recycled water system)	✓		✓	✓	✓	✓	✓	✓
Efficient Mechanical Heating and Ventilation System	✓		✓			✓	✓	
Water-efficient Mechanical Heating and Ventilation System	✓	✓	✓					
Recycled/Easily Renewable Material Use	✓	✓	✓	✓	✓	✓	✓	✓
Passive Heating, Cooling, and Ventilation System (like operable windows and doors for summer cooling, atria with solar access, shading elements)	✓	✓	✓					
Green Roofs, Community Gardens, Native Vegetation and Tree Canopy)	✓		✓	✓	✓	✓		
Orientation for Optimum Solar Access and Natural/Daylight Capture	✓	✓	✓			✓		

EFFICIENT RESOURCE USE

Urban Design Objectives

- Use **energy** and **resources** efficiently, by protecting and conserving water, reusing and recycling water, reducing energy consumption, minimizing waste output, waste and all forms of resources, using renewal energy and **building materials**, and incorporating **mixed-uses** in new development
- Incorporate **sustainable** and/or **green building** design practices and technologies to reduce development footprint, minimize adverse impacts on the environment and increase **green open space**

Policy Reference

- Calgary – A City of Trees: Parks Urban Forest Strategic Plan
- The City of Calgary's Environmental Policy
- Citywide Stormwater Targets
- Land Use Bylaw

Guideline Sections

- 3.2.5 Street Trees
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.2.3 Building Massing
- 4.2.4 Facade Articulation
- 4.3.1 Sustainable Stormwater Drainage
- 4.3.3 Biodiversity

4.3.2 Efficient Resource Use

DESIGN GUIDELINES

1. Water Use
   a. Harvest rainwater and reuse storm-water in buildings, open space, parks and other landscaped areas for non-potable water consumption and irrigation purposes. See applicable licensing requirements and policies of Alberta Environmental and Sustainable Resources Development (AESRD) for accepted practices of rainwater and storm water re-use.
   b. Install efficient water fittings like dual flush toilets and low flow household appliances in buildings.
   c. Use drought-resistant plant species, that are regionally appropriate, in the design of water-efficient parks, landscaped (or green) roofs and all other landscaped areas.
2. Energy Use
   a. Orientate and design buildings and open space on sites to optimize sun access and natural ventilation for efficient lighting as well as mechanical heating and ventilation.
   b. Manage solar gain from southern and western sun exposure during summer through the appropriate use of colonnades, trellises, horizontal or vertical wall projections or recesses, operable windows and other shading devices. Also consider using deciduous trees and shrubs at grade, or on roofs or podiums.
   c. Use building design elements like light shelves, clerestory lighting, skylights and translucent wall materials to reduce the use of artificial daytime lighting and energy consumption.

Landscaped roofs and roof gardens save energy while adding landscaped amenity space for building occupants.

Use a controllable glass louver shading system to reduce solar heat gain and cut down cooling costs in summer, while maximizing the use of natural daylight.

Operable windows and doors allow for natural ventilation to cool buildings in summer.

d. Use landscaped roofs, courtyard designs, colonnades, canopies and other passive space-cooling techniques to allow for natural ventilation and passive temperature regulation through buildings during summer.

e. Integrate active solar technology such as photovoltaic panels on roofs and/or into the external wall cladding systems, as well as geo-thermal heating technology for renewable energy use.

f. Install fixtures and operating systems with high energy-efficiency ratings when improving or rehabilitating existing buildings, as well as in all new buildings, to lower energy consumption.

3. Building Materials

a. Use materials and assemblies that are durable and can be rapidly renewed, from renewal sources and/or made of largely recycled contents, and are compatible with reusing and recycling.

b. Reuse and recycle construction and demolition materials appropriate for new construction.

c. Use building products and materials from local regions to conserve energy and transportation resources.

d. Use lightly tinted glazing and other bird-friendly materials and facade treatment techniques to mitigate built form impact on bird migratory paths.

4. Waste Management

a. Provide collection facilities for recyclable materials within buildings in all new developments

b. Maximize tree canopy in all new developments using street trees, tree groves or clusters at open space areas, amenity space and along streets to reduce urban heat island effects and CO2 emissions.

c. Minimize glare and light trespass into the night sky from exterior lighting of buildings.

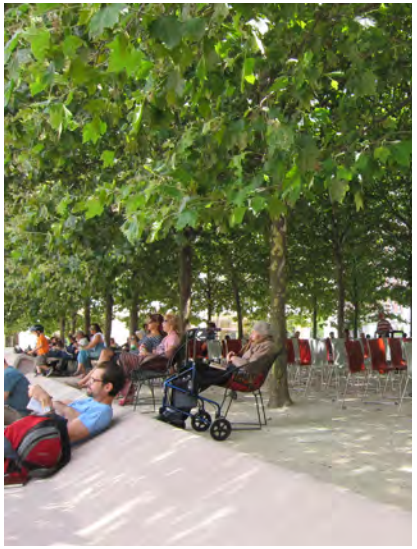
5. Flexible Reuse of Buildings and Sites

a. Design block layouts, buildings and open space with generous space standards and carefully planned spatial arrangement that can allow for adaptation with relative ease to suit the needs of different users over the years.

b. Convert existing, redundant or under-used buildings and open space, including derelict sites, to high density development or intensified productive uses.

Use clerestory windows and operable windows to allow natural light into buildings.

Natural ventilators at courtyards and operable windows aid in efficient resource use.



Street trees at public open space, along streets and around buildings, make great people-gathering places while reducing carbon dioxide emissions and urban heat gain.

Project building lighting downwards to minimize light pollution.

BIODIVERSITY

Urban Design Objectives

- Protect and enhance **urban forestry** and the **natural** habitat by **conserving** and **enhancing** riparian areas, retaining natural vegetation and features, habitats and wildlife, as well as **connecting** green space and corridors to form a green urban network in the Centre City

Policy Reference

- Calgary – A City of Trees: Parks Urban Forest Strategic Plan
- The City of Calgary's Environmental Policy
- Stormwater Management and Design Manual
- Watershed Management Plans
- Land Use Bylaw

Guideline Sections

- 2.4 The Riverfront
- 2.5 Parks and Open Spaces
- 3.2.5 Street Trees
- 4.1.1 Public Open Face Interface
- 4.1.2 Private and Public Accessible On-site Open Space
- 4.3.1 Sustainable Stormwater Drainage
- 4.3.2 Efficient Resource Use

4.3.3 Biodiversity

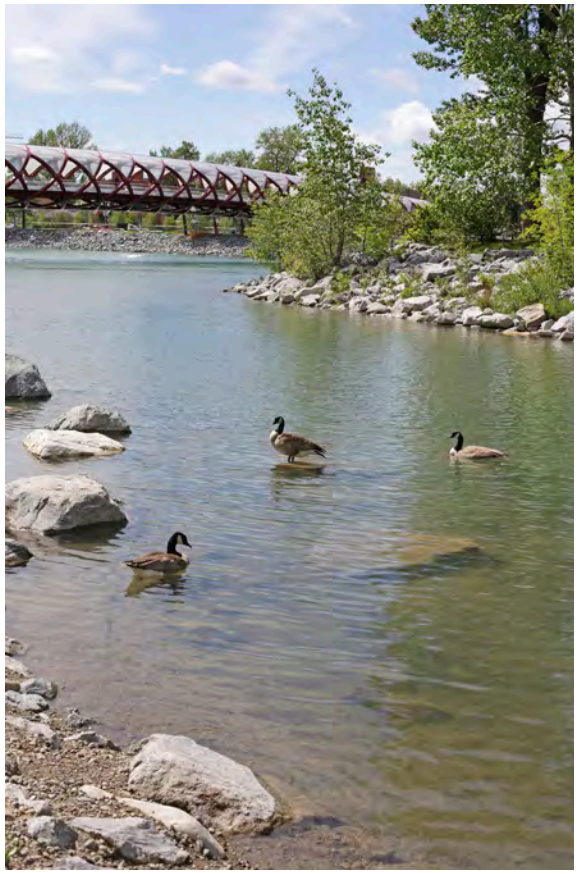
DESIGN GUIDELINES

1. Native Vegetation and Habitat
   a. Mix native and ornamental plants to enhance diversity. Use native and drought-resistant plant species that are tolerant of urban pollution and conditions in new developments.
   b. Design project landscaping to increase the interconnected corridors of urban forest and natural habitat as well as all riparian areas and open space at the Centre City.
   c. Use lightly tinted glazing and other bird-friendly materials and facade treatment techniques to mitigate built form impact on bird migratory paths.
2. Urban Community Gardens
   a. Create community gardens at grade in sunny, non-windy locations, or on podiums or roofs, particularly in residential development, for economic and social benefits. Include pedestrian lighting and sitting areas to enhance such community gardens as additional amenity space. Consider using these community gardens as gateway features for different neighbourhoods.

Native vegetation on landscaped (or green) roofs reduces water use, solar gain and adds amenity space for residents.

Urban community gardens provide amenity space as well as offer social, economic and environmental benefits to local communities.

3. Riparian Corridors
   a. Protect, restore and enhance all riparian areas in any development project at and/or in the vicinity of riparian corridors within the Centre City.
   b. Collaborate with Water Resources and Parks at The City of Calgary at the onset of all development projects to:
      i. develop an integrated and adaptive water management approach to protect and manage riparian areas; and
      ii. confirm on requirements and targets of The City of Calgary Riparian Strategy that may impact development projects.
   c. See 4.1.1 (2) for interface treatment of buildings adjacent to the Riverfront.



Prince's Island Park, a part of Calgary's riparian corridors, is a great natural asset to preserve and enhance.

The riparian corridors along the Bow River offer a unique, invaluable stretch of urban forestry and natural habitats right next to downtown Calgary.