

NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE

# Capital Design Guidelines

2023-03-24



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# Introduction

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The Capital Design Guidelines have been developed to provide a clear and consistent understanding of “design excellence” in the National Capital Region. These guidelines are intended to clarify the NCC’s expectations for the quality of spaces, facilities, architecture and structures of national importance, in keeping with its planning and stewardship mandate.



## The Capital Context

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The National Capital Region is located on the ancestral territory of the Algonquin Anishinabeg nation. Located at the confluence of three major rivers, the region was first established as a place of gathering and trade by Indigenous peoples over 8,000 years ago. In recent history, it has become a thriving metropolis and modern international capital.

The quality of the Capital experience relies on the development of places of high physical quality, which protect and showcase its exceptional natural and cultural features, and create a strong sense of place and meaning. The Capital's valued features include cultural and natural landscapes, historic sites, and iconic buildings and monuments of international significance. The National Capital Region's heritage assets are evidence of Canada's rich and varied history, and they showcase its diverse and evolving legacy, from traditional and ongoing Indigenous culture to modern symbols of achievement.

# Design Process

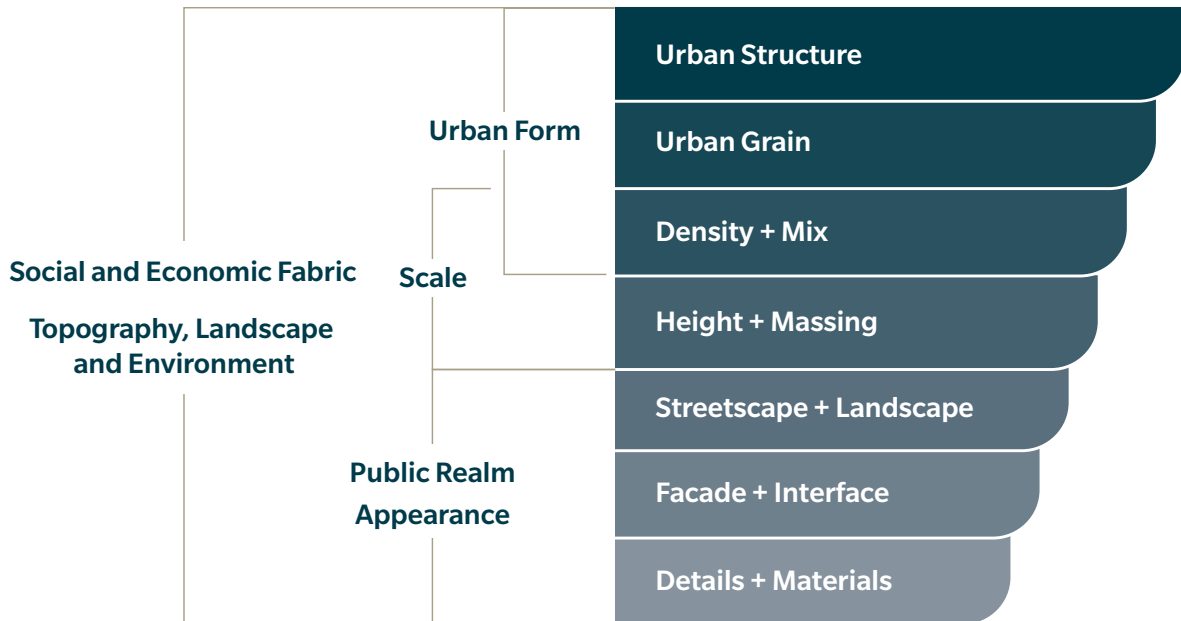
The NCC is engaged in the continual beautification and betterment of the National Capital Region, in keeping with its mandate to ensure that the nature and character of the Capital are in accordance with its national significance.

Design is the cumulative effect of the work of many design professions, shaping the built environment from macro elements, such as transportation networks, to micro elements, like individual building facades, street furnishings and material choices.

Design is the creative process of envisioning and planning solutions to a problem or need. Consequently, design is not only the physical outcome, such as a building’s aesthetics or choice of material, but also the entirety of the decision-making process. Throughout the design process, designers must consider many factors and inputs to develop an appropriate design solution in the form of plans, drawings or models.

The designers’ role is as follows:

- ▶ to analyze and study the problem to fully understand the functions and requirements at play;
- ▶ to generate creative ideas and concepts to meet the requirements;
- ▶ to refine the solutions through iterative testing and feedback; and
- ▶ to detail and finalize the optimal design solution.



# Design Excellence

Design excellence is an aspiration; it is something to strive for. The evaluation of design is based on many variables and factors, and there are no fixed criteria for what constitutes excellence in all instances. However, at its core, design excellence is characterized by the following principles:

- ▶ **Suitable designs** are well adapted to their use or purpose. This encompasses considerations such as functionality, contextual appropriateness and character.
- ▶ **Accessible designs** provide universal access to public spaces, services and amenities. This means identifying and removing barriers and ensuring that everyone can participate, regardless of ability.
- ▶ **Inclusive designs** reflect the diversity of Canadians. This means identifying and addressing issues of equity, equality, privilege and power to provide benefits for all, without excluding vulnerable or marginalized groups.
- ▶ **Durable designs** are sound, sustainable, robust and adaptable over time. This also relates to structural capacity, longevity and timelessness of materials.
- ▶ **Pleasing designs** are aesthetically and experientially refined, resulting in a feeling of satisfaction or enjoyment. This encompasses aspects of beauty, comfort, innovation, excitement and inspiration.



The best designs will address each of these principles, proposing solutions that appear flawlessly adapted to their situation. Excellent design will enhance the Capital's symbolism, dignity and prestige by creating significant and appealing spaces. It will contribute to cultural and natural landscapes, being context-sensitive and appropriately located to preserve and enhance natural features. Key sites, places and institutions of national prominence will provide a strong sense of regional identity and meaning to a broad range of people. And the public realm will be welcoming and enjoyable, while the places and structures of the Capital will stand the test of time by being sustainable, robust and durable.

In all instances, design innovation will build on the legacies of the past, and respond to new and emerging challenges in order to create a thriving, meaningful and inspiring Capital for generations to come.

# Purpose of the Guidelines

These guidelines are a reference tool for the NCC, its partners and proponents of projects requiring federal design approval. Their purpose is to inspire and direct designers and decision makers, and to facilitate the evaluation and approval of design proposals. They are intended to facilitate dialogue and to create a common understanding and reference point for the elaboration and evaluation of physical designs.

- ▶ The Capital Design Guidelines are aspirational ideals. They are not prescriptive; rather, they convey intent, while remaining flexible about the means to achieve the outcome. They do not prescribe specific architectural styles, construction standards or capital projects.

- ▶ The guidelines must be applied holistically, and considered and balanced alongside all other applicable policies, guidelines and legislation. The guidelines are not prioritized, and may require evaluation and compromise.
- ▶ The guidelines are broad, but not exhaustive. Each guideline may require the reader to consult references and conduct research to apply it to the project at hand.
- ▶ These guidelines do not replace the skills and intuitions of qualified professionals. Designers and decision makers have both the flexibility and the responsibility to creatively interpret and apply these guidelines.

Over time, as projects respond to these guidelines in unique and innovative ways, they will each contribute to the diversity and richness of the Capital’s built environment, and further the definition of design excellence.



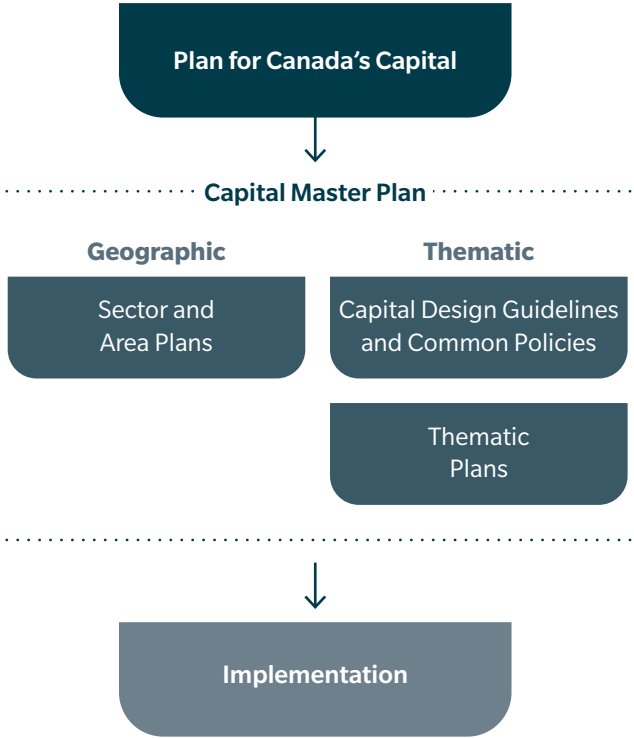
# Capital Planning Framework

The NCC has a unique mandate, “...to prepare plans for and assist in the development, conservation and improvement of the National Capital Region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance” (section 10.1 of the *National Capital Act*, R.S.C., 1985, c. N-4).

The Capital Design Guidelines form part of the NCC’s planning framework, a collection of plans and policies that direct land use planning and design in the Capital Region. The Capital Design Guidelines are a collection of planning and design policies based on sound theory and international best practices, specifically tailored to the Capital context. The Capital Design Guidelines complement the geographic and thematic plans of the Capital planning framework by providing universal design cues and principles that transcend all sectors. They must therefore be considered and interpreted in conjunction with the NCC plans, policies and strategies that are relevant to the site.

- ▶ The guidelines provide guidance across the National Capital Region. They complement other NCC land use plans. Where there are inconsistencies between these guidelines and the directions of a specific land use plan, that land use plan takes precedence.
- ▶ The guidelines apply principally to Capital-building projects. In addition, designers will also have regard for other guidance documents, such as municipal plans.
- ▶ Designers will have regard for many competing and complementary objectives. *To have regard for* is not to *conform to*, but to *give due consideration to and analysis of*. Each project is to respond substantially to the intent of these guidelines, with the goal of achieving design excellence.

More information regarding the Capital planning framework can be found on the NCC’s website under the section [Our Plans](#).







## The Federal Approval Process

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Under the *National Capital Act*, the NCC has the responsibility to coordinate and approve projects on federal lands and in federal buildings throughout the National Capital Region. The NCC's specific mission and responsibilities relating to land use, design and transaction approvals are laid out in section 12 and subsection 12.1 of the Act.

Information about the federal approval process and application details is available on the NCC website via the [Proponent's Guide to the NCC's Federal Land Use, Design and Transaction Approval Process \(2021\)](#).

# How to Use the Guidelines

The Capital Design Guidelines are a working collection of advice and direction, best practices, and aspiration.

The Capital Design Guidelines are organized into two types of categories.

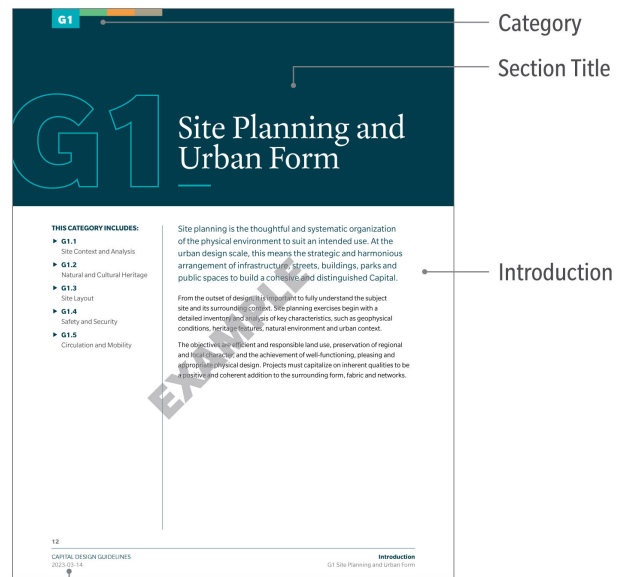
## G: Global Categories

The comprehensive categories provide design and planning guidance across the National Capital Region for the most critical aspects of the Capital’s composition and character. These guidelines are organized in three overarching sections:

- ▶ G1 Site Planning and Urban Form
- ▶ G2 Landscapes and Public Spaces
- ▶ G3 Buildings and Structures

## S: Specific Categories

The specific categories provide detailed design policies for particular topics and themes. Specific categories provide the most precise level of guidance and best practices, on a topic-by-topic basis. However, they are to be read and interpreted in relation to the comprehensive categories and/or other specific categories. Where contradictions or trade-offs between competing guidelines exist, designers and decision makers are encouraged to raise these points for discussion via the design process to develop innovative solutions and compromises. New sections will continue to emerge, as the NCC develops additional guidelines and directions for specific topics or contexts.

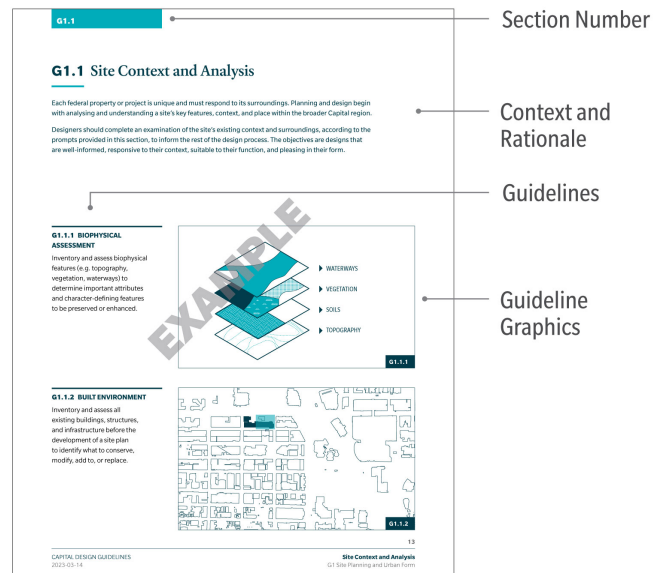


Category

Section Title

Introduction

Version



Section Number

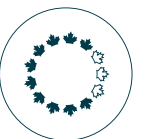
Context and Rationale

Guidelines

Guideline Graphics



# Site Planning and Urban Form



# G1

# Site Planning and Urban Form

## THIS CATEGORY INCLUDES:

- ▶ **G1.1**  
Site Context and Analysis
- ▶ **G1.2**  
Natural and Cultural Heritage
- ▶ **G1.3**  
Site Layout
- ▶ **G1.4**  
Safety and Security
- ▶ **G1.5**  
Circulation and Mobility

Site planning is the thoughtful and systematic organization of the physical environment to suit an intended use. At the urban design scale, this means the strategic and harmonious arrangement of infrastructure, streets, buildings, parks and public spaces to build a cohesive and distinguished Capital.

From the outset of design, it is important to fully understand the subject site and its surrounding context. Site planning exercises begin with a detailed inventory and analysis of key characteristics, such as geophysical conditions, heritage features, natural environment and urban context.

The objectives are efficient and responsible land use, preservation of regional and local character, and the achievement of well-functioning, pleasing and appropriate physical design. Projects must capitalize on inherent qualities to be a positive and coherent addition to the surrounding form, fabric and networks.

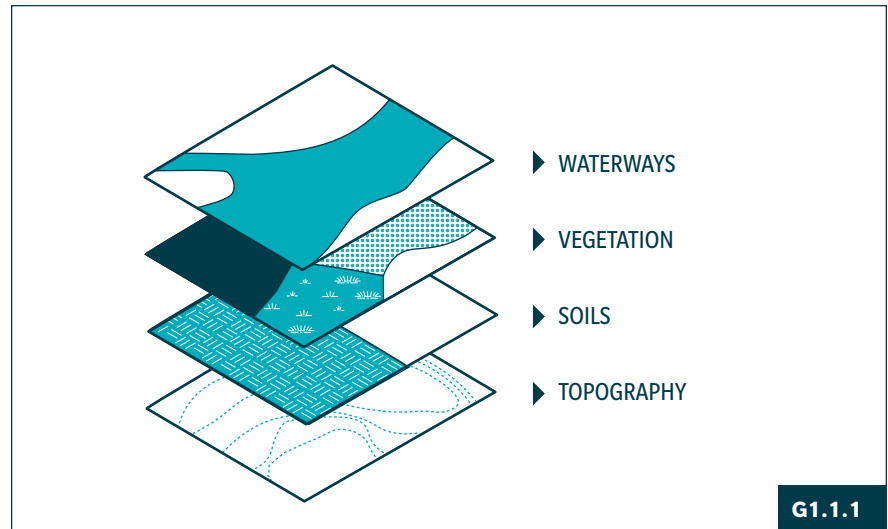
# G1.1 Site Context and Analysis

Each federal property or project is unique and must respond to its surroundings. Planning and design begin with analysing and understanding a site's key features, context, and place within the broader Capital region.

Designers should complete an examination of the site's existing context and surroundings, according to the prompts provided in this section, to inform the rest of the design process. The objectives are designs that are well-informed, responsive to their context, suitable to their function, and pleasing in their form.

## G1.1.1 BIOPHYSICAL ASSESSMENT

Inventory and assess biophysical features (e.g. topography, vegetation, waterways) to determine important attributes and character-defining features to be preserved or enhanced.



G1.1.1

## G1.1.2 BUILT ENVIRONMENT

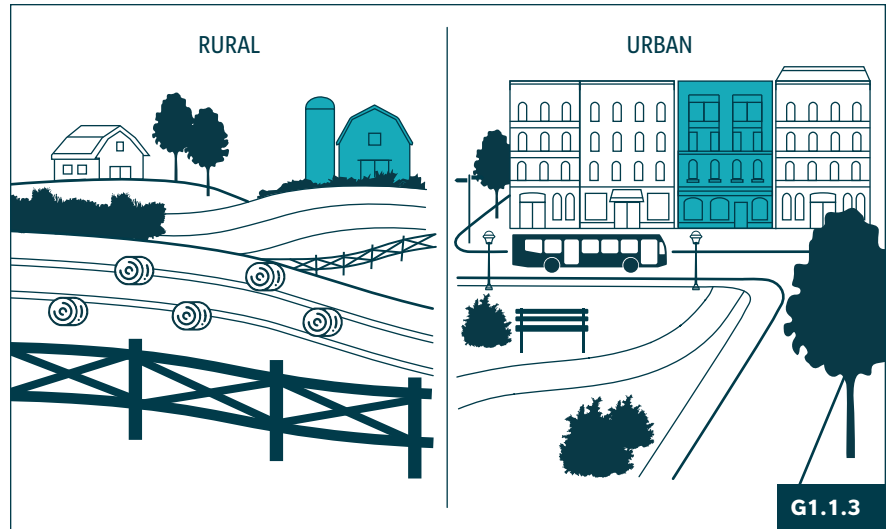
Inventory and assess all existing buildings, structures, and infrastructure before the development of a site plan to identify what to conserve, modify, add to, or replace.



G1.1.2

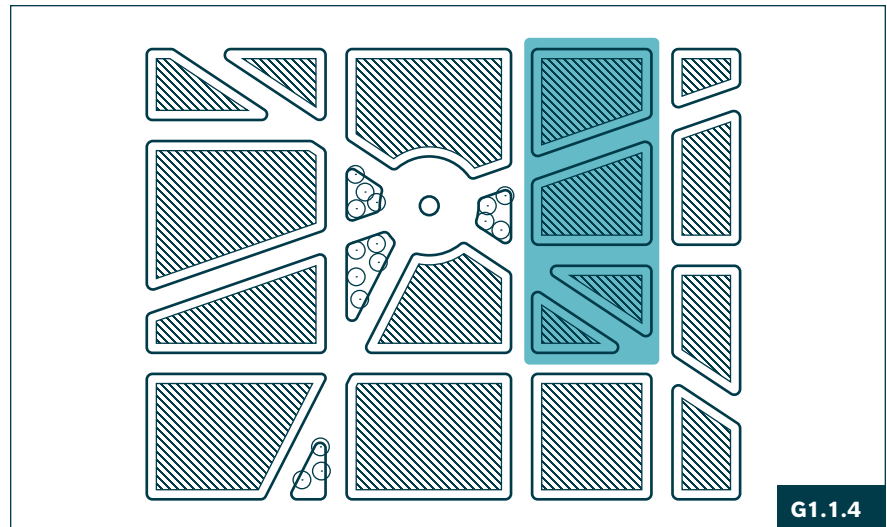
### G1.1.3 CONTEXT

Arrange and design sites to suit both the existing surrounding context and building typologies (e.g. rural, urban, suburban) as well as the planned urban form.



### G1.1.4 PATTERNS AND FORM

Study the prevailing pattern of urban form, fabric, street configuration and building placement. Arrange the design to contribute to a harmonious composition of parts and an intuitive hierarchy of elements and spaces.



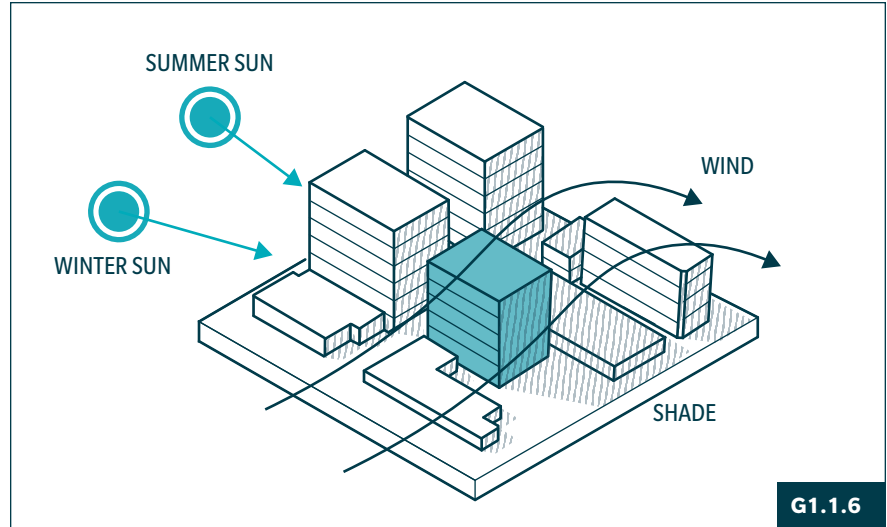
### G1.1.5 INTEGRATION

Determine the function of each part of a project and arrange them to suit their purpose and contribute to the purpose of others. Demonstrate how the project will enhance the site's integration with its surroundings.



### G1.1.6 CLIMATIC CONDITIONS

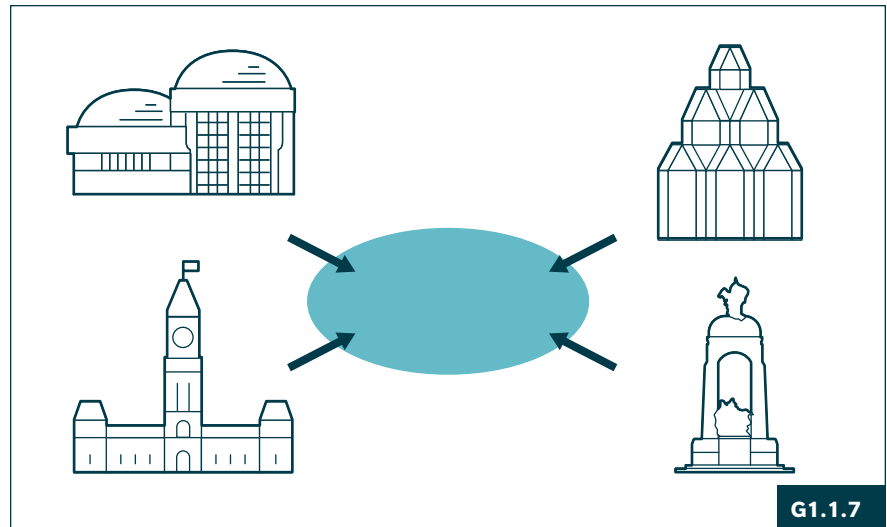
Respond to climatic conditions through choices such as orienting buildings and public spaces to maximize solar penetration in winter and shade in summer, and to avoid adverse microclimatic effects related to wind.



G1.1.6

### G1.1.7 IMPORTANT SITES

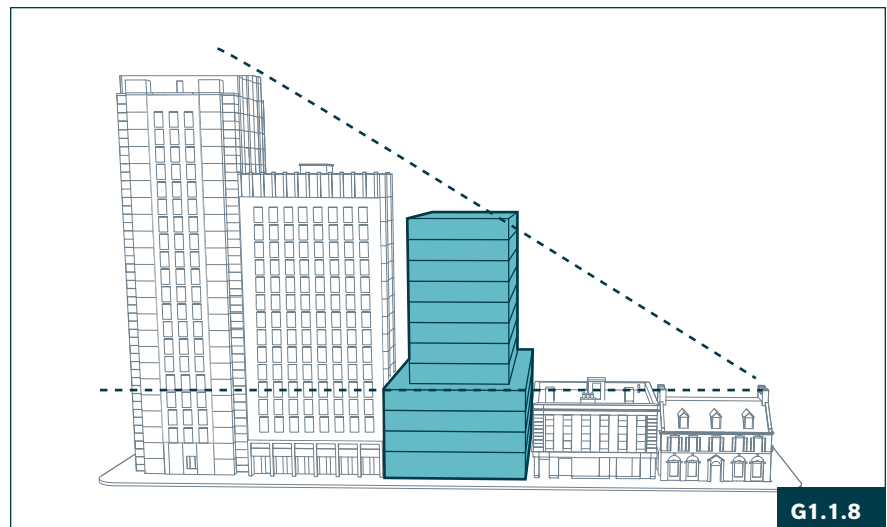
Employ the highest planning and design standards to sites containing, or in proximity to, national symbols and landmarks.



G1.1.7

### G1.1.8 MASSING

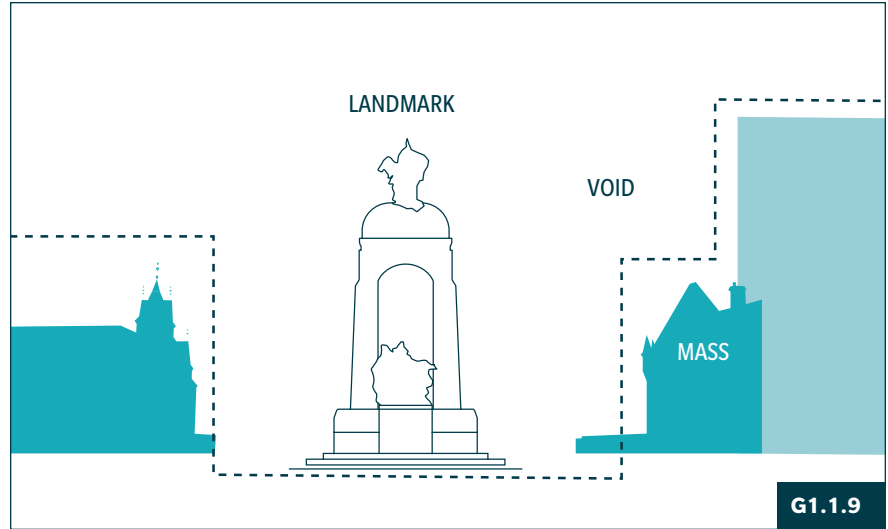
Ensure appropriate transitions in height, scale, proportion, form and spatial arrangement of surrounding development and adjacent sites.



G1.1.8

**G1.1.9 FRAMING**

Orient the site and locate buildings and structures to frame and enhance important views of national symbols and significant landscapes. Ensure that these views are protected.





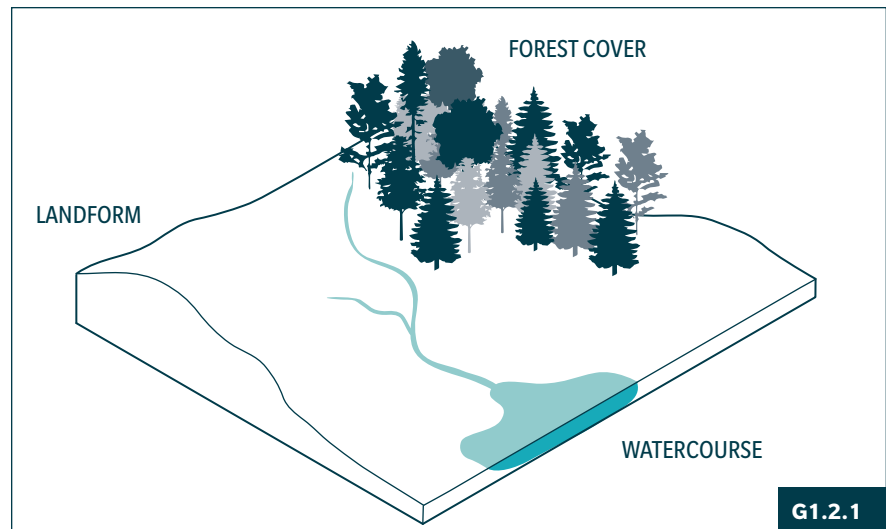
## G1.2 Natural and Cultural Heritage

The National Capital Region is situated on the ancestral lands of the Algonquin Anishinabeg Nation, in a spectacular setting at the confluence of three major rivers. The natural landscape of the Capital reflects the deep meaning and importance of natural heritage in Canada's national identity, and the layers and patterns of human history and cultural exchange stretching back thousands of years.

Cultural landscapes, heritage sites, and archaeological discoveries all contextualize the Capital's course of history. Designers should analyze and draw inspiration from the site's place and role within this history. The objectives are to carefully situate new projects within their historical context, showcase cultural narratives, and respect heritage attributes, all of which contribute to the distinctive places and cultural significance of the Capital.

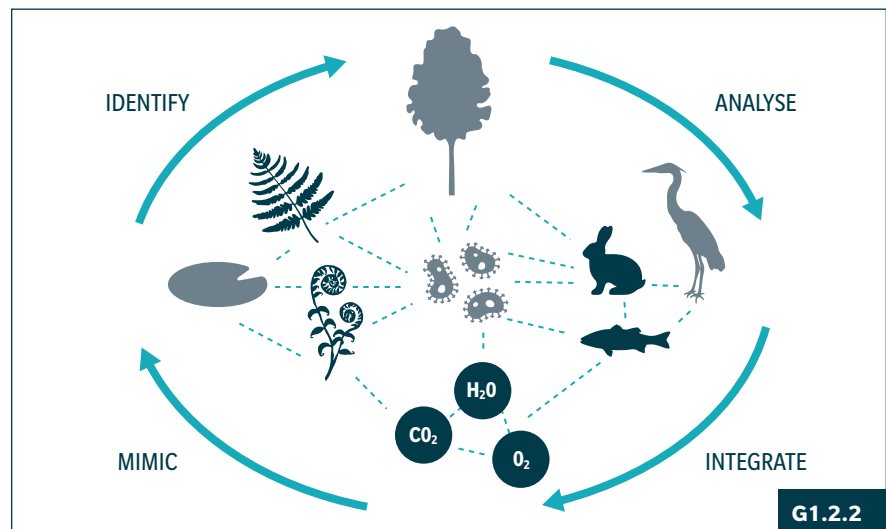
### G1.2.1 NATURAL FEATURES

Preserve, enhance, and showcase important natural heritage features (e.g. rivers, escarpments, hills and forests of the region).



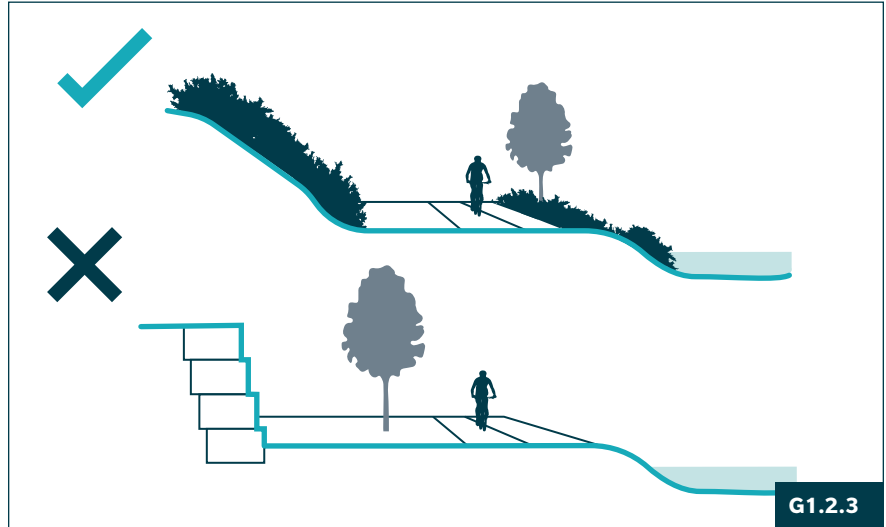
### G1.2.2 ECOLOGICAL FUNCTIONS

Integrate natural processes into the site design: preserve, rehabilitate and restore. Where a natural state cannot be maintained, identify opportunities to integrate and mimic natural processes.



**G1.2.3 TOPOGRAPHY AND VEGETATION**

Conserve existing topography and natural native vegetation. Avoid clearing and regrading/levelling sites where topography contributes to a site's experience.



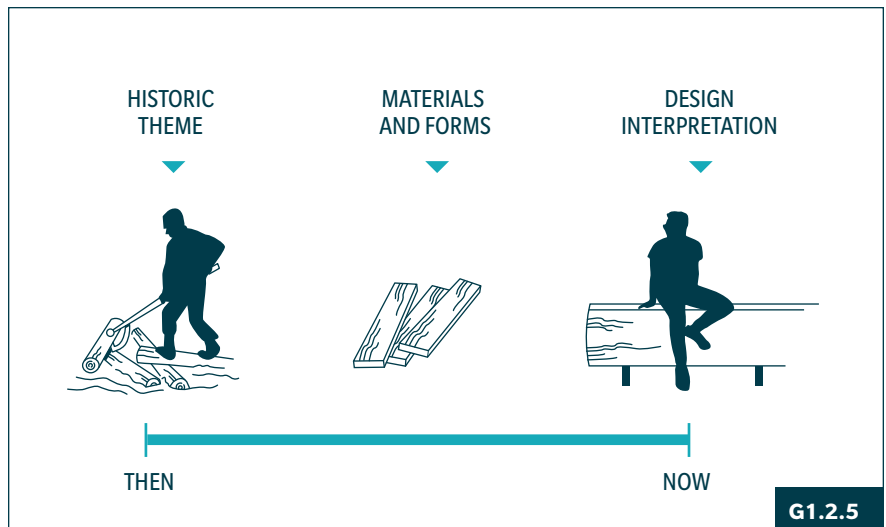
**G1.2.4 CHARACTER FEATURES**

Identify and retain notable site features that contribute to the unique sense of place (e.g. iconic railings, fences, lamp posts, benches).



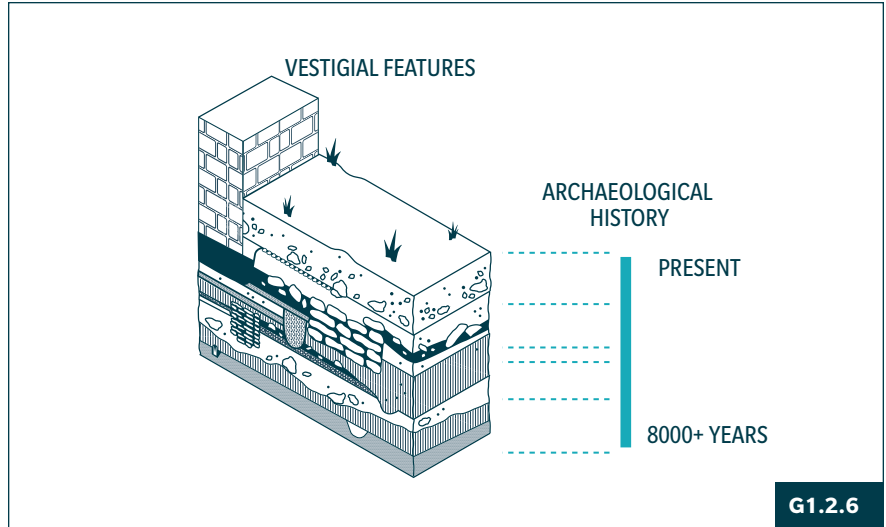
**G1.2.5 HISTORICAL INSPIRATION**

Draw inspiration from the history, archaeology and cultural landscapes of the site and surrounding area to inform the site's form and features.



**G1.2.6 SHOWCASE**

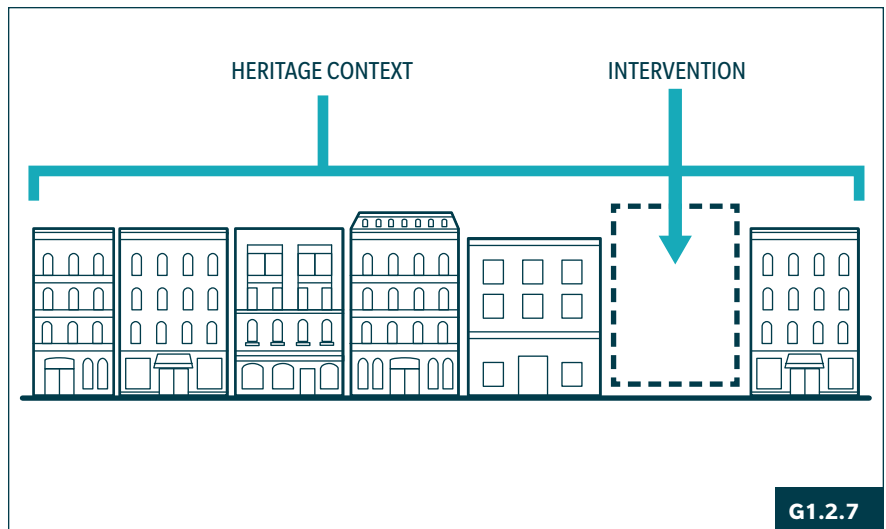
Preserve and display archaeological discoveries, vestigial site features, cultural narratives, and past site uses.



G1.2.6

**G1.2.7 INTERVENTION**

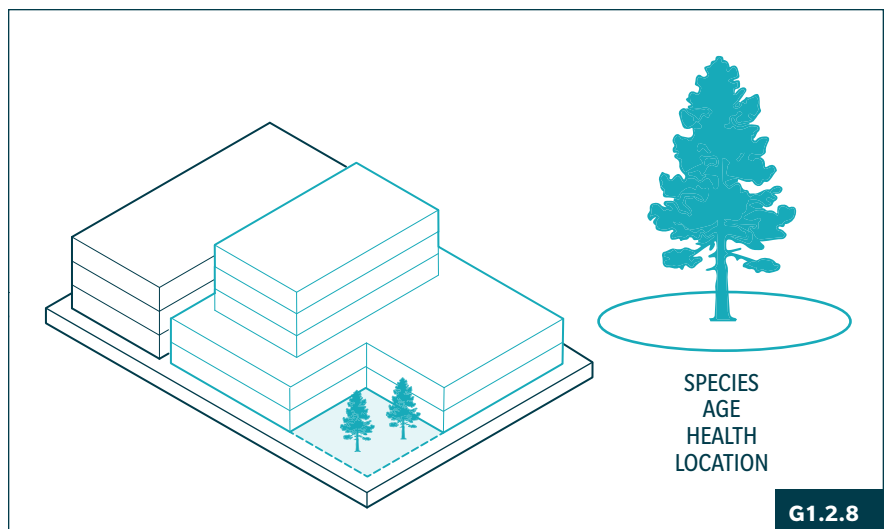
Ensure that interventions respect and complement the heritage context. Avoid negatively altering or inadvertently impacting character-defining features.



G1.2.7

**G1.2.8 SIGNIFICANT TREES**

Preserve notable trees as a living legacy and testament to the site’s history and character. Mature trees contribute to the Capital’s comfort, beauty, shading and forested character.



G1.2.8



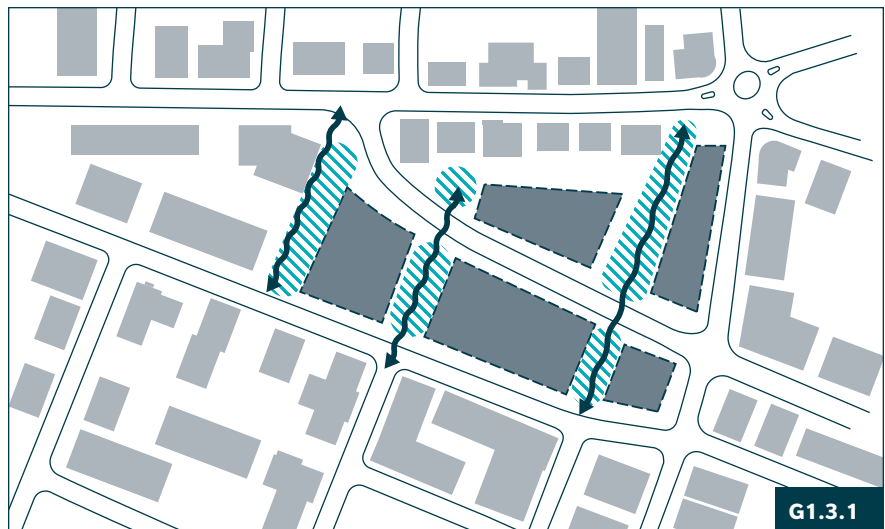
## G1.3 Site Layout

The Capital Realm is made up of diverse sites and locations – public, private, natural, and urban. While their roles and uses vary, it is important that sites in the Capital are well laid out to achieve their purpose. The design of built and landscaped spaces is closely linked with user behaviour and requirements. The design of spaces begins with analyzing the needs of those who will use the space, and designs are more effective when user needs are understood.

The layout and design of spaces present suggestions of how the space is meant to be used – its level of privacy, how to travel through it, and where one can be comfortable in different conditions. The objective is an intuitive design that provides clear expectations to users of the form and function of a space.

### G1.3.1 ARRANGEMENT

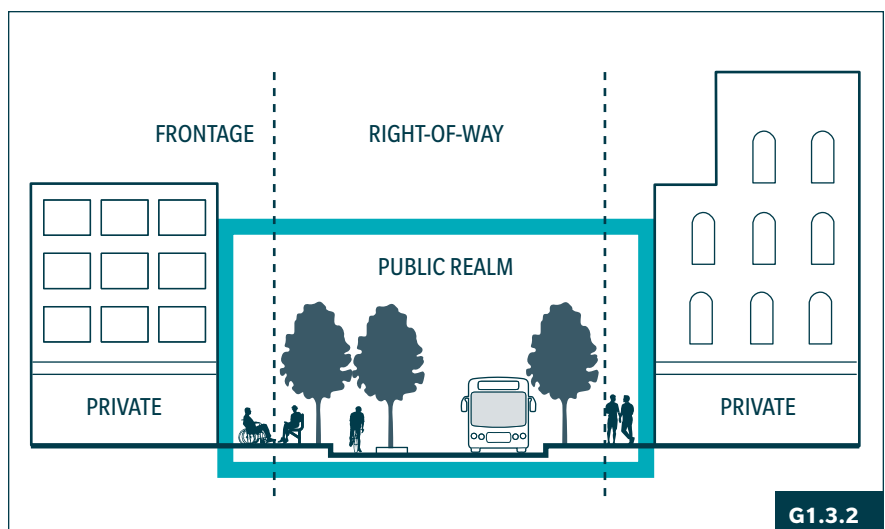
Configure and arrange important elements and destinations with logical entrance and exit points and clear lines of sight and travel.



G1.3.1

### G1.3.2 PUBLIC REALM

Make clear which exterior spaces are part of the public realm through amenities and design features appropriate to the location and its role (e.g. furnishings, public amenities, and signage).



G1.3.2

**G1.3.3 PRIVATE AREAS**

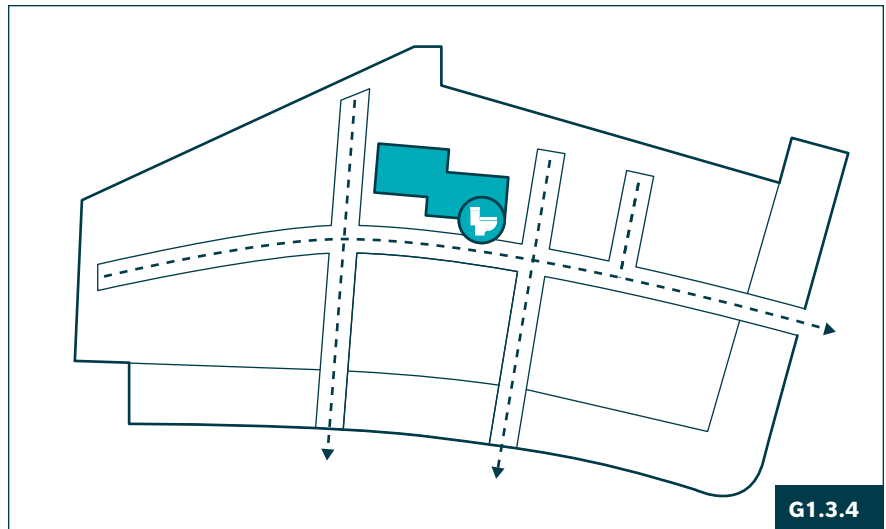
Identify which areas are private, restricted, or utilitarian spaces. Locate them discreetly and provide clear identification of their role through placement, circulation patterns and design features (e.g. fences, gates, screens, and changes in materiality).



G1.3.3

**G1.3.4 ANCHORS**

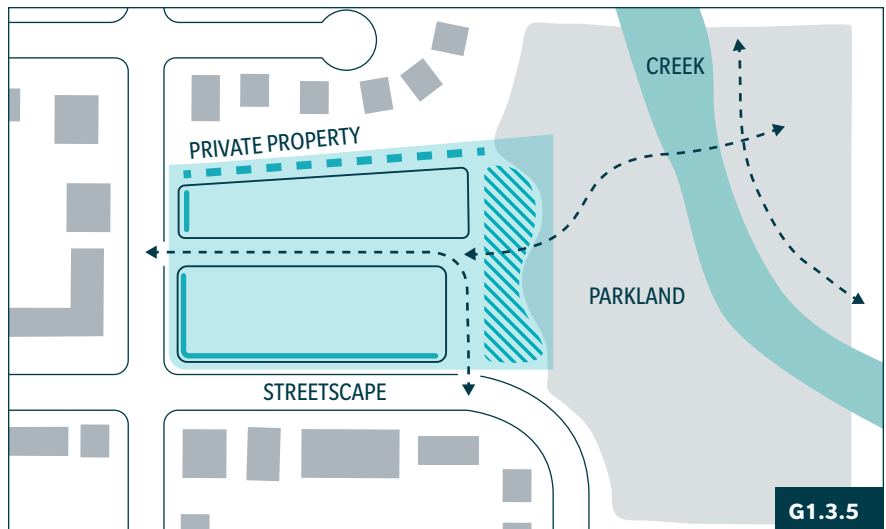
Locate commonly used public features in prominent and easily accessible locations.



G1.3.4

**G1.3.5 EDGES**

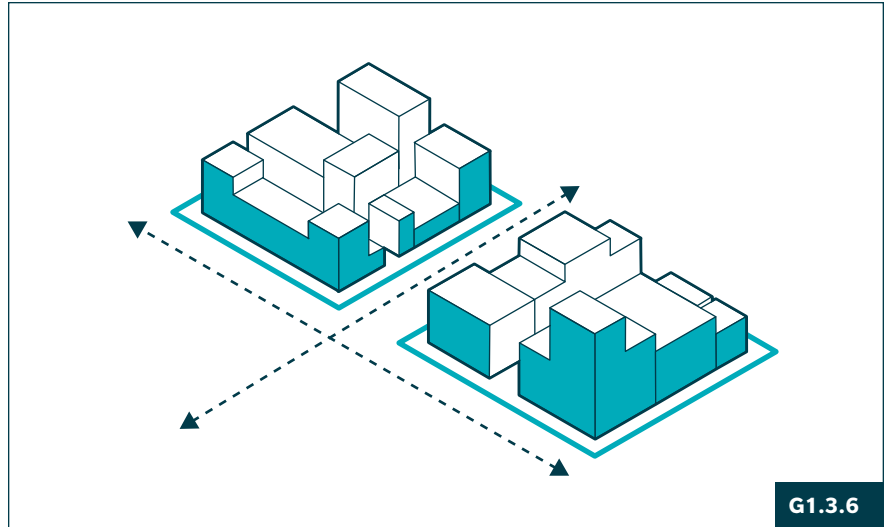
Design property edges and boundaries to provide safe, attractive and legible transitions to the character and patterns of use of adjacent streets and sites.



G1.3.5

### G1.3.6 BUILDING ORIENTATION

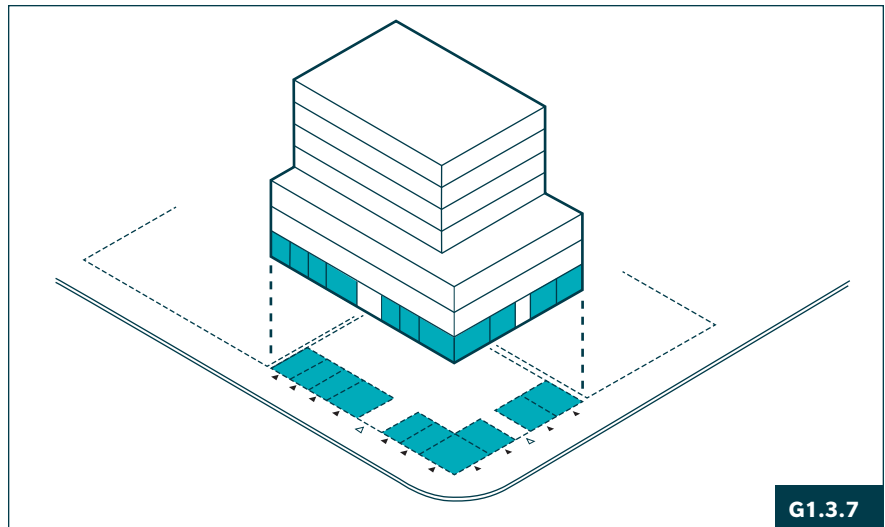
Orient buildings to face roads and frame public spaces, contribute to adjacent spaces and improve pedestrian safety and landscape amenities within the public realm.



G1.3.6

### G1.3.7 ACTIVE FRONTAGES

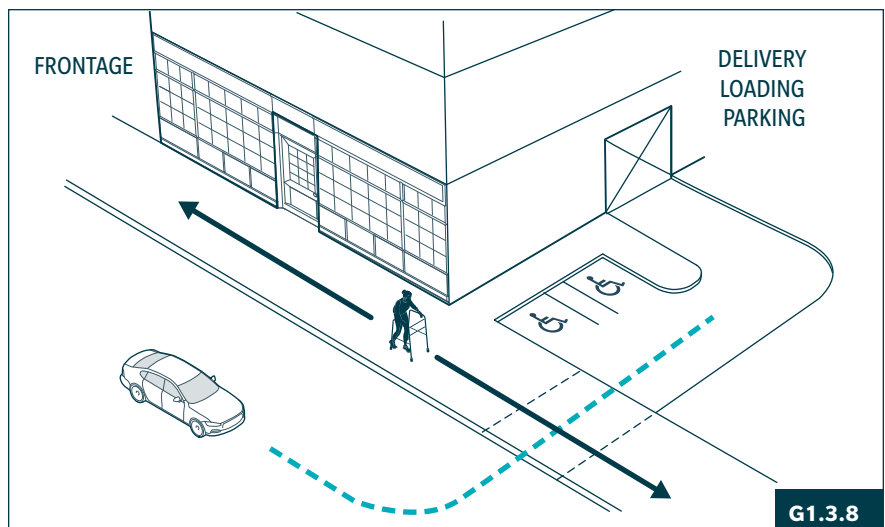
Provide active building frontages that present safe, animated and distinctive faces to adjacent streets and properties.



G1.3.7

### G1.3.8 VEHICULAR ACCESS

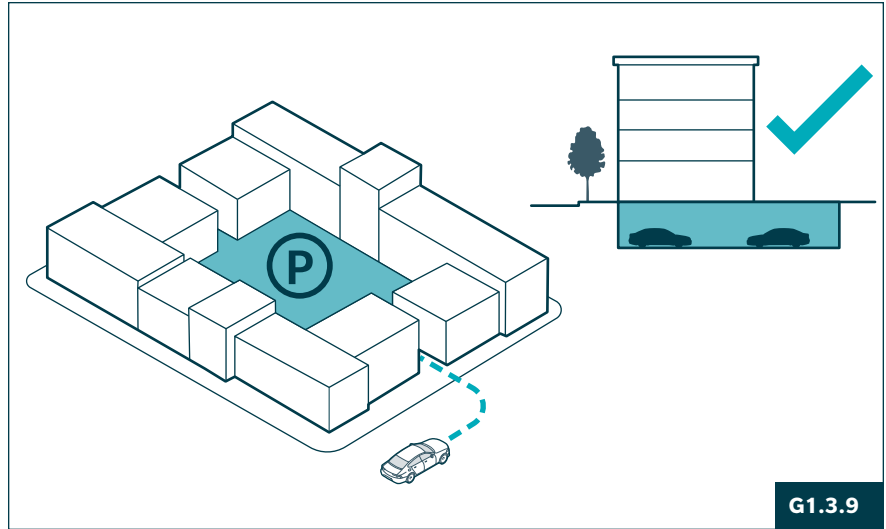
Arrange vehicular circulation, arrival and drop-off zones to prioritize public spaces and minimize vehicular impacts. Limit the number of driveways that cross sidewalks to preserve pedestrian priority.



G1.3.8

**G1.3.9 PARKING**

Minimize and discreetly locate parking with clear travel routes to entrances and destinations. Avoid placing parking between buildings and adjacent streets or in locations that will discourage pedestrian travel.

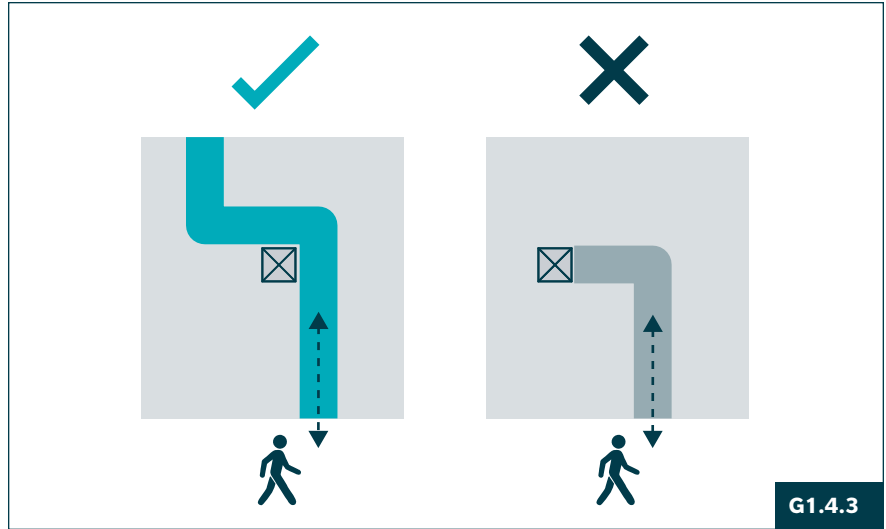






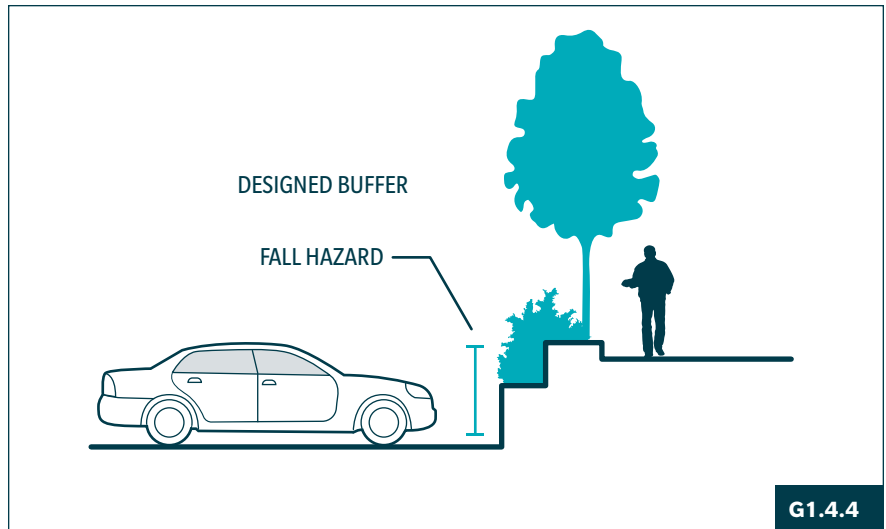
**G1.4.3 CIRCULATION AND EGRESS**

Provide safe and attractive pedestrian linkages with convenient access to and from pathways, sidewalks or public spaces. Avoid dead-ends and enclosed spaces.



**G1.4.4 HAZARDS**

Identify and mitigate risks to public safety through thoughtfully integrated site design and detailing solutions.



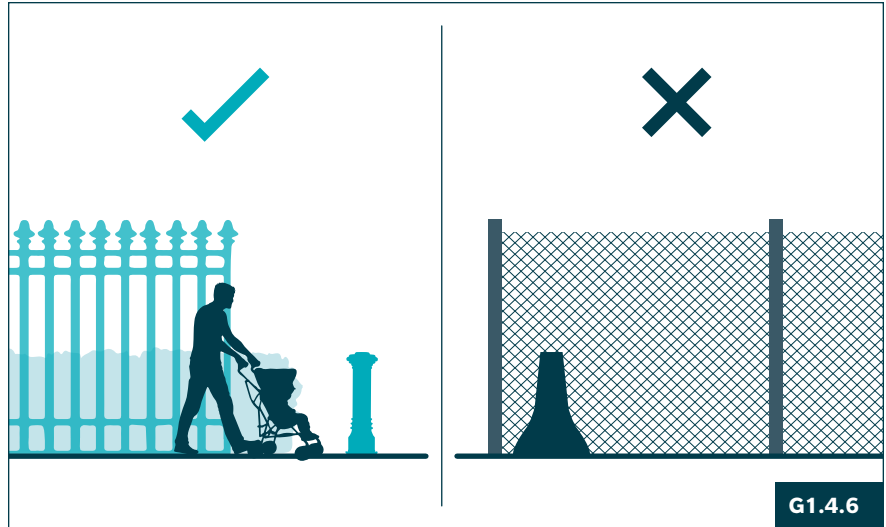
**G1.4.5 DESIGN INTEGRATION**

Integrate security devices into the site design so that they reflect and contribute to the site's aesthetics and character.



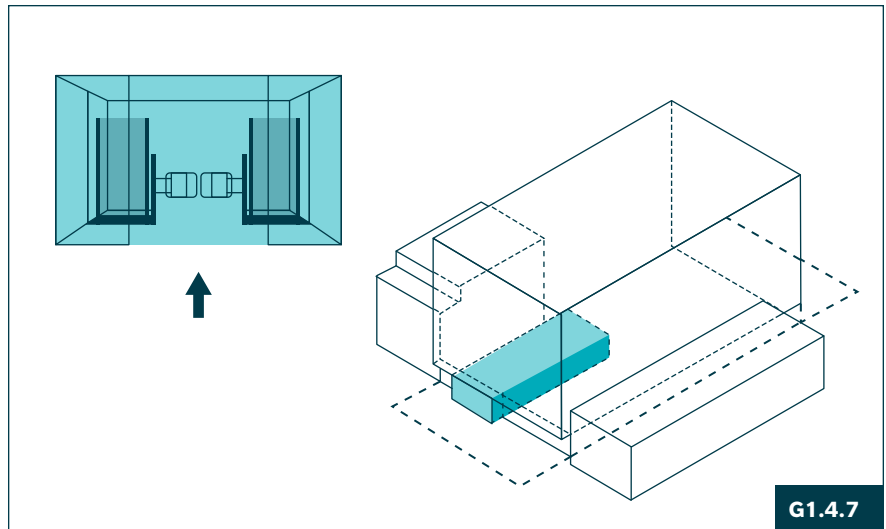
**G1.4.6 PERIMETERS AND BARRIERS**

Where a controlled perimeter is required, employ fences, walls and barriers that present a pleasing and finely detailed face to the adjacent public realm.



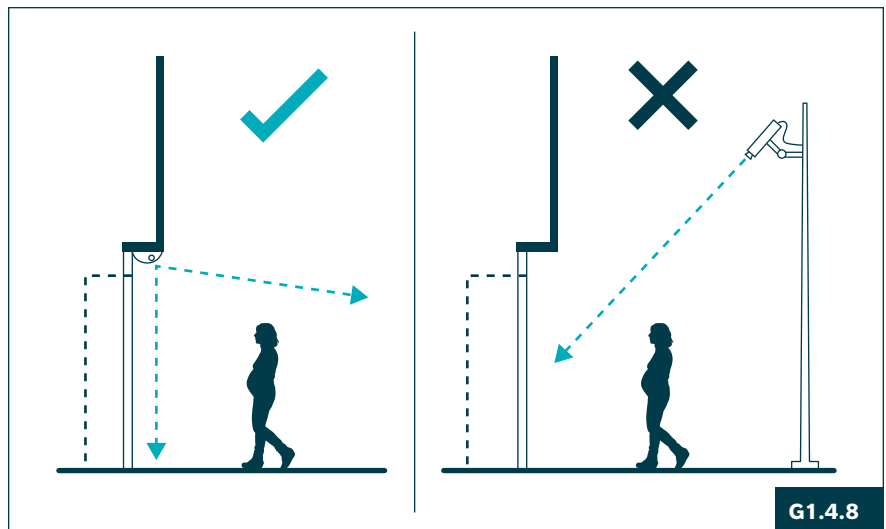
**G1.4.7 SCREENING FACILITIES**

Where controlled access and visitor screening are required, design facilities as prominent doors and entries with attention to placement, detail, materiality, and surrounding context. Integrate facilities into building envelopes or site features.



**G1.4.8 SURVEILLANCE**

Integrate surveillance features discreetly into their surroundings so as not to visually dominate the environment.





## G1.5 Circulation and Mobility

Circulation and mobility networks have shaped the Capital of today. From travel on the Ottawa River, and the construction of the Rideau Canal, to railway relocations, the federal parkway network, and the Capital Pathways – the ways that people move through the Capital help to define the experience it offers.

Designers should analyze existing and potential connections to mobility networks (e.g. pedestrian, cyclist, transit, vehicular, marine) to inform how to connect sites. The objectives are to ensure that sites are accessible and that the experience of travelling through the Capital contributes to its image and user experience.

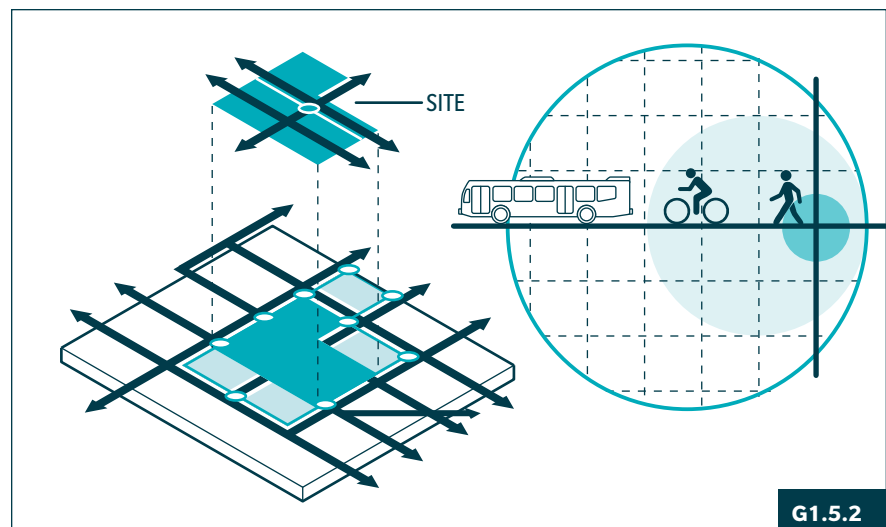
### G1.5.1 USER EXPERIENCE

Promote a people-first approach to create pleasing, safe and convenient routes and connections. Accommodate layered modes of mobility, both present and future.



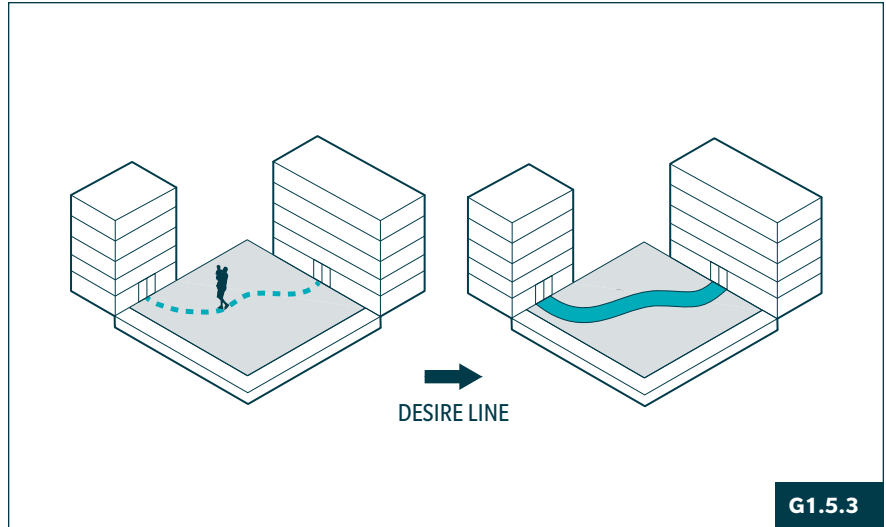
### G1.5.2 SEAMLESS NETWORKS

Ensure sites are well connected to, and participating in, surrounding mobility networks. Avoid the creation of impermeable blocks and continue the pattern of mobility networks through sites.



**G1.5.3 DESIRE LINES**

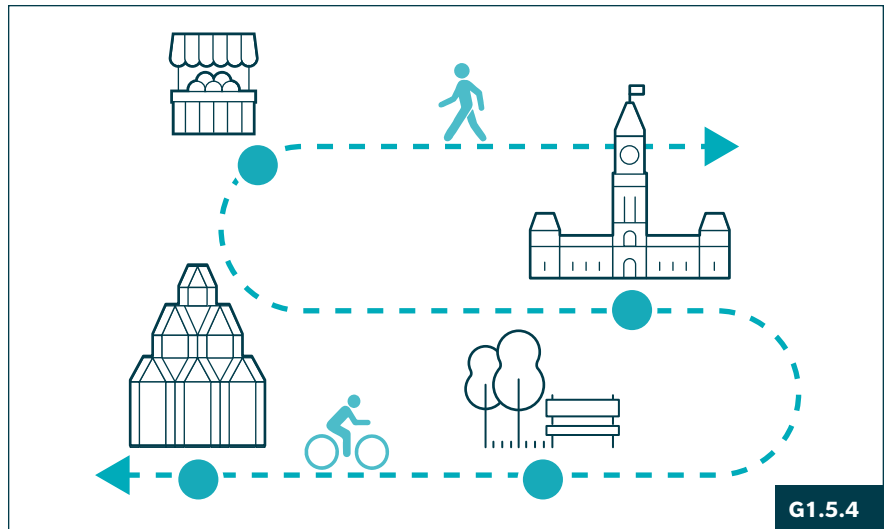
Arrange paths of travel to and through sites to accommodate the anticipated behaviour of users. Avoid compensating for unintuitive design with signage and obstacles.



G1.5.3

**G1.5.4 INTEGRATION**

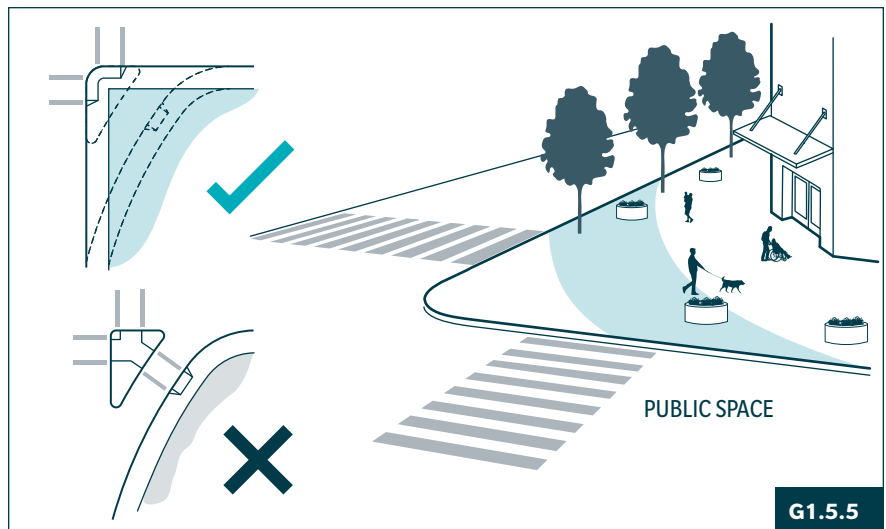
Design thoroughfares to connect to and reinforce places and destinations through material choice, alignment, views, and landscape integration.



G1.5.4

**G1.5.5 SPACE**

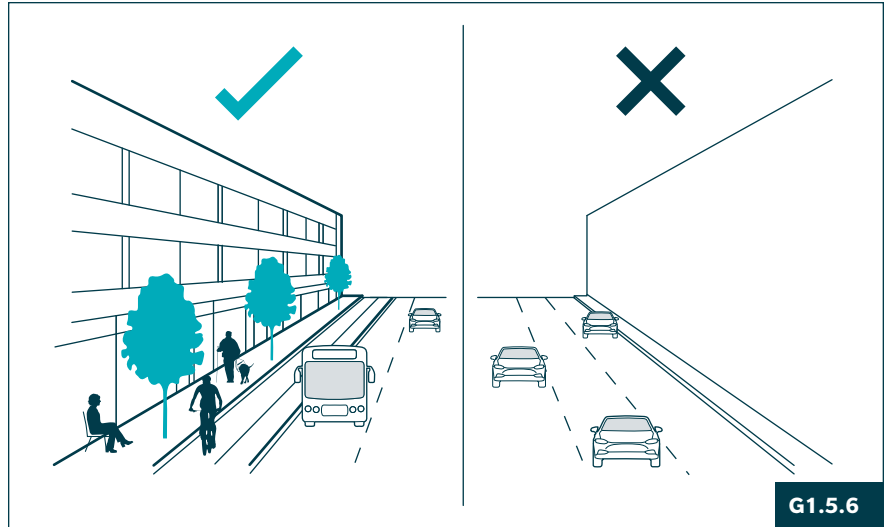
Provide transportation infrastructure in compact, efficient layouts. Avoid expansive roadway configurations, slip lanes and on-ramps that increase vehicle speeds and fragment spaces.



G1.5.5

### G1.5.6 HUMAN SCALE

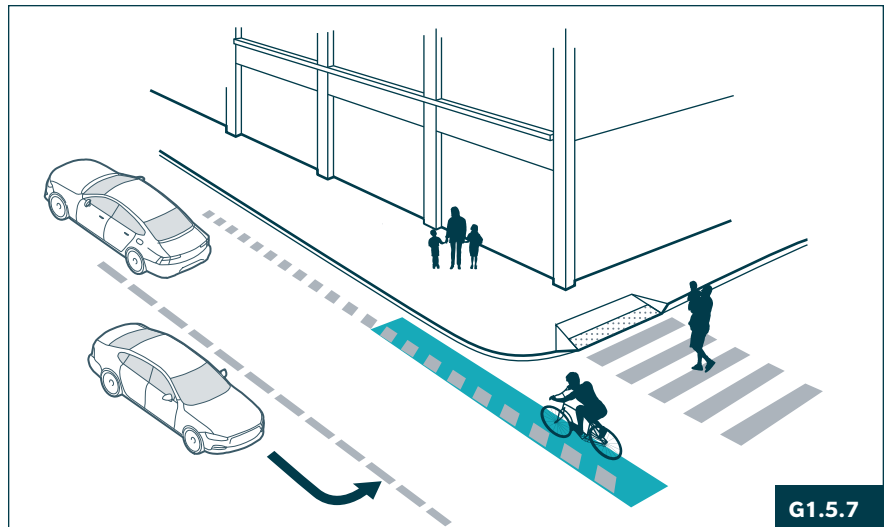
Treat roadway rights of way as public spaces. Make streets lively, human-scaled places to linger and enjoy and not simply pass through.



G1.5.6

### G1.5.7 USER SAFETY

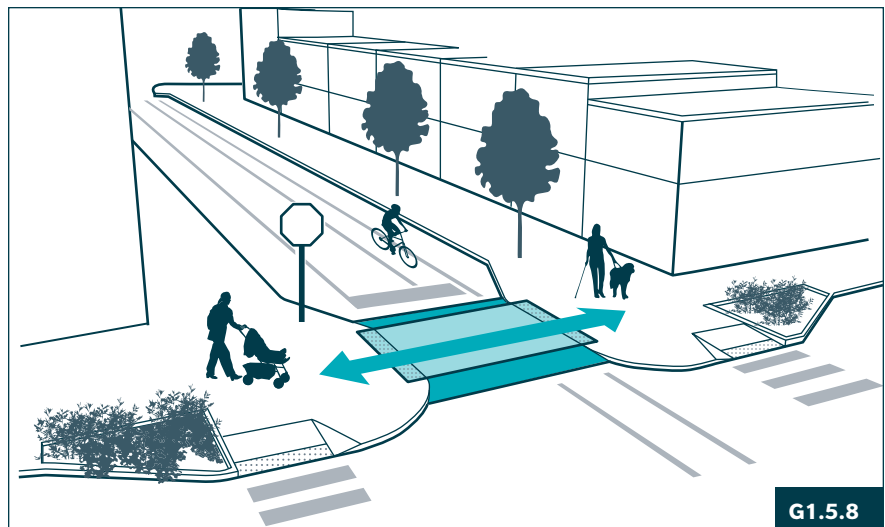
Recognize that users will make mistakes. Design to avoid conflict, injury and collisions, and to reduce their severity when they do occur.



G1.5.7

### G1.5.8 CLARITY

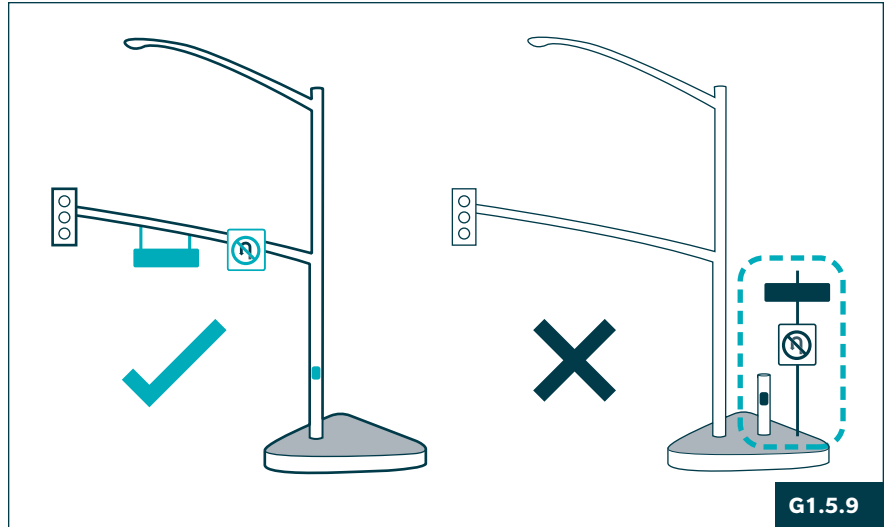
Where conflict or friction may occur between different modes, provide design cues that clarify who has priority. Employ infrastructure to direct appropriate user behaviour while protecting vulnerable users.



G1.5.8

**G1.5.9 ANCILLARY INFRASTRUCTURE**

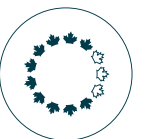
Integrate ancillary transportation infrastructure discreetly into the streetscape design. Limit visual clutter to provide clarity and legibility within the landscape.







# Landscapes and Public Spaces





# Landscapes and Public Spaces

## THIS CATEGORY INCLUDES:

- ▶ **G2.1**  
Picturesque Landscapes
- ▶ **G2.2**  
Public Spaces
- ▶ **G2.3**  
Landscape Furnishings  
and Features
- ▶ **G2.4**  
Waterways and Shorelines
- ▶ **G2.5**  
Earthworks and Site  
Engineering

One of the Capital's most distinctive features is its picturesque natural setting and character. The juxtaposition of monumental architecture set against a lush verdant backdrop is a unique and defining characteristic of Canada's Capital.

At the centre of the Capital, the Parliament Buildings were designed as an ensemble of gothic pavilions in a park-like setting, majestically perched atop the rugged escarpment overlooking the Ottawa River. Scenic shorelines, extensive green spaces, plazas and landmark sites all contribute to the exceptional beauty and quality of life of the Capital Region. This duality between natural and built form is a stunning legacy of the Capital. Special care and attention must be paid to the curation and evolution of the underlying landscapes and public spaces.

The objective is to create and enhance iconic landscapes and meaningful public spaces that provide a diversity of options for residents and visitors to gather, explore and celebrate the Capital. Places that are memorable and engaging, and a public realm that is accessible, animated and equitable.

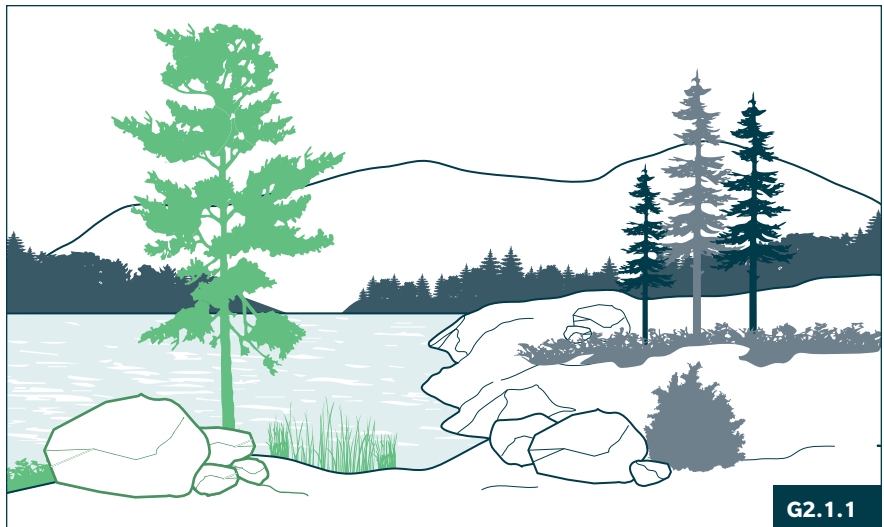
## G2.1 Picturesque Landscapes

The earliest plans for the Capital were influenced by the picturesque landscape movement. This style capitalizes on the unique place and setting of the landscape by emphasizing the duality and tensions between the “wild” landscape and the orderly arrangement of architecture and urban form.

Picturesque designs espouse this “wild” aesthetic, typified by rugged terrain, variety, irregularity, asymmetry and textures. When the built form is contrasted against this curated wilderness, it creates dramatic scenes, as though lifted from a painting. The synergy between the landscape and the built environment creates dynamic views and experiences, and the dramatic changes in elevation throughout the region enable humbling and awe-inspiring landscape vistas. All projects must play a part in maintaining and enhancing the Capital’s verdant landscape and preserve its natural features to reinforce the Capital’s identity and legacy.

### G2.1.1 REGIONAL CHARACTER

Evoke the unique regional character of the Capital through landscape designs that preserve and emphasize the region’s underlying landscape, rugged topography and local materials. Avoid commonplace or exotic landscape designs that do not reflect the character of the Capital.



G2.1.1

### G2.1.2 JUXTAPOSITION

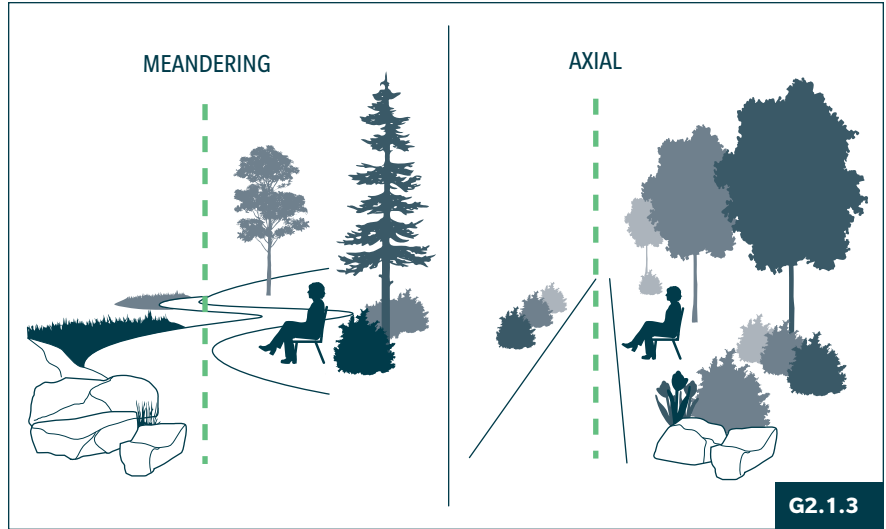
Use vegetation to contrast and complement the architecture and to balance the built and natural environments with a juxtaposition of “wild” and “designed” forms.



G2.1.2

**G2.1.3 PICTURESQUE LANDSCAPES**

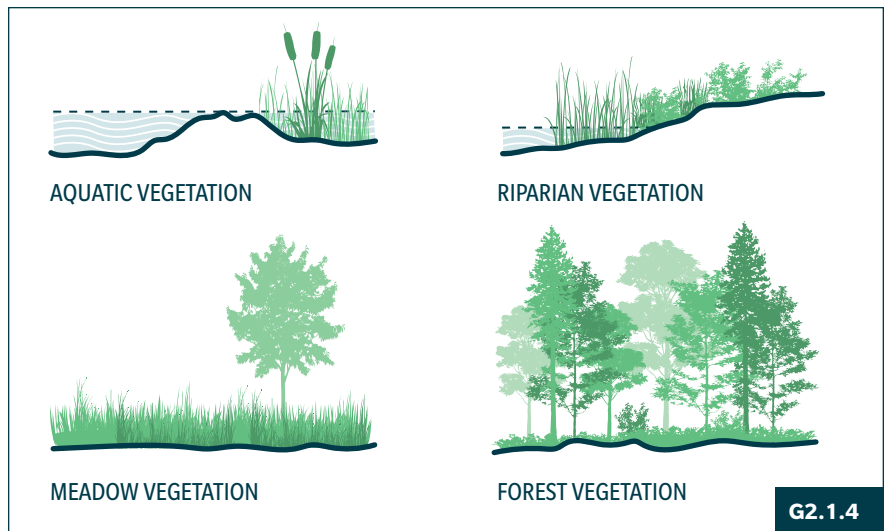
Arrange and curate parks and greenspaces to preserve and enhance the rugged natural beauty of the Capital. Employ pleasing variety, irregularity and asymmetry, even where a manicured design may be appropriate in an urban context.



G2.1.3

**G2.1.4 VEGETATION COVER**

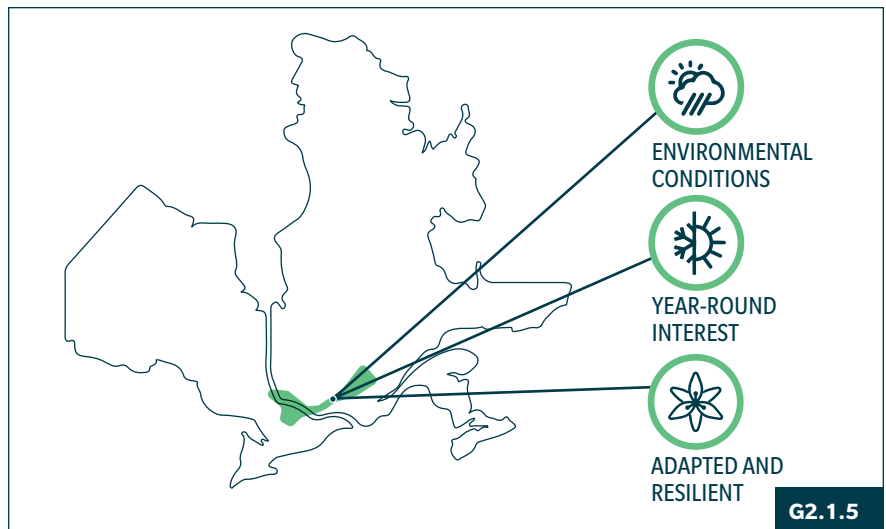
Prioritize layered vegetation communities with a mix of symbiotic plants (e.g. ground cover, understory and canopy species) and contribute to a variety of habitat typologies (e.g. aquatic, riparian, meadow and forest).



G2.1.4

**G2.1.5 HARDY PLANTING**

Select plant materials suited to the region’s climatic conditions and provide year-round interest. Prioritize resilient native plant species, well adapted to climate change.



G2.1.5

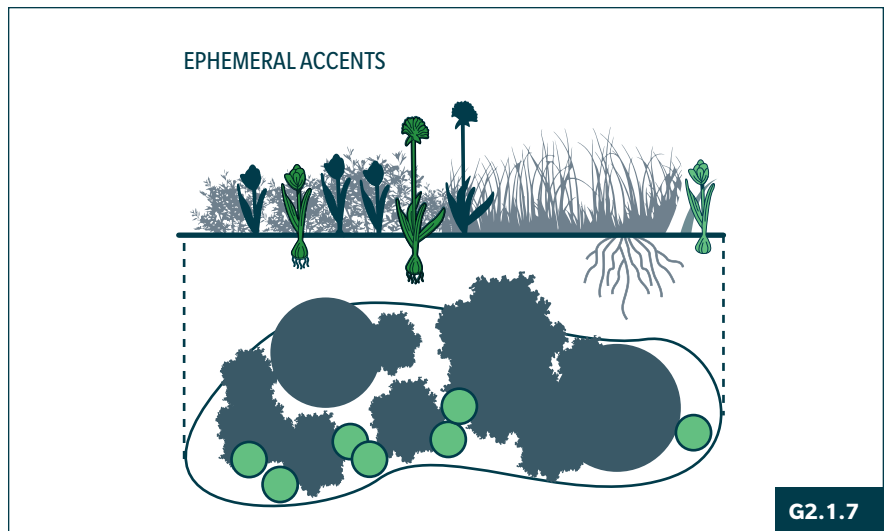
**G2.1.6 PERENNIAL DISPLAYS**

Prioritize enduring perennial planting displays. Select vigorous and low-maintenance plant species that provide interesting sequences of visual effects throughout the changing seasons.



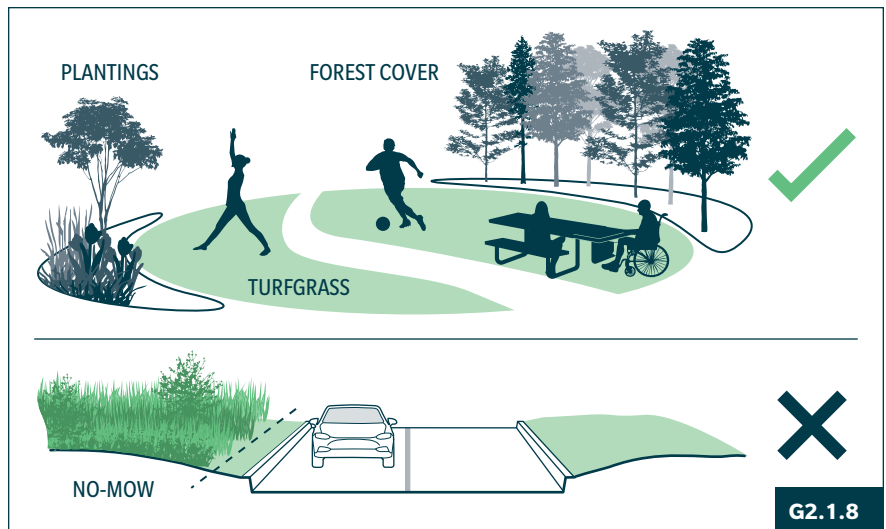
**G2.1.7 EPHEMERAL PLANTS**

Use flowering annual and ephemeral plantings strategically to complement perennial vegetation and beautify public spaces, while respecting the regional character.



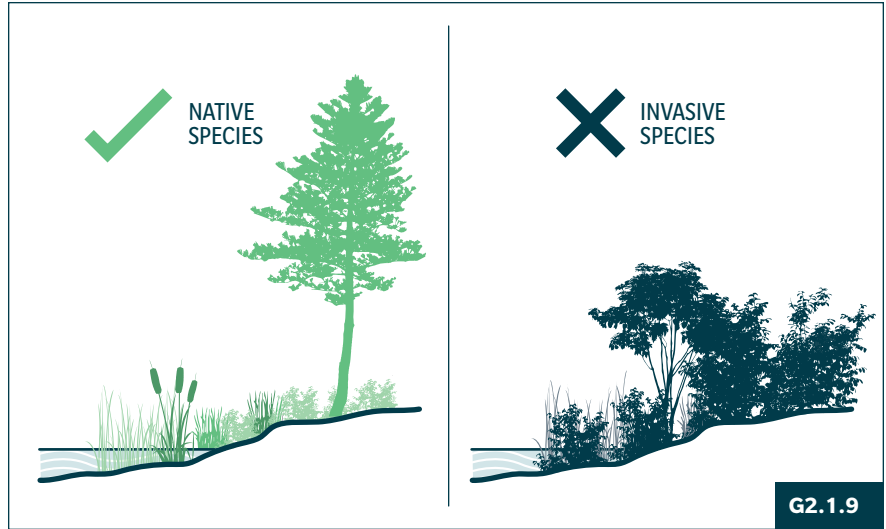
**G2.1.8 TURFGRASS**

Reserve turfgrass for areas where it provides recreational benefits, such as urban parks and leisure areas. Avoid the widespread use of turfgrass as a ground cover.



**G2.1.9 INVASIVE SPECIES**

Eradicate and control the spread of invasive species. Select non-native plantings with care where their qualities permit better adaptation or suitability to site conditions.



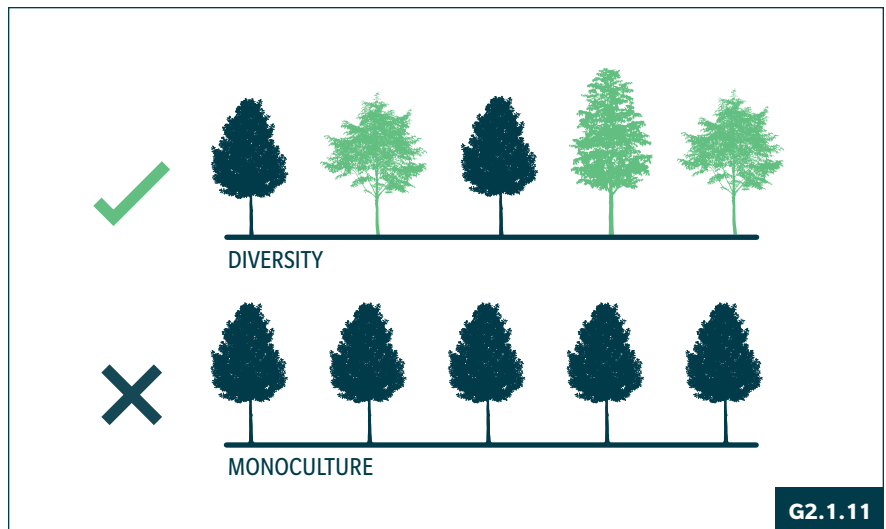
**G2.1.10 PROTECTION AND COMPENSATION**

Protect existing vegetation from injury or removal. Where vegetation must be removed, integrate new plantings proportional to loss of canopy cover, vegetation and ecosystem function.



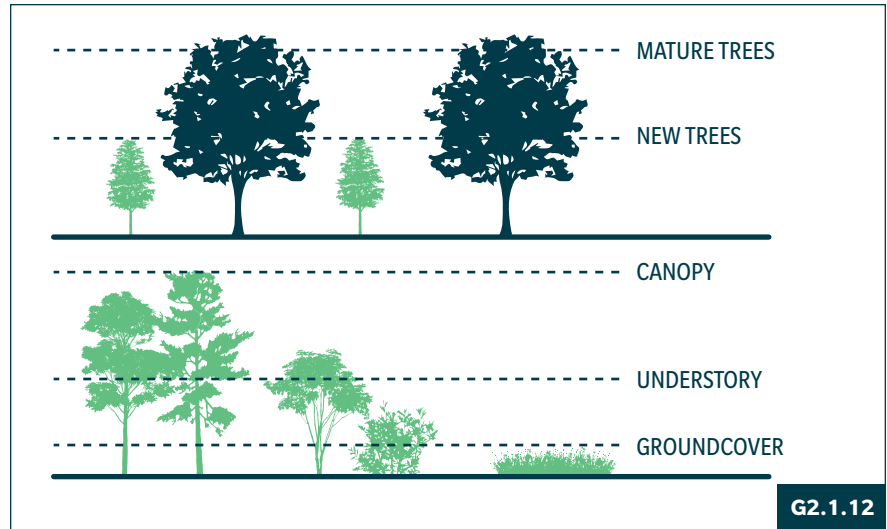
**G2.1.11 PLANT DIVERSITY**

Plant a diversity of species. Avoid monocultures of cultivated varieties with limited genetic diversity.



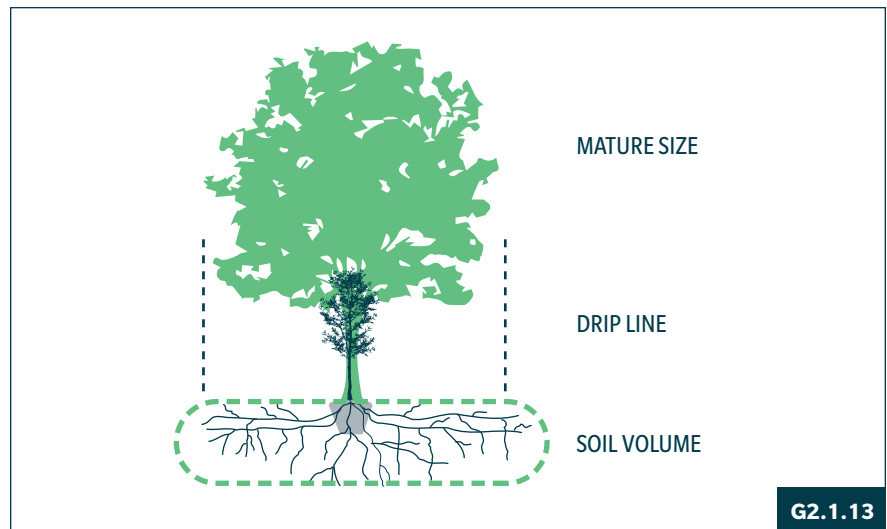
### G2.1.12 SUCCESSION PLANTING

Plant tree species of diverse ages to ensure the continuous renewal of tree cover. Employ successive understory and groundcover vegetation to contribute to four-season interest and biodiversity.



### G2.1.13 LONGEVITY

Provide the necessary elements for plantings to reach full maturity and thrive. Supply adequate space, soil, water, drainage and sun to provide the conditions for success.



### G2.1.14 INTEGRATION

Incorporate landscaping to achieve other objectives such as streetscaping, visual screening and stormwater management.







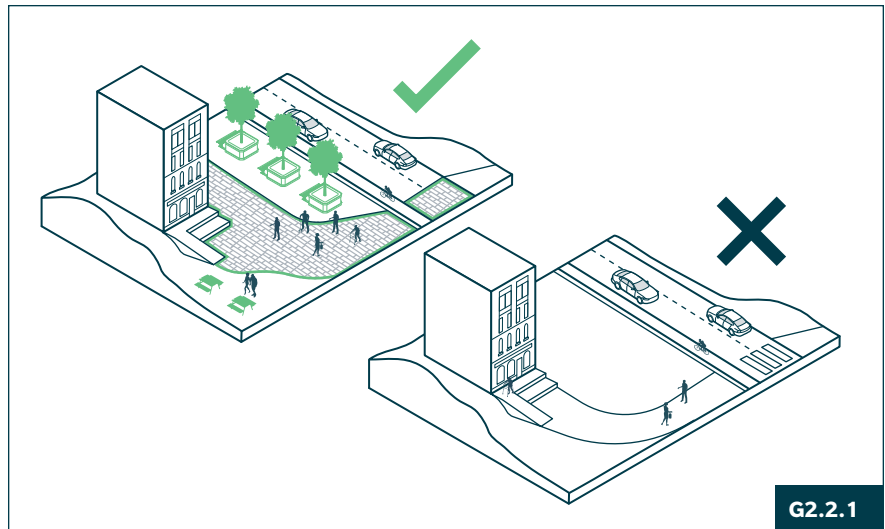
## G2.2 Public Spaces

A distinctive public realm includes meaningful parks and public spaces that reflect the dignity and symbolic importance of the Capital. These places include gathering spaces, parks, streets, squares and plazas that provide diverse opportunities to explore and experience the Capital.

Public spaces include both monumental, intentional gathering spaces, and intimate, fleeting and informal spaces that contribute to the day-to-day experience and enjoyment of residents and visitors alike. Designers should analyze user behaviour to understand patterns of use and the ways that physical space and social behaviour interact. The objective is to create spaces that provide diverse opportunities to linger, gather, converse and enjoy the Capital.

### G2.2.1 MEANINGFUL

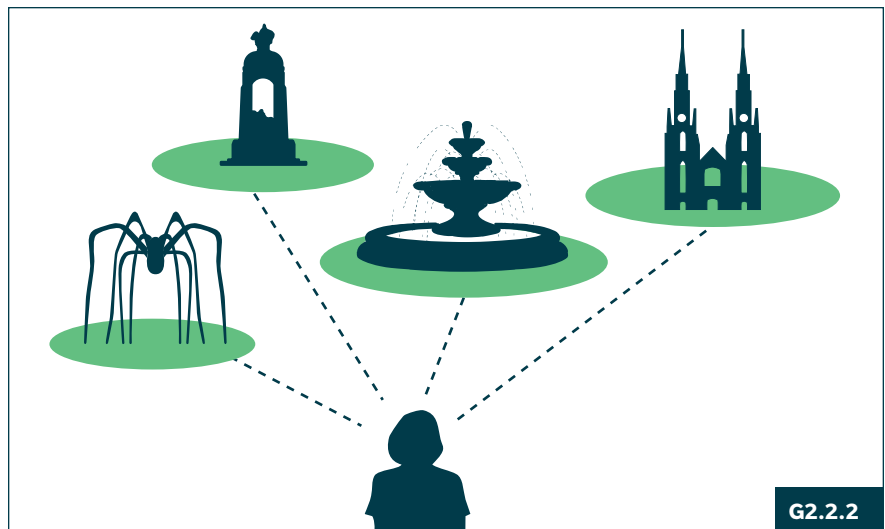
Design public spaces and outdoor areas around buildings to be purposeful public spaces, with richly detailed materials, patterns and forms. Avoid bland residual spaces without meaningful amenities or user experiences.



G2.2.1

### G2.2.2 MEMORABLE

Create unique and memorable places, through distinctive designs that preserve and highlight iconic features and provide an engaging ambiance. Introduce whimsical, playful, or creative elements strategically to dramatic effect.



G2.2.2

**G2.2.3 FOCAL POINT**

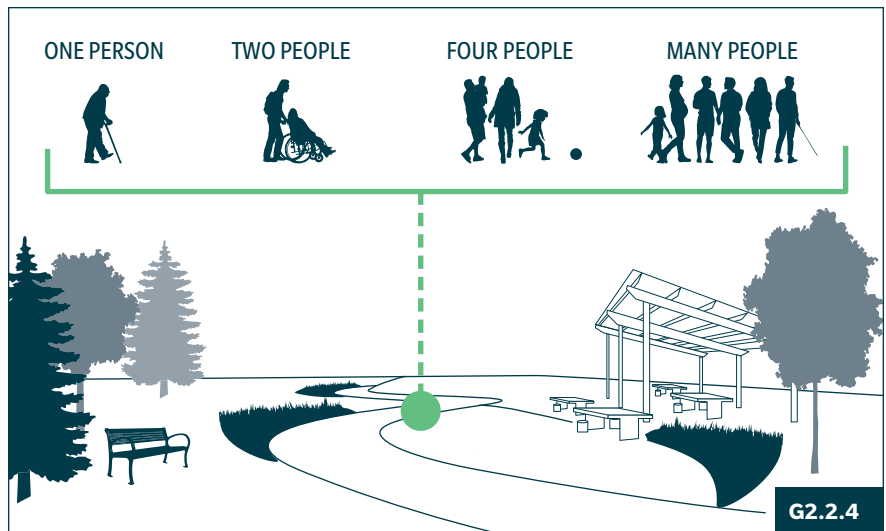
Anchor public spaces with focal points (e.g. pavilions, fountains, public art or monuments) that create a point of interest within the space. Coordinate points of interest with views, alignments and adjacent sites' experiences.



G2.2.3

**G2.2.4 DIVERSE EXPERIENCES**

Divide and arrange spaces through design and landscaping to offer a diversity of places and user amenities. Avoid expansive, unprogrammed areas without a distinct purpose.



G2.2.4

**G2.2.5 TWENTY-FOUR HOURS**

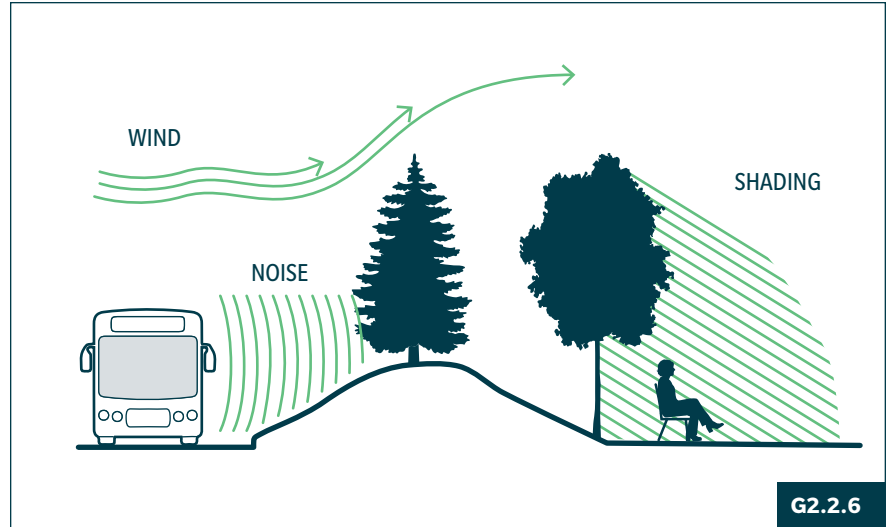
Incorporate ways to experience places at all hours of the day and night. Use lighting, active street frontages, clear sight lines and other design tools to make spaces that extend when they can be enjoyed into the evening and nighttime.



G2.2.5

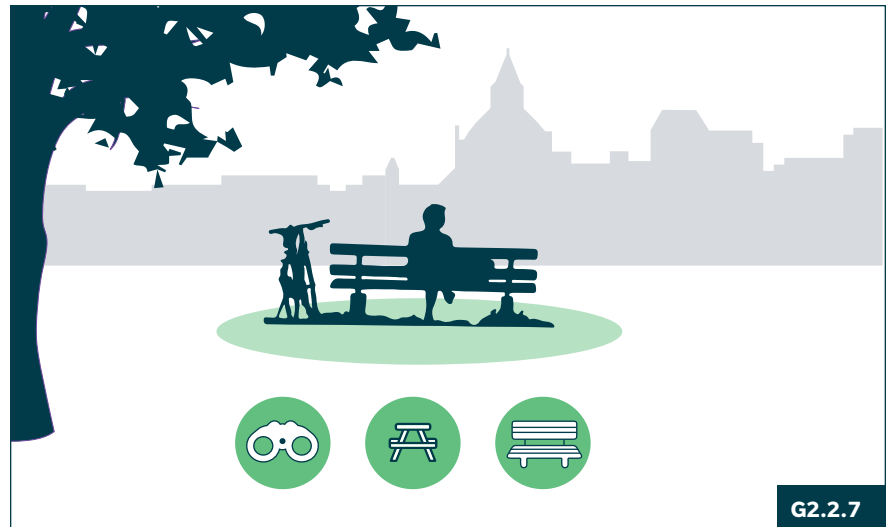
### G2.2.6 HUMAN COMFORT

Use landscape design and planting to create inviting public spaces that provide shade, wind protection and comfortable human environments.



### G2.2.7 PASSIVE SPACES

Create passive, contemplative spaces to linger and enjoy through amenities such as rest areas and observation points.



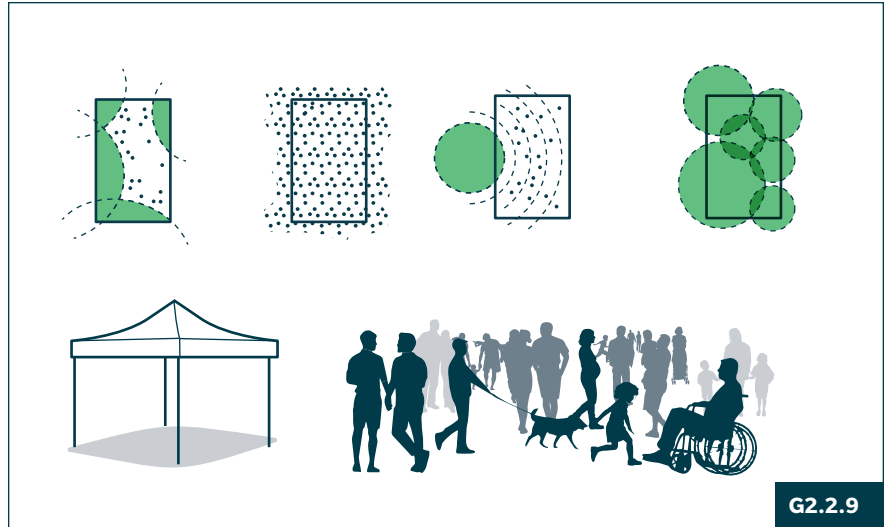
### G2.2.8 COMPLEMENTARY AMENITIES

Design special amenities and services (e.g. play features, kiosks, or commercial services) to complement the setting and blend into the context through material choice, siting and proportion.



**G2.2.9 PROGRAMMING AND EVENTS**

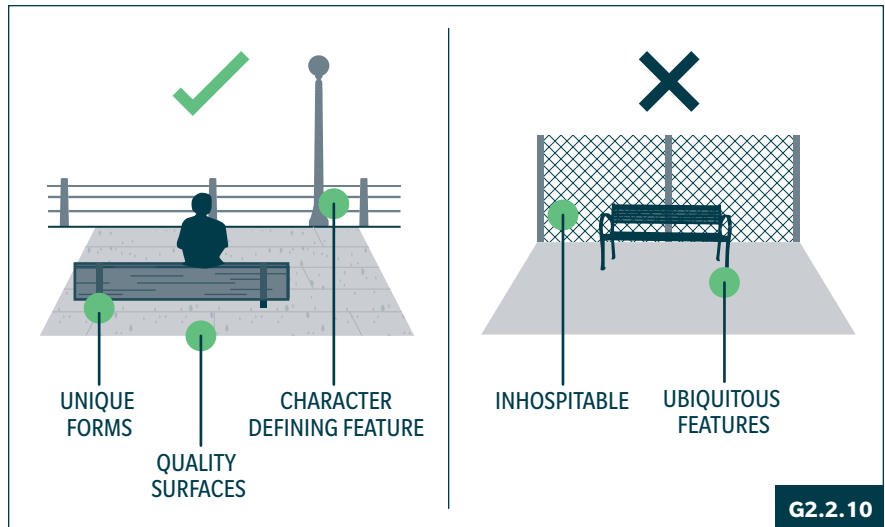
Design sites to accommodate programming and events without impacting the day-to-day use and enjoyment of parks and public spaces. Event spaces must be fit-for-purpose and designed to withstand the intensity and frequency of intended programming.



G2.2.9

**G2.2.10 DESIGN DETAILING**

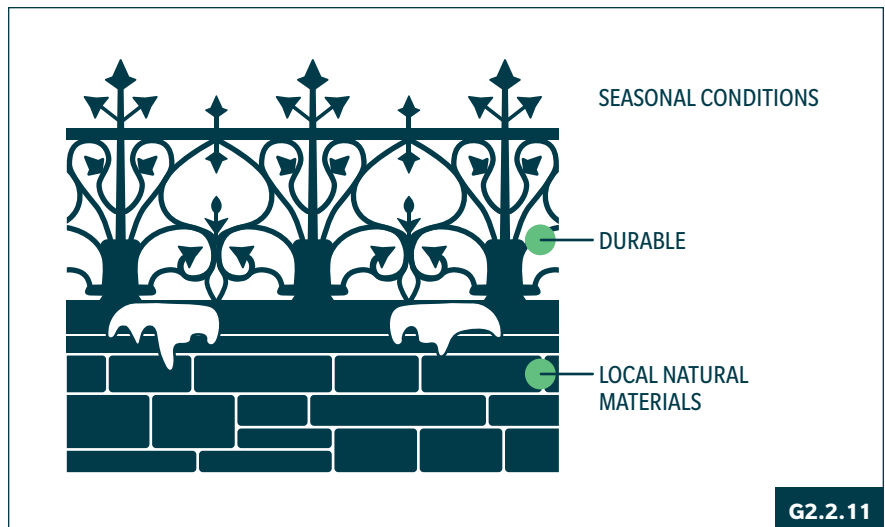
Carefully select and detail site elements (e.g. furnishings, pavements, walls) to be suited to and inspired by their context. Avoid using ubiquitous products (e.g. modular walls, chain-link fencing) that are not tailored to the locale or the Capital’s image.



G2.2.10

**G2.2.11 MATERIALS**

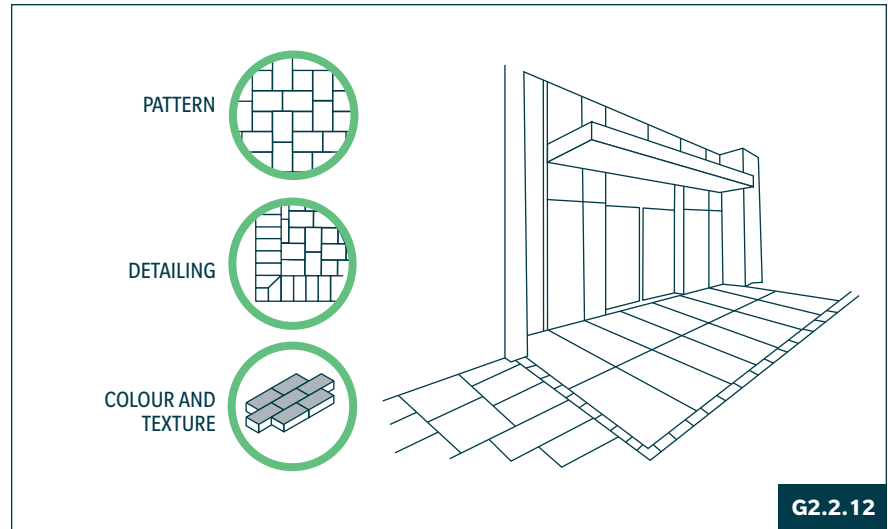
Select noble, elegant and authentic landscape materials that will age gracefully and can withstand the seasonal conditions of the region.



G2.2.11

### G2.2.12 PAVING

Define public spaces with beautiful and durable paving materials that provide interesting patterns and motifs and reflect their importance and role within the public realm.





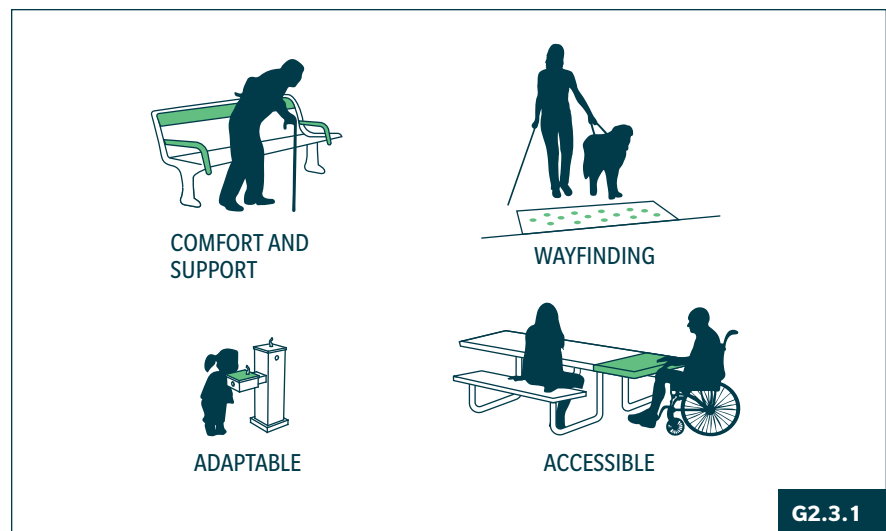
## G2.3 Landscape Furnishings and Features

Landscape furnishings and built features are often signature elements that impart a sense of character and provide important public amenities and functionality. Park benches, bollards, streetlamps, waste bins and bike racks all play an important role in addressing public needs and shaping the public spaces of the Capital.

The design and selection of landscape furnishings and features must be carefully undertaken to ensure that these elements contribute to the character and identity of the Capital and do not create unnecessary visual clutter. Designers should have a holistic view of the needs of a site to be able to integrate these features into a cohesive design without intrusive unconsidered elements. The objective is to provide durable, timeless, carefully designed functional elements that will make the Capital safe, livable and functional.

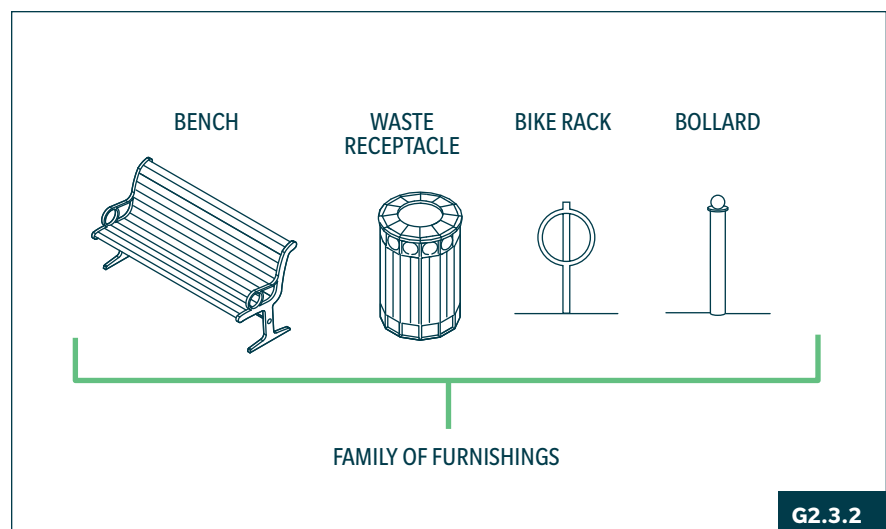
### G2.3.1 USER NEEDS

Select and design site furnishings and features to serve a wide variety of user needs and abilities.



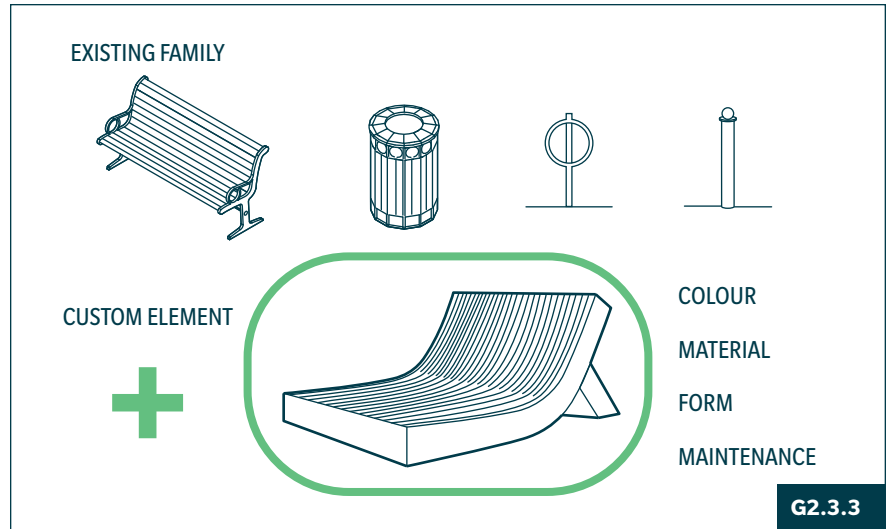
### G2.3.2 STANDARDIZED FEATURES

Where standardized families of furnishings exist, use them consistently to preserve the local character. If no family exists, select and design furnishings to suit the context.



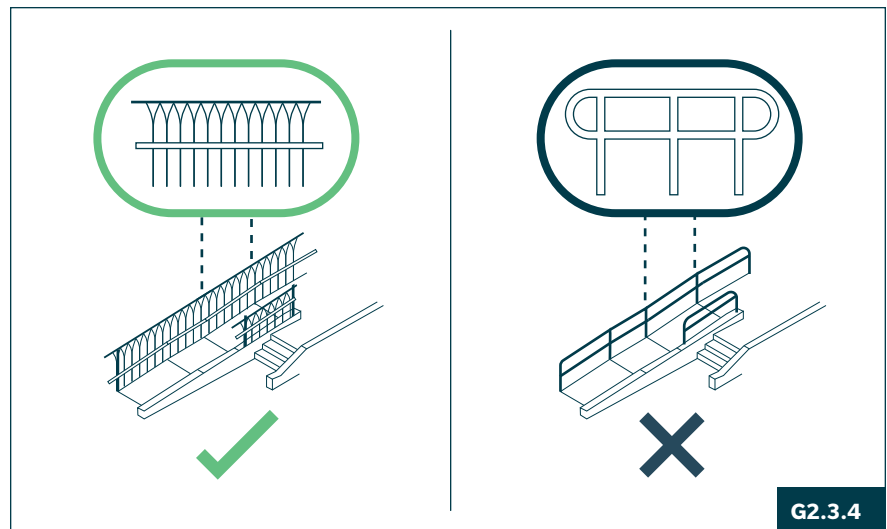
**G2.3.3 CUSTOM ELEMENTS**

Add custom site features or specialty elements where required, to complement standardized families and enhance the character and setting of the space.



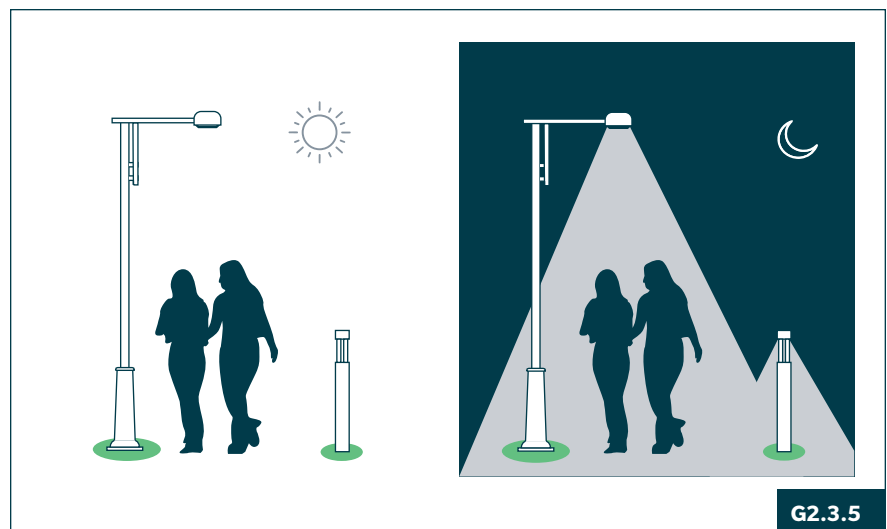
**G2.3.4 FORM AND DETAIL**

Provide furnishings and features (e.g. handrails, guard rails, fences) with beautiful forms and proportions that embody the dignity of the Capital. Avoid utilitarian features based on minimum technical requirements.



**G2.3.5 LIGHTING**

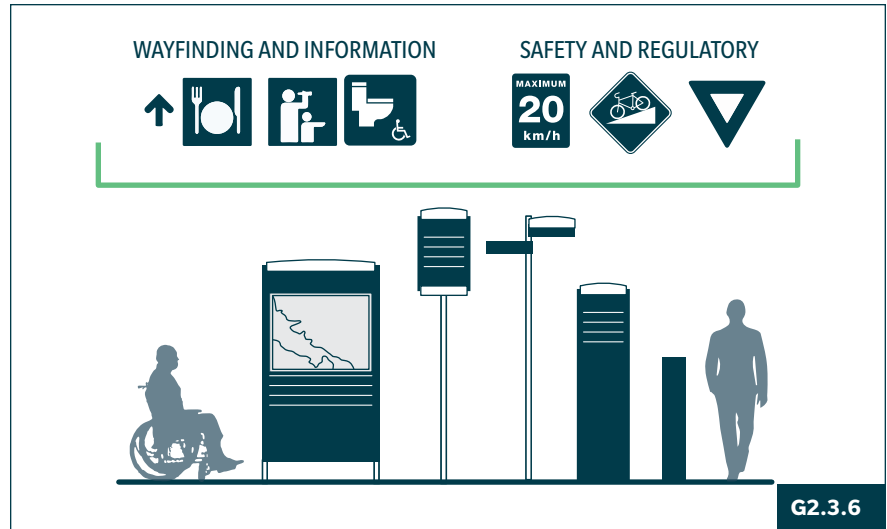
Select lighting fixtures based on their daytime aesthetics and nighttime ambiance. Avoid excessive lighting, up-lighting and spillover that create glare and limit night-time visibility.





### G2.3.6 SIGNAGE

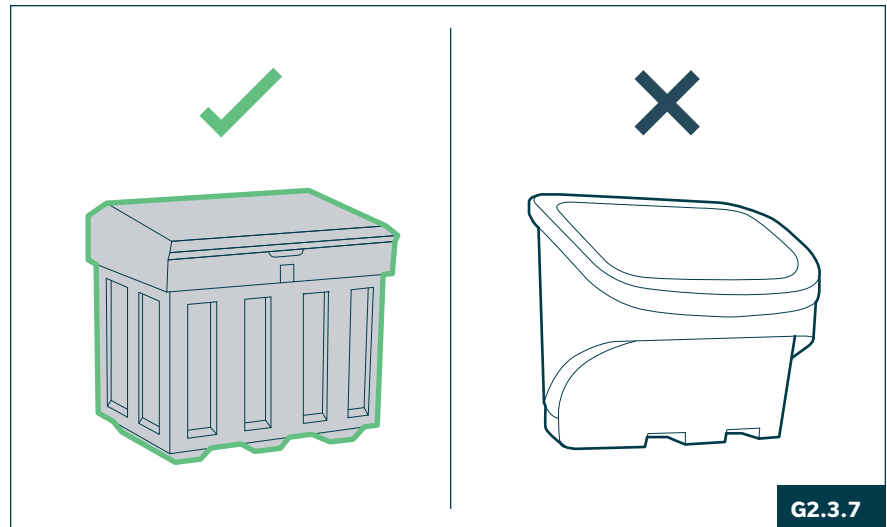
Create cohesive and integrated signage installations that address wayfinding, information and regulatory requirements. Avoid visual clutter and use design cues to reduce the need for signage.



G2.3.6

### G2.3.7 UTILITARIAN FEATURES

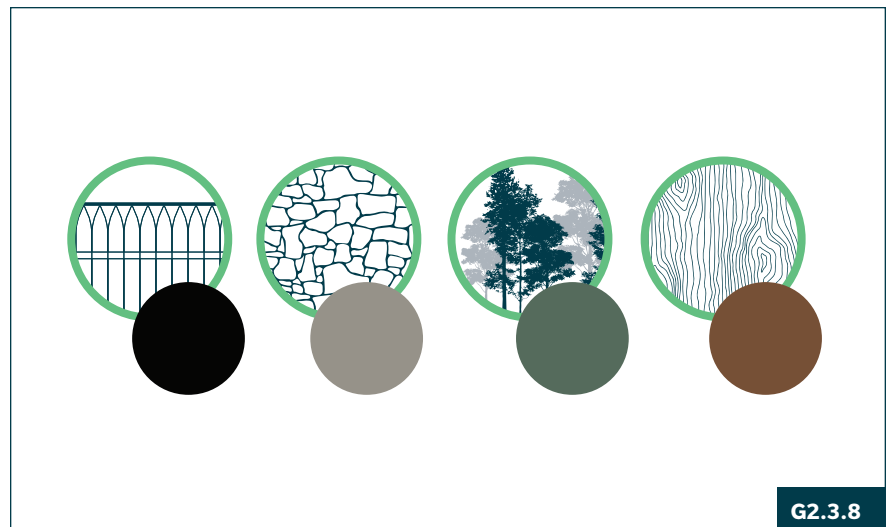
Locate and integrate utilitarian features (e.g. grit boxes, utility boxes) discreetly into the setting. Select colours and forms that do not draw attention to these elements. Consolidate, screen and avoid standalone configurations.



G2.3.7

### G2.3.8 COLOUR PALETTE

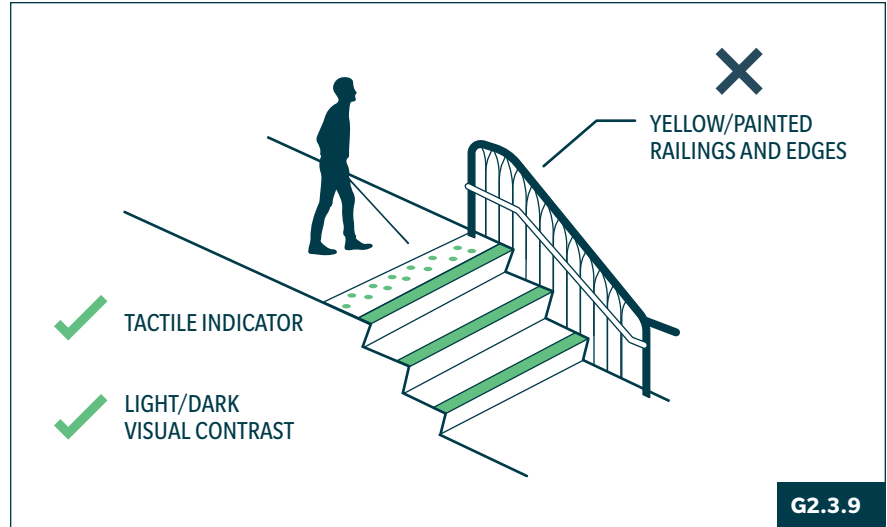
Prioritize dark natural tones such as black, greys, greens or browns that match and complement natural materials such as wood, stone and metal. Use bright colours strategically to highlight focal points or make intentional statements.



G2.3.8

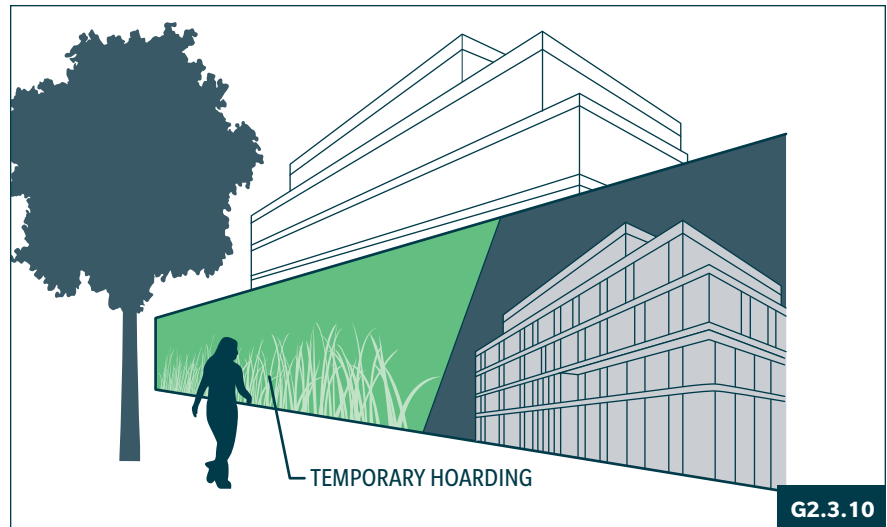
### G2.3.9 VISUAL CONTRAST

Use high contrast light/dark materials, and appropriate design cues to create a safe and easily navigable public realm. Limit the use of yellow and fluorescent colours for hazard identification.



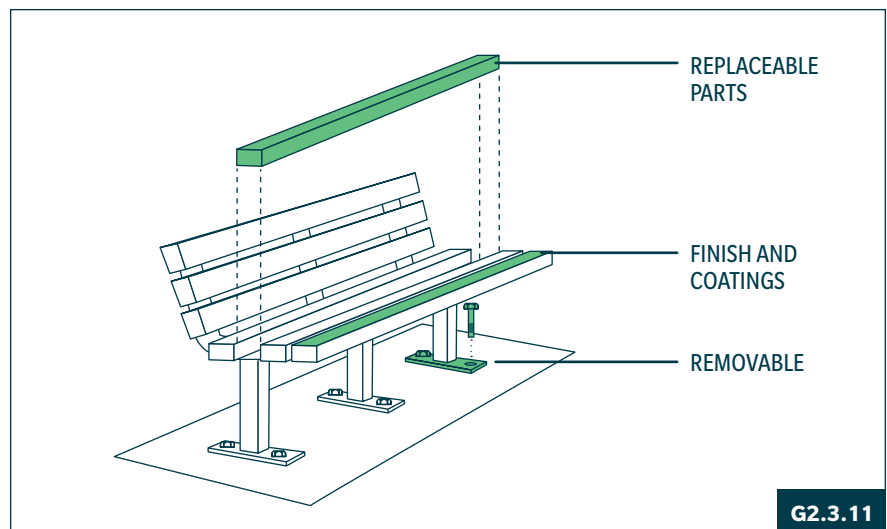
### G2.3.10 TEMPORARY INSTALLATIONS

Design temporary installations (e.g. artistic installations, event infrastructure, construction hoarding) to complement and respect adjacent sites and settings. Where appropriate, leverage their ephemeral and reversible nature to create visual interest and dramatic effect.



### G2.3.11 MAINTENANCE

Select landscape amenities and features that are easy to maintain or replace and resistant to vandalism.



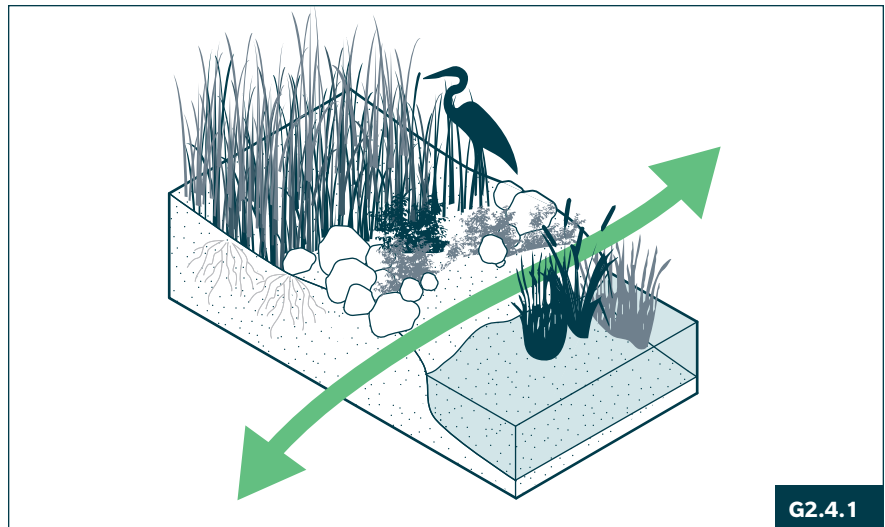
## G2.4 Waterways and Shorelines

The National Capital is situated at the confluence of the Ottawa, Rideau, and Gatineau rivers and is surrounded by many smaller lakes, rivers and creeks that contribute to its beauty and ecological diversity. The region also includes the Rideau Canal, a man-made structure that has been classified as a UNESCO World Heritage Site.

The waterways provide ecological services, recreational opportunities and navigation functions, as well as important public space and placemaking opportunities. When designing and planning waterfront sites, designers must analyze the site and its ecological functions, along with patterns of human use to control the types of activities and their intensities. Waterfront lands must be carefully planned and designed to balance these competing demands. The objective is to preserve and enhance the Capital's waterways and shorelines, creating public spaces that are animated and memorable.

### G2.4.1 LIVING SHORELINE

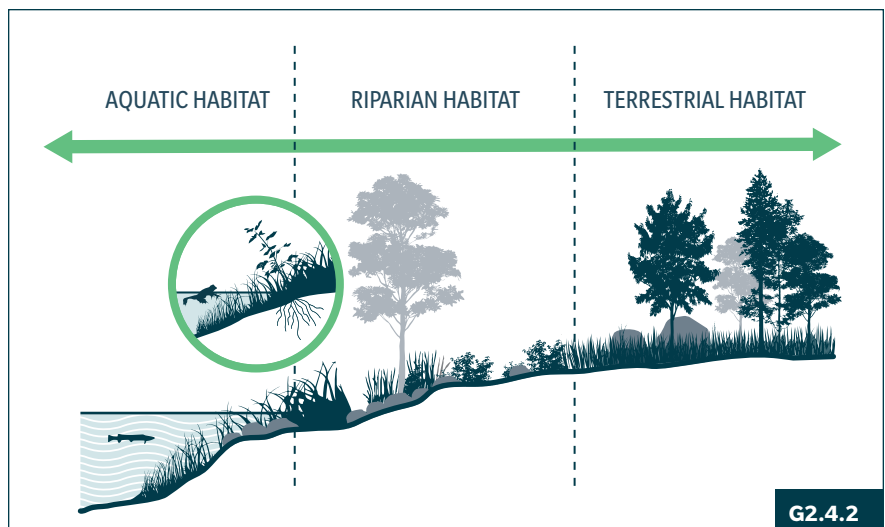
Prioritize the vitality and preservation of living shorelines through environmental best practices (e.g. riparian buffer strips, continuous shoreline vegetation, bio-engineering approaches to shoreline stabilisation).



G2.4.1

### G2.4.2 HABITATS

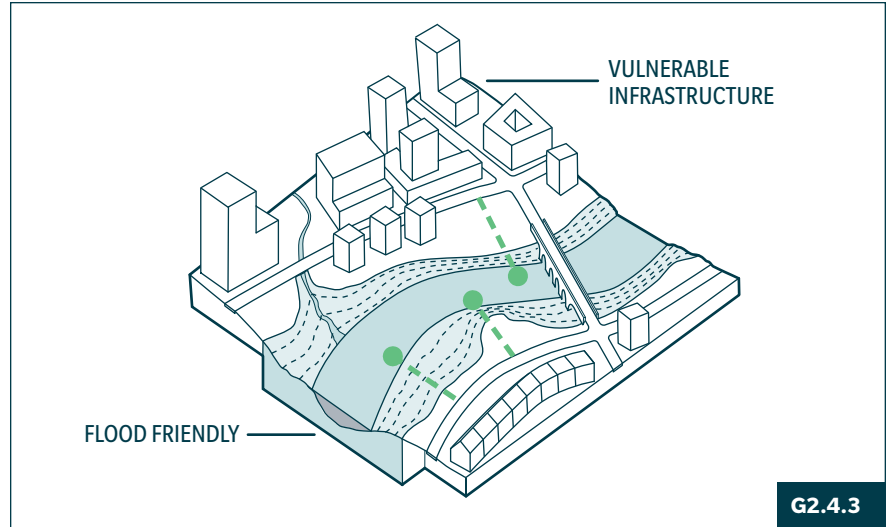
Create and improve riparian and aquatic habitats by providing structure, shading and a diversity of shoreline conditions. Ensure connectivity with adjacent terrestrial habitats necessary for many semi-aquatic species.



G2.4.2

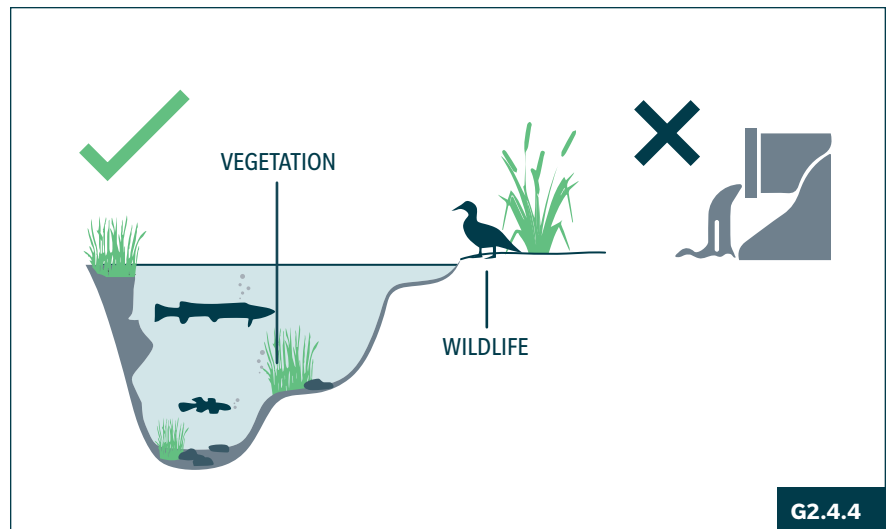
### G2.4.3 FLOOD RESILIENCE

Create flood-friendly and resilient parklands, public spaces and infrastructures within the flood plain. Locate buildings, utilities and vulnerable infrastructure above major flood elevations.



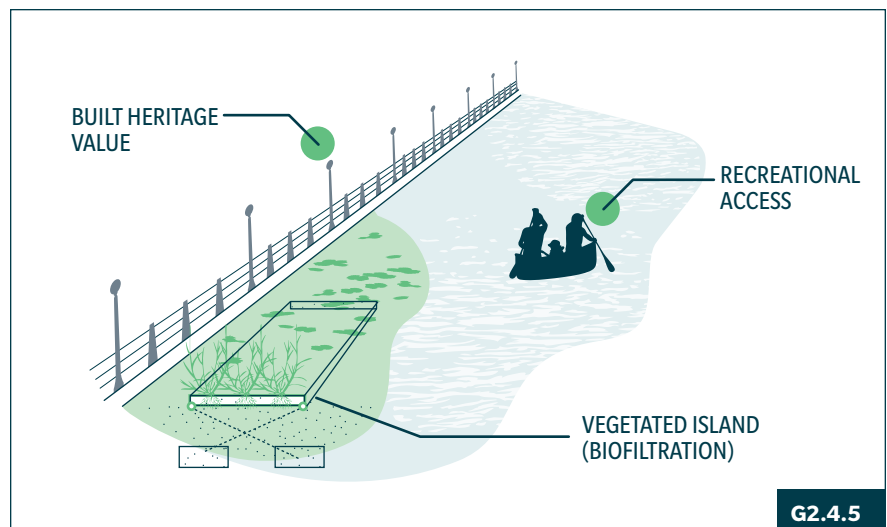
### G2.4.4 WATER QUALITY

Where changes to watercourses (e.g. rerouting, erosion control measures, flood mitigation) are required, employ ecologically friendly techniques that improve water quality, increase biodiversity and enhance ecological functions.



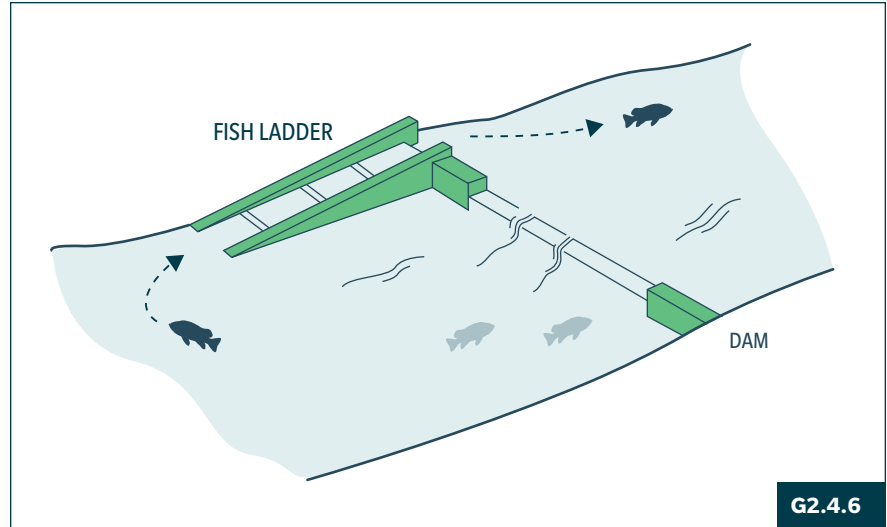
### G2.4.5 URBAN WATERWAYS

Integrate features to manage and enhance water quality of urban waterways, while serving transportation and recreational needs and preserving their built-heritage value.



### G2.4.6 BARRIERS

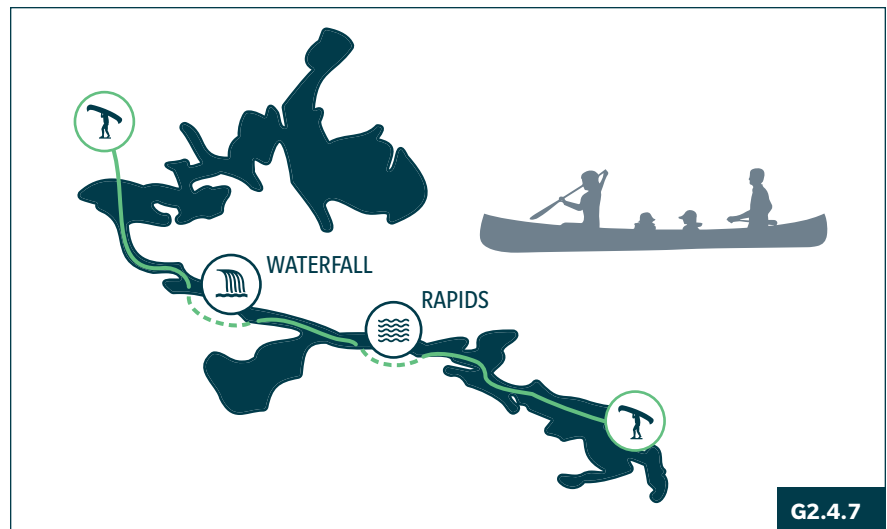
Mitigate the effects of barriers (e.g. locks, dams, weirs, grates) on the movement and migration of aquatic species via bypasses, fish ladders and other movement-facilitating design features.



G2.4.6

### G2.4.7 PORTAGES

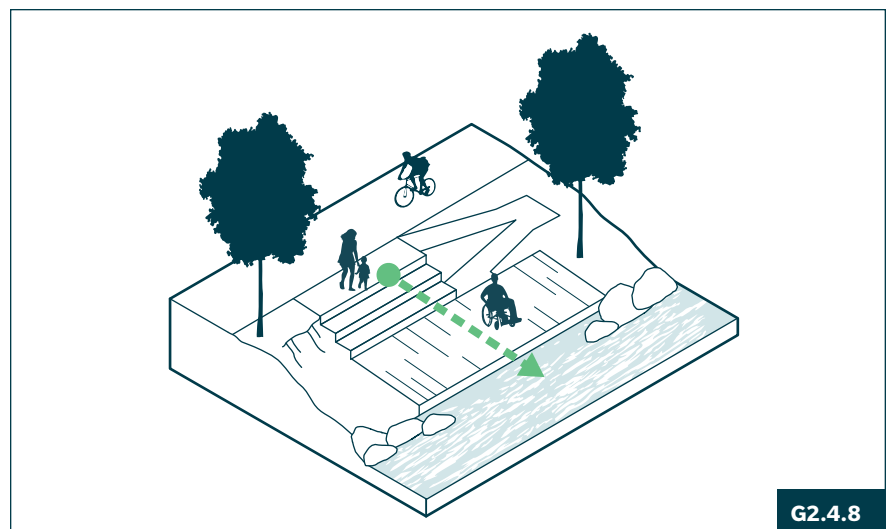
Connect watercourses and design safe, convenient put-in and take-out locations with clearly indicated wayfinding and portage routes around dams, rapids and waterfalls.



G2.4.7

### G2.4.8 ACCESS POINTS

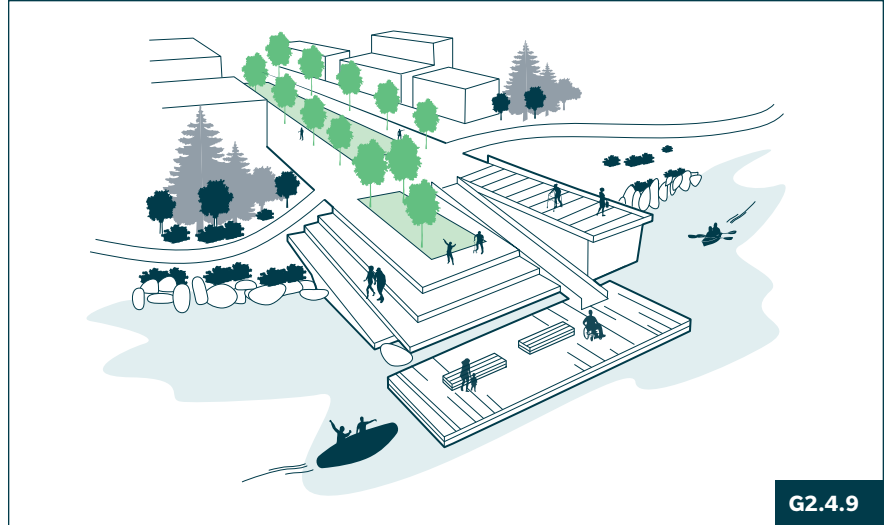
Provide punctuated locations to access the water's edge, with resilient surfaces and embankment designs to mitigate erosion and vegetation disturbances from human traffic and use.



G2.4.8

### G2.4.9 PUBLIC INSTALLATIONS

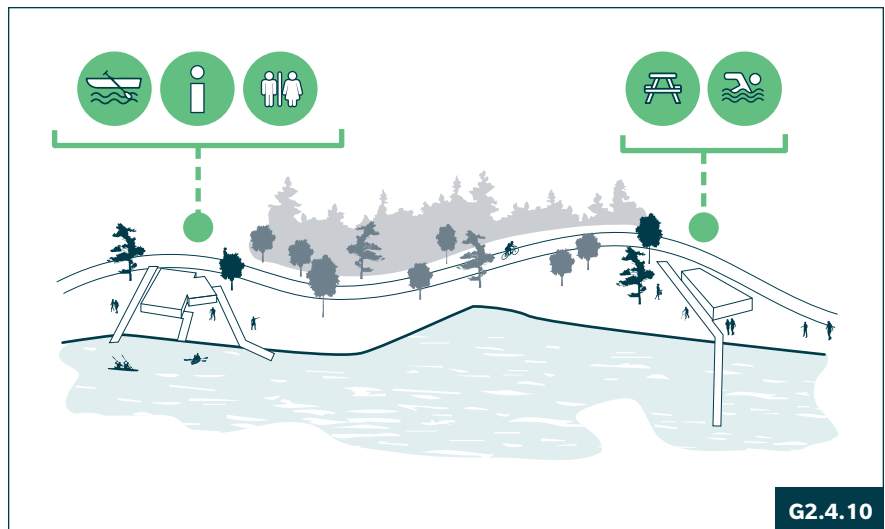
Design shoreline infrastructure (e.g. docks, lookouts, belvederes, terraces) as public amenities. Ensure adequate size, configuration and detailing to create beautiful public spaces that also serve functional purposes (e.g. mooring, commercial leases)



G2.4.9

### G2.4.10 WATERFRONT AMENITIES

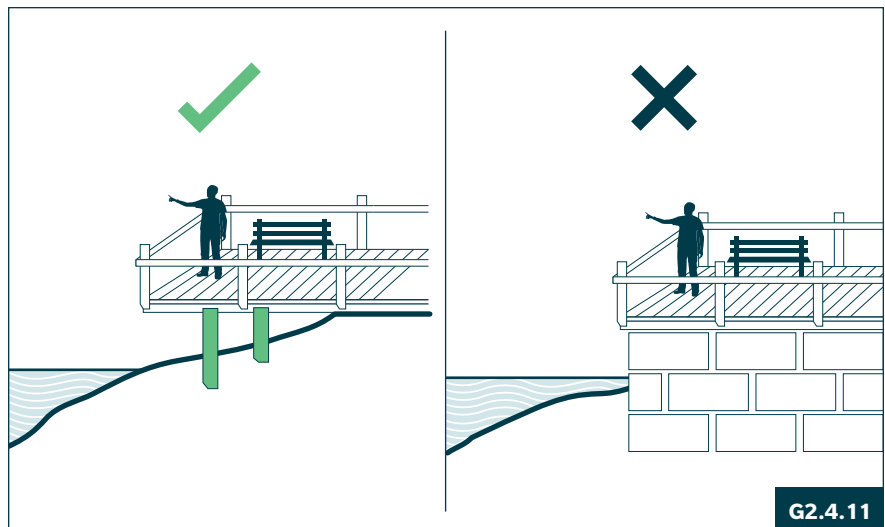
Cluster and integrate buildings and recreational amenities to create public waterfront spaces. Orient amenities to anchor public spaces, engage the waterfront, and simplify servicing and access requirements.



G2.4.10

### G2.4.11 SHORELINE IMPACT

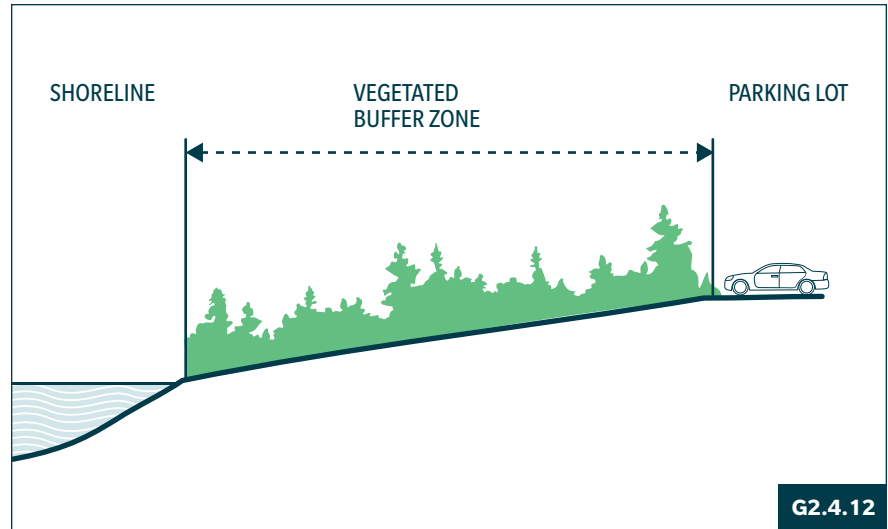
Design installations and structures to have a light touch and minimize impacts to shoreline vegetation and embankments (e.g. elevated, cantilevered or suspended structures).



G2.4.11

**G2.4.12 PARKING**

Locate parking for water-based sites away from the shoreline and employ landscaping and vegetation buffers to mitigate environmental and visual impacts.







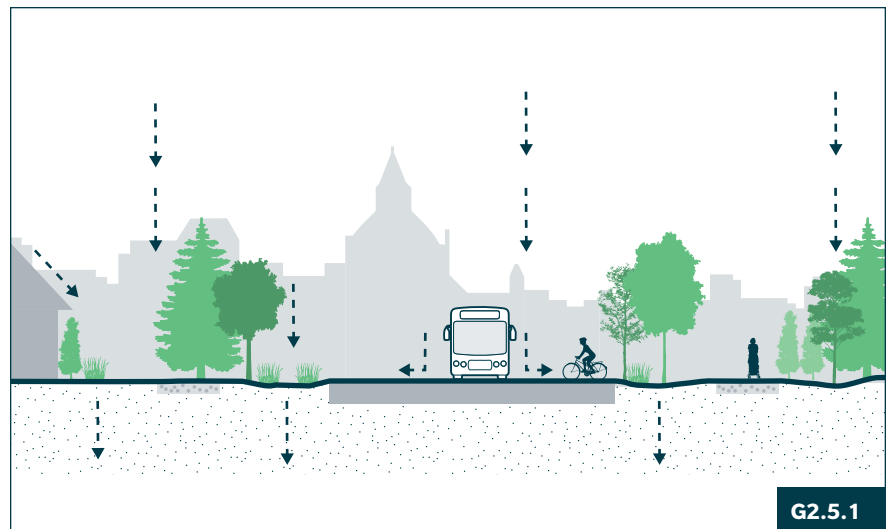
## G2.5 Earthwork and Site Engineering

Sustainable development, including responsible earthwork and stormwater management practices, contributes to the ecological health and natural heritage of the Capital. A naturalized approach to landscape design and site engineering builds on the picturesque landscape that is emblematic of the Capital while contributing to the resilience and adaptability of ecological features and processes.

Designers must consider the effects of building and maintenance practices on the long-term condition and viability of the lands. Designing with nature rather than trying to control it can minimize long-term capital and maintenance costs. The objective is to create designs that are not only beautiful, but also restorative, and that enable living processes contributing to environmental quality and ecological services.

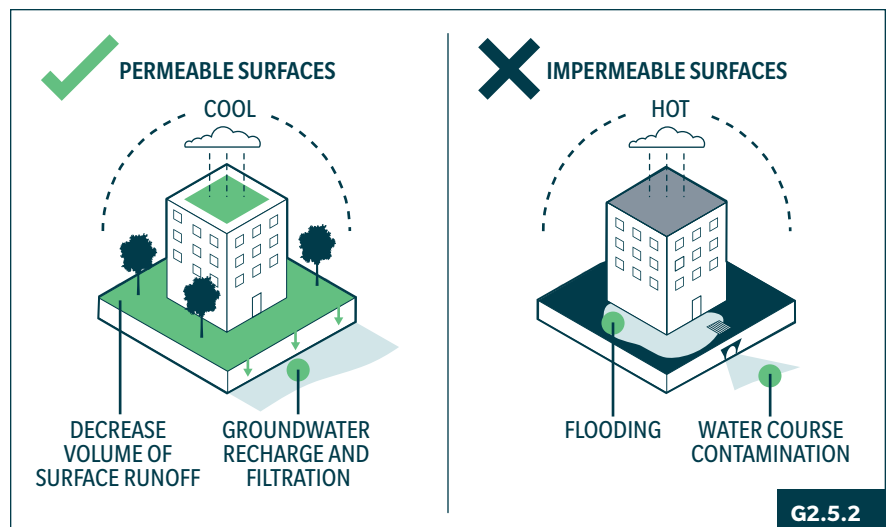
### G2.5.1 GREEN INFRASTRUCTURE

Prioritise green living infrastructure over grey manufactured infrastructure to create living systems with both engineering and environmental benefits.



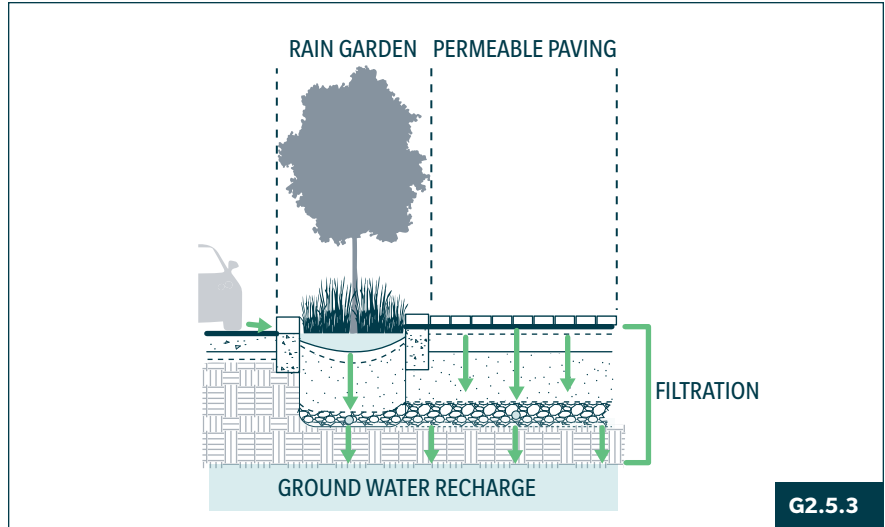
### G2.5.2 IMPERMEABLE SURFACES

Minimize impermeable surfaces to avoid heat island effects and mitigate the risks of flooding and water course contamination from stormwater overflow.



**G2.5.3 GROUND WATER**

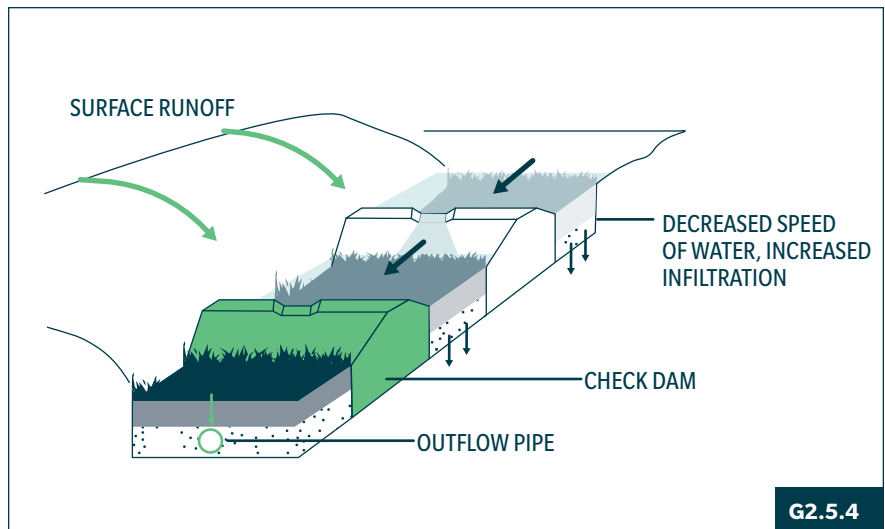
Allow ground water infiltration via permeable surfaces and localised retention and soak-away zones that contribute to ground water recharge and filtration.



G2.5.3

**G2.5.4 STORM WATER RETENTION**

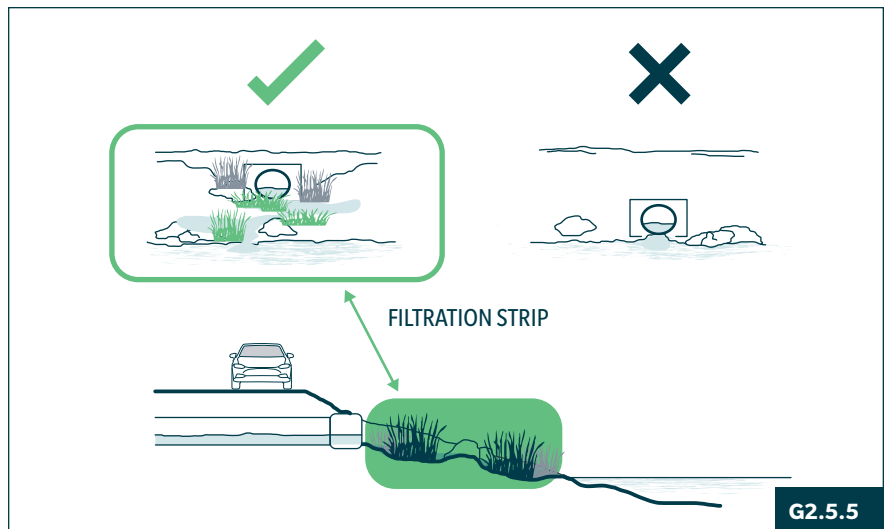
Take advantage of topography, drainage patterns, landscaping and plantings to capture and treat stormwater on site. Minimize direct drainage to overflows and storm outlets via design features (e.g. swales, pools, check dams).



G2.5.4

**G2.5.5 FILTRATION**

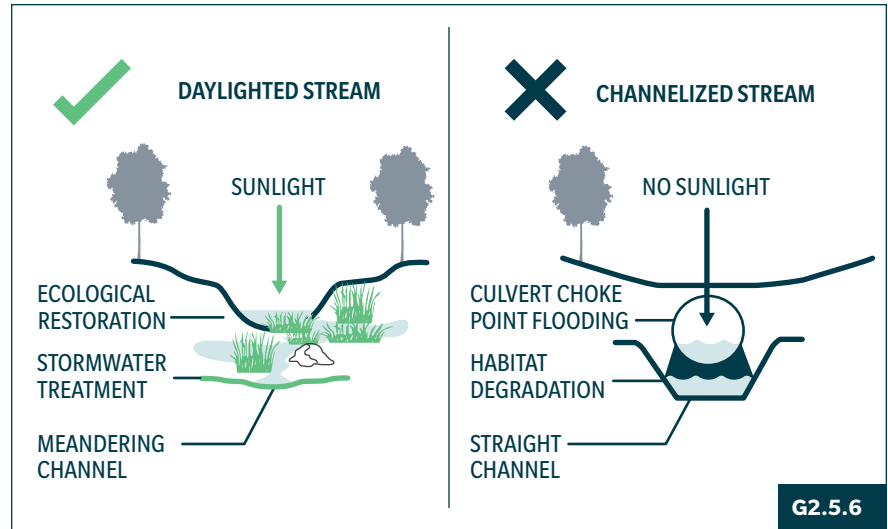
Intercept and pre-filter runoff prior to discharging into watercourses through techniques such as bio-swales, filtration strips, holding ponds and grit separators.



G2.5.5

### G2.5.6 DAYLIGHTING

Prioritize daylighting watercourses to contribute to environmental conditions and landscape character. Avoid channelizing or piping watercourses.



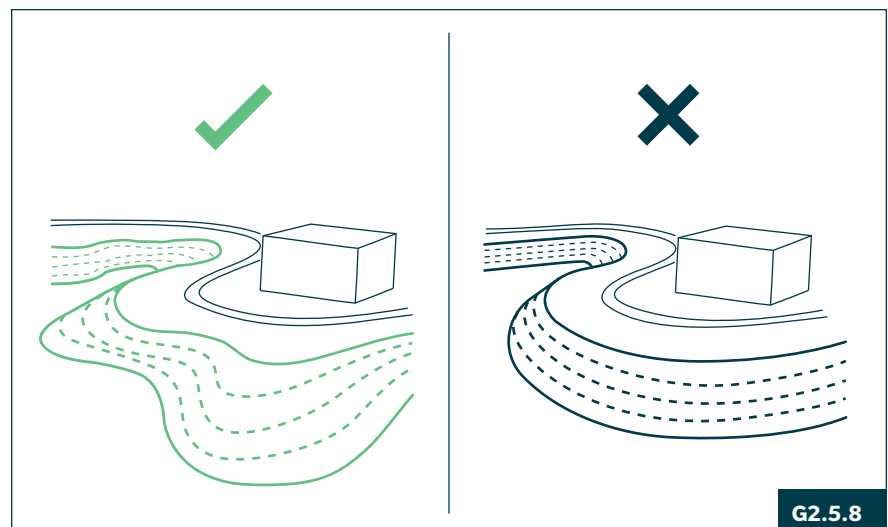
### G2.5.7 DESIGN INTEGRATION

Showcase stormwater management features to be visible and contribute to the site's character via beautiful and creative landscape design integration.



### G2.5.8 SLOPES AND EMBANKMENTS

Prioritize vegetated slopes and naturally undulating terrain. Avoid steep engineered embankments and retaining walls.



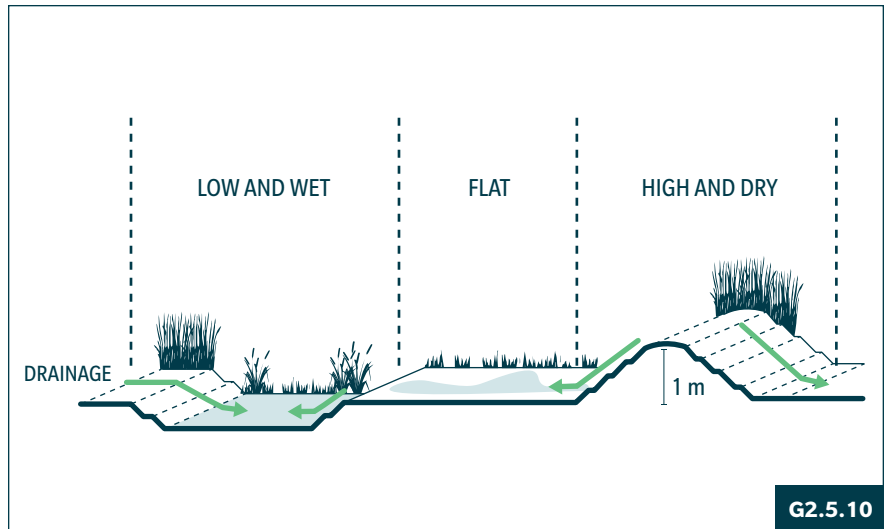
**G2.5.9 LANDFORMS**

Employ site grading to preserve or create interesting spaces and landforms that add to the visual interest and functionality of the site. Avoid flattening sites to accommodate new uses.



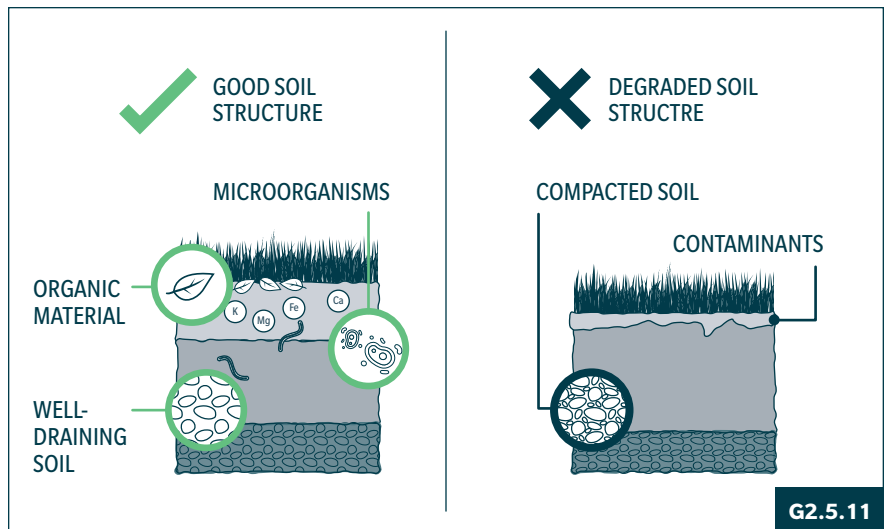
**G2.5.10 MICRO TOPOGRAPHY**

Create minor variations and undulations to direct rainwater and create varied micro-climatic and environmental conditions that contribute to biodiversity and planting conditions.



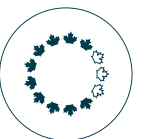
**G2.5.11 SOIL HEALTH**

Protect and preserve existing undisturbed topsoil and subsoil. Enhance degraded and disturbed soils and avoid compacting, contaminating or degrading soil conditions.





# Buildings and Structures



# G3

# Buildings and Structures

## THIS CATEGORY INCLUDES:

- ▶ **G3.1**  
Built Heritage
- ▶ **G3.2**  
New Buildings
- ▶ **G3.3**  
Landmarks and  
Iconic Structures
- ▶ **G3.4**  
Sustainable Buildings
- ▶ **G3.5**  
Ancillary Structures  
and Equipment

Canada's Capital contains many iconic buildings, structures and landmarks that reflect its national and international role. Chief among them are the buildings of the Parliamentary and Judicial Precincts and many long-standing federal institutions fronting onto Confederation Boulevard. In addition, numerous built landmarks such as museums, galleries and commemorations are iconic symbols that contribute to the identity and functions of the Capital.

The objective is to preserve what exists while creating new buildings and structures that artfully blend into and complement their surroundings. Through appropriate proportion, massing, textures and materials, new layers of built heritage can be added to continue the ongoing evolution and legacy of the Capital. Whatever the scale, built elements must add value to the site and reflect and enhance the sense of place. New structures are intended to be carefully woven into the existing ensemble while preserving and enhancing iconic Capital panoramas and views of national symbols.

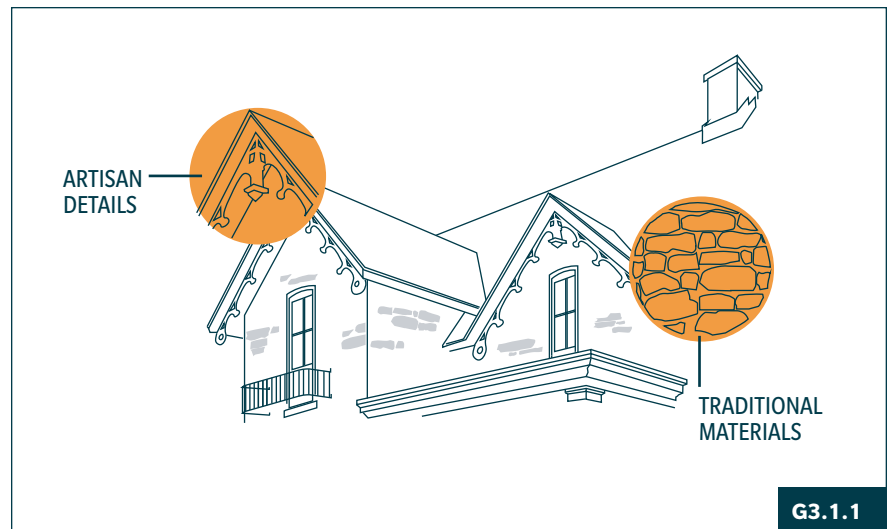
## G3.1 Built Heritage

Built heritage is an irreplaceable resource that must be carefully managed and preserved for future generations. Heritage buildings are important artifacts that reflect the layered history and evolution of the Capital. From the grand and monumental institutions that line Confederation Boulevard, to small buildings and spaces like the Sussex Courtyards, historic residences, or farmsteads, all these elements contribute to the Capital’s heritage. Buildings and districts may have a local, provincial, or federal heritage status – or may yet require analysis to determine their heritage value. Heritage evaluations and designations ensure that buildings are properly assessed and understood so they can be effectively managed and preserved. Designers must understand a site’s heritage context irrespective of jurisdiction and seek to preserve and showcase heritage.

While preserving the unique features and intrinsic value of heritage buildings is essential, it is equally important that these structures remain purposeful and relevant in the present day. The objective is both stewardship and conservation of existing buildings, as well as creative and appropriate adaptation and reuse. Designs should be informed by analysis and understanding of the heritage context and demonstrate how an intervention contributes to the preservation and enhancement of the heritage value.

### G3.1.1 HISTORICAL FEATURES

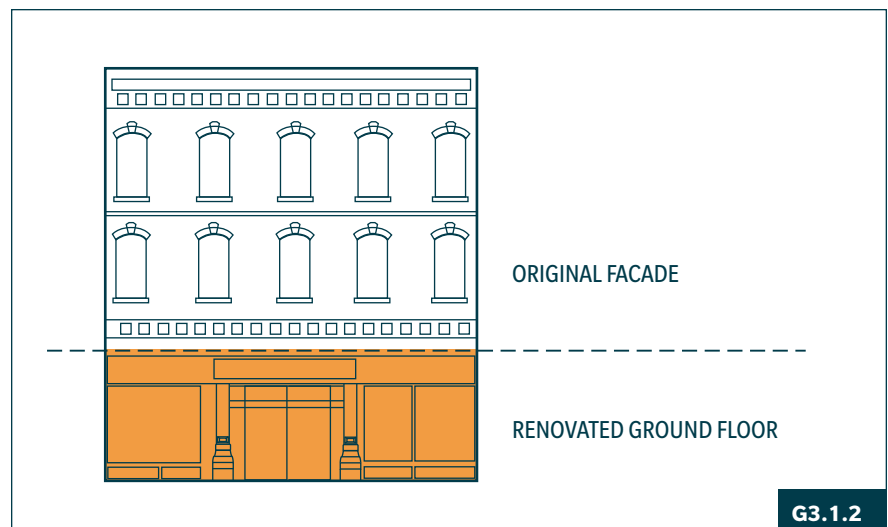
Study heritage designations and identify character-defining features that must be preserved, enhanced or showcased throughout the design (e.g. rooflines, facades, doors, windows).



G3.1.1

### G3.1.2 RENOVATIONS

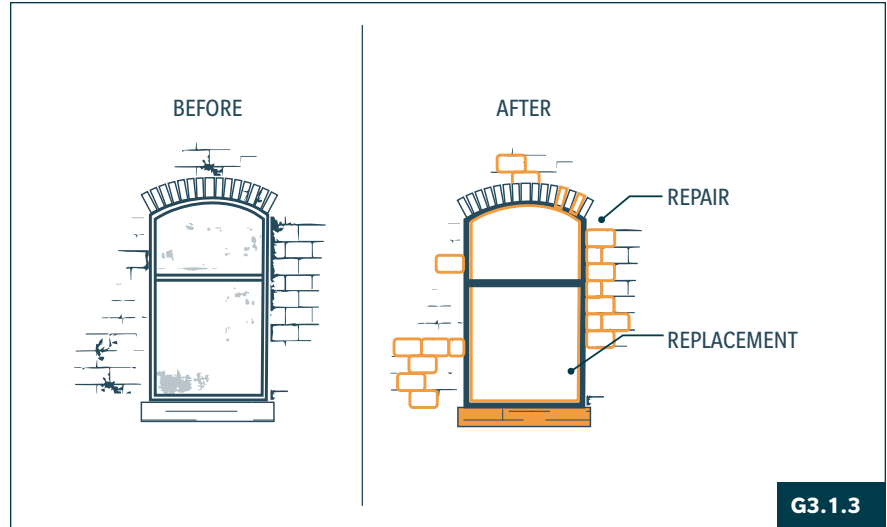
Preserve character-defining elements, materials and artisan details while maintaining or repairing for maximum lifecycle. Avoid replacements that would alter the existing character.



G3.1.2

### G3.1.3 RESTORATION AND REHABILITATION

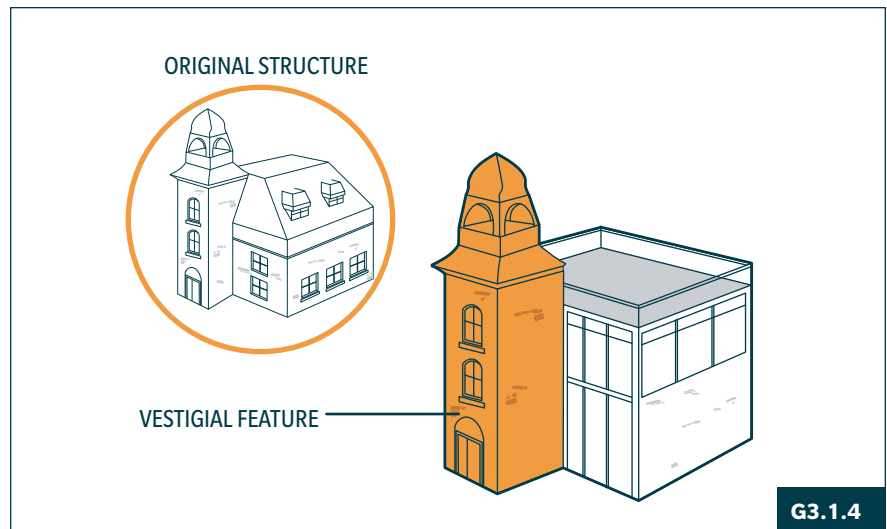
Where an original structure has been altered or degraded, replace character-defining elements in keeping with the original period, design intent and construction techniques.



G3.1.3

### G3.1.4 RECONSTRUCTION

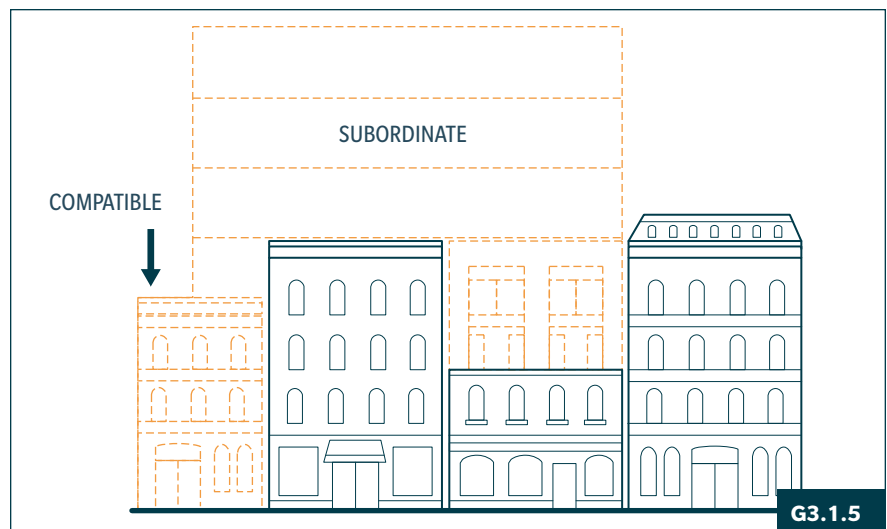
Where demolition or new construction is required, it may be appropriate to replicate what existed or, for new buildings, to retain and incorporate vestigial traits of the preceding structure.



G3.1.4

### G3.1.5 ADDITIONS AND INFILL

Design alterations and additions to heritage buildings to be complementary and appropriate in scale, form and materiality to the original. Make new elements compatible with or tastefully differentiated from the original.

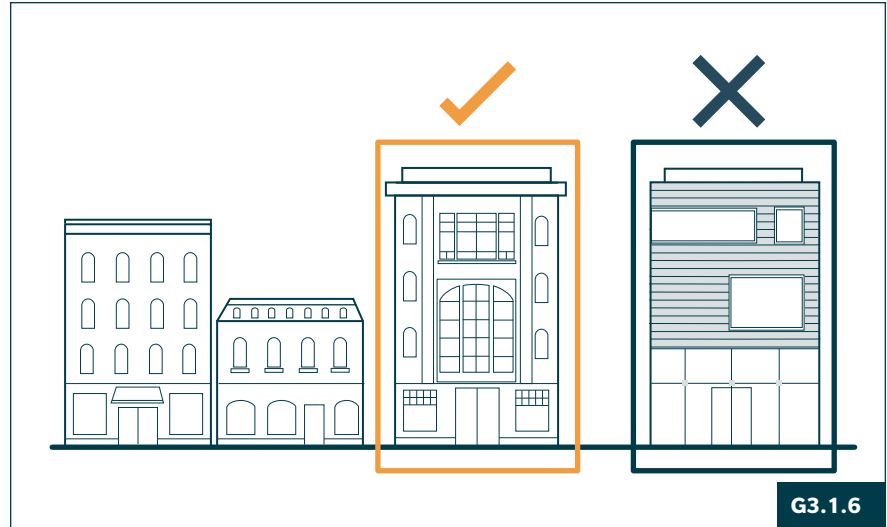


G3.1.5



### G3.1.6 COMPATIBILITY

Prioritize designs that honour and respect the historical patterns and styles of the locale and reinforce the heritage setting, either through replication, reference or reinvention within a style.



G3.1.6

### G3.1.7 DIFFERENTIATION

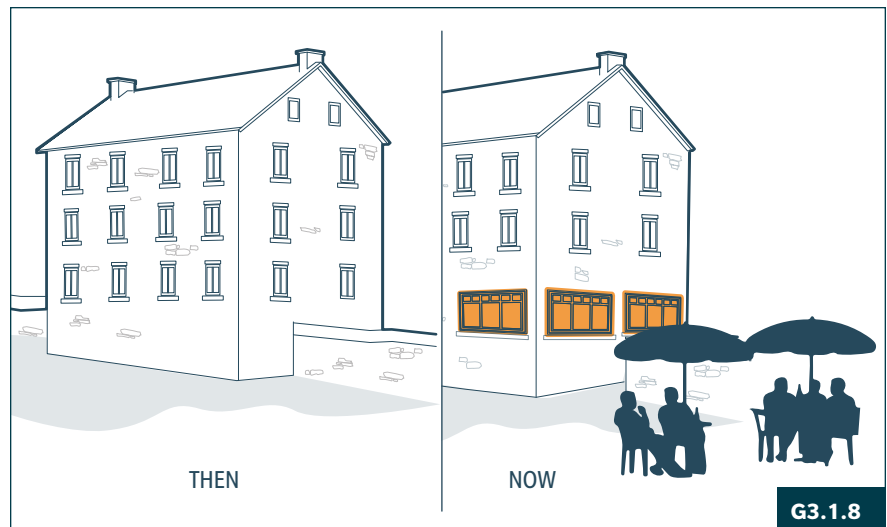
Intentional contrast or abstract reference may be used to distinguish new elements from old. Select materials, colours and forms that complement and contrast but do not overwhelm.



G3.1.7

### G3.1.8 ADAPTIVE RE-USE

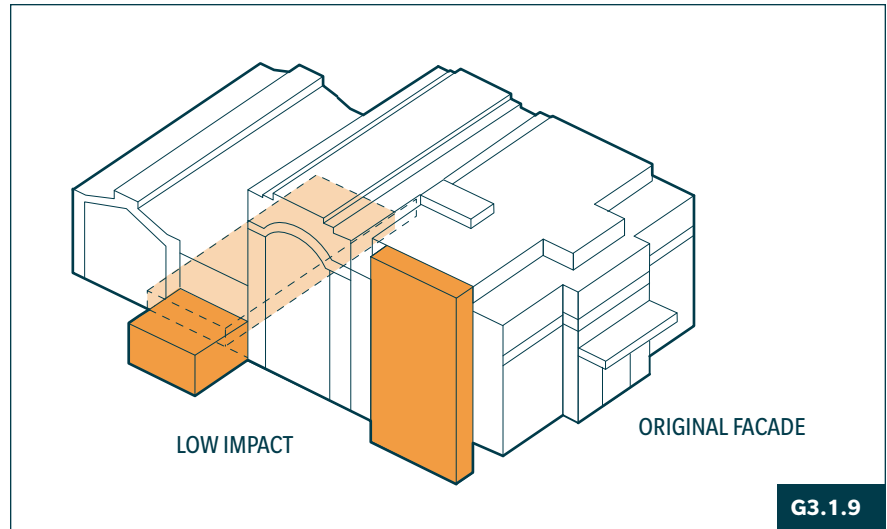
Select and plan new uses that are well suited to the original structure. Avoid extensive and/or irreparable alterations to the building's form, massing, materials or character.



G3.1.8

**G3.1.9 MODERNIZATION**

Tastefully integrate upgrades and alterations to existing buildings to be low impact, invisible and reversible whenever possible.



## G3.2 New Buildings

Each new building contributes to the evolving character and identity of the Capital. Federal buildings are often of substantial size, and even simple structures such as office accommodations, laboratories or storage facilities can create or influence the character of their surroundings.

The objective is to develop a collection of timeless Capital buildings and structures that will endure long into the future. This requires quality construction based on sound principles of building form and function. Every new building is an opportunity to create a built legacy that is both inspiring and functional. Designers should analyze the anticipated building program, functions and needs to expertly execute the current project while ensuring it is flexible and adaptable to future uses and contexts.

### G3.2.1 SENSE OF PLACE

Select colours, materials and styles to create a building aesthetic complementary to adjacent properties and indicative of the surrounding area. Avoid exotic materials and forms that are not representative of the region.



G3.2.1

### G3.2.2 TIMELESS

Design buildings to be inter-generational and prioritize styles, materials and techniques that will age gracefully and retain their character and patina with time.



G3.2.2

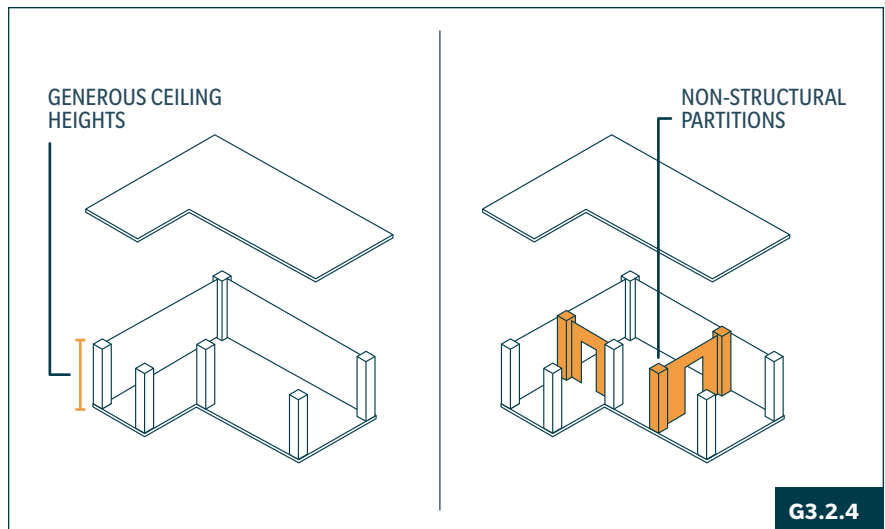
### G3.2.3 DIGNIFIED

Employ noble, durable and authentic materials to create high-quality buildings, with elegant detailing and architectural features.



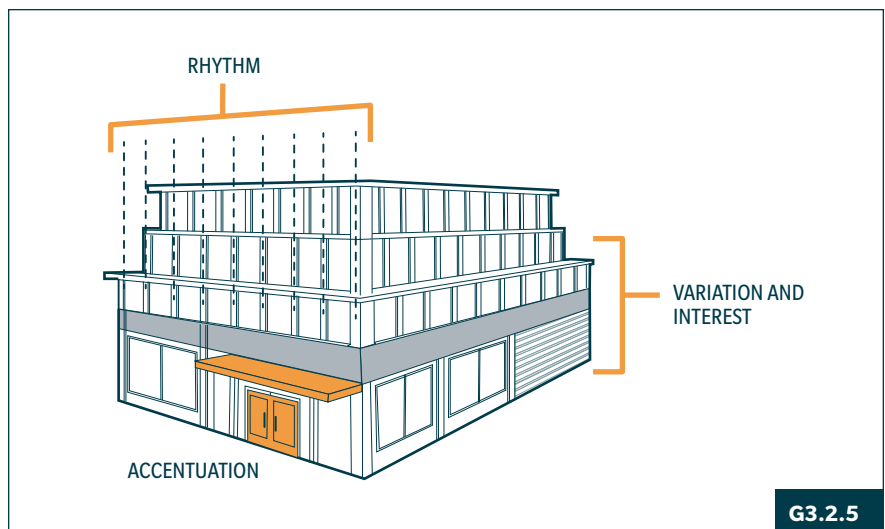
### G3.2.4 ADAPTABLE

Make building floorplans and structural design flexible for various future uses. Favour generous ceiling heights, structural capacity and adaptable partition walls that can accommodate multiple future uses.



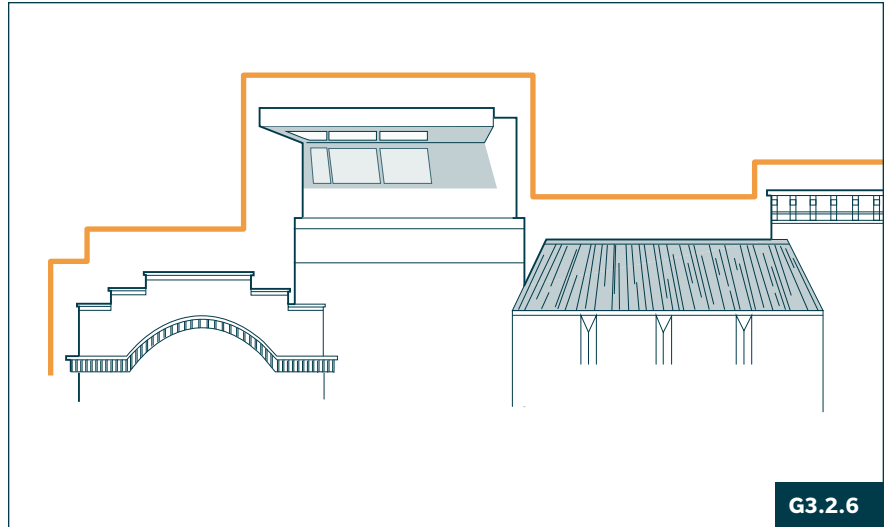
### G3.2.5 ENVELOPE AND CLADDING

Include finely detailed patterns of structure, cladding and material variation that provide visual interest and rhythm.



### G3.2.6 PROFILE

Shape rooflines with interesting angles, profiles, contours and overhangs to accentuate the building mass and define the top of the building envelope.



G3.2.6

### G3.2.7 FRONTAGES

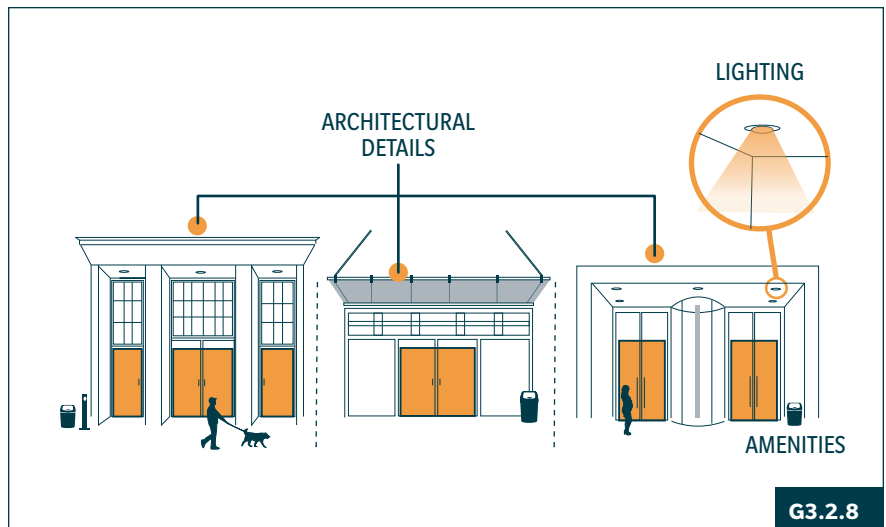
Provide fine-grained architecture along street frontages and public spaces, with richly detailed ground floor façades.



G3.2.7

### G3.2.8 DOORWAYS

Create finely designed and detailed principal entrances that present an identifiable and welcoming point of entry and arrival experience.



G3.2.8

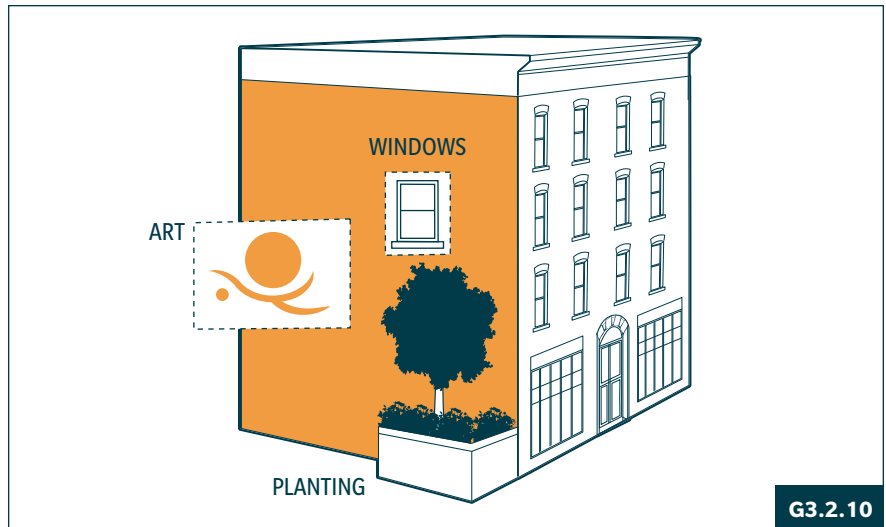
### G3.2.9 WINDOWS

Draw public view into buildings through windows. Emphasize visual interaction along ground floors, especially those facing public spaces.



### G3.2.10 WALLS

Avoid blank exterior walls. Activate blank walls with detailing, art or landscaping to minimize their visual impact.



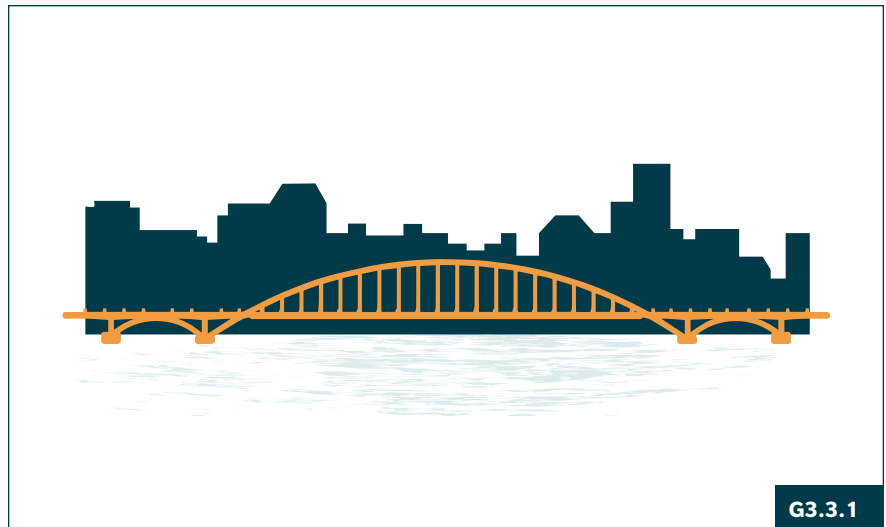
## G3.3 Landmarks and Iconic Structures

Major civic buildings and structures offer opportunities to create iconic and memorable places. Each new structure adds a layer of history and culture that must be artfully woven into the existing context and hierarchy of places. Bridges, monuments, museums and federal institutions are all highly visible and symbolic built elements that contribute to the identity and character of the Capital.

The objective is to create a lasting legacy of symbolic and memorable landmarks for future generations. Not every building is a signature landmark, but prominent locations must be designed with special care and intention. Designers must assess and determine whether the project's role is to stand out, or to blend in. Landmarks and iconic structures must reflect the pluralism of Canadian culture and strive to create an inspiring, inclusive and meaningful Capital.

### G3.3.1 SIGNATURE LANDMARKS

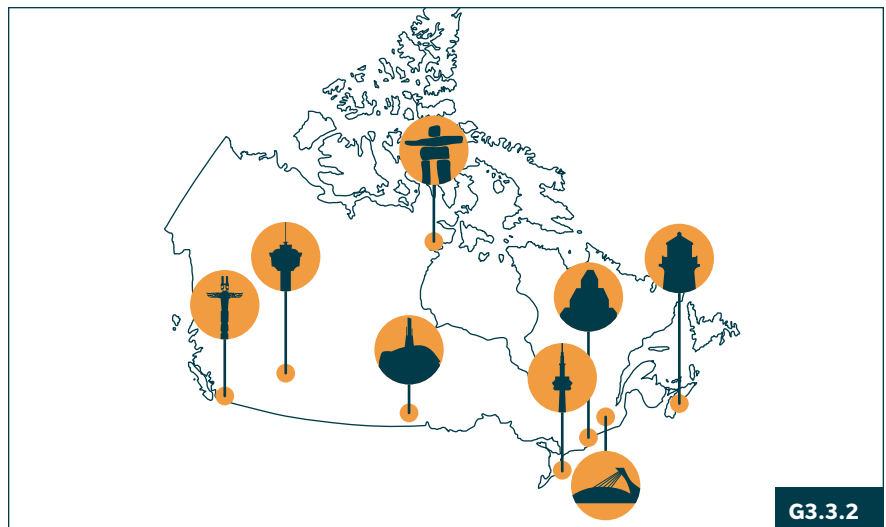
Distinguish major civic projects by creating unique and iconic physical forms that will represent the Capital on a national and international level.



G3.3.1

### G3.3.2 PLURALISM

Design landmarks and symbolic places to enhance the public realm and respect the pluralism of Canadian culture and values of democracy, diversity and inclusion.



G3.3.2

**G3.3.3 ICONIC FORMS**

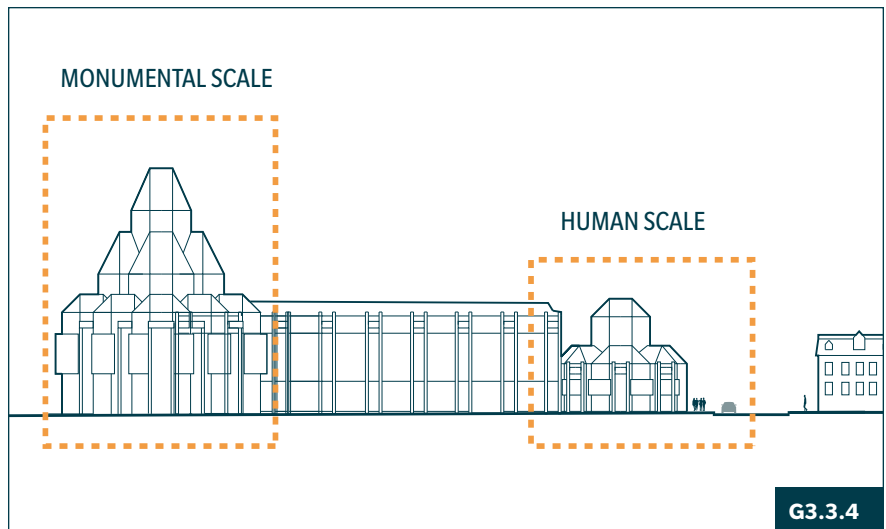
Create unique and identifiable signature buildings with interesting profiles and silhouettes that contribute to the Capital skyline and serve as recognizable landmarks.



G3.3.3

**G3.3.4 PROPORTION**

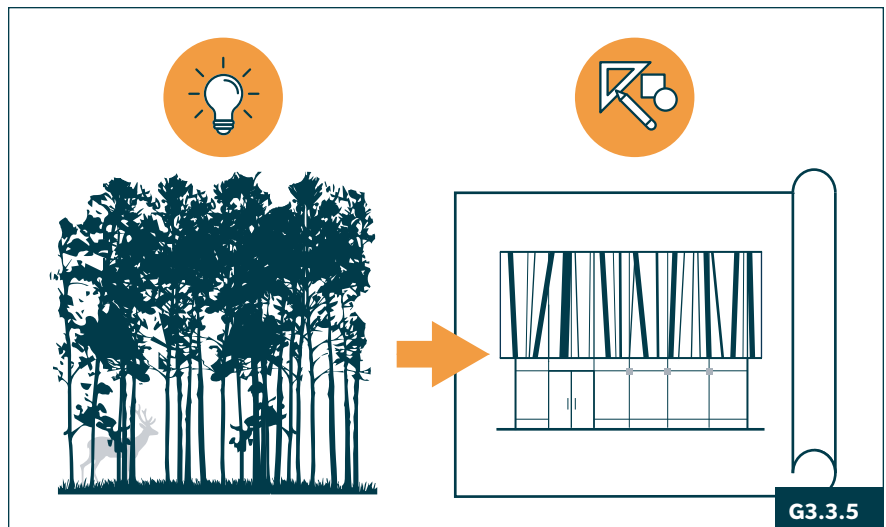
Design for both the monumental and the human scales. Respect the hierarchy of surrounding landmarks and the symbolic importance of the setting.



G3.3.4

**G3.3.5 SETTING**

Design iconic buildings to reflect and accentuate the locale. Creatively interpret and complement vernacular forms.

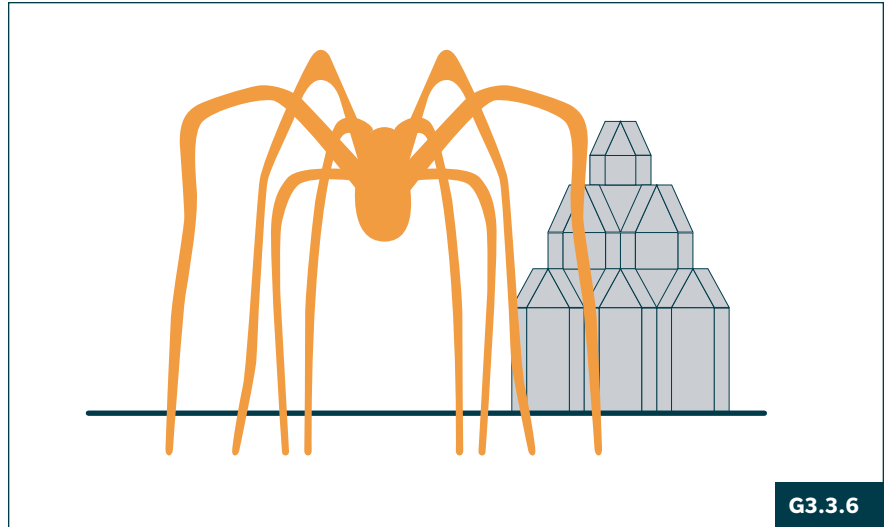


G3.3.5



**G3.3.6 ARTISTIC EXPRESSIONS**

Infuse artistic and interpretive elements into major design projects to enliven and enhance the Capital experience.





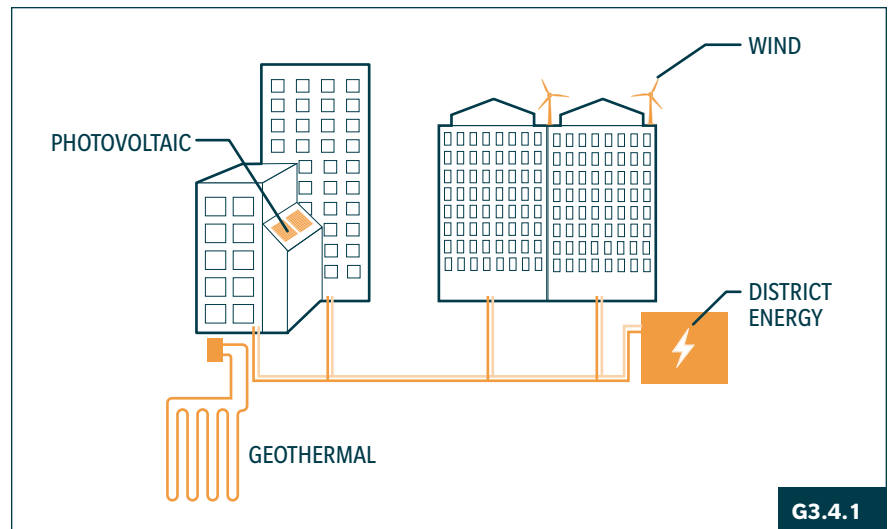
## G3.4 Sustainable Buildings

Environmentally responsible buildings and structures support a livable Capital for generations to come. Ensuring the Capital's buildings are sustainable and fit for purpose demonstrates a commitment to building a Capital that is resilient to climate change.

Designers must pay careful attention to site conditions, material selection and sustainable design principles throughout the design process, seeking low greenhouse gas emissions, low energy consumption and high metrics of human comfort. The objective is to develop projects that are both functional and ecologically responsible through best practices in sustainable building design.

### G3.4.1 SUSTAINABLE ENERGY

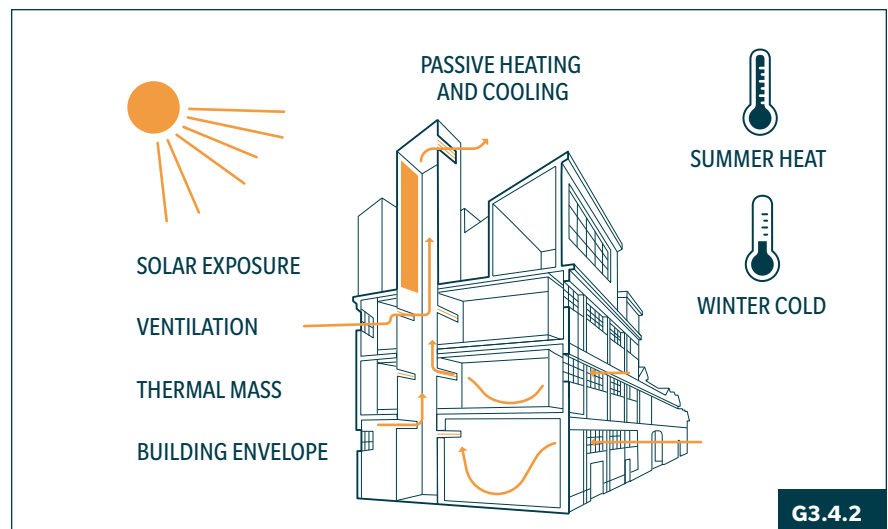
Prioritize renewable energy sources and creatively integrate infrastructure into the building design through placement, material and colour choice. Novel and interesting energy systems may be visually emphasized in select cases.



G3.4.1

### G3.4.2 ENERGY EFFICIENCY

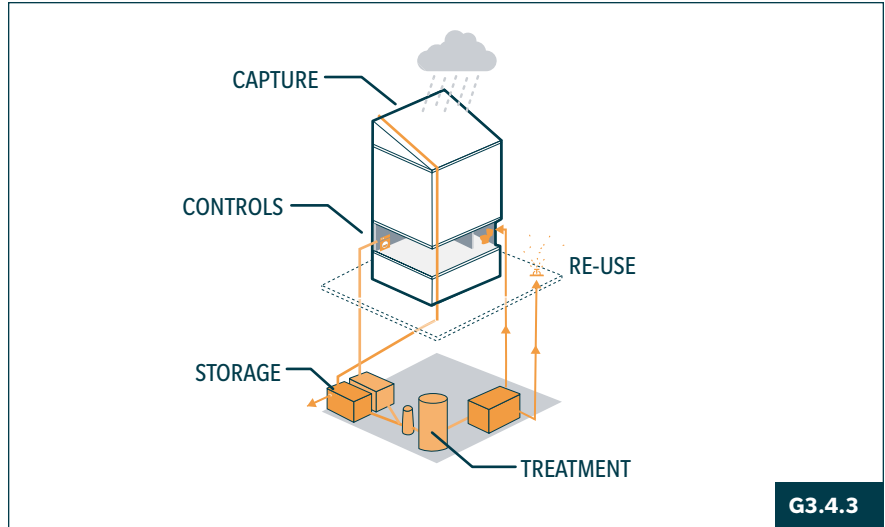
Orient and design building envelopes to optimize energy efficiency and thermal performance. Consider elements such as cladding, windows, thermal mass, solar exposure and other design choices.



G3.4.2

**G3.4.3 WATER SYSTEMS**

Minimize water consumption and waste by integrating water systems into the building and site design. Employ rainwater harvesting, bio-retention swales, cisterns and grey-water recapture to reduce demand for potable water.



G3.4.3

**G3.4.4 AUTOMATION AND MONITORING**

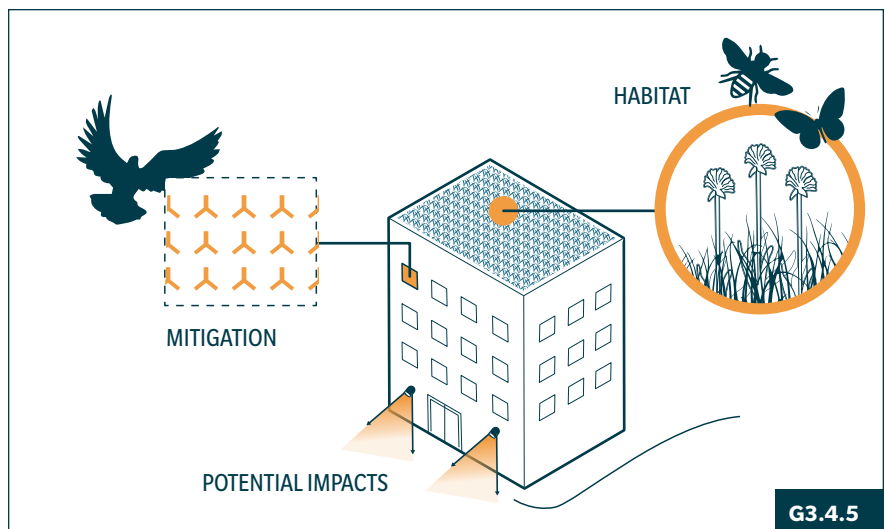
Employ automated systems with monitors and controls to reduce energy consumption and minimize waste (e.g. lighting and climate controls).



G3.4.4

**G3.4.5 ECOLOGICAL IMPACT**

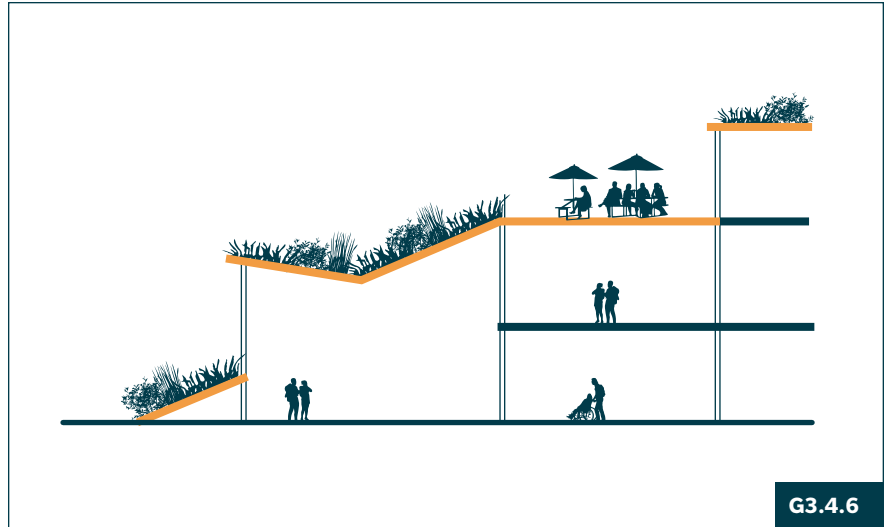
Orient and design the building to minimize environmental disturbance and support ecological processes (e.g. bird safety, pollinator habitat, light trespass).



G3.4.5

### G3.4.6 ROOFS

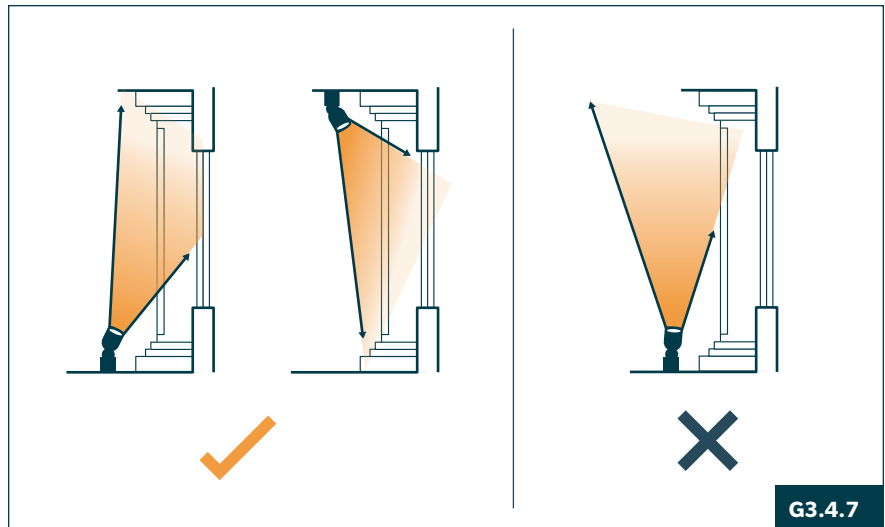
Treat building roofs as opportunities to improve building performance and amenities (e.g. green roofs, rooftop gardens, high-albedo surfaces, renewable energy generation).



G3.4.6

### G3.4.7 EXTERIOR LIGHTING

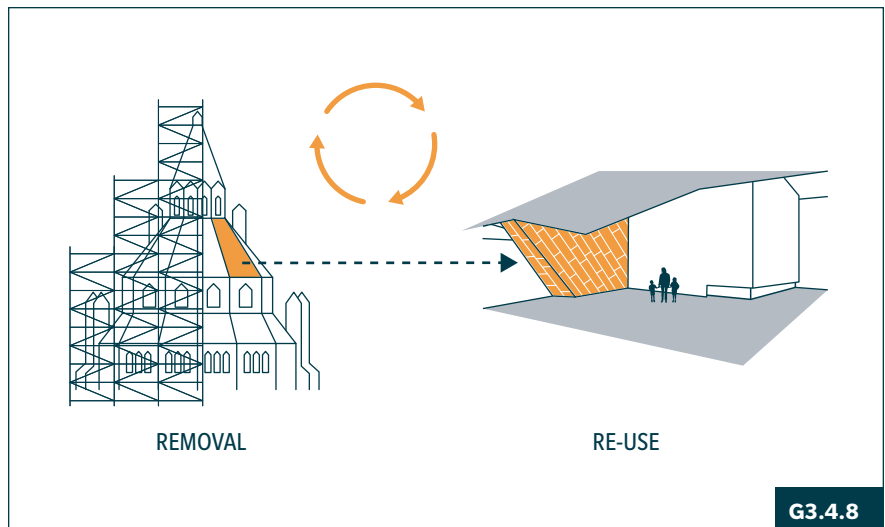
Highlight and accentuate interesting features of the building while preserving the dark sky and minimizing light trespass. Limit lighting to what is necessary and appropriate to the role of the building.



G3.4.7

### G3.4.8 RE-USE

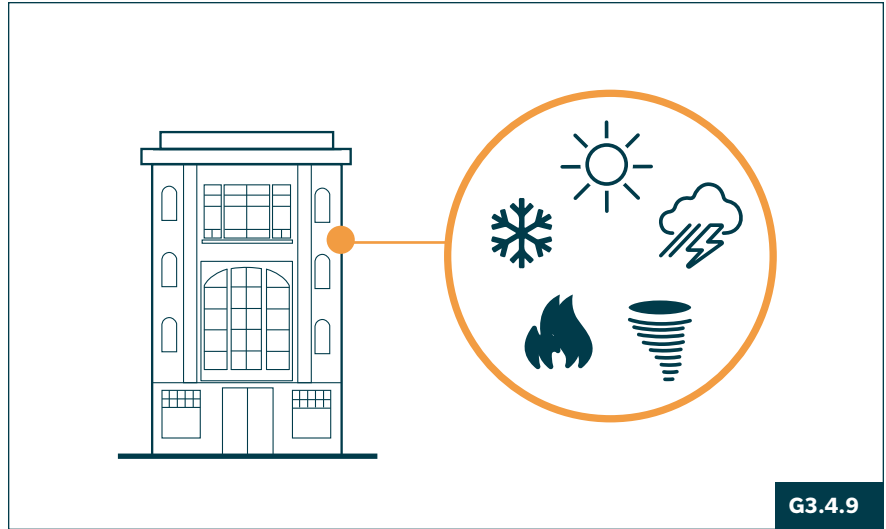
Reclaim and reuse buildings and building materials adaptively. Exhibit and emphasize unique reused materials and features.



G3.4.8

**G3.4.9 RESILIENCE**

Prepare buildings to withstand extreme conditions and emergencies (e.g. power loss, extreme temperatures, variable precipitation, flooding).



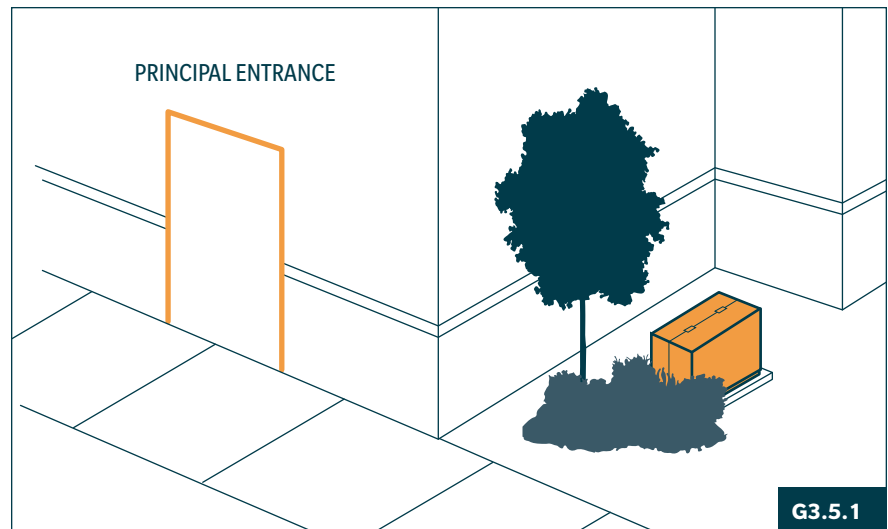
## G3.5 Ancillary Structures and Equipment

The Capital is beautiful and dignified, but it also requires functional and practical ancillary features that support its operations. These elements may be part of a larger structure or stand-alone facilities that support essential city functions and engineering requirements.

Designers should carefully consider the engineering and servicing requirements from the outset of a project. The objective is to discreetly integrate these elements into their surroundings to provide safe, efficient and reliable service without detracting from the quality of public spaces and the Capital experience.

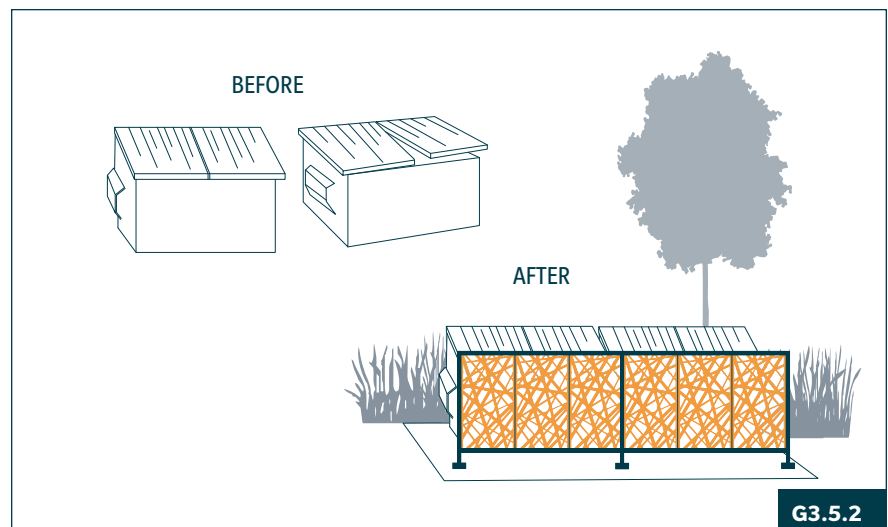
### G3.5.1 PLACEMENT AND LOCATION

Locate utilitarian installations away from building entrances and public spaces, while ensuring easy access for maintenance and operation purposes.



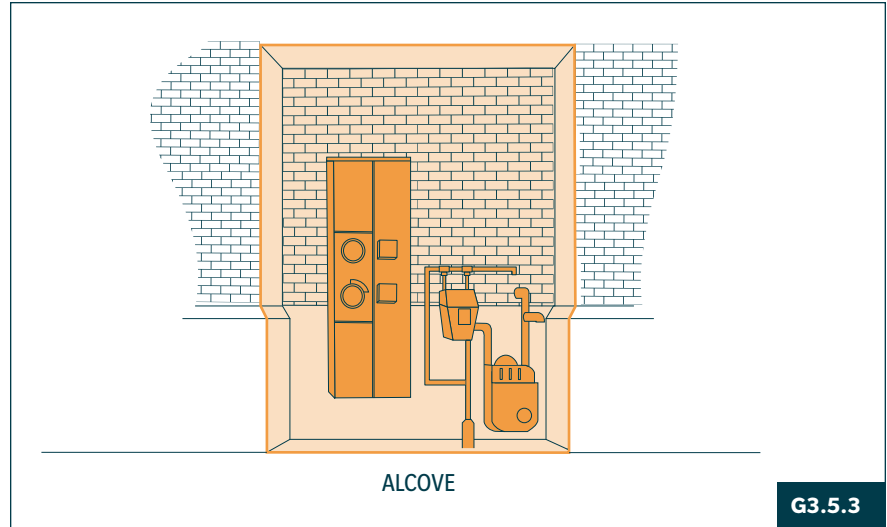
### G3.5.2 CAMOUFLAGE

Hide and camouflage ancillary structures through architectural screening, planting or landforms to minimize their visual impact. Artistic screening techniques may be appropriate.



### G3.5.3 METERS AND MECHANICAL EQUIPMENT

Integrate service meters and mechanical equipment into the building façade (e.g. alcoves, indents) or tastefully screen via utility cabinets or architectural details that complement the building's style and materials.



G3.5.3

### G3.5.4 HAZARDS

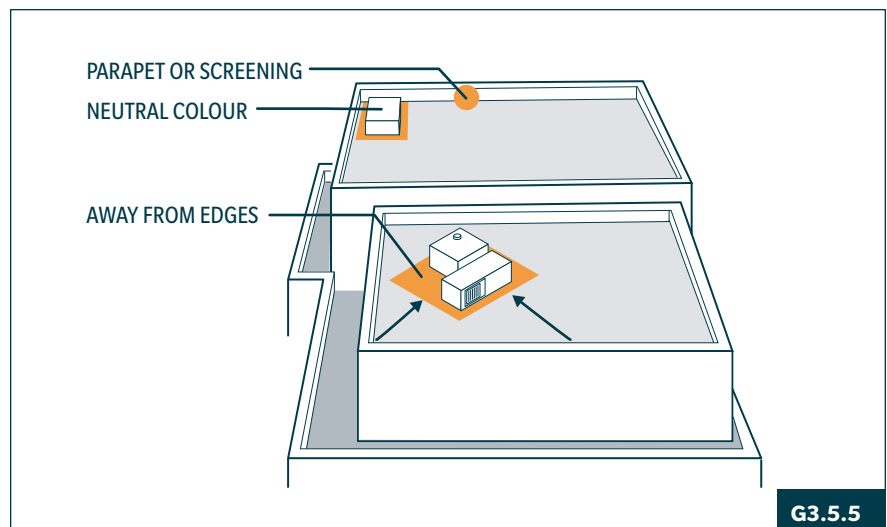
Make hazardous infrastructures (e.g. electrical transformers, dams, turbines) safe and secure without detracting from or encumbering the public realm. Beautify and showcase where possible and avoid blank facades, fencing or visual clutter.



G3.5.4

### G3.5.5 ROOFTOP EQUIPMENT

Limit the protrusion of rooftop equipment (e.g. heating and cooling equipment, antennae, communication dishes). Integrate them into the roofline, locate them to avoid prominence on building edges and select subordinate colours.

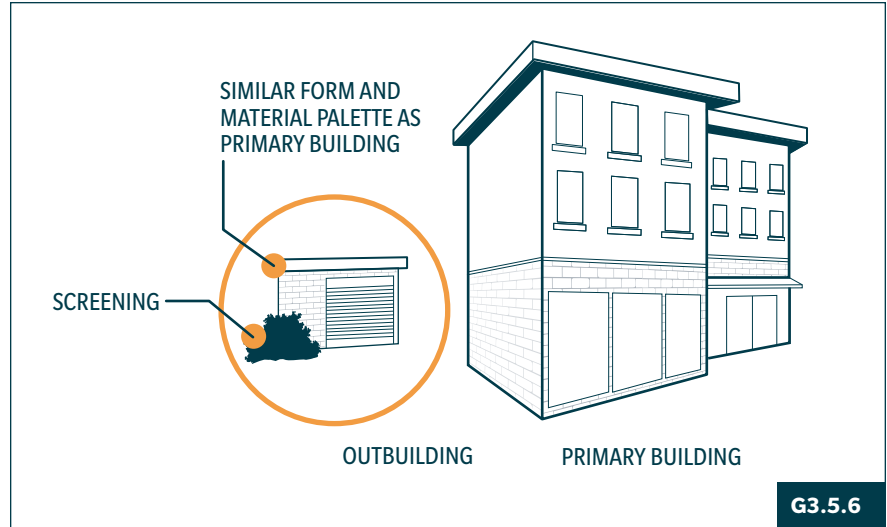


G3.5.5



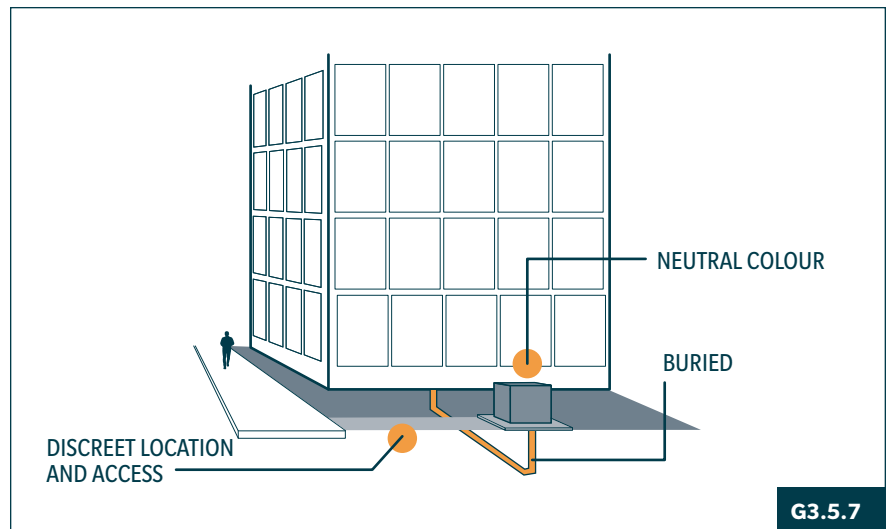
### G3.5.6 OUTBUILDINGS

Locate and scale outbuildings (e.g. pumping stations, mechanical outbuildings, storage structures) to be subordinate and complementary to any primary buildings in terms of materiality and form. Locate to blend into the setting through strategic design, screening and landscaping.



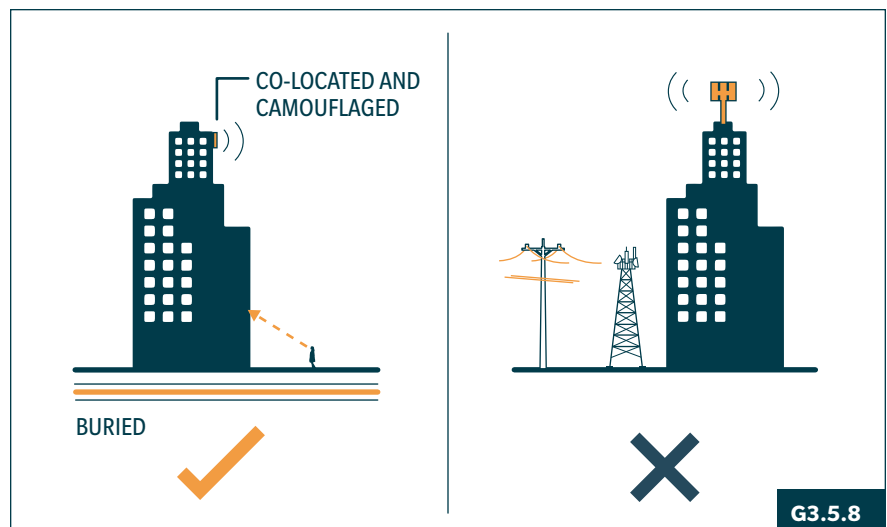
### G3.5.7 HYDRO STRUCTURES

Place utility poles, transformers and kiosks in discreet locations. Avoid encumbering public spaces or routes. Select subtle earth-tone colours to recede into the landscape or employ them as canvases to enliven the public realm.



### G3.5.8 COMMUNICATION TOWERS

Locate towers to minimize visual impacts on the surroundings. Prioritize opportunities to camouflage or co-locate with other elements.



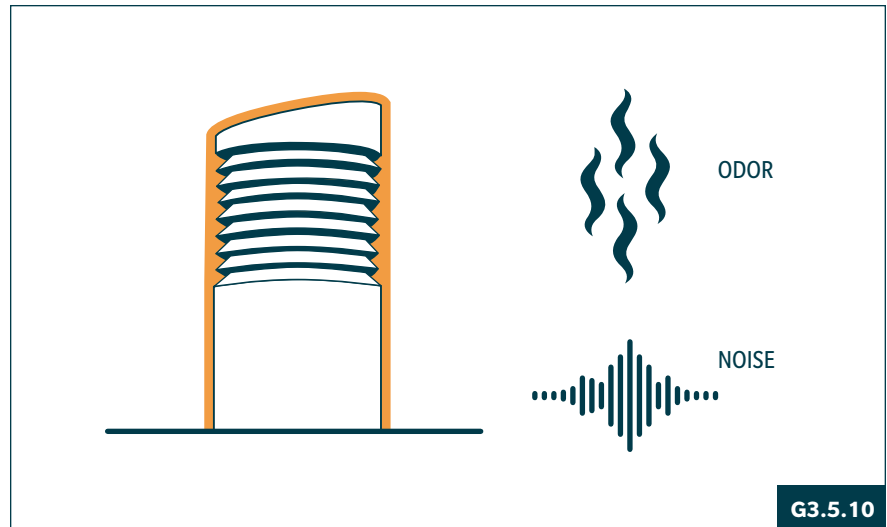
### G3.5.9 PIPING AND WIRING

Integrate exterior piping and wiring (e.g. downspouts, conduits) tastefully into the building façade to complement the building materials and colour palette.



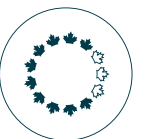
### G3.5.10 VENTING

Integrate ventilation systems into the building and landscape without detracting from the public realm. Avoid vents onto public areas, which may create noise, odour or other disturbances.





# Specific Categories



# Contents

## SPECIFIC CATEGORIES

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# Bird-Safe Design

## THIS CATEGORY INCLUDES:

### ► Rationale

### ► Goal

### ► Policy Statements

### ► Guidelines

- 1 Overall Site and Building Design
- 2 High-risk Glass Treatment
- 3 Building-associated Structures
- 4 Building-integrated Structures
- 5 Building Interior Design
- 6 Outdoor Lighting
- 7 Landscaping around Buildings
- 8 Heritage Characteristics

### ► References

## Rationale

Urban development is putting more and more pressure on birds, and it has come to light that collision with glass surfaces on and around buildings is now the second-most common human-related cause of bird mortality. It is estimated that, in North America, as many as one billion birds are killed by colliding with windows each year.<sup>1</sup>

Birds are unable to recognize glass as an impermeable surface. As a result, birds may strike windows when they attempt to fly through glass to vegetation or habitat on the other side, or when they try to reach the habitat mirrored in the glass. Collisions with glass affect all birds regardless of species, sex, health or age, amplifying the negative impacts of this issue on bird populations.<sup>2</sup>

The bird collision problem is exacerbated by light emanating from buildings and outdoor lighting at night. Birds use visual cues to help them navigate along their migration routes. Light from buildings and outdoor light fixtures can attract birds into urban areas and disorient them, causing them to change their flight patterns, which can lead to exhaustion, emaciation or death. This situation also increases birds' likelihood of colliding with windows during daylight hours.<sup>3</sup>



*“Safe Wings Ottawa’s annual bird display illustrates the impact of bird–window collisions.”*

## Goal

The goal of these guidelines is to reduce bird–building collisions on NCC lands and on federal buildings and lands in the National Capital Region.

## Policy Statement

The NCC will apply bird-safe design guidelines to all projects on NCC lands, and all projects on federal buildings and lands in the National Capital Region that involve glass or lighting and are subject to federal land use, design and transaction approval, as well as to all projects that involve landscaping adjacent to buildings or other structures containing glass or reflective surfaces.

## Applicable Law

Light that reflects off or radiates from buildings is considered a contaminant under the *Environmental Protection Act* (EPA) of Ontario, and allowing such light emissions, if they harm or kill species at risk, contravenes the *Species at Risk Act* (SARA). Also, the *Migratory Birds Convention Act* (MBCA) prohibits the incidental take of migratory birds and the deposit of substances harmful to birds in areas frequented by migratory birds. Owners or managers of buildings where the design results in the death of or injury to birds may be found guilty of an offence under federal or provincial laws, as applicable, if they fail to take reasonable preventative measures to reduce the risk their buildings present to birds.

## Guidelines

The following guidelines draw from current bird-friendly standards and are in line with the Canadian Standards Association’s standard on Bird-Friendly Building Design (A460:19), which is Canada’s first national standard on bird-safe design for buildings, and the City of Ottawa’s Bird-Safe Design Guidelines.<sup>4</sup> These guidelines were developed in consultation with a core team of staff from various NCC divisions, FLAP Canada and Safe Wings Ottawa. In addition to standards for building site, architectural, lighting and landscape design, these NCC-specific guidelines also contain recommendations for heritage buildings.

## 1 Overall site and building design for new buildings and structures must limit risks to bird safety.

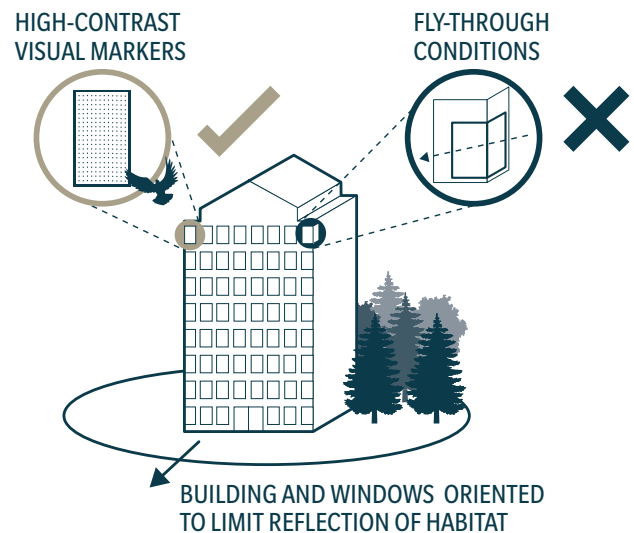
The first step toward limiting bird–window collisions is to ensure that building site design does not pose inherent risks to birds. While windows are important features that allow building occupants to feel a connection to nature, it is important to anticipate where birds will be in relation to the glass in the structures on-site. Certain types of building design and glass-containing architectural features are inherently risky for birds. However, with thoughtful design and window placement, buildings can be designed to reduce the risks to birds, while also maintaining connections with nature and maximizing energy efficiency.

**1.1** To the extent possible, and consistent with NCC master plans, building should be limited in existing natural areas, including migratory bird routes, shorelines, green spaces, wetlands and ecological corridors, to minimize impacts on birds and other wildlife.

**1.2** Where buildings are located in proximity to a natural area, the buildings and windows should be oriented in a way as to limit reflection of habitat (trees, shrubs, hedges, water and wetlands) on glass surfaces and to limit fly-through conditions, whereby birds can see the habitat on the other side of a building through two panes of glass.

**1.3** All buildings should be designed to minimize bird collisions by minimizing or eliminating the use of the following design elements:

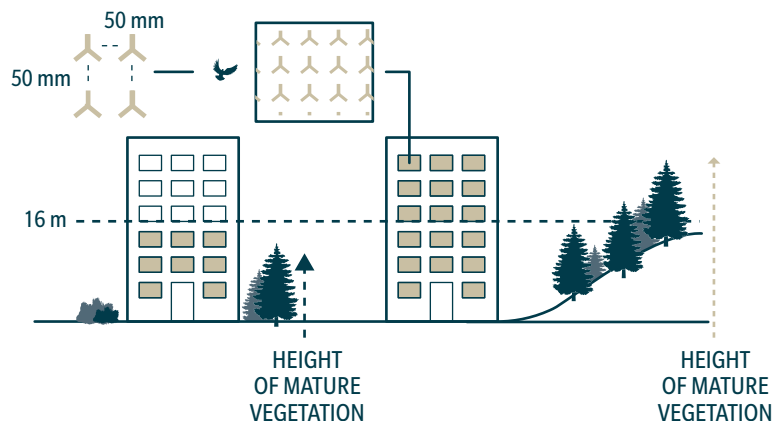
- ▶ large expanses of undistinguished glass, including spandrel glass, or other reflective material, such as polished stone or steel (ideally, the total surface area of glass should be no more than 40 percent of the overall facade);
- ▶ parallel or angled glass elements where birds can see through to the other side of the building (common in linkways, lobbies, corners, alcoves, atriums and alleyways);
- ▶ open-topped atriums, which can trap birds;
- ▶ glass balustrades;
- ▶ transparent wind and sound barriers;
- ▶ free-standing glass architectural elements.



## 2 High-risk glass must be treated with high-contrast visual markers to render it bird-safe.

The properties of glass that pose a risk to birds are transparency (because birds do not recognize the glass as a physical barrier and try to fly through it) and reflectivity (because birds see habitat reflected in the glass). Both issues must be addressed in order to reduce the risk that glass surfaces pose to birds.

- 2.1** In the areas listed below, a minimum of 90 percent of all glazed (glass) surfaces must be treated with the application of high-contrast visual markers:
- ▶ up to the greater of 16 m above grade or the height of the surrounding vegetation at maturity (which may be up to 45 m in the National Capital Region);
  - ▶ on a green roof, up to the greater of 4 m above the surface of the green roof/rooftop garden or the height of the surrounding vegetation at maturity.
- 2.2** In the areas listed below, 100 percent of all glazed (glass) surfaces must be treated with the application of high-contrast visual markers:
- ▶ all glazed surfaces that create fly-through conditions, such as parallel glass, glass balustrades and glass corners, which must be treated for 5 m in each direction;



- ▶ all glazed surfaces up to the greater of the first 16 m above grade or the height of the surrounding vegetation at maturity, where the structure is located directly adjacent to a shoreline, woodlot or wetland.

- 2.3** Visual markers must be applied to the first surface (outside) of the glass, and must be at least 4 mm in diameter and spaced no further than 50 mm apart.
- 2.4** Non-vision glass (such as spandrel glass and privacy glazing) should be treated with a full surface treatment on the first surface that renders the glass visible to birds (opaque and non-reflective).
- 2.5** Visual markers applied according to the specifications in subsections 2.1 and 2.2 may consist of, but are not limited to, the following:
- ▶ muntins, mullions or grilles (bars that divide the pane of glass),
  - ▶ grates and screens,
  - ▶ commercial films and adhesives,
  - ▶ patterns created by acid etching, silk screening or ceramic frit.

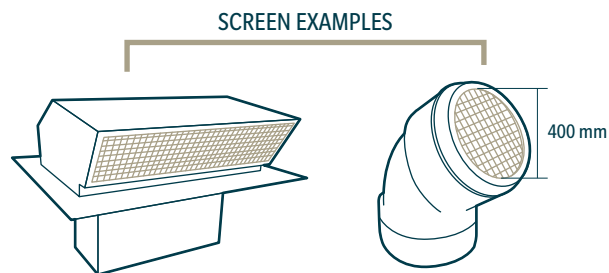
Source: Clause 3, CSA A460:19, Bird-Friendly Building Design. © 2019 Canadian Standards Association. Please visit [store.csagroup.org](http://store.csagroup.org).



### 3 Building-associated structures that pose a risk to birds must meet bird-safe criteria.

Some structures associated with buildings, including ventilation grates, free-standing glass elements and antennas, may pose a risk to birds and must adhere to the following bird-safe criteria.

- 3.1 Glass structures associated with buildings, such as glass railings or balustrades and free-standing glass architectural elements, including wind and sound barriers, must be treated as per guideline 2.2 above.
- 3.2 Outdoor art installations with expanses of transparent glass or highly reflective surfaces should be avoided or treated as per guideline 2.2 above.
- 3.3 All ventilation grates must have a porosity of no more than 20 mm × 20 mm or 40 mm × 10 mm.
- 3.4 Vents and pipes with an opening greater than 400 mm<sup>2</sup> must be covered with a screen or cap.

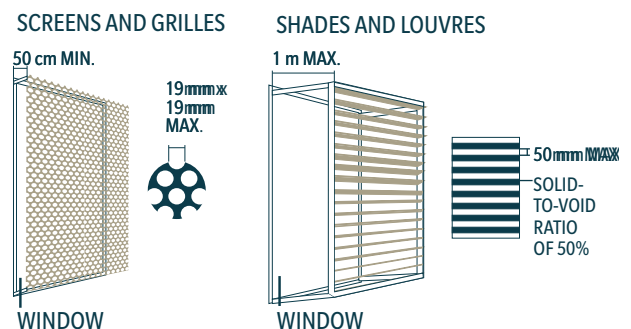


- 3.5 The use of guy wires should be avoided, and antennas should be consolidated into one tower.

### 4 Building-integrated structures may be used to reduce bird collisions, but must meet bird-safe criteria.

Some building-integrated structures can be effective at deterring bird collisions while adding to the architectural design detail of the building and increasing building energy efficiency. Building-integrated structures may be used to deter bird collisions, provided they follow the guidelines below.

- 4.1 When building-integrated structures are used to reduce bird collisions, they must be permanently fixed to the building and non-movable. If removable or movable structures, such as exterior shades, are used, they must be used in concert with the glazing treatments specified in Section 2.2.
- 4.2 Shades and louvres used to deter bird collisions must be parallel or angled to the glass surface, not more than one metre from the parallel pane of glass, have gaps no greater than 50 mm, and have a solid-to-void ratio of 50 percent or more.
- 4.3 Screens or grilles used to deter bird collisions must have a maximum gap of 19 mm x 19 mm, and must be installed at least 50 cm from the glass, on the exterior.



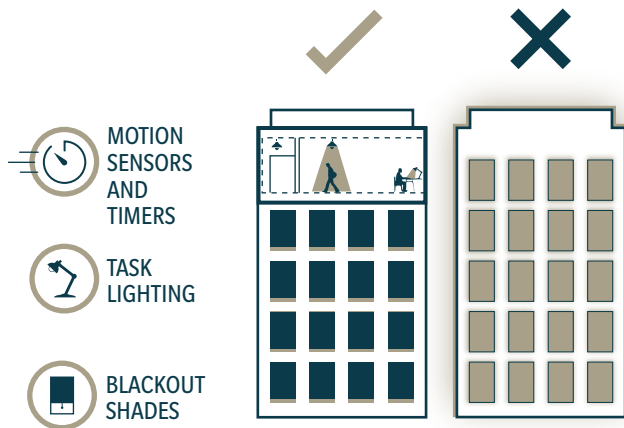
- 4.4 Exterior, stationary shutters used to deter bird collisions must have gaps no larger than 50 mm.

Source: Clause 3, CSA A460:19, Bird-Friendly Building Design. © 2019 Canadian Standards Association. Please visit [store.csagroup.org](http://store.csagroup.org).

## 5 Building interior lighting should be limited from sunset to sunrise.

Interior lighting from buildings draws birds into urban areas where they are at an increased risk of colliding with windows. Light from high-rise buildings emanating up into the sky can attract and disorient birds, causing them to congregate around buildings in urban areas and become exhausted. Reducing lighting in buildings from sunset to sunrise helps to alleviate this problem.

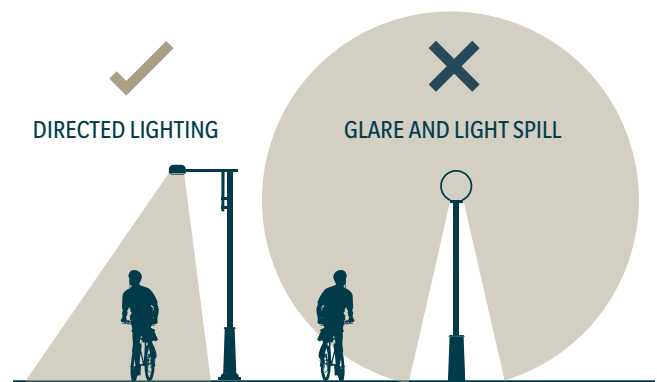
- 5.1** In cases where interior lighting is visible from the outside of the building, it should be reduced from sunset to sunrise using any or all of the following:
- ▶ installing motion detectors and/or timers to automatically extinguish lights in unoccupied spaces
  - ▶ making task lighting options available to reduce lighting in unoccupied spaces
  - ▶ installing blackout shades or blinds that can be drawn at night
  - ▶ installing dimmer switches to reduce light intensity in occupied spaces.



## 6 Outdoor lighting on NCC lands should be dark-sky-compliant.

Outdoor lighting directed up at the sky contributes to sky glow (the brightness of the night sky in a built-up area as a result of light pollution) and may pose a threat to birds. These guidelines should be applied to all lighting on NCC lands, whether in relation to a building or not. Lighting projects completed under the Capital Illumination Plan will be reviewed on a case-by-case basis to weigh various factors, and should follow the guidelines below to the extent possible.

- 6.1** In general, outdoor lighting, whether associated with a building or not, should follow dark-sky-compliant best practices according the following criteria.



- ▶ Lighting should be on only when required for nighttime visibility, wayfinding, or to highlight elements of heritage, historical, cultural, architectural or social value (this can be achieved through the use of motion sensors and automatic timers).

- ▶ Only the areas that require lighting for nighttime visibility, wayfinding, or to highlight elements of heritage, historical, cultural, architectural or social value should be lit (this precludes the use of flood lighting).
- ▶ To reduce over-lighting and limit blue light transmissions, all outdoor lights should have a colour temperature of no more than 3,000 Kelvin (ideally, LED lighting should be amber, not white).<sup>5</sup>
- ▶ Full cut-off fixtures should be used to limit spill light (light that falls outside the area which is meant to be lit).

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**6.2** Where non-dark-sky-compliant lighting is required for special events or light shows, the impact of lighting on birds should be limited by avoiding the use of uplights and by not using spotlights, lasers or searchlights, especially during migratory bird seasons (March to May and August to October).

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**6.3** Where rooftop, facade and monument architectural illumination are required under the Capital Illumination Plan or to showcase heritage characteristics, it should be directed downward toward the structure and should be turned off, or at a minimum, dimmed, between 11 pm and 6 am.

## 7 Landscaping around buildings should be designed to reduce the risk of bird collisions with windows.

The landscaping adjacent to a building has an impact on bird–window collisions by affecting how many birds will be in the direct vicinity of the building and how much vegetation is reflected in the windows of the building. While it is important and encouraged to provide habitat for birds in urban areas, and it is not generally necessary to deter birds from buildings that have been made bird-safe, there are some landscaping guidelines that increase bird safety. The following landscaping guidelines should always be used in concert with bird-safe building design guidelines.

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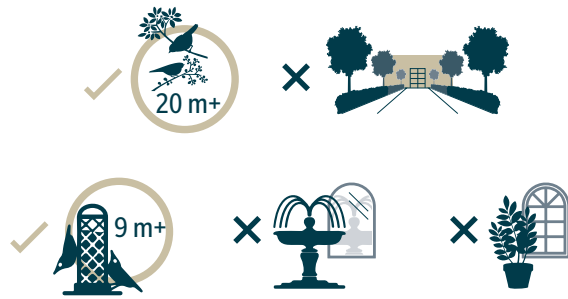
**7.1** Landscaping adjacent to buildings and structures should be designed to minimize reflections of vegetation in windows and other reflective surfaces. (Trees and shrubs planted within one metre of glass surfaces, even if they do not produce reflections in the glass, have not been shown to be effective at preventing bird collisions in all cases. Where trees and shrubs are planted within one metre of glass surfaces, these areas should be monitored for bird collisions using a protocol such as in Annex D of the CSA standard on Bird-Friendly Building Design and/or treated as per the guidelines in Section 2.2, as necessary.)

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**7.2** Landscape designs that channel birds toward windows, such as tree-lined walkways leading toward windowed entrances, should be avoided.

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**7.3** Species known to attract birds, such as those with abundant nectar, seeds or fruit, should be avoided within 20 metres of glass or reflective surfaces, even if those surfaces have been treated with high-contrast visual markers.



- 7.4** Bird feeders and other features, such as bird baths, should be located less than 50 cm OR more than nine metres from glass surfaces.
- 7.5** Features with open water, such as fountains, ponds, stormwater retention infrastructure and engineered wetlands, should be located in areas where they will not be reflected in windows or other reflective surfaces. If this is not possible, the bird collision mitigation strategies in Section 2.2 must be implemented.
- 7.6** Indoor plants and landscaping features should be located so they are not visible through building windows. Where plants are visible from outside the building, the bird collision mitigation strategies in Section 2.2 must be implemented.
- 7.7** Existing vegetation must NOT be removed for the sole purpose of reducing the threat of bird collisions. Where bird collisions are a problem, the bird collision mitigation strategies in Section 2.2 must be implemented.

## 8 Heritage characteristics must be considered in conjunction with bird-safe design.

When making any intervention in heritage and historic buildings and sites (i.e. buildings and sites with heritage value and character-defining elements), decisions should be guided by the Standards and Guidelines for the Conservation of Historic Places in Canada. All proposed bird collision mitigation strategies should be seen in the context of the heritage elements present within the building and site. As each building and site is unique, each intervention must be dealt with on a case-by-case basis, with careful consideration for the integration of these bird collision mitigation strategies into the heritage context.

In many cases, the bird collision mitigation strategies in sections 2.2 to 2.7 can be implemented without impacting heritage considerations. The following guidelines should be applied to bird-safe design projects on existing buildings where heritage designations may apply.

- 8.1** Before applying bird collision mitigation strategies, all documentation with respect to the heritage values of the historic place, including any heritage designations, must be reviewed to determine if there are heritage conservation considerations that must be implemented on-site.
- 8.2** If a heritage designation exists, appropriate heritage experts must be engaged in all stages of review, selection and approval of potential bird collision mitigation strategies and must approve the selected strategies.

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- 8.3** All character-defining elements of a heritage-designated building and site must be identified BEFORE any approved bird collision mitigation strategies are implemented, to ensure that these elements are appropriately conserved during project implementation.
- 
- 8.4** Where character-defining elements may pose a risk to birds, a qualified bird collision mitigation expert should be engaged in a site assessment to determine which elements pose a lethal, high, moderate or low risk to birds. Those elements that are determined to pose the highest risk to birds (lethal or high) should be treated with bird collision mitigation strategies.
- 
- 8.5** Where character-defining elements are determined to pose a high or lethal risk to birds, bird collision mitigation strategies that do not require changes to the building (such as those in sections 2.5 and 2.7) should be implemented first, and monitored for their effectiveness using a protocol such as in Annex D of the CSA standard on Bird-Friendly Building Design. If the risk to birds is not mitigated by these interventions, the guidelines in sections 2.2 to 2.4 and 2.6, or other appropriate and effective bird collision mitigation strategies, as verified by a bird collision mitigation expert and approved by heritage experts, should be implemented.



# References

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- 1 Machtans, C. S., C. H. R. Wedeles, and E. M. Bayne (2013). "A first estimate for Canada of the number of birds killed by colliding with building windows". *Avian Conservation and Ecology* 8(2):6.
- 2 Canadian Standards Association (2019). CSA A460:19, Bird-Friendly Building Design. CSA Group.
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- 5 International Dark-Sky Association (no date). Outdoor Lighting Basics. <https://www.darksky.org/our-work/lighting/lighting-for-citizens/lighting-basics/>

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# Gender-Based Analysis Plus

## THIS CATEGORY INCLUDES:

- ▶ **Rationale**
- ▶ **Goal**
- ▶ **Policy Statement**
- ▶ **Guidelines**
  - 1 Understanding Identity, Gender and Intersectionality
  - 2 Avoiding Biases
  - 3 Identifying and Eliminating Barriers
  - 4 Creating Safe and Comfortable Environments
- ▶ **References**

## Rationale

The Capital of Canada is the national seat of democratic governance and therefore must reflect and serve all Canadians. Gender-Based Analysis (GBA) Plus is a Government of Canada best practice to assess how policies, programs and initiatives affect diverse groups of people differently. Some groups of people may experience persistent challenges to achieving equity and inclusion based on gender and/or other identity factors. These groups may be underrepresented throughout the design process and more limited in their ability to benefit from the function and enjoyment of public institutions and spaces. As such, Capital designs must account for the pluralism of all Canadians in order to advance equity and inclusion and eliminate barriers and discrimination within the built environment.

*Gender is one of numerous identity factors that shapes our lived experiences and sense of self.*

## Goal

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The purpose of these guidelines is to create inclusive, equitable and welcoming public spaces and amenities by assessing and understanding the ways people presenting different identity factors perceive, experience and interact with the design.

## Policy Statement

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The NCC is committed to implementing an internal GBA Plus Framework, in alignment with best practices developed by Women and Gender Equality Canada (WAGE).

The NCC advocates for inclusive and socially responsible design to make Canada's Capital Region more welcoming, inclusive and responsive to the diverse needs of its residents and visitors, regardless of sex, gender, age, ability and all other identity factors.



# Guidelines

## 1. Understanding Identity, Gender and Intersectionality

### 1.1 Identity Factors

**1.1.1** Identity factors shape who we are and inform our experience of the world around us.

**1.1.2** Each person's identity is unique, based on their individual identity factors and lived experiences.

- ▶ Identity factors include unique characteristics of a person's identity such as age, ability, gender, geography, culture, income, sexual orientation, education, sex, race, ethnicity, religion, and others.



## 1.2 Gender

**1.2.1** Gender is one of numerous identity factors that shape our lived experiences and sense of self.

- ▶ Gender is a set of socially constructed roles, behaviours and characteristics.
- ▶ Gender is not biological; a person's gender identity may or may not align with the gender typically associated with their sex.

**1.2.2** Gender identity refers to an internal and deeply felt sense of being a man or woman, both or neither. Gender identities that fall outside the "woman-man" binary are commonly referred to as gender-diverse people.

- ▶ A person who is gender diverse may identify as non-binary, genderqueer, gender fluid, multiple, two-spirit, no gender, gender non-conforming or agender. However, understandings of gender continually evolve and, as such, other gender identities do and will exist beyond those listed here.

**1.2.3** Designers should understand and design for the full spectrum of gender diversity, roles and experiences.

## 1.3 Intersectionality

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**1.3.1** Multiple identity factors intersect to create each person's uniquely layered identity and sense of self. For example:

- ▶ "Womanhood" is not a uniform identity: a racialized woman (e.g. Black or Indigenous), a woman with a disability and a racialized woman with a disability may each experience the world very differently.
- ▶ Similarly, a person who identifies as a woman, a new immigrant and a senior citizen can be viewed as belonging to three separate identity groups.

**1.3.2** Society is diverse, and there is a limitless array of intersectional identity factors between and among all of us.

- ▶ Intersectionality creates diverse needs that require inclusive design solutions.
- ▶ A person may be impacted by design in complex and compounding ways, depending on their unique identity factors.

**1.3.3** Designers should apply a GBA Plus lens to assess how the design may affect (positively or negatively) diverse groups of people and if specific needs and perspectives may be overlooked.

## 1.4 Vulnerable and Underrepresented groups

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**1.4.1** Vulnerable (including marginalized or underrepresented) groups are more likely to be excluded or adversely affected by design. Vulnerable groups may include but are not limited to:

- ▶ Women
- ▶ Members of the LGBTQ2+ community
- ▶ Indigenous peoples
- ▶ Newcomers
- ▶ Older adults
- ▶ People with disabilities
- ▶ People belonging to religious minorities
- ▶ Neurodiverse people
- ▶ People with low income
- ▶ Homeless people
- ▶ Racialized people
- ▶ Rural residents
- ▶ Youth

## 2. Avoiding Biases

### 2.1 Norms and Standards

---

**2.1.1** Planning, design and engineering include numerous standardized norms and processes. Many of them have historically been shaped by men.

- ▶ These norms may carry assumptions that perpetuate systemic bias and discrimination.
- ▶ Institutional biases can have detrimental impacts on vulnerable or underrepresented groups.

**2.1.2** Designers should question and challenge institutional norms and biases to ensure that the assumptions used in the design process do not result in unintended or negative impacts on particular groups of people.

## 2.2 Power and Privilege

**2.2.1** Power is the ability to influence and make decisions that impact others.

- ▶ Designers and decision makers exercise power by creating spaces that will influence how people live, interact and experience their surroundings.

**2.2.2** Privilege refers to advantages or benefits that some groups or individuals may experience and that others do not because of social groups they are, or are perceived to be, a part of.

- ▶ Privilege can exist or persist as a result of historical patterns and practices.

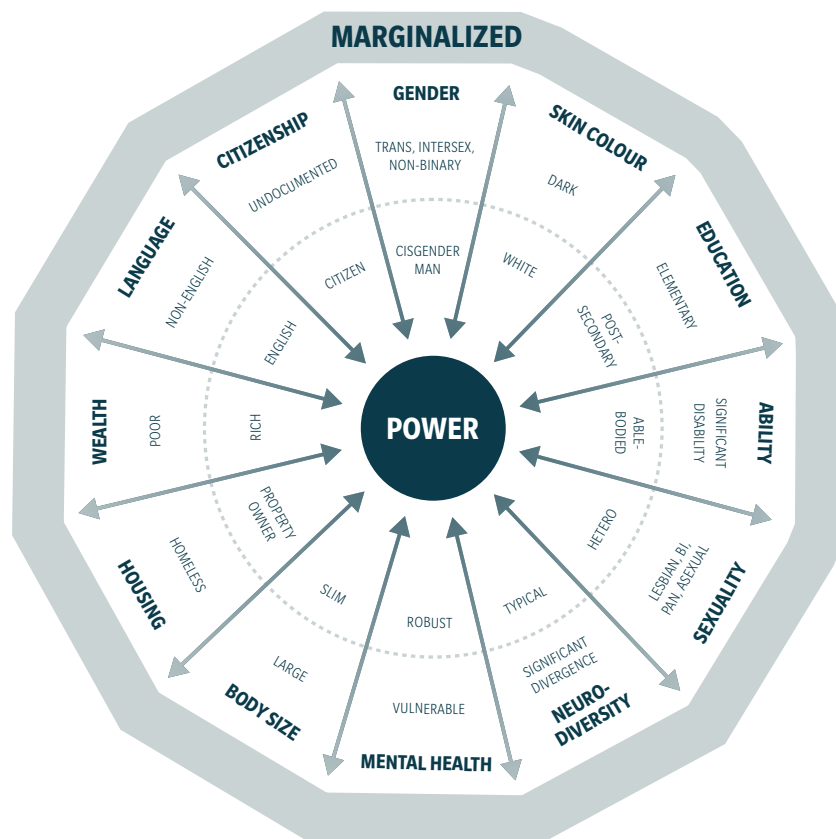
**2.2.3** To identify imbalances in power and privilege, designers should ask:

- ▶ Who will be impacted?
- ▶ Who is benefitting?
- ▶ Who is deciding?

## 2.3 Positionality

**2.3.1** Positionality describes how a person's unique intersectional identity factors create and may obscure their understanding of, and outlook on, the world.

- ▶ Unconscious biases can result from assuming one's own views and experiences as typical or prioritized/privileged over those of others.
- ▶ Be cognisant of position and privilege which may influence assumptions. Designers should assess their own identity factors and positionality to recognize how these might consciously or unconsciously influence the design process.
- ▶ For example, income, language, class, education, property or vehicle ownership and other factors can be elements of privilege and can affect unconscious assumptions.
- ▶ Learn about the experiences and perspectives of diverse groups whose identity factors may differ from your own.



## 2.4 No “universal” Person

**2.4.1** Standards are often based on a typical or average person. However, not everyone falls within conventional social or physical norms.

- ▶ Designers should question and challenge a “one size fits all” approach.

**2.4.2** Assess the full range of user needs and envision design solutions that meet the needs of diverse groups of people. For instance:

- ▶ Handrails of varying heights can address the needs of children and people of various heights and abilities.
- ▶ Seating for pregnant or obese people may require different spacing or features.

## 2.5 Equality, Equity and Justice

**2.5.1** Equality refers to equal conditions where each person receives the same treatment.

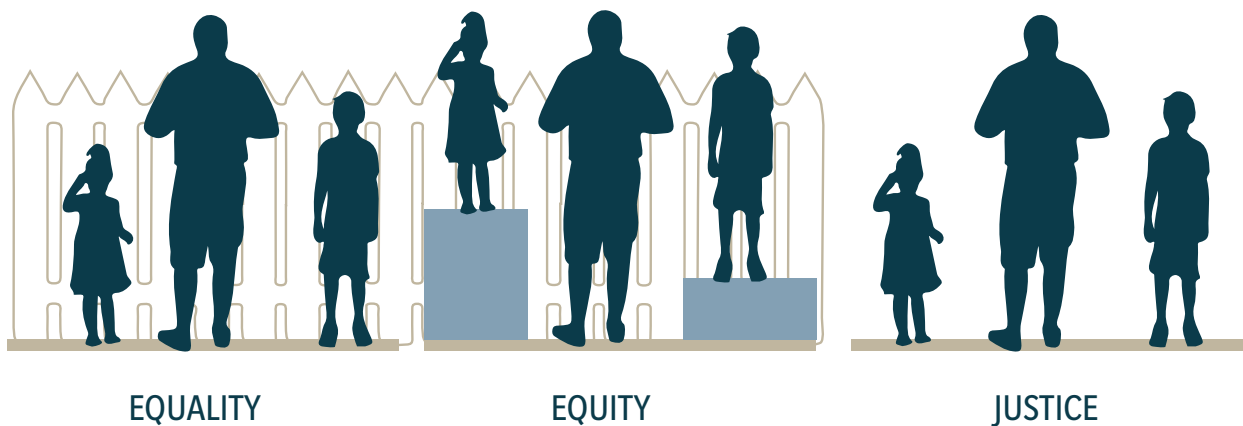
- ▶ Equal treatment does not guarantee equal outcomes and opportunities for all.

**2.5.2** Equity refers to fair opportunity and benefits for all.

- ▶ Equity may require support and accommodations that provide equal access and opportunity.

**2.5.3** Justice refers to fair and inclusive conditions that are fully inclusive for everyone.

- ▶ Justice requires careful planning to eliminate barriers.



## 2.6 Diversity and Inclusion

**2.6.1** Diversity refers to the variety of identity factors within a population.

- ▶ Diversity alone does not ensure equity or inclusion.

**2.6.2** Inclusion is a conscious choice to create more equitable conditions and opportunities for everyone.

**2.6.3** Inclusive design aims to create public spaces that are responsive to the needs of diverse groups of people. Inclusive design:

- ▶ Focuses on making spaces user-friendly for everyone.
- ▶ Asserts that there is no typical or “universal” user.
- ▶ Understands that exclusion can happen to anyone depending on context.
- ▶ Seeks to create connections between people and to address exclusion.

## 3. Identifying and Eliminating Barriers

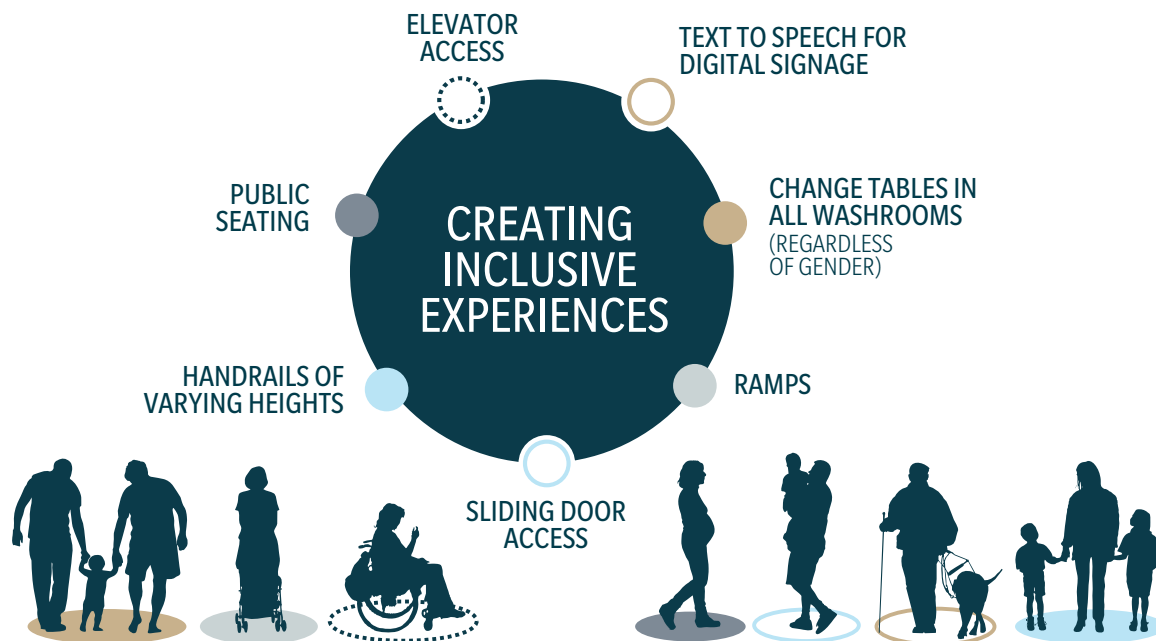
### 3.1 Barriers to Equity and Inclusion

**3.1.1** Barriers are any aspect of a design – social, functional or otherwise – that hinders the full and equal participation and benefit for persons.

- ▶ People may experience barriers in different ways, to varying degrees, and for various reasons based on one or more of their identity factors.

**3.1.2** Designers can identify, reduce and eliminate barriers by:

- ▶ Understanding the needs of diverse groups of people.
- ▶ Creating welcoming environments that encourage and permit everyone to use public spaces.
- ▶ Enabling diverse groups to make independent choices about how they use a space without experiencing undue effort, discomfort, discrimination, or exclusion.



## 3.2 Social Barriers

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- 3.2.1** Social identity factors (e.g. language, income, ethnicity) can affect how particular groups use and experience space. Examples include:
- ▶ Written signage may not be clear or comprehensible for people who do not speak an official language.
  - ▶ Commercialization of public spaces may create unfair access for people of lower incomes.
  - ▶ Groups with proportionally higher incarceration rates may be more sensitive to policing and security measures.
- 
- 3.2.2** Social roles (e.g. parent or caretaker) may involve two or more people's compounding identity factors. Examples include:
- ▶ When a caregiver is assisting or accompanying an infant, an older adult or a person with disabilities. The caretaker's role is different from their experience as an individual.
  - ▶ The experience of a person with a disability may be very different when they are acting alone compared with when they are in the company of a caretaker, a friend or a companion animal.
- 
- 3.2.3** Gender biases, stereotypes and assumptions are examples of discrimination that may contribute to social inequities in the built environment.
- ▶ Gender references are often social constructs that do not reflect functional uses.
  - ▶ Designing for function rather than gender can achieve more inclusive outcomes.
  - ▶ Remove gender references in design and develop non-gendered solutions.

## 3.3 Functional Barriers

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- 3.3.1** Certain physical features or configurations can result in functional barriers that may reduce the benefit to certain groups or impede or deter their participation. Examples include:
- ▶ A parent or guardian may face mobility barriers travelling with a stroller or baby carriage.
  - ▶ Some people may require frequent rest breaks due to physical or health conditions or limited mobility.
- 
- 3.3.2** Accommodations and design features can help to overcome functional barriers, such as:
- ▶ Introducing charging stations for mobility aids.
  - ▶ Providing Wi-Fi connectivity for assistive technologies.
  - ▶ Locating services and amenities in convenient and easily accessible places.

## 3.4 Seasonal Barriers

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- 3.4.1** Some groups (especially vulnerable groups) may be disproportionately affected by climatic conditions and seasonal patterns. Examples include:
- ▶ People with mobility devices may be more impacted by snow accumulation.
  - ▶ The risks of slips and falls on icy surfaces may be more severe for older people.
  - ▶ People of lower income or without stable housing may be more frequently exposed to extreme heat or cold.
- 
- 3.4.2** Design public spaces to mitigate the adverse effects of climate. Examples include:
- ▶ Creating interior and exterior public spaces for the benefit of all.
  - ▶ Providing access to drinking water, especially during periods of extreme heat.
  - ▶ Providing shade in summer and wind protection in winter.

## 3.5 Particular Needs

**3.5.1** A universal design approach does not always address the full range of user experience. Tailored design solutions are sometimes necessary to meet a particular group's needs, often to the benefit and convenience of all users. For instance:

- ▶ Mothers may encounter challenges with respect to pregnancy or nursing a newborn in public spaces.
- ▶ Children at varying stages of physical and cognitive development may require specific features or safety considerations. They also need play opportunities and tactile stimulation.

- ▶ People who menstruate (e.g. women, older girls and some trans men) require access to menstrual products. Providing amenities for easy access and disposal mitigates a functional biological barrier.
- ▶ People with medical conditions such as diabetes or hormone deficiencies may need to use syringes, lancets and small pharmaceuticals. Providing needle drop boxes enables safe disposal.

**3.5.2** Assess user groups and engagement, conduct surveys and address particular user needs.

**3.5.3** Design solutions to facilitate or mitigate particular needs without segregating, excluding or marginalizing any group.

### Case Study: Lactation Rooms

Lactation rooms provide a calm, restful environment for new mothers and their babies.

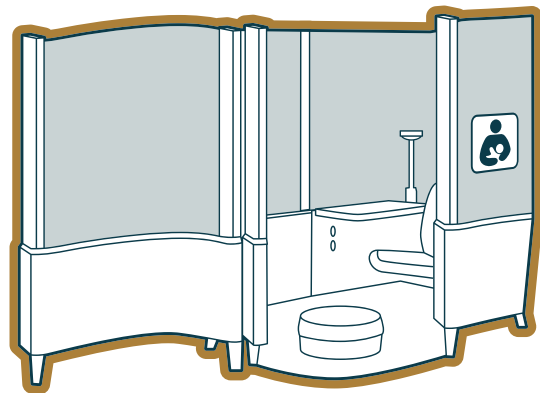
These spaces can be specific or multi-functional, such as for prayer or wellness, if partitioned for comfort and privacy, and should feel safe, accessible and comfortable.

Signage and wayfinding can clearly communicate the location and vocation of lactation rooms.

Design features could include:

- ▶ Comfortable and washable seating with a sufficient radius around the seating area to secure space for belongings, such as a stroller.
- ▶ A user-operated lock with an indicator for privacy to discourage interruptions while allowing ease of operation.
- ▶ Walls that reach up to the ceiling or sound attenuation to minimize sound transmission and ensure acoustic comfort.

- ▶ A work surface or counter with electrical outlets above it and sufficient depth for pumping equipment and accessories.
- ▶ Small appliances, such as a small fridge for storing milk and a microwave to sanitize pumping equipment.
- ▶ A utility-type sink for the cleaning of pumping equipment.
- ▶ Storage space for personal items and cleaning supplies.



LACTATION POD

## 3.6 Exclusion

**3.6.1** Exclusion can occur inadvertently, when a design does not identify or incorporate particular needs. Vulnerable and minority groups are at greater risk of exclusion as their needs are more likely underrepresented through the design process.

- ▶ For example, a lack of facilities or amenities (e.g. drinking fountains, public washrooms, age-appropriate amenities for children and/or older adults) may disproportionately create barriers for certain individuals or groups.

**3.6.2** Exclusion can also occur when certain groups do not feel represented or included in the design. Designs that reflect the diversity of Canadian society may include:

- ▶ Naming of places and public spaces to reflect and include underrepresented groups (e.g. Indigenous peoples, women, people of colour).
- ▶ Historical interpretation that includes multiple perspectives and is sensitive to experiences of discrimination such as colonialism, systemic racism and religious persecution.

**3.6.3** Avoid features that deter certain groups of people from fully participating and benefiting from public spaces and facilities.

- ▶ Avoid exclusionary messages such as “no loitering”, or architectural features that may be perceived as unwelcoming or hostile, to the detriment of all users.
- ▶ Instead, focus on permitted uses and design quality, so everyone feels safe and welcome.

### Case Study: Non-Gendered Washrooms

Gendered (male | female) washrooms and change rooms may signal to trans and gender-diverse groups that they are not welcome or understood.

Non-gendered facilities can meet the needs of diverse groups of people by focusing on everyday needs and functionality.

Design considerations could include:

- ▶ Locating non-gendered washrooms and changerooms near building entrances and prominent or frequently used locations to enhance safety and visibility.
- ▶ Providing intuitive signage to make them highly visible, welcoming and accessible.
- ▶ Providing multiple locations and distributed facilities for fair access, especially near large gathering areas and meeting spaces.

- ▶ Mirrors inside stalls that allow users to groom themselves privately and comfortably rather than in communal areas.
- ▶ Baby changing stations that permit a person of any gender to tend to the needs of infants and toddlers.
- ▶ Adult change tables with adjustable height to reduce mobility barriers and support the autonomy and care for people with disabilities.
- ▶ Large stalls that accommodate more than one person to facilitate assistance from a caretaker of any gender.
- ▶ A shelf or ledge for personal effects to improve ease of use and to accommodate various health conditions and individual needs (e.g. purses, colostomy bags, menstrual products).



A SHARED EXPERIENCE: WASHING OUR HANDS



## 4. Creating Safe and Comfortable Environments

### 4.1 Safety

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- 4.1.1** Safety includes both the physical and mental well-being of a person.
- ▶ Vulnerable groups may experience or perceive risks to their individual or collective safety and freedom of movement more acutely based on their identity, as a result of their lived experiences of violence or discrimination.
  - ▶ Women, girls and gender-diverse people may experience fear and are historically at higher risk of sexual violence or intimidation in public areas.
- 
- 4.1.2** Design public spaces, amenities and services to ensure that all people can use them safely, with dignity, comfort and confidence.
- ▶ Make spaces comfortable and inviting, and reduce stress, danger and the perception of danger through infrastructure, plantings and other design choices.
  - ▶ Prioritize design solutions that enhance both the physical and perceived safety of public spaces.
- 
- 4.1.3** Modifications to existing public spaces and amenities may help to mitigate and improve personal safety. Examples include:
- ▶ Mirrors and lighting can make spaces clearer and reduce the perception of danger.
  - ▶ Panic buttons or community alarms (at appropriate intervals in plain view) that draw attention when activated and are linked to emergency response centres along pathways and other outdoor infrastructure can increase safety.
  - ▶ Beautifully designed and well-maintained spaces, with trees, natural materials and water installations can alleviate stress and anxiety and create a feeling of security, calm and comfort.

### 4.2 Visibility and Movement

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- 4.2.1** Maximize visibility to promote natural surveillance of the environment and improve public safety. Examples include:
- ▶ Provide clear lines of sight from adjacent sites and adjoining buildings so that people can see and be seen by others.
  - ▶ Employ spatial and acoustic divisions only where privacy is required (e.g. washrooms, changerooms, wellness rooms) and avoid concealed areas.
  - ▶ Select vegetation and planting to ensure visibility towards public pathways, park spaces and other outdoor spaces in all seasons and over time as plants mature.
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- 4.2.2** Eliminate narrow, dead-end or isolated spaces (e.g. pathways, corridors, park areas) to minimize unsafe conditions and the possibility of entrapment.
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- 4.2.3** Provide well-defined public spaces and buildings to enable safe movement and ease of access. Examples include:
- ▶ Clear and intuitive entrances to outdoor spaces and buildings that minimize obstructions and create welcoming edges and points of entry that can be seen from the street or other public spaces.
  - ▶ Convenient connections between mobility systems (e.g. transit routes and multi-use pathways for cyclists and pedestrians) including wayfinding, lighting and configurations to optimize pedestrian comfort and safety.
  - ▶ Safe routes through parks and urban green spaces with links to surrounding streets and public spaces and permeable edges, without physical barriers such as walls and fences.

## 4.3 Lighting

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- 4.3.1** Illuminate public spaces with adequate lighting to improve amenability at night-time and perceived safety and comfort. Examples include:
- ▶ Appropriate night-time lighting that makes the environment more inviting, particularly to vulnerable groups who may otherwise feel unsafe.
  - ▶ Provide natural and ambient lighting in and around buildings (via windows, atria, etc.) to increase the perceived openness and security of such spaces.
  - ▶ Provide uniform lighting in public spaces and on travel routes.
  - ▶ Avoid glare or misdirected lighting that obscures the visibility of people and surroundings.

## 4.4 Gathering

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- 4.4.1** Social interactions can improve mental health and social well-being.
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- 4.4.2** Create opportunities for friendly interaction and community connections. For example:
- ▶ Vary public seating formations to allow people to sit in different numbers and modes to help them feel comfortable while observing, interacting and participating in the surrounding environment.
  - ▶ Design large public spaces (indoor and outdoor) to include flexible layouts and various programming options that create a sense of animation, connection and welcoming.
  - ▶ Provide lively public spaces and street-facing shops and amenities (e.g. cafés and picnic tables) to facilitate movement and opportunities for social interactions.

## References

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- ▶ [Justice Canada - Constitution Acts 1867-1982](#)
- ▶ [Justice Canada – Canadian Charter of Rights and Freedoms](#)
- ▶ [Canadian Human Rights Act](#)
- ▶ [What is Gender-based Analysis Plus](#)
- ▶ [Government of Canada Policy on Gender-Based Analysis Plus](#)
- ▶ [Government of Canada’s approach on Gender-based Analysis Plus](#)
- ▶ [Women and Gender Equality Canada, Introduction to GBA Plus, Glossary](#)



# Universal Accessibility

## THIS CATEGORY INCLUDES:

- ▶ **Rationale**
- ▶ **Goal**
- ▶ **Policy Statement**
- ▶ **Guidelines**

- 1 User Experience
- 2 Universal Design Principles
- 3 Complementary Objectives

- ▶ **References**

## Rationale

The National Capital Region is intended for the enjoyment of and use by all Canadians and visitors. An integral part of this vision is for the region to reflect a Canada without barriers, where all people can enjoy the Capital, regardless of individual ability.

Every design decision regarding the built environment has the potential to include or exclude certain people. However, when barriers are removed or a site is inclusive by design, people can participate fully, thus promoting a more accessible and inclusive environment for all. Universal accessibility is a design approach which assumes that the range of human ability is ordinary, not special.

Universal accessibility in design affords comfortable, equitable, barrier-free access and participation for Canadians, regardless of a wide range of physical, mobility and cognitive limitations. Achieving universal accessibility requires the proactive identification, removal and prevention of barriers in both natural and built environments.



*“All persons must have barrier-free access to full and equal participation in society, regardless of their disabilities.”*

Section 6(c), *Accessible Canada Act*

## Goal

The goal of these guidelines is to assist in removing, mitigating and avoiding barriers, by providing direction to consider how physical spaces are designed, in order to ensure that they are accessible to people having different abilities and disabilities.

These guidelines do not specify particular numerical requirements or standards of accessible design. Other policy instruments, including legislation identified in the References section, provide the technical requirements, minimum standards and required features in a range of design scenarios. These guidelines provide designers with principles and direction about how to integrate accessibility as a key objective in the Capital.

## Policy Statement

The *Accessible Canada Act* requires federal entities such as the NCC to work toward the realization of a Canada without barriers, through the removal of barriers and the implementation of measures to prevent new barriers.

All projects on NCC lands, and all projects on federal lands in the National Capital Region subject to federal land use, design and transaction approval, will be reviewed for universally accessible design.

# Guidelines

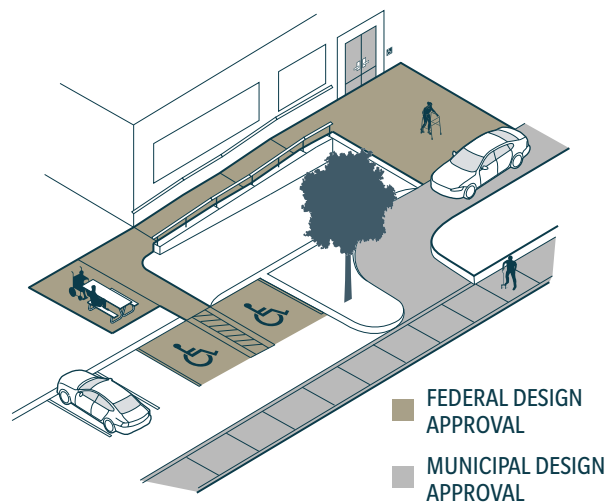
## 1 User Experience

- 1.1 Diversity of needs:** While design standards can identify ways to remove or overcome specific barriers, they do not reflect the diverse and intersecting forms of marginalization, disability and discrimination that people face. Design should exceed minimum standards, and strive for universal accessibility.
- 1.2 Inclusivity:** The needs and abilities of each person differ, as does the way they perceive and experience space. Design should afford all persons the ability to use and enjoy spaces with dignity and comfort.



- 1.3 Consistency:** Designs should provide a consistent user experience through the use of predictable design elements, recognizing that users experience travel through the built environment without regard for jurisdictions.
- ▶ Designs subject to federal jurisdiction must meet the minimum standards of accessibility, as set out in the National Building Code and the Canadian Standards Association's Accessible Design for the Built Environment (CAN/CSA-B651).

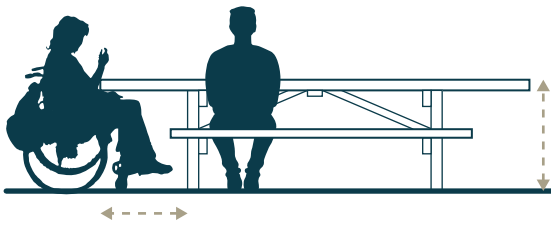
- ▶ Designs should have regard for the locally applicable standards, and provide a consistent user experience across jurisdictional boundaries. Provincial and municipal standards regulate accessible design of non-federal buildings and public spaces; much of the built environment of the National Capital Region is shaped by these rules, which create user expectations of predictable design elements.
- ▶ Where there are multiple standards that potentially apply (e.g. National Building Code, CAN/CSA-B651 and local codes), the selected design should provide the highest level of accessibility.



## 2 Universal Design Principles

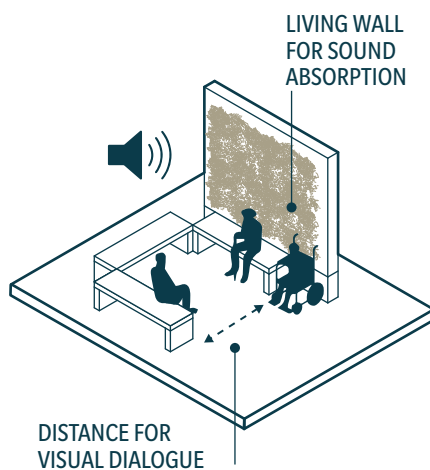
**2.1 Equitable Use:** The design is useful and marketable to people with diverse abilities.

- ▶ Provide the same means of use for all users: identical whenever possible; equivalent when not.
- ▶ Avoid segregating or stigmatizing any users.
- ▶ Provisions for privacy, security and safety should be equally available to all users.
- ▶ Make the design appealing to all users.



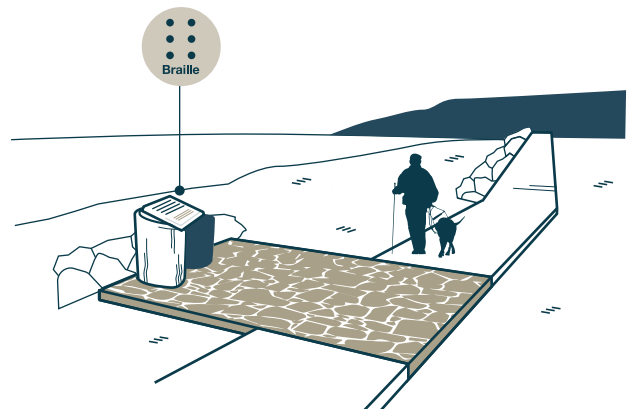
**2.2 Flexibility in Use:** The design accommodates a wide range of individual preferences and abilities.

- ▶ Provide choice in methods of use.
- ▶ Accommodate right- or left-handed access and use.
- ▶ Facilitate the user's accuracy and precision.
- ▶ Provide adaptability to the user's pace.



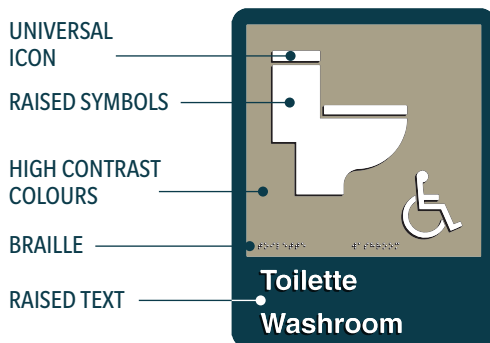
**2.3 Simple and Intuitive Use:** The use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.

- ▶ Eliminate unnecessary complexity.
- ▶ Be consistent with user expectations and intuition.
- ▶ Accommodate a wide range of literacy and language skills.
- ▶ Arrange information consistent with its importance.
- ▶ Provide effective prompting and feedback during and after task completion.



**2.4 Perceptible Information:** The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.

- ▶ Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- ▶ Provide adequate contrast between essential information and its surroundings.
- ▶ Maximize the “legibility” of essential information.
- ▶ Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- ▶ Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

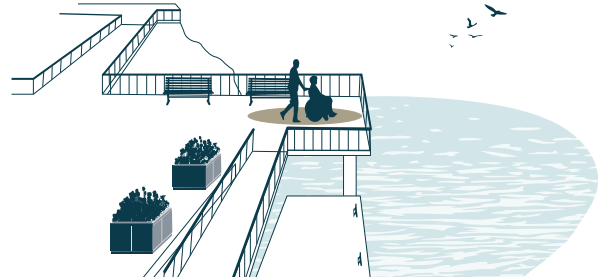


**2.5 Tolerance for Error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.

- ▶ Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated or shielded.
- ▶ Provide warnings of hazards and errors.
- ▶ Provide fail-safe features.
- ▶ Discourage unconscious action in tasks that require vigilance.

**2.6 Low Physical Effort:** The design can be used efficiently and comfortably and with a minimum of fatigue.

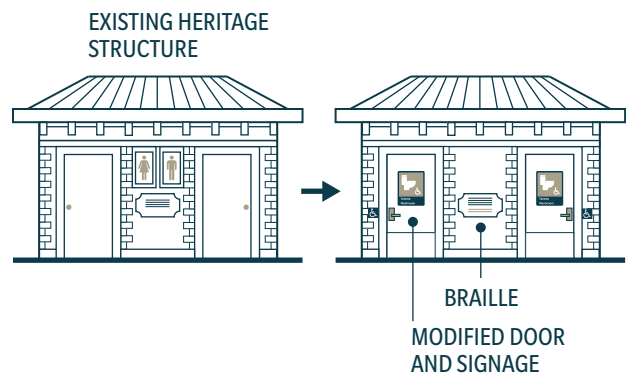
- ▶ Allow the user to maintain a neutral body position.
- ▶ Use reasonable operating forces.
- ▶ Minimize repetitive actions.
- ▶ Minimize sustained physical effort.



**2.7 Size and Space for Approach and Use:**

Appropriate size and space is provided for approach, reach, manipulation and use, regardless of the user’s body size, posture, or mobility.

- ▶ Provide a clear line of sight to important elements for any seated or standing user.
- ▶ Make reach to all components comfortable for any seated or standing user.
- ▶ Accommodate variations in hand and grip size.
- ▶ Provide adequate space for the use of assistive devices or personal assistance.



The seven principles of universal design were developed by the Center for Universal Design at North Carolina State University.

### 3 Complementary Objectives

**3.1 Heritage and Accessibility:** The National Capital Region features a wealth of heritage buildings, modifications to which must maintain their character-defining elements.

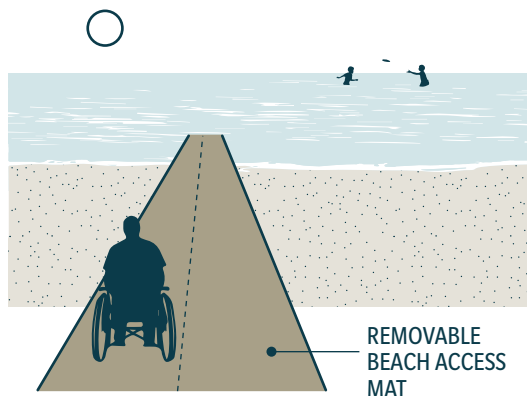
- ▶ Design should remove barriers and integrate accessibility, while retaining character-defining elements.
- ▶ Provide the highest level of access with the lowest level of impact.

**3.2 Natural Heritage:** The Capital Region encompasses natural areas whose topography and natural features pose barriers to access.

- ▶ Where access is permitted, design should avoid and minimize impacts to the natural environment.
- ▶ Where alteration would compromise natural features, provide equivalent opportunity elsewhere.

**3.3 Year-round Enjoyment:** The experience of space by persons of a range of ability levels will vary in different weather and seasons.

- ▶ Design should avoid the creation of barriers in each season, and provide ways to overcome the barriers that each season brings.



## References

- ▶ *Accessible Canada Act* (S.C. 2019, c. 10), [laws-lois.justice.gc.ca/eng/acts/A-0.6/](https://laws-lois.justice.gc.ca/eng/acts/A-0.6/)
- ▶ National Building Code of Canada, [nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-canada-publications/national-building-code-canada-2015](https://nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-canada-publications/national-building-code-canada-2015)
- ▶ Canadian Standards Association's Accessible Design for the Built Environment, [www.csagroup.org/wp-content/uploads/B651-18EN.pdf](https://www.csagroup.org/wp-content/uploads/B651-18EN.pdf)
- ▶ *Accessibility for Ontarians with Disabilities Act, 2005*, S.O. 2005, c. 11, [www.ontario.ca/laws/statute/05a11](https://www.ontario.ca/laws/statute/05a11)
- ▶ Loi sur le bâtiment, <https://www.legisquebec.gouv.qc.ca/fr/document/lc/B-1.1>
- ▶ City of Ottawa Accessibility Design Standards, [https://documents.ottawa.ca/sites/documents/files/documents/accessibility\\_design\\_standards\\_en.pdf](https://documents.ottawa.ca/sites/documents/files/documents/accessibility_design_standards_en.pdf)
- ▶ E-20.1 - Act to secure handicapped persons in the exercise of their rights with a view to achieving social, school and workplace integration, [legisquebec.gouv.qc.ca/en/showdoc/cs/E-20.1](https://legisquebec.gouv.qc.ca/en/showdoc/cs/E-20.1)
- ▶ Universal Design principles are adapted from the Centre for Excellence in Universal Design [universaldesign.ie/What-is-Universal-Design/The-7-Principles/](https://universaldesign.ie/What-is-Universal-Design/The-7-Principles/)







NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE