

### 12.3 Development Permit Area 1 – Design Standards

#### PURPOSE

The purpose of DPA 1 – Design Standards is to...

- protect the natural environment, its ecosystems, and biological diversity;
- revitalize areas in which commercial uses are permitted;
- establish objectives for the form and character of intensive residential development;
- establish objectives for the form and character of commercial development;
- establish objectives for the form and character of multi-unit residential development;
- establish objectives for the form and character of industrial development;
- establish objectives to promote energy conservation;
- establish objectives to promote water conservation; and
- establish objectives to promote the reduction of greenhouse gas emissions.

#### OBJECTIVES

The objectives of DPA 1 – Design Standards are to...

- enhance the visual and aesthetic qualities and character of Duncan;
- provide recreation, leisure, and natural amenities in development;
- improve the public realm adjacent to private development sites;
- support and prioritize active and sustainable transportation;
- reduce stormwater runoff and to recharge the underlying aquifers;
- facilitate the development of highly energy efficient buildings;
- facilitate development with low carbon heating and cooling;
- protect and enhance native biodiversity;
- support and enhance placemaking;
- ensure that development is safe and accessible;
- ensure that development responds and adapts to the impacts of climate change; and
- ensure that development does not adversely impact the surrounding neighbourhood.

#### APPLICATION

1. All land within the City of Duncan is designated DPA 1 – Design Standards.
2. A Development Permit application is required prior to development in this DPA in the following circumstances:
  - (a) construction, siting, or placement of a new building or a building addition greater than 10 m<sup>2</sup> GFA, including intensive residential development, multi-unit residential development, commercial development, community use development, light industrial development, and any mixed-use building;
  - (b) exterior renovation to an existing building, including painting or repainting;
  - (c) alteration of existing landscaping planted or installed as part of an issued Development Permit or otherwise approved or required by the City; or
  - (d) alteration of land, including (but not limited to) re-grading, hard-surfacing, placement of soils or fills, or construction of a retaining wall or stacked rock wall.

3. Where any proposed exterior renovation with a value of less \$100,000, alteration of existing landscaping, or alteration of land is consistent with the applicable design standards, as determined by the Manager of Planning, a Development Permit application is not required. For the Manager of Planning to determine if the proposed exterior renovations are consistent with the applicable design standards, the proponent must provide professionally prepared drawings, illustrations, and examples showing the proposed changes.
4. A development undertaken by the City or its authorized agents and contractors is exempt from the requirement for a Development Permit, provided that the development is consistent with the standards and objectives of this DPA.
5. All development design policies and guidelines contained in this OCP, the Cairnsmore Sustainable Neighbourhood Plan, the University Village Sustainable Local Area Plan, and other City plans and strategies form part of DPA 1 – Design Standards and all development permit proposals will be reviewed for consistency with those other City policies and guidelines.
6. The City or delegate may diverge from the standards where a compelling rationale that preserves the intent of the standards is supplied.

#### **SITE DESIGN**

7. The onsite design must integrate seamlessly with the offsite design of the adjacent public realm (e.g. road right-of-way) and facilitate physical and social interaction between private and public space, where appropriate.
8. CPTED principles must be incorporated in all site planning, design, and redevelopment.
9. Mid-block crossings must be incorporated into the design and connect logically to nearby public areas and amenities, including transit stops, trails, sidewalks, parks, and open spaces.
10. Mid-block crossings must include landscaping, lighting, and signage consistent with the landscaping, lighting, and signage standards in this DPA.



11. Commercial uses should wrap around the building to connect to mid-block crossings.
12. Crosswalks at intersections and mid-block crossings must be designed with alternative materials and colours (e.g. coloured, imprinted asphalt, paving stones) that are different than the surrounding vehicle lanes to enhance pedestrian safety.
13. The onsite and offsite design must incorporate existing and planned transportation infrastructure and networks, including bike lanes, sidewalks, stormwater management, and transit shelters.
14. Where a transit shelter is independent from a building, a minimum clearance of 2 m from the building to the rear of the shelter must be provided for pedestrian movement.
15. All aspects of the site design must be safe, barrier-free, and universally accessible for all ages and abilities, including incorporating visual and auditory guides, where appropriate.



16. Pedestrian walkway must not be contained between high solid fences or blank walls. A low wall or fence may be appropriate.



17. Buildings must be sited to frame the edges of adjacent streets and open spaces, while minimizing the visual impact of parking, servicing, and loading areas.
18. Where a consistent pattern of building setbacks exists, and those setbacks generally conform to the zoning bylaw regulations, new buildings should be designed to align with adjacent buildings.
19. Where there is no consistent pattern of building setbacks, the building should be set back to create a boulevard that can accommodate wider sidewalks, street trees, landscaping, stormwater management, and active uses to establish a more pedestrian-oriented relationship between the building and the sidewalk.
20. Where a continuous streetwall is desirable, side yard setbacks are usually not required. Continuous streetwalls are generally desirable within areas designated for mixed use, except where special site or block conditions require breaks to access mid-block crossings, public courtyards, or other open spaces. However, there are some locations where this condition is not appropriate because adjacent existing buildings have windows and balconies on side walls or close to side parcel lines. It is important that new development on adjacent sites does not negatively impact these existing buildings, provided the existing building is intended to remain for an extended period.
21. Where adjacent sites have buildings with walls containing secondary windows, new buildings should provide a minimum separation of 5.5 m from the existing building wall.
22. Side walls of new buildings that are set back a minimum of 5.5 m from the property line should incorporate glazing, where possible.
23. Some conditions will require additional setbacks (e.g. where the existing building has habitable windows or balconies on the side wall). Setbacks in this case will be determined on a site-by-site basis.
24. The design should provide a minimum separation distance of 10 m between windows and balconies on facing buildings.
25. Where a building includes residential uses at grade, those residential uses and accesses must be differentiated from commercial or other non-residential uses through additional setbacks, landscaping, and privacy screening.
26. In general, where a site is adjacent to a property designated in this OCP for lower density and lower intensity land uses, taller building elements in new development design should be located further away and transition down in height closer to those properties.
27. Buildings must be designed to be stepped along street frontages to conform to the existing geography and avoid the need for retaining walls and significant land manipulation. Individual retaining walls, where required, should be limited to 1.2 m in height and engineered.
28. Buildings, amenity spaces, and entrances must be oriented to maximize sun exposure and passive heating during cool months and to provide shaded areas during warm months. Deciduous trees and outdoor shade structures must be strategically placed to provide cool areas during the summer while maximizing sun exposure during the winter.
29. The extent of impermeable hard-surfaced areas not actively used must be minimized. The design must include paving materials that are permeable and other materials that reduce heat storage.

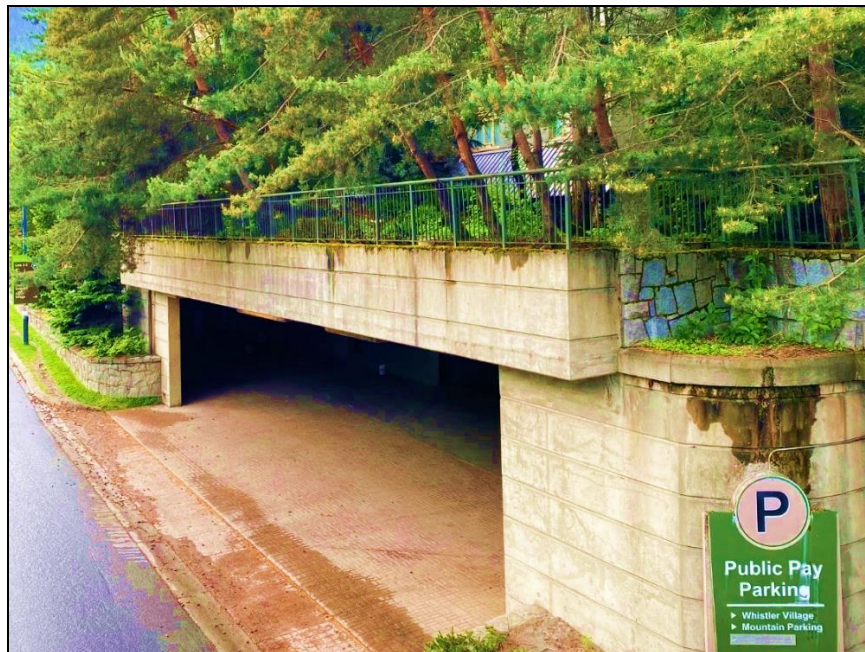


30. Parking must be enclosed, covered, or underground, unless the site or geography will not allow it, including a high water table that would require regular pumping of the parkade.
31. Surface parking, when permitted, must be designed and located to reduce its visual impact on the community. Surface parking must be well-landscaped with trees and other vegetation, screened (where appropriate), and located behind buildings away from streets and the public realm.



32. Surface parking, when permitted, must be integrated with the stormwater management design, including the use of permeable paving materials, where suitable.
33. Parking areas must incorporate and prioritize a safe and universally accessible pedestrian circulation network by providing clearly marked crossings, raised and continuous or separated walkways, landscaping buffers, clear signage, and downcast pedestrian-scaled lighting.
34. Driver and pedestrian sightlines must be respected throughout the parking area, with special consideration given at access points, corners, and pedestrian crossings.
35. Preferential parking, including accessible parking stalls, car-share, EV charging, and bicycle racks, must be easily accessible and should be located close to building entrances.
36. A parking space should be provided for delivery and utility provider vehicles.
37. Where there is underground or structured parking, the sidewalk must be maintained at grade, with pavement markings to alert both drivers and pedestrians of the upcoming driveway crossing.
38. The design must ensure that where driveways cross into the public realm, the pedestrian and cycling facilities take precedence over vehicle access. Sidewalks and walkways must be continuous across all driveways. The apron must be on the boulevard and the sidewalk or walkway must not dip down to accommodate an apron.

39. A tactile walking surface indicator must be incorporated at driveway crossings to indicate entry into a vehicle route or area where no curbs or other elements separate the vehicle route from a pedestrian route.
40. A rumble strip of paving across the width of the driveway must be incorporated into the private property side of the sidewalk or walkway to warn drivers of the upcoming pedestrian crossing.
41. Pedestrian entrances to parking structures must be located adjacent to main building entrances, public streets, or other highly visible locations.
42. Underground parking should be designed to be fully below natural and finished grade. Where underground parking must be partially above grade, it should not exceed 1 m above natural or finished grade. Exposed portions of a parking structure must be designed with attractive, high-quality materials and screened with landscaping.
43. Where trees and vegetation are planted above parking structures, a Landscape Architect must establish a minimum depth of soil above the structure to ensure a suitable growing environment.



44. Stand-alone parking structures must be wrapped with active, at-grade uses facing streets, public parks, and open spaces to provide attractive, animated façades that contribute to the streetscape and enhance pedestrian safety.
45. Where above-grade, structured parking is provided next to streets, the structure must be attractive, with high quality design, articulation, fenestration, and appealing complimentary materials.
46. Where there is no at-grade active use, the ground floor of the parking structure must include architectural and landscaped screens to hide cars from view and disguise the use.

47. Vehicle access to parking structures must be located at the rear or side of buildings away from main building frontages and major streets. Where access must be provided from the primary frontage, access to the parking structure must be integrated into the overall site and building design.
48. All above-grade parking structures must be designed to facilitate adaptability and reuse in the case of future land use conversions.
49. Bicycle parking must be secure, safe, illuminated, highly visible, accessible, covered and protected from the elements.
50. The design must include parking spaces for scooters and other mobility devices in developments where the anticipated occupants would require such devices.
51. Shared driveway accesses and parking between adjoining parcels may be required. Easements may be necessary to accommodate future access between adjacent parcels.
52. Vehicle access to a development must be from a laneway, where a laneway exist. Where there is no laneway, vehicle access to a development must be from a secondary, side street. Vehicle access to major streets is the last option where no other options exist.
53. Servicing, storage, and loading spaces are necessary components of all development sites. These areas must be functional and easily accessible, and their visual impact minimized through thoughtful location and screening.
54. Loading bays, storage areas, and other service areas must be coordinated, consolidated, and located together, where possible.
55. Loading, servicing, and storage areas, including garbage and recycling enclosures, must be integrated within the building envelope, where possible, and are not permitted outside of the building envelope between the building and the street. Where this is not possible, these areas must be located at the rear of the building and screened from the public realm, while maintaining functionality and access. Access to servicing and loading areas must be provided from secondary streets or rear laneways, where possible.
56. Access points on corner sites for loading bays, storage areas, and other service areas must be located as far from nearby intersections as possible.
57. Screening, fencing, low walls, and landscaping must be incorporated into the design to screen servicing areas, maintenance uses, and otherwise less attractive areas from the public realm.
58. Screening materials must be high quality and complement the design of the principal building. Chain link fencing is not permitted.
59. Fencing is not supported where it would create concealed areas that could promote criminal activity or unsafe conditions.

- 60. Special paving materials, lighting, seating, benches, bike racks, waste and recycling stations, public art, planters, landscaping, stormwater management, and other architectural and landscape features must be incorporated into the design to define and activate the public realm.



- 61. Street furnishings that support active transportation uses must be concentrated in spaces that are universally accessible and have a high amount of pedestrian activity. Raised planters must incorporate seating areas.



- 62. Street furnishings and lighting must be focused near building entrances, mid-block crossings, and other walkways.
- 63. Street furnishings must not obstruct circulation, sight lines, or hinder transportation facility maintenance.
- 64. Seating areas must be coordinated and planned around shade trees and landscaping and to deter long-term loitering.





65. The visual impact of electrical transformers and hydro kiosks must be minimized through the use of decorative wraps, landscaping, and screening (where permitted and appropriate).
66. Utilities must be integrated into site and building design and placed in discreet locations away from the primary building entrances and amenity spaces and screened from public view.
67. Overhead wiring, including hydro and telecommunications utilities, must be placed underground, or relocated away from the public realm.
68. Consideration must be given to sharing utilities (i.e., pad mounted transformer) with adjacent properties and developments, where feasible.
69. Courtyards provide a combination of soft and hard landscaping to create spaces that are passively programmed for public and private uses. Courtyards are typically framed by buildings on at least three sides and are located at the side or back of buildings.
70. Courtyards must be connected to active indoor uses, such as lobbies and indoor amenity spaces, with the intent of extending indoor spaces.
71. A clear delineation between public and private areas is encouraged when courtyards are adjacent to grade-level residential spaces. Private residential entrances should not open directly into public courtyards.
72. Courtyards must be designed to promote year-round activities, including the use of walkways, benches, tables, and formal and informal gathering and play spaces.
73. The design must ensure courtyards have sufficient access to sunlight while also providing shaded areas.
74. Courtyards must be designed to feel accessible to everyone. CPTED principles are incorporated into all courtyard designs.





75. Open spaces must incorporate animated edges with active at-grade uses and are designed to be inviting, appear to be public spaces, and encourage year-round use.
76. The design of plazas must be consistent with the overall character and vision of the development as well as the streetscape design.
77. Plazas must be located at centers of activity, such as transit exchanges, intersections of important streets, building entrances, and retail streets, providing a focal point for these areas.
78. Features within a plaza must not visually or physically obstruct the entrance to a building.
79. Urban squares must be designed to have unique character and distinct features including unique paving, landscaping, water features, seating, lighting, and shade trees.
80. Consideration must be given to co-locating outdoor amenity spaces with the building's indoor amenity spaces to establish larger community gathering spaces. Buildings should have active uses facing the plaza, such as shop entrances, food and beverage services, or recreation and community uses.
81. The location and orientation of urban squares must be designed to maximize sun exposure and mitigate environmental impacts such as wind exposure.
82. Urban squares must be constructed at grade, where possible, and have access to public sidewalks on at least one side.
83. Public art is encouraged in urban squares, including though integrated designs or as individual pieces to further humanize the built environment and animate the space.

## **BUILDING DESIGN**

84. All aspects of the building design must be safe, barrier-free, and universally accessible for all ages and abilities, including incorporating visual and auditory guides, where appropriate.

85. Buildings must be designed to include significant vertical and horizontal articulation to create attractive, interesting buildings.
86. Buildings must be designed to include significant variation in colour, texture, and materials to create attractive, interesting buildings.



87. Designs must incorporate visual breaks in the façade through shifts in massing, articulation, colour and material variations, fenestration, recesses for patios, courtyards, entryways, or other features to help break up the expanse of the façade.
88. Buildings must be designed with articulation, stepping, canopies, arcades, and landscaping to reduce wind effects at the pedestrian level.
89. Commercial buildings and commercial components of mixed-use buildings must be designed to create or maintain a continuous street wall, where desired by the City, and frame the public realm.
90. The portions of new buildings over 4 storeys must be stepped back a minimum of 3 m above the streetwall along street frontages to maintain human scale, minimize shadowing, and provide opportunities for balconies and rooftop terraces.



91. Depending on the orientation of the building relative to the street and the width of the street right-of-way, alternatives to stepping may be considered where the design achieves the intent of maintaining human scale, minimizing shadowing, and providing opportunities for balconies and terraces.
92. The design must use building and roof materials that reduce heat island effect and glare.
93. The design must use solar shading devices, high-performance wall assemblies, and glazing products to reduce long-term building heating and cooling requirements.
94. Continuous weather protection must be provided, particularly at building entrances, along commercial façades, and at transit stops.
95. The design must give equal treatment to all street frontages and façades.
96. The design must stagger or offset windows and balconies from those on existing adjacent residential properties that share a side or rear property line to improve privacy and livability.
97. The design must include well-designed, attractive, private front entrances and front yards for residential uses, while also maintaining connections and visibility to the street.
98. The design must include separate entrances for the residential and commercial components of mixed-use developments.
99. The main entrance must be designed to be clearly distinguishable from other entrances through its architectural design and treatment, high visibility, wayfinding, and direct pedestrian access from the primary street frontage.





100. The design must transition from the public to private realm with architectural and landscape cues, such as subtle changes in grade, materials, decorative railings, and landscape plantings.
101. Ground floor residential units adjacent to a street must include individual entrances with direct connections to the public sidewalk. The design should include the use of raised terraces, patios, landscaping, screening, fences, and gates to enhance individual residential entrances and create a semi-private transition to the street.
102. On corner sites, the main entrance must be located at the corner. Where this is not possible, the design must still emphasize the street corner, both streets, and prioritize the primary street for the main pedestrian access.
103. The design must utilize high-quality materials selected for their permanence, durability, and energy efficiency.
104. Natural and locally inspired materials, such as locally produced or manufactured concrete, wood, brick, and stone are preferred while simulated or artificial materials, other than fibre cement siding, are avoided. Vinyl siding is not permitted. Where wood is used, it must be treated and stained to preserve its longevity.
105. Brick is the preferred siding material on the commercial component of mixed-use buildings.
106. The use of high intensity, black, and fluorescent colours as the primary colour is discouraged. Darker colours are supported provided they are used in conjunction with a variety lighter colours and tones.
107. The design must use architectural elements and features, such as balconies, windows, recesses, and projections to highlight individual units and reinforce a variety of scales and textures within each component of the building.
108. The exposed undersides of balconies and porches that are visible from a street or the public realm must be clad with exterior materials that result in a finished appearance which complements the palette of exterior materials used on the rest of the building.
109. The street wall of buildings in commercial land uses must be designed to create a comfortable, yet highly activated, pedestrian environment through a rhythm of multiple retail frontages, architectural articulation, numerous entrances, display windows, canopies, and signage.
110. Façades fronting streets and the public realm must have large, well-proportioned areas of glazing to enhance the streetscape and promote a sense of visual interaction between the building and public realm. Mirrored glass and other opaque materials at street level are generally not supported, unless required under provincial legislation.



111. Buildings with commercial uses at-grade must provide a range of unit sizes designed for active uses. Larger retail units should have their internal massing hidden behind small units with street frontages.
112. The minimum floor-to-floor height of the ground floor of commercial and mixed-use buildings is 4 m to facilitate retail uses at grade. Where permitted, residential uses (e.g. live-work units) must front onto a primary street at grade level. In a mixed-use building, the vertical distance from grade to the top of the second storey floor level should also measure 4 m.
113. Primary doors, walls, and windows that slide, stack, fold, collapse, and retract are encouraged for active, at-grade uses, taking advantage of seasonal benefits and encouraging energetic streetscapes.
114. The design must be bird- and bat-friendly, including special consideration to the treatment of glazing, landscaping, and lighting to reduce the number of bird strikes and create an urban environment in which birds and bats can thrive.
115. Functional building elements, like vents and utilities, must be consolidated, integrated into the building design, and/or screened from view.
116. Blank walls are designed as architecturally finished surfaces and large expanses of blank walls must be avoided. As redevelopment occurs, especially in the Core Commercial area, some buildings built with zero parcel line setbacks may be taller than the existing buildings that are not built to the maximum height limit and result in exposed blank walls. Blank walls are to be expected during times of transition, but to mitigate the appearance of blank walls they must be designed with material finishes that complement the architectural character of the main building façade.
117. Murals or climbing vines must be used to address the negative visual impacts of large blank walls.
118. The roof design must reduce the visual impact of mechanical equipment and provide usable amenity space on the roof, where appropriate.
119. Rooftop mechanical equipment must be screened from view from the public realm using complementary building materials, parapets, or other architectural devices. The equipment must be positioned away from the edge of the roof.
120. The design must include durable, thermally efficient roofs that reduce heating and cooling requirements and enhance thermal comfort.
121. Extensive (light) or intensive (deep) green roofs are required. Temporary irrigation systems to establish green roof plants are permitted, but once the planting has been established these systems should be disconnected.



122. Roofs must not be designed in such a manner that would prevent green roofs or rooftop amenity space.
123. For residential buildings, balconies must be integrated into the overall building design. The balconies must be designed to have a positive impact on building massing, the public realm, and the site's micro-climate conditions.
124. Balconies must be designed to extend interior living space. They must be functional and sufficiently sized and shaped relative to the unit size.
125. Where glass balconies are used, they must be treated to be bird and bat friendly (e.g. frosted glass, visual markers).
126. The design of balconies must consider the building's energy performance to reduce thermal bridging and manage solar gain.
127. Balconies must be inset or partially inset to offer greater privacy and shelter from the wind, reduce the building bulk, and minimize the impact of shadow on other amenity spaces below.

#### **LANDSCAPING DESIGN**

128. A landscape plan developed by a Landscape Architect must be submitted as part of the Development Permit application to ensure appropriate, interesting, and sustainable landscaping is designed and installed.
129. The detailed design for planting and landscape typologies must consider all seasons and the micro-climate of the site, including shadows, sunlight, and wind.
130. Irrigation plans must avoid the use of potable water and rely on passive irrigation and drought-tolerant native vegetation, where appropriate.
131. Plant species selected must be low maintenance, drought-tolerant species.

132. Plant species selected must enhance and support biodiversity, including supporting pollinator species.
133. An abundance of native plant species must be included in the landscape plan.
134. Landscaping must provide buffers for wind, visual screening, and privacy.
135. Landscaping and screening must not limit the safety, visibility, sightlines, or sense of security of pedestrians, cyclists, or drivers.
136. Front and exterior side parcel line setbacks, especially in Commercial Core areas, are used to create and connect green infrastructure, where appropriate.
137. Landscaped spaces must be of a sufficient size and shape to support the management of stormwater, absorption of noise, and the cooling of urban spaces.
138. Street landscaping should be strategically planted to help regulate climate, control stormwater, cleanse air and water, and provide habitat.
139. The landscape plan must include an abundance of hard-landscaping features, including (but not limited to) decorative brick pavers, stamped and coloured hard-surfacing, seating areas, water features, play areas, outdoor dining areas, planters, walkways, lighting, signage, and gathering places.
140. Existing trees that are healthy and well-suited to their location are a key City asset and should be retained wherever possible. Where this is not possible, re-planting must follow the guidelines and regulations in the City's urban forest strategy, tree protection bylaw, and the standards in this DPA.
141. Trees species selected must be drought-tolerant, low maintenance, disease-resistant, well-adapted to urban environments, and preferably native.
142. Trees must be incorporated into the design of green space and open space.
143. Site planning must seek to maximize continuous soil areas for tree planting and vegetation. Soil cell technology may be necessary to achieve required soil volumes.
144. Street trees must establish a consistent streetscape pattern to minimize transitions between properties.
145. Street trees must be provided in both the private and public realm. Street trees on private property must be positioned to fill in the gaps in the street tree spacing in the public realm.
146. The landscape design must include the provision of soil volumes to support mature tree growth to help achieve the 2050 tree canopy goal of 40% set by the City's Urban Forest Strategy.
147. In addition to providing aesthetic and environmental benefits, trees must also serve a function. Street trees and onsite trees in open areas must not be narrow, columnar varieties and species – these trees must provide canopy coverage at maturity.





148. Street trees on private and public land must include an exterior outlet at grade for future tree light installation.
149. Street trees must include a decorative tree grate.

#### **SIGNAGE DESIGN**

150. A comprehensive signage plan for the site and buildings must be provided as part of the Development Permit application.
151. Ground level signage must not overwhelm the appearance of the streetscape, nor restrict the placement or growth of trees and landscaping.
152. Commercial signs must be pedestrian-scaled in areas with high pedestrian traffic. The visibility and design of signage must be complimentary to the architectural form and character, constructed of durable materials, and fit within the surrounding context.
153. Signage on commercial and mixed-use buildings must clearly identify uses and business names.
154. Signage must identify building addresses at all entrances.
155. Lettering and logos for businesses must be individual channel lettering signage. Only the individual letters or logos may be illuminated. Box ('can') signage is prohibited.



156. Signage should be unique, visually interesting, and artistic.
157. Information or educational signage should be located in high traffic areas where there are unique site elements or characteristics to highlight, such as special landscapes, public art, cultural heritage features, etc.
158. The scale, visibility, and design of signage must respond to and fit within the surrounding context and long-term character of the urban area. Street signs, road signage, and advertising signs, for example should be designed for optimal visibility by pedestrians to be viewed at the speed of pedestrian traffic. Signage that is optimized for pedestrians does not need to be as large as signage that is optimized for vehicle traffic.
159. For larger developments with multiple businesses, tenants, and occupants, a hierarchy of signage must be implemented to create a distinct identity for the property. A coordinated approach will reduce the amount of signage and encompass wayfinding and directional signage, information signage, and commercial signage, as required.
160. Down lighting must be incorporated to increase visibility of signage at night.

#### **LIGHTING DESIGN**

161. The design and location of lighting must consider sustainability, safety, and the impacts of light pollution.
162. Onsite lighting must be sufficient to provide clear orientation, personal safety, and site security. Lighting must be provided for all walkways, driveways, parking areas, and loading areas.
163. Sustainability and the impacts of light pollution must be considered when determining the design and location of lighting. Consideration must be given to energy efficiency, induction lighting, solar power, sensors, timers, and other lighting features.
164. All pedestrian and streetscape lighting must be “dark sky” friendly. Light pollution must be minimized by implementing the use of full cut-off lighting, avoiding light reflectance, and directing lighting downwards. Exceptions may be considered for signage and architectural lighting.

165. In key areas, lighting can be used to accent special features, such as building features, heritage properties, landscaping, and signage.
166. Where possible, lighting must be integrated into the building design.
167. Human scale lighting guidelines (3-4 m above ground) that are of a consistent type, colour, and quality must be installed throughout the public realm.
168. Warm light sources (2000-3000k) must be used to avoid negative impacts to human health, wildlife, and the night sky.
169. Pedestrian-scaled lighting must be integrated into building entrances, public spaces, and in areas with high pedestrian traffic.
170. Lighting affixed to the building must only be located at the ground level, as it is intended to provide lighting for pedestrian areas.
171. Developments must use energy efficient lighting design such as Light Emitting Diodes (LED) and motion or photo-sensitive lighting for all outdoor lighting.
172. All lamp standards must be equipped with brackets for hanging City banners.

## **PUBLIC ART**

173. Public art is a required component of development. If the City agrees, the developer may provide cash-in-lieu of public art, equivalent to 0.1% of the construction value of the development (determined by the City's Building Official at the building permit stage).
174. Public art can enhance the unique culture and history of the City and the site. Its design should be place-specific and explore opportunities to celebrate historic and cultural events or to complement building and site design. Public art can be free-standing or integrated into the site or building architecture.
175. Special focus must be given to integrating public art into the urban design of the public realm on corner lots, courtyards, and plazas.
176. The design should incorporate public art that is interactive, accessible, and integrated into the property's infrastructure or site furnishings.
177. Public art must be visually and physically accessible.



## SUSTAINABILITY

178. The intent of the sustainability design standards is to provide direction for green building, site, and sustainable infrastructure designs that support the City's sustainability objectives and help reduce energy and resource demands, while strengthening environmental resilience.
179. The following specific features in the development must be included to reduce GHG emissions, conserve water, and conserve energy:
- (a) amenity space;
  - (b) onsite energy generation;
  - (c) energy efficient buildings;
  - (d) low carbon buildings;
  - (e) green roofs;
  - (f) active transportation infrastructure; and
  - (g) electric vehicle and e-bike charging.
180. Amenity spaces are open spaces or spaces within buildings that can be private, semi-private, or public. These spaces can be at grade, on terraces, or on rooftops and are designed to contribute to the quality of life for the building's residents and users and to reduce the need to travel offsite to meet specific amenity needs.
181. Amenity spaces must be designed to enhance residents' feeling of safety.
182. The design must ensure open spaces are comfortable, with ample access to sunlight, as well as shaded areas, and weather protection.
183. Play areas and related amenities should be at grade rather than on rooftops.





184. Amenity spaces in residential or mixed-use developments must be functional year-round and programmed to provide multiple active and passive functions and are designed for all ages and abilities, including (but not limited to):
- (a) gardens, habitat conservation, and connectivity;
  - (b) water features and water themed play areas;
  - (c) open lawn areas for unstructured play;
  - (d) seating or picnic areas to accommodate various group sizes;
  - (e) spaces for passive activities such as reading, socializing, relaxing, bird watching;
  - (f) children's play areas;
  - (g) community gardens;
  - (h) outdoor kitchens and barbeques;
  - (i) weather protection;
  - (j) exercise and fitness;
  - (k) resident events and meeting; and
  - (l) special events.
185. Pedestrian circulation is a priority for all open space design. Amenity spaces are directly connected with the public street network and facilitate connections to active transportation routes, transit facilities, and community amenities and destinations.
186. Residential developments that have more than 10 units must provide a minimum outdoor amenity space that is not less than 3 m in width and equal to 10 m<sup>2</sup> per unit. Indoor amenity spaces may be considered as a supplemental alternative to outdoor amenity space. A wider variety of, and more abundant, amenity spaces are required depending on the scale of the development, the number of residents, and the ages and abilities of the intended occupants.

187. Amenity spaces must be conveniently located and accessible for all ages and abilities.
188. Amenity spaces must be accessible from private property and must have a clear demarcation between private and public spaces.
189. Rooftop amenity spaces must be included in the building design. These spaces can help reduce heat island effect, provide unique urban experiences, and create public, semi-public, and/or private community gathering spaces. The design and character of a rooftop amenity space must be an extension of the building design and its interior.
190. Accessible green rooftops and useable rooftop terraces must be provided as common amenity space.
191. Indoor, shared amenity spaces must be provided, including exercise rooms and common meeting, event, and leisure spaces.
192. Green roofs should be integrated with rooftop amenity space to provide naturalized, inviting, and attractive amenity spaces.
193. Safety, comfort, and the enjoyment of the amenity space must be enhanced by the provision of landscaping, seating, lighting, public art, and weather protection elements.
194. Exposure to the elements must be considered when designing and orienting rooftop amenity spaces. Wind screens, canopies, and shading must be used where required to mitigate wind and sun exposure.
195. Mechanical equipment on rooftops must be located away from amenity areas. Screening or buffering must be used to reduce noise and visibility.
196. Vegetation and physical screening must be used to create visual barriers between programmed areas and between private and public spaces.
197. The design must ensure that selected vegetation is suitable for rooftop areas. Durable, drought-resistant, and wind-resistant species are prioritized.
198. Urban food gardens and garden boxes for residents must be considered in the design.
199. Buildings and site infrastructure must be designed to use less potable water by considering the following:
  - (a) install plumbing fixtures that conserve water;
  - (b) utilize high efficiency irrigation systems, xeriscaping, and drought-tolerant plants for landscape areas to minimize the need for watering and maintenance; and
  - (c) specify water efficient HVAC, chillers, and other equipment and appliances.
200. Trees that were removed during site development must be replaced with trees suited to the climate and soil conditions, with native tree species prioritized.
201. New development must be designed to retain and protect significant trees and other high-value vegetated areas on the site.

202. Permeable surfaces are required, where feasible, to assist and enhance stormwater management solutions.
203. The design must incorporate intensive and extensive blue/green roofs, bio-swales, infiltration, and other best management practices throughout the site to store rainwater, mitigate urban heat island effect, reduce heating and cooling requirements, and reduce the impact on City drainage systems.
204. The design must provide for the collection and re-use of rainwater to irrigate non-edible plants and landscaping, where feasible, by using the following strategies:
- (a) collect water from roof downspouts and direct it to planted areas or into rain barrels for irrigation and storage; and
  - (b) collect rainwater in above- or below-ground cisterns for irrigation or sub-surface infiltration systems that store runoff.
205. Site grading and stormwater design must manage rainwater and ground water to ensure that water will not discharge directly offsite into the surrounding streets, adjacent properties, or existing storm sewers.



206. Development designs must minimize impervious areas and incorporate onsite integrated stormwater management solutions (e.g. stormwater retention tanks, onsite dispersal systems, rain gardens, green roofs, and bioswales).
207. Permeable surfaces must be maximized to assist and enhance stormwater management solutions.
208. Deciduous trees should be used on the southern and western-facing sides of a building to maximize the warming effect of solar radiation in winter months and the cooling effect of shade in summer months.
209. Coniferous trees should be planted to block winter wind – especially on the north face of a building. Planting coniferous trees near southern façades should be avoided as they will block desired light and solar gain.

210. The design should use deep window overhangs and fixed, adjustable external shades on south-facing façades that can block out high-angle summer sun and allow entry of low-angle winter sun.
211. The roof shape and orientation should be designed to maximize passive solar gain and opportunities for solar energy collection, where such design would not conflict with other design standards (e.g. green roofs).
212. South facing façades should incorporate large windows to maximize solar gain and natural light, especially in winter months.
213. The design should use building shapes that minimize adverse wind effects and optimize conditions for passive ventilation and cooling.
214. Operable windows should be located to maximize natural ventilation, ideally on opposing or adjacent walls, to create cross-breezes.
215. Solar-powered lighting systems must be used, where feasible.
216. The design should use onsite renewable energy generation, such as solar panels, as the source for electric car charging stations, where viable.
217. The design must demonstrate that at least 10% of energy use in the proposed development will be generated onsite.
218. All buildings in the development must be highly energy efficient and include heating and cooling systems that use low-carbon fuels (e.g. electricity). As a feature in the development, the development must include buildings that are designed to the higher steps of the BC Energy Step Code.
219. As a feature in the development, all parking spaces must be equipped with conduits and wiring to support Level 2 EV charging station installation (i.e. 240 V outlets).
220. The development must provide adequate accommodations for short- and long-term e-bike storage, including access to appropriate electrical outlets for e-bike charging. (i.e. adequate space to store a cargo style e-bike).