

MOTION

6. Various Guidelines and Policies

THAT the documents entitled “RM-8 and RM-8N Guidelines”, “RM-8A and RM-8AN Guidelines”, “Guidelines for the Administration of Variances for Zero Emission Buildings in the RS, RT and RA Districts”, “Guidelines for the Administration of Variance in Larger Zero Emission Buildings”, “Artist Studio Guidelines”, and “Rezoning Policy for Sustainable Large Developments”, as considered by Council at the Public Hearing on July 6, 2021, be approved by Council for use by applicants and staff for development applications in the relevant districts;

FURTHER THAT the document entitled “Charles/Adanac RS-1 Rezoning Policy”, as considered by Council at the Public Hearing on July 6, 2021, be repealed by Council as it has been superseded by updated land use policy;

AND FURTHER THAT the document entitled “West End Georgia/Alberni Guidelines”, as considered by Council at the Public Hearing on July 6, 2021, be renamed “RM-6 West End Georgia/Alberni Guidelines”.

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City of Vancouver *Land Use and Development Policies and Guidelines*

Planning, Urban Design and Sustainability Department

453 West 12th Avenue, Vancouver, BC V5Y 1V4 | tel: 3-1-1, outside Vancouver 604.873.7000 | fax: 604.873.7100
website: vancouver.ca | email: planning@vancouver.ca | app: VanConnect

RM-8 AND RM-8N GUIDELINES

Adopted by City Council on June 24, 2014

Amended on October 20, 2015, October 30, 2018, ~~and~~ September 10, 2019 and xx, 2021

~~September 2019~~

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Note: These guidelines are organized under standard headings. As a consequence, there are gaps in the numbering sequence where no guidelines apply.

1 Application and Intent

These guidelines are to be used in conjunction with the RM-8 and RM-8N Districts Schedule of the Zoning and Development By-law.

The RM-8 and RM-8N Districts Schedule includes “multiple dwelling” and “freehold rowhouses” as conditional uses. In this zone, a multiple dwelling may take the form of a stacked townhouse, a courtyard rowhouse or a strata rowhouse development. Freehold rowhouses are listed as a separate use, however, strata rowhouse and freehold rowhouse developments follow the same regulations and guidelines. Throughout the RM-8 and RM-8N Guidelines, they are simply referred to as “rowhouses”.

The main difference between a strata rowhouse and a freehold rowhouse development is the minimum width of the rowhouse. In order to provide services (e.g. water, sewer, gas) to a freehold rowhouse and subdivide the development into fee simple lots, a minimum lot width and frontage of 5.0 m (16.4 ft.) is required.

The developer needs to decide at the initial stage of the application whether a rowhouse development will be freehold or strata. For freehold rowhouse developments, additional zoning regulations in section 11 of the Zoning and Development By-law need to be met.

1.1 Intent

The intent of these guidelines is to:

- (a) Encourage the development of ground-oriented, medium-density multiple dwellings in the form of rowhouses, courtyard rowhouses and stacked townhouses, the majority of which are suitably sized for families (i.e. two- and three-bedroom units). Rowhouses can be strata titled or subdivided into freehold rowhouses – they are simply referred to as rowhouses throughout this document;
- (b) Ensure a high level or activation of residential street life;
- (c) Ensure neighbourliness while recognizing that the new development's siting is not intended to be the same as development under RS zoning;
- (d) Ensure a high standard of livability for all new dwelling units, including lock-off units. Emphasis is placed on ground-oriented access, natural light and cross-ventilation, as well as usable private outdoor space for each unit;
- (e) Ensure durable and sustainable design, while allowing architectural diversity rather than prescribing any particular architectural character; and
- (f) Support the retention and renovation of pre-1940s houses that retain original character elements and to permit infill one-family dwellings on these sites.

1.2 Application

These guidelines apply to most new conditional residential development, as well as significant renovations or additions:

- (a) Multiple Dwelling, such as strata rowhouses (referred to as “rowhouses” in these guidelines), courtyard rowhouses and stacked townhouses;
- (b) Freehold rowhouses (referred to as “rowhouses” in these guidelines);
- (c) Multiple Conversion Dwelling, other than those permitted outright in the RM-8 and RM-8N Districts Schedule;
- (d) Infill in conjunction with the retention of a pre-1940s house; and
- (e) Two principal buildings (one duplex and one one-family dwelling or two one-family dwellings) on a lot that backs or flanks onto a school or park, on a corner lot or on a lot that is more than 52 m (170 ft.) deep.

On lots with one principal building only, i.e. lots with only a two-family dwelling, a two-family dwelling with secondary suite, a one-family dwelling or a one-family dwelling with secondary suite (and/or laneway house), these guidelines do not apply. One-family dwellings and one-family dwellings with secondary suite as the only principal building on a site refer to RS-1. For laneway housing, see regulations in section 11 of the Zoning and Development By-law.

In situations where an applicant proposes an addition of less than 9.3 m² (100 sq. ft.) that is not visible from the street, the application will only be evaluated against Sections 2 and 4 of these guidelines.

2 General Design Considerations

2.1 Neighbourhood/Streetscape Character

The existing neighbourhood consists of single family homes and shows many characteristics of a typical Vancouver single-family neighbourhood, such as a regular spacing of houses, individual front yards, etc. New development should be compatible with the existing pattern with respect to:

- (a) Providing a clear visible identity of dwelling units from the street through elements that can be found in single family dwellings, such as individual front doors, porches, steps and front yards;
- (b) Providing opportunities for social interaction between the public realm on the sidewalk and the private home; and
- (c) Locating garages and vehicular access at the rear of the site.

2.2 Development Scenarios and Building Typologies

2.2.1 Development Scenarios

The RM-8 and RM-8N zone provides an array of options for individual lots and consolidated sites, as shown in Table 1.

Table 1: Development Scenarios

Typical Lot Characteristics	Permitted Uses	Maximum Allowable FSR	Notes
(A) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> One-family dwelling One-family dwelling with secondary suite and/or laneway house (per RS-1) 	0.60-0.70 FSR + laneway house; subject to RS-1	<ul style="list-style-type: none"> RS-1 District Schedule applies RM-8 and RM-8N Guidelines do not apply
(B) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> Two-family dwelling (duplex) (with or without secondary suites) 	0.75 FSR	<ul style="list-style-type: none"> Each ½ Duplex may contain one secondary suite No guidelines, but section 4.17 in District Schedule applies
(C) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> Conversion of existing house (Multiple Conversion Dwelling - MCD) 	Existing FSR; up to 0.90 FSR for pre-1940 character building retention	<ul style="list-style-type: none"> MCD to two units outright MCD to max 3 units conditional
(D) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> Two principal buildings or infill with existing one-family dwelling or two-family dwelling on: <ul style="list-style-type: none"> sites where the rear or side property line abuts a park or school site, with or without the intervention of a lane, corner sites, or sites with a lot depth of more than 52 m (170 ft.) 	0.85 FSR	<ul style="list-style-type: none"> RM-8 and RM-8N Guidelines apply Number of units determined by site area and width and ability to meet parking requirements
(E) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> Infill with retention of pre-1940s building* 	0.90 FSR, of which 0.20 FSR can be allocated to the infill	<ul style="list-style-type: none"> The Infill should be located at the rear of the lot, close to the lane.
(F) Site area minimum 3,260 sq. ft. (303 m ²) and minimum lot width 32 ft. (9.8 m)	<ul style="list-style-type: none"> Multiple dwelling in the form of stacked townhouse (with option for lock-off units) 	0.90 FSR	<ul style="list-style-type: none"> Max. Dwelling Unit Density 100/ha One lock-off unit for three stacked townhouse units
(G) Site area minimum 3,260 sq. ft. (303 m ²) and minimum lot width of 48 ft. (14.6m)	<ul style="list-style-type: none"> Multiple dwelling in the form of three rowhouses ** (with option for lock-off units) 	0.90 FSR	<ul style="list-style-type: none"> Each rowhouse can have a maximum of one lock-off unit
(H) Site area minimum 4,790 sq. ft. (445 m ²) and lot width minimum 42 ft. (12.8 m)	<ul style="list-style-type: none"> Multiple dwelling in the form of stacked townhouses (with option for lock off units) 	1.20 FSR	<ul style="list-style-type: none"> Max Dwelling Unit Density 132/ha One lock-off unit for three stacked townhouse units
(I) Site area minimum 4,790 sq. ft. (445 m ²) and lot width minimum 62 ft. (18.9 m)	<ul style="list-style-type: none"> Multiple dwelling in the form of a minimum of four rowhouses ** (with option for lock-off units) 	1.20 FSR	<ul style="list-style-type: none"> Each rowhouse can have a maximum of one lock-off unit
(J) Site area minimum 7,567 4,790 sq. ft. (703 445 m ²) and lot width minimum 62 ft. (18.9 m)	<ul style="list-style-type: none"> Multiple dwelling in the form of courtyard rowhouses (with option for lock-off units) 	1.20 FSR	<ul style="list-style-type: none"> One lock-off unit for three courtyard rowhouse units

* Pre-1940 Building Retention:

Buildings constructed before January 1, 1940, and which maintain significant elements of their original character, may be eligible for incentives such as an infill building and/or an FSR increase to 0.9.

- (a) Retention of a character building is at the applicant's discretion;
- (b) Pre-1940 buildings which have not retained significant elements of their original character may, if character elements are fully restored as part of the development proposal, allow the proposed development to be considered for the incentives and relaxations available to developments with pre-1940 buildings.

** Fee simple rowhouses need to provide a minimum width of 5.0 m (16.4 ft.) each to be able to meet servicing requirements (e.g. water, sewer, gas).

2.2.2 Building Typologies

The RM-8 and RM-8N Districts Schedule is designed to accommodate three types of multiple dwelling: the rowhouse, courtyard rowhouse and the stacked townhouse.

- (a) Rowhouse Characteristics:
 - (i) A rowhouse development is comprised of side-by-side units – units are not stacked on top of each other (see Figure 1).
 - (ii) Each rowhouse has access to the front and rear yard.
 - (iii) Rowhouse developments consist of one row of units at the front of the site. The row may be broken up into more than one building.
 - (iv) The individual rowhouse unit should be no less than 3.6 m (12 ft.) clear, measured from internal wall finish to internal wall finish. Narrower units can be considered if improved livability is provided (e.g. end units with three exposures).
 - (v) Rowhouses can be strata titled or freehold. The term "rowhouse" in these guidelines refers to any rowhouse development whether they will be strata titled or subdivided into freehold lots.

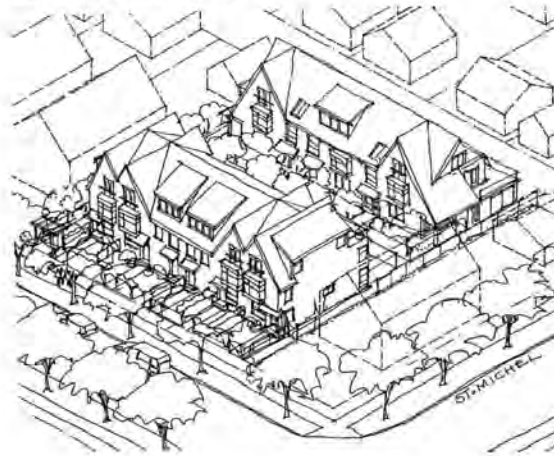
Figure 1: Rowhouse



- (b) Courtyard Rowhouse Characteristics:
 - (i) The basic type will have one row of side-by-side units near the street, and one near the lane (i.e. two principal buildings) with parking provided at grade under the rear row of units, or underground (see Figure 2).
 - (ii) The row of side-by-side units may be broken up into more than one building.
 - (iii) An "L" shape configuration is possible on corner sites. This form is recommended where the development site is adjacent to an RS zoned site.

- (iv) Each unit has access to private open space and entries that are accessible from the street (for the front row of units) or the courtyard (for the rear row of units).
- (v) Stacked units may be considered, subject to these guidelines.
- (vi) Individual rowhouses should be no less than 3.6 m (12 ft.) clear, measured from internal wall finish to internal wall finish. Narrower units can be considered if improved livability is provided (e.g. end units with three exposures).

Figure 2. Courtyard Rowhouse



- (c) Stacked Townhouse Characteristics:
 - (i) A stacked townhouse development is comprised of units that are stacked on top of each other. This can include three units located on top of each other, two-level units stacked on top of one-level units, or two-level units stacked on top of two-level units. Other layout solutions may be possible (see Figures 3 and 4).
 - (ii) Stacked townhouses feature private open spaces for all units and entries that are directly accessible and visible from the front yard.
 - (iii) Access to each unit is achieved through external and internal stairs.
 - (iv) The minimum width of major living spaces (e.g. living room) of any dwelling unit should not be less than 4.2 m (14 ft.).

Figure 3: Three-unit stacked townhouse (triplex) on single lot



Figure 4: Multiple unit (four or more) stacked townhouse on assembled site or large lot



2.3 Orientation

An important aspect of rowhouses, courtyard rowhouses which face the street, and stacked townhouses is the emphasis on street-facing front door entries and private outdoor spaces for all dwelling units. An apartment form with single entry to the building and common interior corridors as the primary access to units is generally not permitted in the RM-8 and RM-8N Districts Schedule.

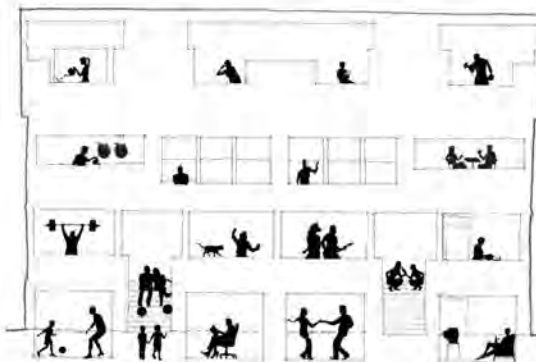
The intent is to maximize active street life, and the following elements are strongly encouraged: front entry porches, front doors, external porch stairs and living room windows. In addition, covered balconies, front patios and secondary patios help activate the street for the stacked townhouses form (see Figures 5 and 6).

- (a) Developments should orient the main entrances to the street, and entries should be clearly visible from the street and the sidewalk. Discrete lighting of paths and entries should be provided.
- (b) On corner sites, building fronts and entrances should be located facing both streets.
- (c) Units in the rear buildings of courtyard rowhouses should have front entrances oriented to the internal courtyard. A generous and clearly marked passage from the street to the courtyard should be provided (see section 2.11). On a corner or double-fronting site, all elevations which face a street should be fully designed and detailed.
- (d) Stacked townhouses on interior sites may have the main entrance to the dwelling unit from a side yard. However, a larger side yard setback with a minimum of 2.4 m (8 ft.) should be provided for the portion of travel between the front property line and the front entrance.
- (e) Entrances to lock-off units may be located on a building elevation that is not directly oriented toward the street; however, there must be a wayfinding element at the front of the site that clearly directs individuals to the entrance of the lock-off unit.
- (f) Each rowhouse unit should have a rear entrance to provide access to the rear yard and allow for light and cross-ventilation.

Figure 5: Example of front elevation of nine unit stacked townhouse development



Figure 6: Porches and balconies activate the building



2.6 Light and Ventilation

Access to natural light and ventilation affects the livability of dwelling units. While it is relatively easy to provide for these qualities in a one-family dwelling, a stronger design effort is required to ensure these qualities in multiple dwellings.

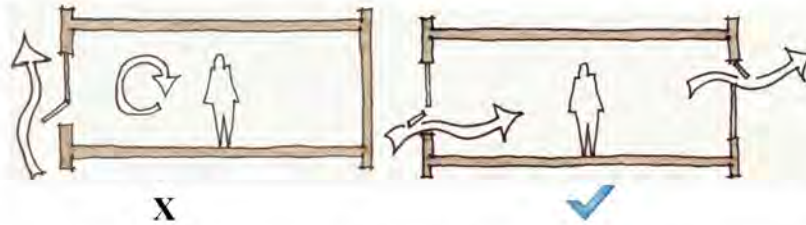
2.6.1 Access to Natural Light

- Daylight for interior and exterior spaces for all housing types should be maximized.
- Multiple dwellings have to meet the Horizontal Angle of Daylight requirements of the RM-8 and RM-8N Districts Schedule.
- Shadowing on adjacent sites should be minimized.
- For all housing types, all habitable rooms (not including bathrooms and kitchens) should have at least one window on an exterior wall.

2.6.2 Natural Ventilation

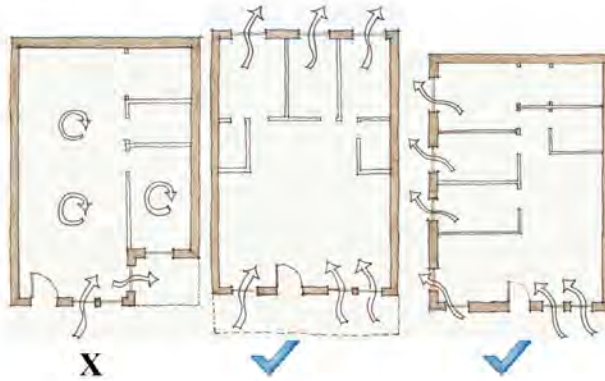
Natural ventilation allows the exchange of stale indoor air with fresh outdoor air and has an impact on the heating and cooling of spaces that is not energy intensive. Natural ventilation is affected by several factors, such as the size, type and placement of windows, ceiling heights, and prevailing winds. Natural ventilation is greatly increased when two windows on two different exposures are opened within a dwelling unit (see Figure 7).

Figure 7: Dwelling Unit with minimum fresh-air displacement despite an open window (left) and dwelling unit with fresh-air displacement with two windows of different orientations (right).



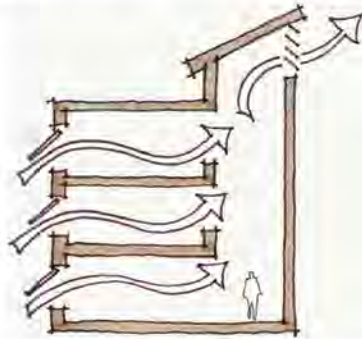
- (a) All dwelling units should have at least two major exposures that face opposite directions or are at right angles to each other (see Figure 8).
- (b) The provision of natural ventilation should work in conjunction with Horizontal Angle of Daylight regulations to ensure that each habitable room is equipped with an openable window.

Figure 8: Dwelling Unit with a single exposure lacks the opportunity for natural displacement of indoor air (left) vs dwelling units with two exposures (right)



- (c) Where a dwelling unit is located directly beneath the roof of a building, the stack effect of internalized air may be exploited by placing openable skylights in the roof (Figure 9).

Figure 9: Stack effect



- (d) Ceiling heights greater than 2.4 m (8 ft.) are encouraged, especially for the floor where the majority of living space is located.
- (e) Employing window types that facilitate air exchange are encouraged. Double-hung windows offer the choice of ventilating a high zone, a low zone or a combination thereof, of interior space. Casement windows, when oriented with prevailing winds, can facilitate air flow from outside into interior spaces (scoop effect).

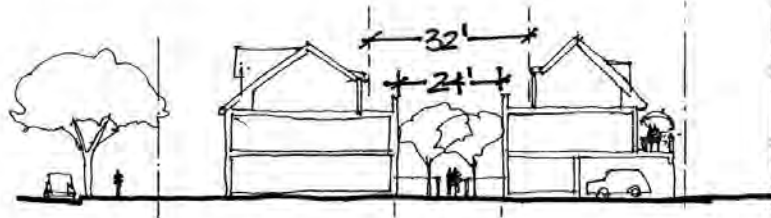
2.6.3 Light and Ventilation for Courtyard Rowhouses:

The courtyard rowhouse development scenarios include a central courtyard that plays a role in providing light and ventilation to both rows of units.

- (a) A garden and pedestrian courtyard should be a minimum of 7.3 m (24 ft.) clear width on the first and second levels, and a minimum of 9.8 m (32 ft.) on the third (Figure 10).
- (b) There are no set restrictions on what rooms can face the courtyard, but privacy should be considered.
- (c) Projections permitted into the courtyard should be the same as the allowable projections into yards in section 10.32 of the Zoning and Development Bylaw, except that:
 - (i) On the first level, entry porches and bay windows may project into the minimum courtyard width;
 - (ii) the minimum distance between projecting bay windows should be 7.3 m (24 ft.) on the second level; and
 - (iii) on the third level, portions of roofs sloping away from the courtyard, balcony rails, pergolas and similar architectural features should also be permitted to project into the courtyard width.
- (d) Some units in courtyard rowhouse buildings may be in close proximity to commercial lanes. Windows to ground level bedrooms in these units should not be located within 3 m (10 ft.) of a commercial lane.

Figure 10. Garden Courtyard, Pedestrian Access Only

Minimum 24' width on first and second levels, increase to 32' on third level



2.8 Noise

The intent of this section is to guarantee an acceptable level of acoustic separation between dwelling units within a development.

- (a) All shared walls between separate dwelling units should strive to achieve an STC rating of 65. This will most likely require a wall thickness of 25 cm (10 in.).
- (b) The overall room layouts and their relationship to adjacent units should be considered. Noise-sensitive rooms, such as bedrooms, should be located adjacent to noise-sensitive rooms in the neighbouring unit.
- (c) Locating building elements such as stairs and closets to act as noise buffers against shared walls is also an effective design solution to minimize noise impact from neighbouring units.
- (d) For structural floors between separate stacked townhouse dwelling units, a high acoustical rating is recommended. Furthermore, other measures designed to dampen the transfer of vibrations should also be provided.
- (e) Details reflecting the method of noise mitigation proposed for the exterior walls should be included with the drawing set as required in section 4.15 of the District Schedule.

2.9 Privacy

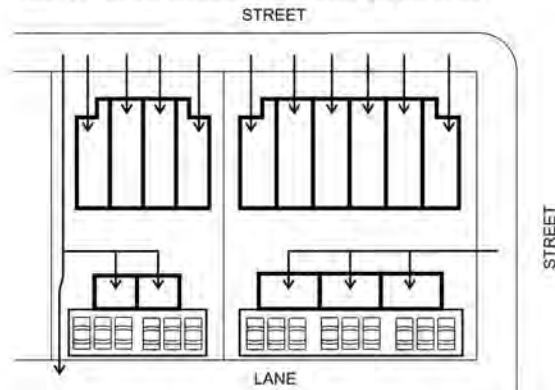
While some overlook of private open space and direct lines of sight into windows may be unavoidable, the intent of these guidelines is to minimize these impacts.

- (a) The location and orientation of windows, decks and balconies in new development should be carefully considered to reduce looking into close-by windows of existing adjacent development.
- (b) Visual privacy for units, balconies and private open space should be enhanced as much as possible through unit planning, landscape screening, and other elements, such as solid railings.
- (c) In stacked townhouse developments, external stairs leading to upper level units should be located close to the entry doors so that people do not need to pass the front doors and windows of other units in order to access their own units.
- (d) Developments without a basement are encouraged to raise the ground floor at least 0.9 m (3 ft.) above the sidewalk to enhance residents' privacy.

2.11 Access and Circulation

- (a) Pedestrian access to the front doors of units should be from the street.
- (b) For courtyard rowhouse units a pedestrian path of at least 3.6 m (12 ft.) wide should be provided to the courtyard from the street. Access to front doors in the rear building should be from the common courtyard. Pedestrian access should also be provided between the lane and the courtyard through the sideyard space (Figure 11)

Figure 11. Access and Circulation for Courtyard Rowhouse



- (c) For proposals with buildings containing dwelling units at the rear of the site, applicants should review specific siting conditions with Building By-law and Fire Prevention staff. Additionally, for courtyard rowhouses, in order to provide fire access to buildings at the rear of sites:
 - (i) Pedestrian access route(s) to buildings at the rear should maintain a minimum building separation of 2.4 m (8 ft.) and clear path of 2.0 m (6.5 ft.); and
 - (ii) On lots without lanes, additional requirements for firefighter access, or upgrades to fire protection standards may affect the placement, separation, or construction of buildings.
- (d) Side yards should be designed as pathways to allow access to lock-off units, car parking, bike parking, garbage and recycling located at the rear of the building.
- (e) Vehicular access should be from the lane, where one exists.
 - (i) Sites for multiple dwelling development should be assembled in such a way that vehicular access from a lane is possible.
 - (ii) On sites without lane access, for developments other than a multiple dwelling, access may be from the street to a garage that faces the street if the curb cut is minimized. The manoeuvring area in front of the garage door should be limited to what is necessary to get the vehicles into the garage. An offset, rather than a centred curb cut should be considered in order to consolidate space left for landscaping.
- (f) For freehold rowhouse applications, applicants should consult in advance with the City of Vancouver Engineering Department and third-party utilities to determine lot layouts and access locations that will accommodate the required services and utilities.

2.12 Internal Storage in Stacked Townhouses

The internal design of stacked townhouses should consider the storage needs of families. In-suite storage areas should be provided within individual dwelling units or within storage areas located in underground parking structures.

3 Uses

3.1 Lock-off Units

- (a) The District Schedule permits a “Principal Dwelling with a Lock-off Unit” in multiple dwellings. A lock-off unit is a portion of the main dwelling unit that can be locked off to be used separately or rented out. The intent of allowing lock-off units in a stacked townhouse, courtyard rowhouse or rowhouse is to increase the rental stock in the neighbourhood and to provide the option of having a mortgage helper for the owner of

the stacked townhouse, courtyard rowhouse or rowhouse (similar to the option of having a secondary suite in one- and two-family dwellings).

- (b) A lock-off unit is an optional and flexible use, and therefore the lock-off unit must be equipped with an internal access to the main unit.
- (c) A lock-off unit cannot be strata-titled (secured by covenant).
- (d) While lock-off units do not require additional vehicle parking, they do need separate bicycle parking (see Section 4.9).
- (e) In order to ensure safety and acceptable standards of liveability, lock-off units must comply with the **Lock-off Unit Guidelines**.
- (f) The maximum number of lock-off units in stacked townhouse or courtyard rowhouse developments is one lock-off for every three units.
- (g) The maximum number of lock-off units in rowhouse developments is one lock-off unit for every rowhouse unit.

3.2 Retail

Retail stores may be permitted on the ground floor of strata developments on specific sites located on major arterials, shown on the map in Figure 12. Development may only occur on sites that have been consolidated with the corner lot. Retail uses that serve the surrounding residential neighbourhoods are encouraged, such as a small grocery store or café.

Residential units above retail uses should meet the requirements of these guidelines for stacked townhouse developments. Parking for retail uses should meet the requirements of the Parking Bylaw.

Figure 12. Locations Where Retail Use Permitted At Grade



4 Guidelines Pertaining to Regulations of the Zoning and Development or Parking By-laws

4.2 Frontage

The minimum frontage in the District Schedule for a multiple dwelling with four or more units (not including lock-off units) is 12.8 m (42 ft.). This is the minimum frontage for a stacked townhouse development. Rowhouse developments require a minimum of 14.6 m (48 ft.) for three rowhouses and 18.9 m (62 ft.) for four rowhouses. This width accommodates the minimum width for rowhouse units [4 m (13.3 ft.) between the centre of walls] and a 1.2 m (4 ft.) side yard on either side of the development. A minimum frontage of 18.9 m (62 ft.) is required for courtyard rowhouse developments.

4.3 Height

- (a) For rowhouses and courtyard rowhouses, the Director of Planning may permit an increase in building height to 10.7 m (35 ft.) and two-and-a-half storeys. In order to achieve better compatibility with adjacent existing development, the massing and roof forms should be designed to reduce apparent scale (refer to additional guidelines in Section 5.0).
- (b) For stacked townhouses, the Director of Planning may permit an increase in building height to 11.5 m (37.5 ft.) and a partial third storey, provided the partial third storey does not exceed 60% of the storey immediately below. The intention of this height increase is to achieve higher livability for units primarily located at basement level. There are generally two approaches to the design of the third storey:
 - (i) a pitched roof design where some of the floor space does not have full floor-to-ceiling height; or
 - (ii) a flat roof where the top level massing only occupies a portion of the footprint of the floor below and is well set back from the front elevation.
- (c) Infill or principal buildings, other than courtyard rowhouses, located in the rear should be one-and-a-half storeys. The Director of Planning can relax this to a partial second storey, with or without a basement. In considering the partial second storey, the guidelines in Section 5 should be followed. The Director of Planning may relax the 7.7 m (25 ft.) height limit on corner sites and on sloping sites to 9.1 m (30 ft.) where the infill or principal building is more than 4.9 m (16 ft.) from the adjacent property. However, a maximum height of 7.7 m (25 ft.) shall be maintained within 4.9 m (16 ft.) of adjacent properties.
- (d) For courtyard rowhouse buildings located in the rear of the site, the Director of Planning may permit an increase in building height to 9.5 m (31 ft.) and 2 storeys. However, a maximum height of 7.7 m (25 ft.) shall be maintained within 4.9 m (16 ft.) of adjacent properties.
- (e) For courtyard rowhouse buildings located in the rear of the site, adjacent to a commercial lane, the Director of Planning may permit an increase in building height to 10.7 m (35 ft.) and two-and-a-half storeys.

4.4 Front Yard

- (a) For rowhouses on shallow sites less than 27.4 m (90 ft.) in depth and for courtyard rowhouses, variations in the front yard may be as follows (see Figure 13):
 - (i) Where the front yard of the existing adjacent building is 4.9 m (16 ft.) or more, the front yard on that side of the proposed development should be 4.9 m (16 ft.) within 3.7 m (12 ft.) of the side property line.
 - (ii) Where the front yard of the existing adjacent building is less than 4.9 m (16 ft.), the front yard on that side of the proposed development may be 3.7 m (12 ft.).
 - (iii) The front yard of the remainder of the development may be reduced to 3.7 m (12 ft.).

Figure 13: Front yard setbacks depend on the setback of adjacent buildings

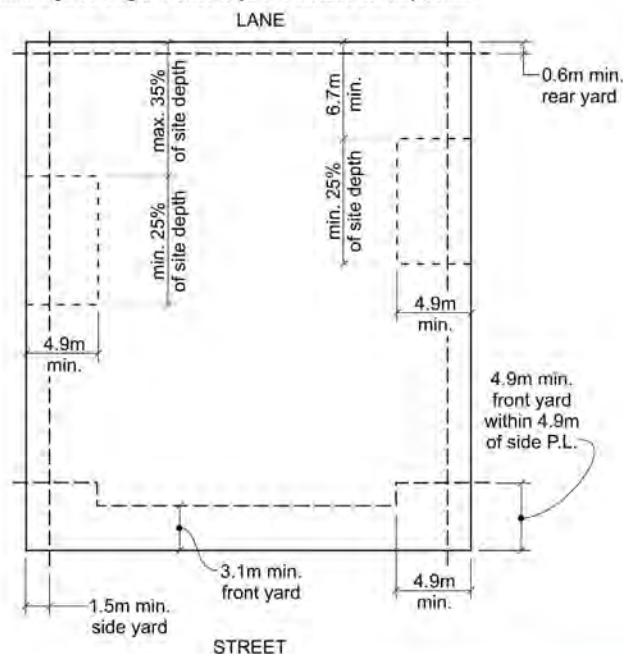


4.5 Side Yard

For courtyard rowhouse developments an additional side yard (see Figure 14) is required to allow a neighbourly relationship to the rear yards of adjacent development:

- An additional side yard with a minimum width of 4.9 m (16 ft.) and a minimum length equal to 25 percent of the site depth should also be provided on each side of the site.
- Each of the side yards should be located so that its rear boundary is not less than 6.7 m (22 ft.), nor more than a distance equal to 35 percent of the site depth, from the ultimate rear property line.
- On the flanking side of corner sites, the enhanced side yard need not be provided. However, if a courtyard rowhouse development is oriented with primary dwelling entries facing the flanking street, the minimum side yard should be increased to 2.4 m (8 ft.).
- The location of the enhanced side yards is flexible in order to allow a variety of development scenarios and need not be located in the same position on both sides.
- Where a site is more than 41 m (135 ft.) deep, the enhanced side yard location may need to be varied (pulled forward) in order to be more compatible with the siting of adjacent development.

Figure 14: Minimum yards diagram for courtyard rowhouse developments



4.6 Rear Yard

A minimum rear yard of 1.0 m (3 ft.) is required for courtyard rowhouse developments to provide space for vehicle access as well as space for planting at the lane.

4.7 Floor Space Ratio (FSR)

Sites that back or flank onto a school or park, corner sites and sites over 51.8 m (170 ft.) deep, qualify for two principal buildings (i.e. two one-family dwellings or a two-family dwelling with a one-family dwelling) or an infill with an existing house. On these sites, the maximum FSR that can be achieved on the site is 0.85 FSR, of which 0.2 FSR can be allocated to the infill or second principal building.

For rowhouses, courtyard rowhouses and stacked townhouses, the maximum FSR achievable is as described in the District Schedule. To achieve the maximum FSR with an acceptable form and siting, it is likely that some floor area will need to be on a third level under a sloped roof, and will not be full height space.

In the RM-8 and RM-8N Districts Schedule, some FSR exclusions for parking and bike storage differ significantly from other districts. Please refer to section 4.9 Off-Street Parking and Bicycle Storage for more detail.

The intent of Section 4.7.7 (c) of the RM-8 and RM-8N District Schedule is to allow and encourage sloped ceilings where they occur directly underneath the structure of a steeply-pitched roof (9:12 pitch or greater). Where such a condition occurs, ceiling heights in excess of 3.7 m (12 ft.) may result for small portions of this space. This means that the space on the top floor below a roof with a steep pitch that is in excess of 3.7 m (12 ft.) will not be counted twice towards overall floor space calculation. The intent of this section is not to permit excessively high ceilings for the lower storeys as this would contribute to the overall external bulk of the building. High ceilings in excess of 3.7 m (12 ft.) height that are proposed for storeys that are below the top storey, therefore, will be counted twice towards the overall floor space calculation.

4.8 Site Coverage and Impermeability

For stacked townhouses and courtyard rowhouses, the Director of Planning can increase the area of impermeable materials to 75% of the site. However, for stacked townhouse, courtyard rowhouses and rowhouse developments with underground parking, a further relaxation may be granted for access to underground parking.

4.9 Off-Street Parking and Bicycle Storage

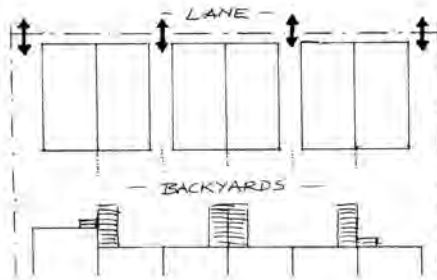
4.9.1 Parking

- (a) Parking should be located at the rear of the site with access from the lane.
- (b) For rowhouses (*excluding courtyard rowhouses*), the following applies:
 - (i) Each rowhouse unit (not including lock-off units) is required to have one parking space.
 - (ii) Parking can be provided in open parking spaces or garages, however, enclosed parking is counted as part of the allowable floor space. There is no exclusion for above ground parking in accessory buildings for the purpose of FSR calculations.
 - (iii) Underground parking structures are discouraged. However, they are permitted and do receive a standard exclusion for the purpose of FSR calculations (see District Schedule).
 - (iv) To be able to provide one garage per rowhouse, the Director of Planning may increase the total floor area of all accessory buildings to a maximum of 24 m² (258 sq. ft.) for each rowhouse and may increase the proportion of the width of the site that can be occupied by an accessory building to a maximum of 80%.
 - (v) Up to two spaces may be located in one accessory building. Garages with three or more spaces are not permitted. Garages containing one or two parking spaces should be interspersed with areas of open space to break up the massing of the

buildings at the lane and provide pedestrian access from the rear yard to the lane (see Figure 15).

- (vi) Some freehold rowhouse units may be limited to a parking pad, in order to allow sufficient space to accommodate servicing and third-party utilities.
- (vii) Open parking spaces should be paved with pavers that are permeable to reduce stormwater sewer loads. However, since most permeable pavers lose their permeability over time, parking areas with permeable pavers are counted as impermeable surface.

Figure 15: Parking garages at the lane interspersed by open space for access (for rowhouses)



- (c) For stacked townhouses, the following applies:
 - (i) In developments with three or more stacked townhouses, each stacked townhouse (not including lock-off units) is required to have a minimum of one parking space.
 - (ii) Surface parking is to be provided off the rear lane.
 - (iii) Enclosed parking garages are discouraged and, if proposed, would be counted as part of the allowable floor space. There is, therefore, no exclusion for above ground parking in accessory buildings for the purpose of FSR calculations.
 - (iv) Underground parking structures are permitted and do receive a standard exclusion for the purpose of FSR calculations (see District Schedule).
 - (v) For stacked townhouses on smaller sites where underground parking cannot be provided, the Director of Planning can increase the proportion of the width of the site that can be occupied by accessory buildings to a maximum of 80%.
 - (vi) Open parking spaces should be paved with pavers that are permeable to reduce stormwater sewer loads. However, since most permeable pavers lose their permeability over time, parking areas with permeable pavers are counted as impermeable surface.
- (d) For courtyard rowhouses, the following applies:
 - (i) Each unit, not including lock-off units, is required to have one parking space.
 - (ii) Parking spaces should normally be located underground.
 - (iii) Parking at grade may also be provided under the rear building, accessed directly off the lane. However, to manage building bulk, there is no FSR exclusion for above ground parking in this location.
 - (iv) Open parking spaces should be paved with pavers that are permeable to reduce stormwater sewer loads. However, since most permeable pavers lose their permeability over time, parking areas with permeable pavers are counted as impermeable surface.

4.9.2 Bicycle Storage

- (a) While there is no FSR exclusion for above grade parking in rowhouse, courtyard rowhouse and stacked townhouse developments, the District Schedule specifies that the portion of required bicycle parking located in an accessory building may be excluded from floor area calculations.
- (b) Creative bike parking solutions should be sought, such as under stairs and patios, in crawl spaces and in freestanding boxes.
- (c) In rowhouse developments, bicycle parking for a lock-off unit should be provided in a location separate from the garage for the principal dwelling, such as underneath the external stair or in a bike box located at the rear of the garage or at the entrance to the lock-off unit.
- (d) For each lock-off unit, 0.75 bicycle spaces need to be provided.

4.10 Horizontal Angle of Daylight

The Horizontal Angle of Daylight regulation helps to ensure the liveability within a dwelling unit by requiring a window for each room (except bathrooms and small kitchens). Priority is placed on the major living spaces in which longer periods of time are spent, such as living rooms.

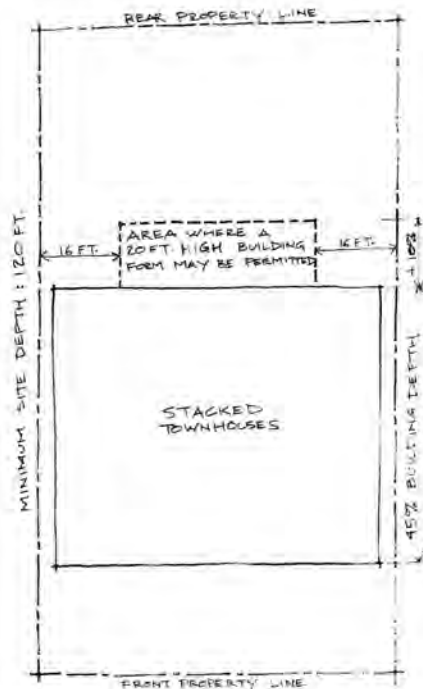
- (a) The relaxation of horizontal angle of daylight requirements provided for in the RM-8 and RM-8N Districts Schedule should be used to achieve a minimum standard of natural light access for rooms that are not primary living spaces, such as bedrooms, dens and dining rooms.
- (b) With the exception of lock-off units, the main living space for each dwelling unit should face either a street or a rear yard, or for courtyard rowhouse developments, the interior courtyard. Relaxation of the horizontal angle of daylight cannot be considered for primary living spaces (i.e., living rooms).
- (c) To ensure the liveability of rooms at the basement level, the basement floor should not be more than 0.9 m (3 ft.) below the adjacent exterior grade. A minimum ceiling height of 2.4 m (8 ft.) should be provided.
- (d) In the case of lock-off units, the required distance for an unobstructed view is detailed in the Lock-Off Unit Guidelines.

4.16 Building Depth and Building Width

4.16.1 Building Depth

- (a) For all housing types permitted, except courtyard rowhouses, the maximum building depth is 40% of the depth of the site, as specified in the RM-8 and RM-8N Districts Schedule.
- (b) For stacked townhouses, the building depth can be increased to 45% of the site depth, provided all units meet livability guidelines for light and ventilation.
- (c) For stacked townhouses on sites that have a minimum depth of 36.6 m (120 ft.), the building depth can be increased to 55% for any portion of the building located at least 4.9 m (16 ft.) from any side property line (See Figure 16). This would allow the middle section of a building to extend further into the back yard, thereby giving more options for window placement and achieve better livability for the units in the centre of the development. The portion of the building that extends beyond 45% building depth cannot be more than 6 m (20 ft.) high. While the increase in building depth improves the internal layout, it will be achieved at the expense of ground level rear yard space. Therefore, an adequate amount of outdoor space should be provided in the form of a generous porch or balcony.

Figure 16: Increased building depth for middle section of a stacked townhouse building



4.16.2 Building Width

The housing types permitted in the RM-8 and RM-8N Districts are larger than the existing single-family dwellings in the neighbourhood. To ensure that new forms of development are compatible in massing with the existing streetscapes, building width should be limited.

- (a) For rowhouses and courtyard rowhouses, the specified building width in the Districts Schedule can be increased. However, for rowhouse developments on sites with frontages of 40 m (132 ft.) or more, particular care should be taken to avoid monotony in building massing and design. Buildings may be broken up in sections to fit with the variety of the existing streetscape. Other forms of architectural articulation can also be used to reduce the massing of long rowhouse developments.
- (b) For stacked townhouses on sites 24 m (78 ft.) and wider, the maximum building width for a multiple dwelling should be 22 m (72 ft.). Limiting the building width allows more windows on the sides and allows for better cross-ventilation and access to natural light. In some situations, this building width can be slightly larger.

4.17 External Design

4.17.1 Separation between infill and other dwellings

- (a) The minimum separation between an infill located in the rear yard and any other dwelling uses on the site is 4.9 m (16 ft.). This distance can be reduced to assist in the retention of a pre-1940 building, provided all building code and fire separation regulations can be met.

4.17.2 Separation between adjacent multiple dwelling buildings

- (a) Where a development includes two or more rowhouse or stacked townhouse buildings the minimum distance between the exterior side walls of the adjacent buildings should be 2.4 m (7.8 ft.). This minimum separation distance also applies to developments with more than one courtyard rowhouse building at the street, but does not apply to the courtyard between the front and rear buildings which must meet the separation requirements in section 2.6.3.
- (b) For guidance on the dimensions of the internal courtyard in courtyard rowhouse development, refer to 2.6.3.

4.19 Number of Buildings on Site

- (a) For rowhouse and courtyard rowhouse developments on sites over ~~703 m² (7,560 sq. ft.)~~ 445 m² (4,790 sq. ft.), more than one multiple dwelling building at the street can be considered where this helps to break up the massing of the rowhouse development and therefore creates a streetscape that is more consistent with the existing streetscape on the block.
- (b) For stacked townhouses, buildings should be limited to 22 m (72 ft.) in width. Therefore, on larger sites, more than one building can be permitted.

5 Architectural Components

Developments are not required to emulate any particular architectural style. Regardless of style, a high level of design excellence is expected to participate in the enrichment of the streetscape. All walls or portions thereof that are visible from the street should include a cohesive and well-scaled composition of cladding materials, trim, fenestration and relief elements such as bays, recesses, porches, balconies which provide shadow play, wall texture, rain protection and human scale.

5.1 Roof and Massing

5.1.1 Roofs

The orientation, form and massing of the roof is limited by the desire to locate livable space within and the requirement to limit the amount of the building mass as seen from the street. The following guidelines are intended to assist with a neighbourly transition between new development and existing one-family dwellings:

- (a) The maximum allowable roof height as specified in the District Schedule may only be attained as a localized point within the development, rather than as a continuous height around the perimeter of the building.
- (b) Upper floor massing should be reduced by:
 - (i) Substantially containing the top floor in a steeply pitched roof (see Figure 17). For sloped roofs, the maximum height refers to the height of the roof peak, while the eaves of the roof should be significantly lower; or
 - (ii) For a flat or shallow pitch roof development, by significantly setting back any building mass located higher than 8.0 m (26 ft.) (see Figure 18). This setback should arrive at an overall visual effect from the street and the rear yard that is comparable to that of a pitched roof building.
- (c) The main roof should spring from somewhere between the upper floor level and approximately 1.2 m (4 ft.) above it. It is expected that some of the allowable floor space will be between 1.2 m (4 ft.) and 2.4 m (8 ft.) in height in most developments. In general, the eave height of a sloped roof or the second-storey cornice line on flat roof buildings should not be higher than 7.9 m (26 ft.).
- (d) Secondary roof forms and dormers should be clearly subordinate to the main form in size and number. They may vary in the pitch of the main roof.
- (e) Roof top terraces should be set back from the edge to minimize the view into adjacent yards.

Figure 17: Illustration of upper floor contained in pitched roof

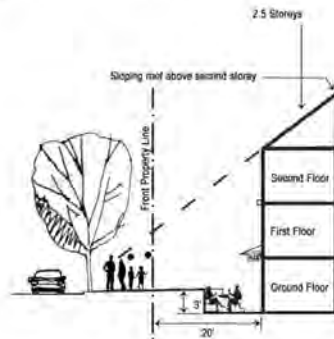
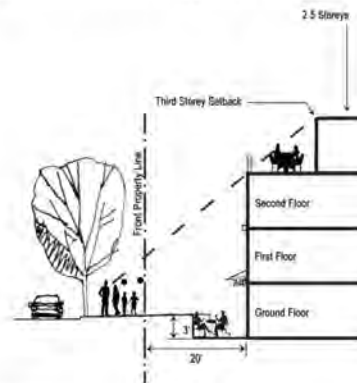


Figure 18: Illustration of upper floor setback for flat or shallow pitched roofs



5.1.2 Massing of Rowhouses and Courtyard Rowhouses on the Street

- (a) Rowhouses and courtyard rowhouses should visually emphasize individual units. While many successful rowhouse developments rely on simple repetition of identical or near identical side-by-side units, the boundaries of each unit should be obvious and clearly expressed on the street façade. End units should be reduced in massing whenever possible (see Figure 19). This can be achieved by reducing the overall height of the units (e.g. through eliminating the top half storey or the basement) or by sloping the roof towards the adjacent development. End units can also be set back further from the front property line to reduce their massing.

Figure 19: Illustration of reduced massing of end unit



- (b) The apparent scale should furthermore be reduced by other aspects, such as floor to floor heights, horizontal elements, changes in material, and the proportion and placement of openings.

5.1.3 Massing of Infill and Courtyard Rowhouses on the Lane

- (a) Infill buildings and courtyard rowhouses at the rear of the site should be designed to reduce apparent massing adjacent to the lane and neighbouring properties.
- (b) The form of buildings at the lane should minimize shadowing impacts on adjacent residential properties.
- (c) Consideration should be given to stepping back the upper floor along the lane to reduce the massing along this exposure. Where a building nears the rear yard of an adjacent residential property, the massing should be further reduced by increased setbacks and/or bringing roof lines down to between the first and second level.

5.3 Entrances, Stairs and Porches

The intent of these guidelines is to maximize active street life by enlivening the streetscape with residents' use of front entries and porches and front facing yards.

5.3.1 Entrances

- (a) Each street fronting principal dwelling unit should have one clearly expressed main entrance area facing the street. In some instances, the Director of Planning may permit a main entry door located off the rear elevation of a stacked townhouse building.
- (b) Other entrances, such as lock-off units, should be located on the front façade wherever possible. However, clarity should be maintained with respect to which is the main entrance. These entrances may include French doors and sliding glass doors.
- (c) Courtyard rowhouse units in the rear building should have main entrances oriented to the internal courtyard. On a corner or double-fronting site, all elevations which face a street should be fully designed and detailed.
- (d) Pedestrian access to the main entries should be clearly visible from the street. Pedestrian pathways to units facing the side yards or rear yards should be clearly visible for wayfinding purposes (such as through lighting, addressing and trellises).

5.3.2 Porches

- (a) For stacked townhouses, all dwelling units, except for lock-off units, should be designed with a major private outdoor space on the principal street-facing facade in the form of a front porch, a front patio, a balcony or a roof deck.
- (b) On rowhouse and courtyard rowhouse developments, each unit should have an entry porch, which can range from a small stoop area to a large, more usable porch.

5.3.3 Stairs

- (a) For courtyard rowhouses and rowhouses, stairs to upper levels above the main floor must be accommodated within the internal space of the house or unit.
- (b) In stacked townhouses stairs play an important role as places for informal social interaction.
- (c) Steps are allowed in required side yards where they are designed to facilitate grade changes from the front to the rear of the site.

5.4 Windows and Skylights

Window placement and design play important roles in the overall visual composition of a building. Windows are also significant for the liveability of a unit because they let in natural light and air.

- (a) When a window or skylight is the only source for natural light for a room, it should also be possible to open it to guarantee natural ventilation throughout the dwelling.

5.5 Balconies and Decks

- (a) Balconies and decks should be designed as integral parts of the building massing and façade composition.
- (b) In order to minimize overlook of neighbouring properties, projection of balconies located above the first floor should be limited.
- (c) Windscreens on roof top terraces should be transparent so that their visibility from the street and adjacent properties is minimized.

5.6 Exterior Walls and Finishing

The finishing materials of new development should be durable. High-quality materials that last longer are more sustainable and create less waste. Materials that perform well over a long period of time also increase the affordability of the dwelling.

In addition to durability, the following guidelines should be considered when choosing exterior materials:

- (a) Materials should be used in a way that is true to their nature. For example, stone facing should be used as a foundation element, and as the base of columns, but should not be used as a facing on upper levels with no clear means of support below.
- (b) In general, the same materials should be used in consistent proportions on all facades and not just on the street face. Materials should carry around corners and terminate at logical points to avoid appearing as a thin veneer or 'false front'.
- (c) All sides of a building that extend in front of an adjacent building are visible from the public realm and warrant appropriate design. For corner buildings, the side façade should be articulated and have sufficient windows and detailing, comparable to the front façade.
- (d) Large blank walls should be avoided whenever possible. Window openings, detailing, materials, colour, wall articulation and landscaping should be used to enliven them and reduce their scale.
- (e) Exposed foundations should be limited to 30 cm (12 in.).
- (f) Garage doors should be single width.

6 Lane Frontage

For courtyard rowhouse developments, the lane will become a focus of development, and in effect, an exposure that is as important the streetscape. The lanescape should be a visually interesting experience for passersby and a pleasant outlook for residences near the lane, while at the same time accommodating garage doors, parking spaces, and garbage and recycling areas:

- (a) Insets, projections and overhangs should be used to lend interest to the lane fronting façade, and to give greater emphasis to the presence of living space over car places.
- (b) Garage doors should be high quality.
- (c) Projections and overhangs such as arbours over the garage add depth to the façade, create a shadow line, and potentially create places for planting to enrich the lanescape.
- (d) Garbage areas should be designed as integral part of the building, or as well defined elements in the lanescape.

7 Open Space

The provision of open space should be part of an overall site development and landscape plan and should take into consideration general site circulation patterns, including parking, existing landscape features, sun access, privacy and usability.

- (a) In rowhouse developments, open space should be organized in a way that every rowhouse unit has its own front and rear yard.
- (b) For courtyard rowhouse developments, semi-private space or garden/entry courtyards in the centre of the site, should be designed:
 - (i) as a focus of development and an organizing element, not as 'leftover' space.
 - (ii) as a primary outlook and entrance for units in the middle and rear sections of a site.
 - (iii) to provide sufficient distance, screening, landscape, and outlook considerations for the mutual comfort of dwellings overlooking the space.

- (c) For stacked townhouses:
 - (i) a ground-level yard is preferable, particularly for larger units;
 - (ii) alternatively, a spacious balcony or deck with a minimum depth of 1.8 m (6 ft.) should be provided;
 - (iii) units that could accommodate families with children (2 bedrooms or larger) should provide open space that is suitable for children.
- (d) For each lock-off unit, a minimum area of 1.8 m² (19 sq. ft.) should be provided immediately adjacent to and accessible from the unit.
- (e) Roof decks add considerably to the amenity of any unit. Care should be taken to avoid direct sightlines to neighbouring windows, balconies and yards. Roof decks should be well-integrated into the overall form, such as cut into sloped roofs in a way that does not upset roof geometry.

8 Landscaping

- (a) Existing trees should be kept and new trees introduced wherever possible.
- (b) Patio areas in the front yard should be screened with planting.
- (c) Visually undesirable building features, such as exposed foundation or utilities, should be screened with landscaping.
- (d) The front and back boulevard should be landscaped as green space. At a minimum, they should be retained as grassed areas, but more intense planting is encouraged (please refer to *Guidelines for Planting City Boulevards*). The space between the sidewalk and the front property line should receive similar treatment.
- (e) In general, the Zoning & Development By-law fencing height limit of 1.2 m (4 ft.) in front yards, and 1.8 m (6 ft.) in rear and side yards should be respected. However, exceptions may be made for entry arbours, and trellises or screening elements immediately adjacent to patio or deck areas. Over height elements in the front yard should assist with the definition of outdoor space but should not prevent all views or glimpses of the outdoor space from the street. Any over height element should be largely transparent and limited in extent.
- (f) Where walls or fences are provided, they should be combined with soft landscape to provide visual depth, screening and layering.
- (g) Landscaping in semi-private common spaces in courtyard rowhouse developments should be designed to provide screening and filtering of views. Planting larger caliper trees is particularly necessary in these locations.
- (h) Where courtyard rowhouses are located at the lane, every opportunity to enhance the lanescape with landscaping should be taken. This includes:
 - (i) Entry gates and arbors over pedestrian entrances.
 - (ii) Arbors over driveway entrances.
 - (iii) Planted areas or planter boxes between garage doors.
 - (iv) Trellised areas along the lane façade, between and above garage entries, to enable “vertical greening” with vines.
 - (v) Planters overhanging the lane on balconies and outside the windows of dwellings on upper levels.
 - (vi) Planting of trees near the lane where possible.

9 Garbage and Recycling

- (a) For strata developments with nine or more units and courtyard rowhouse developments (not including lock-off units) appropriate areas for group garbage and recycling bins directly off the lane should be provided.
- (b) For strata developments with less than nine units, not including lock-off units, and for rowhouses, appropriate areas for garbage container and blue box pick-up at the lane should be provided.

The document, *Garbage and Recycling Storage Facility Supplement*, provides detailed information on the number of containers required and dimensions and specifications of commonly used storage containers. It is available online at: <http://vancouver.ca/home-property-development/garbage-and-recycling-storage-facilities.aspx>, or at the Enquiry Centre, 1st floor, 515 West 10th Avenue.



City of Vancouver *Land Use and Development Policies and Guidelines*

Planning, Urban Design and Sustainability Department

453 West 12th Avenue, Vancouver, BC V5Y 1V4 | tel: 3-1-1, outside Vancouver 604.873.7000 | fax: 604.873.7100
website: vancouver.ca | email: planning@vancouver.ca | app: VanConnect

RM-8A and RM-8AN GUIDELINES

Adopted by City Council on September 18, 2018

Amended on December 18, 2018, September 10, 2019, ~~and~~ September 15, 2020 and xx 2021

~~September 2020~~

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Note: These guidelines are organized under standard headings. As a consequence, there are gaps in the numbering sequence where no guidelines apply.

1 Application and Intent

These guidelines are to be used in conjunction with the RM-8, RM-8A, RM-8N and RM-8AN Districts Schedule of the Zoning and Development By-law.

1.1 Intent

The intent of these guidelines is to:

- (a) Encourage the development of ground-oriented, medium-density multiple dwellings in the form of stacked townhouses and rowhouses. Units can be arranged in a courtyard form, or as single or back-to-back rows. A certain percentage of medium-sized units between 900 and 1,200 sf. is required to ensure a greater variety of units sizes, and thereby a greater variety of price points. The majority of units will be suitably sized for families (i.e. two- and three-bedroom units).
- (b) Ensure a high standard of livability for all new dwelling units, including lock-off units. Emphasis is placed on ground-oriented access, natural light and cross-ventilation, as well as usable private outdoor space for each unit;
- (c) Ensure a high level of activation and residential street life;
- (d) Ensure neighbourliness while recognizing that the new development's siting is not intended to be the same as development under RS zoning;
- (e) Ensure durable and sustainable design, while allowing architectural diversity rather than prescribing any particular architectural character; and
- (f) Support the retention and renovation of pre-1940s houses that retain original character elements by permitting infill one-family or infill two-family dwellings on these sites.

1.2 Application

These guidelines apply to most new conditional residential development, as well as significant renovations or additions:

- (a) Multiple Dwelling such as stacked townhouses and strata rowhouses (referred to as "rowhouses" in these guidelines);
- (b) Freehold rowhouses (also referred to as "rowhouses" in these guidelines);
- (c) Multiple Conversion Dwelling, other than those permitted outright in the RM-8, RM-8A, RM-8N and RM-8AN Districts Schedule;
- (d) Infill in conjunction with the retention of a pre-1940s house; and
- (e) Two principal buildings (one duplex and one one-family dwelling or two one-family dwellings, or, on sites of sufficient width to accommodate the required parking, two two-family dwellings) on a lot that backs or flanks onto a school or park, on a corner lot or on a lot that is more than 45.7 m (150 ft.) deep.

These guidelines do not apply to the development of one single principal building on a lot, i.e. a two-family dwelling, a two-family dwelling with secondary suite, a one-family dwellings or one-family dwelling with secondary suite (and/or laneway house). One-family dwellings and one-family dwellings with secondary suite as the only principal building on a site refer to RS-1. For laneway housing, see regulations in section 11 of the Zoning and Development By-law.

In situations where an applicant proposes an addition of less than 9.3 m² (100 sq. ft.) that is not visible from the street, the application will only be evaluated against Sections 2 and 4 of these guidelines.

2 General Design Considerations

2.1 Neighbourhood/Streetscape Character

The existing neighbourhoods consist of single family homes and show many characteristics of typical single-family neighbourhoods, such as a regular spacing of houses, individual front yards, etc. While new development will be different in size and massing, it should be compatible with the existing pattern with respect to:

- (a) Providing a clear visible identity of dwelling units from the street through elements that can be found in single family dwellings, such as individual front doors, porches, steps and front yards;
- (b) Providing opportunities for social interaction between the public realm on the sidewalk and the private home; and
- (c) Locating garages or vehicular access at the rear of the site.

2.2 Development Scenarios and Building Typologies

2.2.1 Development Scenarios

The RM-8A and RM-8AN zone provides an array of options for individual lots and consolidated sites, as shown in Table 1. Lock-off units are permitted, as per section 3.1.

Table 1: Typical Development Scenarios*

Typical Lot Characteristics	Permitted Uses	Maximum Allowable FSR	Notes
(A) Site area minimum 3,260 sq. ft. (303 m ²)	<ul style="list-style-type: none"> One-family dwelling One-family dwelling with secondary suite and/or laneway house (per RS-1) 	0.60-0.70 FSR + laneway house; subject to RS-1	<ul style="list-style-type: none"> RS-1 District Schedule applies RM-8A/ RM-8AN Guidelines do not apply
	<ul style="list-style-type: none"> Two-family dwelling (duplex) (with or without secondary suites) 	0.75 FSR	<ul style="list-style-type: none"> Each ½ Duplex may contain one secondary suite No guidelines, but section 4.17 in District Schedule applies
	<ul style="list-style-type: none"> Conversion of existing house (Multiple Conversion Dwelling - MCD) 	Existing FSR; up to 0.90 FSR for pre-1940 character building retention	<ul style="list-style-type: none"> MCD to two units outright MCD to max 3 units conditional
	<ul style="list-style-type: none"> Two principal buildings or infill with existing one-family dwelling or two-family dwelling on: <ul style="list-style-type: none"> sites where the rear or side property line abuts a park or school site, with or without the intervention of a lane; corner sites, or sites with a lot depth of more than 45.7 m (150 ft.) 	0.85 FSR, of which 0.25 FSR can be allocated to the infill or the principal building at the rear of the site	<ul style="list-style-type: none"> RM-8A/ RM-8AN Guidelines apply Maximum number of dwelling units is 4
	<ul style="list-style-type: none"> Infill with retention of pre-1940s building** 	0.90 FSR, of which 0.25 FSR can be allocated to the infill	<ul style="list-style-type: none"> The infill should be located at the rear of the lot, close to the lane.
(B) Site area minimum 3,260 sq. ft. (303 m ²) and minimum lot width 32 ft. (9.8 m)	<ul style="list-style-type: none"> Multiple dwelling with three units (triplex) Lock-off units permitted (maximum one) 	0.90 FSR	Maximum number of dwelling units is 3, not including lock-off unit
(C) Site area minimum 4,790 sq. ft. (445 m ²) and lot width 42 ft. (12.8 m) or more	<ul style="list-style-type: none"> Multiple dwelling in the form of stacked townhouses or rowhouses Unit size requirement applies Lock-off units permitted (maximum one for three stacked townhouse units or one for each rowhouse unit) 	1.2 FSR	<ul style="list-style-type: none"> Max Dwelling Unit Density 145/ha

* Other development scenarios may be possible.

** Pre-1940 Building Retention:

Buildings constructed before January 1, 1940, and which maintain significant elements of their original character, may be eligible for incentives such as an infill building and/or an FSR increase to 0.9.

- Retention of a character building is at the applicant's discretion;
- Pre-1940 buildings which have not retained significant elements of their original character may, if character elements are fully restored as part of the development proposal, allow the proposed development to be considered for the incentives and relaxations available to developments with pre-1940 buildings.

2.2.2 Building Typologies

The RM-8, RM-8A, RM-8N and RM-8AN Districts Schedule is intended to accommodate multiple dwellings with a variety of units sizes. Units have individual entrances with direct access to private open space. This is generally accomplished with two types of multiple dwelling: the stacked townhouse and the rowhouse.

Stacked Townhouses are units that are stacked on top of each other. This can include three units located on top of each other, or two-level units stacked on top of one-level units. Other layouts may be possible.

Rowhouses are units that are arranged side-by-side, sharing a wall, occupying all levels, from the ground floor to the top floor. Each rowhouse has access to the front and rear yard or courtyard.

Unit Arrangements:

Stacked townhouse and rowhouse units can be arranged in various layouts, and both unit forms can be combined in the same development. Layouts include:

- Back-to-back arrangement of stacked townhouses or rowhouses (see Figure 1)
- Courtyard arrangements on sites of sufficient depth, with one row of units near the street, and one near the lane (see Figure 2).
- Rows perpendicular to the street can only be considered on corner sites, where an "L" shape configuration is possible, or on large assemblies where the perpendicular building is at least 66 ft (i.e. 2 standard lots) away from the neighbouring properties.
- Corner sites should provide a row of units along each street with a "break" at the corner of a minimum of 4.6 m (15 ft.).
- A combination of back-to-back and courtyard arrangements (see Figure 3).
- Other layout arrangements are possible and will be considered, provided they meet the requirements of the RM-8, RM-8A, RM-8N and RM-8AN District Schedule and Guidelines.
- On single lots, smaller townhouse developments can be accommodated, including triplexes on most standard lots with a minimum lot width of 32 ft. (see Figure 4).

Stacked townhouse Characteristics:

- (i) Stacked townhouses feature private open spaces for all units and entries that are directly accessible and visible from the front yard or courtyard.
- (ii) Access to each unit is achieved through external and internal stairs.
- (iii) Private open space is located at ground level for the lower units, accessible from the street or the courtyard, and on roof decks for the upper units.
- (iii) The minimum width of major living spaces (e.g. living room) of any dwelling unit should not be less than 4.2 m (14 ft.).
- (iv) Stacked townhouse developments may be broken up into more than one building.

Rowhouse Characteristics:

- (i) Rowhouses feature access to private open space and entries that are accessible from the street (for the front row of units) or the courtyard (for the rear row of units).
- (ii) The individual rowhouse unit should be no less than 3.6 m (12 ft.) clear, measured from internal wall finish to internal wall finish. Narrower units can be considered if improved livability is provided (e.g. end units with three exposures).
- (iii) Rowhouses may be broken up into more than one building.
- (iv) Rowhouses can be strata titled or freehold (the term "rowhouse" in these guidelines refers to both types).

Freehold Rowhouses

The main difference between a strata rowhouse and a freehold rowhouse development is the minimum width of the rowhouse. In order to provide services (e.g. water, sewer, gas)

to a freehold rowhouse and subdivide the development into fee simple lots, a minimum lot width and frontage of 5.0 m (16.4 ft.) is required.

The developer needs to decide at the initial stage of the application whether a rowhouse development will be freehold or strata. For freehold rowhouse developments, additional zoning regulations in section 11 of the Zoning and Development By-law need to be met.

Figure 1: Illustration of back-to-back arrangement of stacked townhouses or rowhouses

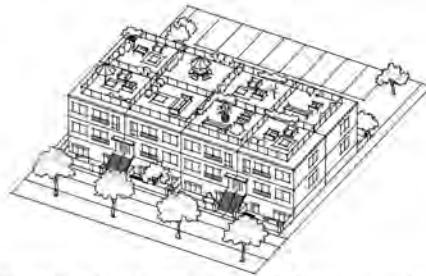


Figure 2: Illustration of courtyard arrangement of stacked townhouses or rowhouses

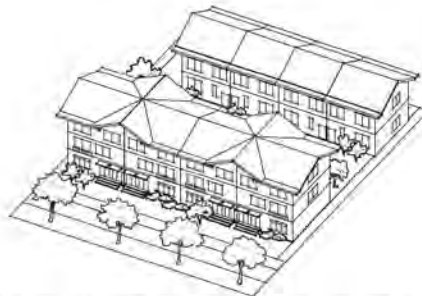


Figure 3: Illustration of combination of back-to-back and courtyard arrangements

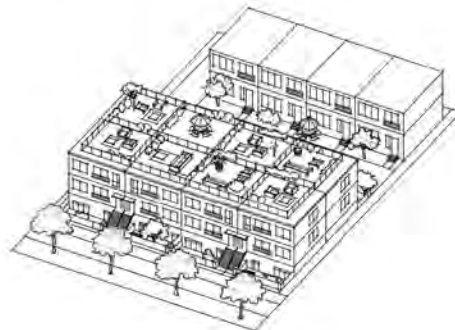


Figure 4: Illustration of triplex on single lot



2.3 Orientation

- (a) Unit entrances should be clearly identified architecturally and oriented to the street or courtyard/rear yard.
- (b) For the rear building of a courtyard configuration, a secondary entrance oriented to the lane is encouraged to activate the lane interface, noting the primary entrance will be from the courtyard.
- (c) On corner sites, building fronts and entrances should be located facing both streets and both street-facing elevations should be fully designed and detailed.
- (d) Stacked townhouses on interior sites may have the main entrance to the dwelling unit from a side yard. However, a larger side yard setback with a minimum of 2.4 m (8 ft.) should be provided for the portion of travel between the front property line and the front entrance.

2.4 Access and Circulation

- (a) Pedestrian access to unit entrances should be from the street or via a clearly marked path on site to the courtyard/rear yard.
- (b) The path should provide a sense of entrance to the courtyard and the rear of the site, and also meet Vancouver Building By-Law requirements for fire-fighter access to dwelling unit entrances, as follows:
 - (i) A continuous path of 2.0 m (6.56 ft.) may be provided for fire-fighter access in a side yard with a minimum 2.4 m (8 ft.) width. The other side yard may be 1.2 m (4 ft.), or
 - (ii) A continuous path of 2.0 m (6.56 ft.) may be provided for fire-fighter access at a "break" in the front building with a minimum building separation of 3.1 m (10 ft.).
- (c) Side yards not providing fire-fighter access may be designed with paths to allow access to garbage and recycling areas and parking located at the rear of the site. These convenience paths are not required to be continuous surface, and may be pavers or gravel to increase site permeability.
- (d) Vehicular access should be from the lane, where one exists. Sites for multiple dwelling should be assembled in such a way that vehicular access from a lane is possible.

2.6 Light and Ventilation

Access to natural light and ventilation affects the livability of dwelling units.

2.6.1 Access to Natural Light

- (a) Daylight for interior and exterior spaces for all housing types should be maximized.
- (b) Multiple dwellings have to meet the Horizontal Angle of Daylight requirements of the RM-8, RM-8A, RM-8N and RM-8AN Districts Schedule.
- (c) Shadowing on adjacent sites should be minimized.
- (d) Shadowing of courtyards and other open spaces should be minimized.

- (c) For all housing types, all habitable rooms (not including bathrooms and kitchens) should have at least one window on an exterior wall.

2.6.2 Natural Ventilation

- (a) The majority of dwelling units should aim to have at least two major exposures that face opposite directions or are at right angles to each other.
- (b) The provision of natural ventilation should work in conjunction with Horizontal Angle of Daylight regulations to ensure that each habitable room is equipped with an openable window.
- (c) Where a dwelling unit is located directly beneath the roof of a building, the stack effect of internalized air may be exploited by placing openable skylights in the roof.
- (d) Employing window types that facilitate air exchange are encouraged. Double-hung windows offer the choice of ventilating a high zone, a low zone or a combination thereof, of interior space. Casement windows, when oriented with prevailing winds, can facilitate air flow from outside into interior spaces (scoop effect).

2.6.3 Light and Ventilation for Courtyard Rowhouses:

The central courtyard plays an important role in providing light and ventilation to both rows of units and should be adequately sized to ensure performance.

- (a) The courtyard should have a minimum of 7.3 m (24 ft.) clear width on the first and second levels. In general, the partial 3rd storey at lane should be centralized to provide solar access to the courtyard and reduce the apparent height on the lane. Alternately, configuration can be revised on case by case basis.
- (b) For courtyards with external stairs to upper stacked townhouse units, a minimum of 9.1 m (30 ft.) clear width on the first and second levels should be provided to accommodate external stairs.
- (c) There are no set restrictions on what rooms can face the courtyard, but privacy should be considered.
- (d) Projections permitted into the courtyard should be the same as the allowable projections into yards in section 10.32 of the Zoning and Development Bylaw, except that:
 - (i) On the first level, entry porches and bay windows may project into the minimum courtyard width;
 - (ii) the minimum distance between projecting bay windows should be 7.3 m (24 ft.) on the second level; and
 - (iii) on the third level, portions of roofs sloping away from the courtyard, balcony rails, pergolas and similar architectural features should also be permitted to project into the courtyard width.
- (e) Some units in courtyard rowhouse buildings may be in close proximity to commercial lanes. Windows to ground level bedrooms in these units should not be located within 3 m (10 ft.) of a commercial lane.

2.8 Noise

The intent of this section is to guarantee an acceptable level of acoustic separation between dwelling units within a development.

- (a) All shared walls between separate dwelling units should strive to achieve an STC rating of 65. This will most likely require a wall thickness of 25 cm (10 in.).
- (b) Unit layouts and their relationship to adjacent units should be considered. Noise-sensitive rooms, such as bedrooms, should be located adjacent to noise-sensitive rooms in the neighbouring unit.
- (c) Locating building elements such as stairs and closets to act as noise buffers against shared walls is also an effective design solution to minimize noise impact from neighbouring units.

- (d) For structural floors between separate stacked townhouse dwelling units, a high acoustical rating is recommended. Furthermore, other measures designed to dampen the transfer of vibrations should also be provided.
- (c) Details reflecting the method of noise mitigation proposed for the exterior walls should be included with the drawing set as required in section 4.15 of the District Schedule.

2.9 Privacy

While some overlook of private open space and direct lines of sight into windows may be unavoidable, the intent of these guidelines is to minimize these impacts.

- (a) The location and orientation of windows, decks and balconies in new development should be carefully considered to reduce looking into close-by windows of existing adjacent development.
- (b) Visual privacy for units, balconies and private open space should be enhanced as much as possible through unit planning, landscape screening, and other elements, such as solid railings.
- (c) In stacked townhouse developments, external stairs leading to upper level units should be located close to the entry doors so that people do not need to pass the front doors and windows of other units in order to access their own units. Where shared access occurs, livability and privacy should be considered.
- (d) Developments along the lane are encouraged to raise the ground floor at least 0.9 m (3') above the lane to enhance residents' privacy provided the proposed development meets the City's accessibility requirements.

2.12 Internal Storage in Stacked Townhouses

The internal design of stacked townhouses should consider the storage needs of families. In-suite storage areas should be provided within individual dwelling units or within storage areas located in underground parking structures. Refer to the administration bulletin **Bulk Storage and In-Suite Storage – Multiple Family Residential Developments**.

3 Uses

3.1 Lock-off Units

- (a) The District Schedule permits a "Principal Dwelling with a Lock-off Unit" in multiple dwellings. A lock-off unit is a portion of the main dwelling unit that can be locked off to be used separately or rented out. The intent of allowing lock-off units in stacked townhouses and rowhouses is to increase the rental stock in the neighbourhood and to provide the option of having a mortgage helper for the owner of the unit (similar to the option of having a secondary suite in one- and two-family dwellings).
- (b) A lock-off unit is an optional and flexible use, and therefore the lock-off unit must be equipped with an internal access to the main unit.
- (c) A lock-off unit cannot be strata-titled (secured by covenant).
- (d) While lock-off units do not require additional vehicle parking, they do need separate bicycle parking (see Section 4.9).
- (e) In order to ensure safety and acceptable standards of liveability, lock-off units must comply with the **Principal Dwelling Unit with a Lock-off Unit Guidelines**.
- (f) The maximum number of lock-off units in stacked townhouse developments is one lock-off for every three units.
- (g) The maximum number of lock-off units in rowhouse developments is one lock-off unit for every rowhouse unit.
- (h) The bedroom in a lock-off unit does not count toward the required percentage of 3-bedroom units under the Conditions of Use in Section 3.3.1 of the District Schedule (i.e. a 2-bedroom unit with a lock-off unit is a 2-bedroom unit, not a 3-bedroom unit).

3.2 Conditions of Use for Three-bedroom Units

In order to ensure an adequate supply of housing suitable for families, as an alternative to single-family houses, multiple dwellings with four or more units are required to include a minimum of 25% of three-bedroom units.

4 Guidelines Pertaining to Regulations of the Zoning and Development or Parking By-laws

4.2 Frontage

The minimum frontage in the District Schedule for a multiple dwelling with four or more units (not including lock-off units) is 12.8 m (42 ft.). This is the minimum frontage for a townhouse development. It allows for small townhouse developments on individual sites, and for larger developments on assembled sites.

4.3 Height

Adjacent to the street at the front of the site, and, in the case of corner sites, on the flanking street side:

- (a) For stacked townhouses and rowhouses, the Director of Planning may permit an increase in building height to 11.5 m (37.5 ft.) and 3 storeys. This will allow for adequate layouts and livability of both upper and lower units.

Adjacent to the lane at the rear of the site:

- (b) For courtyard rowhouses or courtyard stacked townhouses, the Director of Planning may permit an increase in building height if the rear yard setback at the lane is 10 ft or more, or if there are specific site conditions (e.g. tree retention).
 - (i) For a minimum 7:12 pitched roof, the Director of Planning may permit an increase in building height to 10.1 m (33 ft.) and a partial third storey; and,
 - (ii) For a flat or less than 7:12 pitched roof, the Director of Planning may permit an increase in building height to 9.4 m (31 ft.) and a partial third storey.
- (c) Infill or principal buildings, other than courtyard rowhouses, located in the rear should be one and a partial second storey with or without a basement. In considering the partial second storey, the guidelines in Section 5 should be followed. The Director of Planning may relax the 7.7 m (25 ft.) height limit on corner sites and on sloping sites to 9.5 m (31 ft.) where the infill or principal building is more than 4.9 m (16 ft.) from the adjacent property. However, a maximum height of 7.7 m (25 ft.) shall be maintained within 4.9 m (16 ft.) of adjacent properties.

4.4 Front Yard

- (a) For townhouse developments, front yards may be reduced to 3.7 m (12 ft.) to allow for sufficient courtyard width and help in the provision of useable outdoor space for all units. Adjacent existing buildings may have deeper front yards. To assist with this transition the sidewalls of new buildings should be well composed and treated with materials and fenestration to avoid the appearance of a blank 'end wall' condition.

4.5 Side Yard

The minimum side yard is 1.2 m (4 ft.). A 2.4 m (8 ft.) side yard may be required at one side of the front building to provide space for a 2.0 m (6.56 ft.) fire-fighter access path from the street to the units at the courtyard and the rear of the site. See Section 2.4.

4.6 Rear Yard

A minimum rear yard of 1.8 m (6 ft.) is required for courtyard townhouse developments to provide space for secondary entrance porches and patios as well as space for planting at the lane.

Secondary entrances from the lane are encouraged to provide a residential scale and character. However the lane entry is not considered to be the primary unit entrance for fire-fighter access as required by the Vancouver Building By-Law. The primary unit entrance must be accessed from the street via a 2 m (6.56 ft.) clear continuous path and, as such, will be located facing the courtyard and the front of the site.

A minimum rear yard of 3.0 m (10 ft.) is required for courtyard developments to achieve a partial third storey for the building at the lane (see Section 4.3).

4.7 Floor Space Ratio (FSR)

Floor space ratios for different building types are specified in the RM-8, RM-8A, RN-8N and RM-8AN District Schedule and further explained in Table 1 of these guidelines. Depending on site features such as existing trees, topography, and site dimensions (particularly site depth), as well as the other requirements, such as parking requirements, it may not be possible to achieve the maximum permitted FSR on all sites.

For townhouse developments to achieve the maximum FSR of 1.2, a certain unit size requirement has to be met. The intent of this unit size requirement is to achieve a mix of unit sizes, which in turn can offer a greater variety of price points. The requirement of a minimum of 45% of the units to be between 900 and 1,200 sq. ft. in size will be easily achievable on most sites. Floor area should be measured from the inside of all outer walls (i.e. "paint-to-paint"), and should exclude a maximum of 3.7 m² (40 sq. ft.) of residential storage space. The provision of some wider ground floor units is anticipated for developments to be able to meet the requirement. However, the Director of Planning can accept slightly lower percentage of units in the 900 to 1,200 sq. ft. range where site-specific circumstances (such as tree retention or slope) prevent the development from achieving the required 45%.

Parking and bicycle storage exclusions

The intent of Section 4.7.8 (e) of the RM-8, RM-8A, RN-8N and RM-8AN Districts Schedule is to exclude accessory buildings used for bicycle parking only. Garages used for vehicular parking are counted in floor area.

Floor space under pitched roof

The intent of Section 4.7.8 (c) of the RM-8, RM-8A, RN-8N and RM-8AN District Schedule is to allow sloped ceilings where they occur directly underneath the structure of a steeply-pitched roof (9:12 pitch or greater). Where such a condition occurs, ceiling heights in excess of 3.7 m (12 ft.) may result for small portions of this space. This means that the space on the top floor below a roof with a steep pitch that is in excess of 3.7 m (12 ft.) will not be counted twice towards overall floor space calculation. The intent of this section is not to permit excessively high ceilings for the lower storeys as this would contribute to the overall external bulk of the building. High ceilings in excess of 3.7 m (12 ft.) height that are proposed for storeys that are

below the top storey, therefore, will be counted twice towards the overall floor space calculation.

4.8 Site Coverage and Impermeability

For stacked townhouses and rowhouses, the Director of Planning can increase the area of impermeable materials to 75% of the site. However, for stacked townhouse and rowhouse developments with underground parking, a further relaxation may be granted, if:

- (a) The outer limits of the underground parking areas does not protrude into the required setbacks on the site, other than the access ramp.
- (b) The proposed development meets stormwater and groundwater requirements for the area. See Section 10 for more detail.

4.9 Off-Street Parking and Bicycle Storage

4.9.1 Parking

For townhouse developments, the following applies:

- (a) Parking can be provided underground or above ground at the lane.
- (b) Underground parkades should not project into the front, side or rear yards and should align with the exterior walls of the buildings above.
- (c) Where elevated courtyards are proposed, exposed portions of underground parking should be clad with high-quality, durable materials and screened with plantings at-grade.
- (d) For planting over structures, provide substantial growing medium volumes within irrigated planters (to meet BCSLA latest standard).
- (e) Open exit stairs from the underground parkade are discouraged due to CPTED (Crime Prevention Through Environmental Design) concerns.
- (f) Covered parkade exit stairs are encouraged and may be located within the building massing or within the courtyard provided they do not compromise the functionality of the courtyard or livability of adjacent units. Covered parkade exit stairs are not permitted in the side yards.
- (g) Where parking is located above ground at the lane, it can be accommodated in open parking spaces or garages, however, enclosed parking is counted as part of the allowable floor space. There is no exclusion for above ground parking within the residential buildings at the lane or accessory buildings for the purpose of FSR calculations.
- (h) Open parking spaces should be paved with pavers that are permeable to reduce stormwater sewer loads. However, since most permeable pavers lose their permeability over time, parking areas with permeable pavers are counted as impermeable surface.

For three-unit multiple dwellings (triplex), parking should be located within the rear 6.1m (20 ft.) of the site. Parking may be provided as surface spaces located at grade or in a garage. The garage is limited in size to a two-car garage of 42 m² (400 sq. ft.).

4.9.2 Bicycle Storage

- (a) The District Schedule specifies that the portion of required bicycle parking located in an accessory building may be excluded from floor area calculations.
- (b) Creative bike parking solutions should be sought, such as under stairs and patios, in crawl spaces and in freestanding boxes. They should not compromise the functionality of courtyards or private outdoor amenity space.

4.14 Dedication of Land for the Purpose of Road Widening

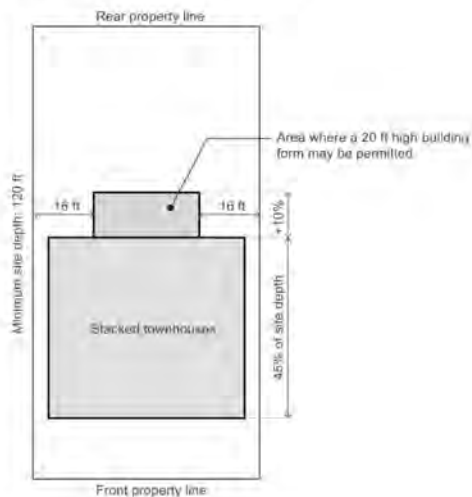
Dedications are required from conditional development to facilitate increased street right-of-way width to provide Complete Streets or other public realm improvements on Oak Street and King Edward Avenue.

4.16 Building Depth and Building Width

4.16.1 Building Depth

- (a) For all housing types permitted, the maximum building depth is 40% of the depth of the site, as specified in the RM-8, RM-8A, RN-8N and RM-8AN Districts Schedule.
- (b) For stacked townhouses or back-to-back townhouses, the building depth can be increased to 45% of the site depth, provided all units meet livability guidelines for light and ventilation.
- (c) For stacked townhouses or back-to-back townhouses on sites that have a minimum depth of 36.6 m (120 ft.), the building depth can be increased to 55% for any portion of the building located at least 4.9 m (16 ft.) from any side property line (See Figure 5). This would allow the middle section of a building to extend further into the back yard, thereby giving more options for window placement and achieve better livability for the units in the centre of the development. The portion of the building that extends beyond 45% building depth cannot be more than 6 m (20 ft.) high. While the increase in building depth improves the internal layout, it will be achieved at the expense of ground level rear yard space. Therefore, an adequate amount of outdoor space should be provided in the form of a generous porch or balcony.

Figure 5: Increased building depth for middle section of a stacked townhouse building



4.16.2 Building Width

The housing types permitted in the RM-8, RM-8A, RN-8N and RM-8AN Districts are larger than the existing single-family dwellings in the neighbourhood. To ensure that new forms of development are compatible in massing with the existing streetscapes, building width should be limited. Limiting the building width allows more windows on the sides and allows for better cross-ventilation and access to natural light.

- (a) Building width over 27 m (90 ft.) should be avoided.
- (b) On sites with frontages of 40 m (132 ft.) or more, particular care should be taken to avoid monotony in building massing and design. Buildings may be broken up in sections to fit with the variety of the existing streetscape. Other forms of architectural articulation can also be used to reduce the massing of long rowhouse developments.

4.17 External Design

4.17.1 Separation between infill and other dwellings

- (a) The minimum separation between an infill located in the rear yard and any other dwelling uses on the site is 4.9 m (16 ft.). This distance can be reduced to assist in the retention of a pre-1940 building, provided all building code and fire separation regulations can be met.

4.17.2 Separation between adjacent multiple dwelling buildings

- (a) Where a development includes two or more townhouse buildings, the minimum distance between the exterior side walls of the adjacent buildings should be 3.1 m (10 ft.). This does not apply to the courtyard between the front and rear buildings which must meet the separation requirements in section 2.6.3.

4.19 Number of Buildings on Site

- (a) On a lot that backs or flanks onto a school or park, on a corner lot or on a lot that is more than 45.7 m (150 ft.) deep, a second principal building may be permitted. Development scenarios include:
 - i. one duplex and one one-family dwelling;
 - ii. two one-family dwellings; and
 - iii. on sites of sufficient width to accommodate the required parking, two duplexes.
- (b) On sites over 445 m² (4,790 sq. ft.), ~~a second principal building more than one principal building~~ in combination with a multiple dwelling or freehold rowhouse can be considered.

5 Architectural Components

Developments are not required to emulate any particular architectural style. Regardless of style, a high level of design excellence is expected to participate in the enrichment of the streetscape. All walls or portions thereof that are visible from the street should include a cohesive and well-scaled composition of cladding materials, trim, fenestration and relief elements such as bays, recesses, porches, balconies which provide shadow play, wall texture, rain protection and human scale.

5.1 Roof and Massing

5.1.1 Roofs

The orientation, form and massing of the roof is limited by the desire to locate livable space within and the requirement to limit the amount of the building mass as seen from the street. The following guidelines are intended to assist with a neighbourly transition between new development and existing one-family dwellings:

- (a) The maximum allowable roof height as specified in the District Schedule may only be attained as a localized point within the development, rather than as a continuous height around the perimeter of the building.
- (b) For pitched roofs, the main roof should spring from the upper floor level. It is expected that some of the allowable floor space will be between 1.2 m (4 ft.) and 2.4 m (8 ft.) in height in most developments. In general, the eave height of a sloped roof or the second-storey cornice line on flat roof buildings should not be higher than 7.9 m (26 ft.).
- (c) Secondary roof forms and dormers should be clearly subordinate to the main form in size and number. They may vary in the pitch of the main roof.
- (d) Roof top terraces should be set back from the edge to minimize the view into adjacent yards.
- (e) Roof top stairwell 'penthouses' should be located to minimize the visual prominence of these elements.

5.1.2 Massing of Rowhouses and Courtyard Rowhouses on the Street

- (a) Rowhouses and courtyard rowhouses should visually emphasize individual units. While many successful rowhouse developments rely on simple repetition of identical or near identical side-by-side units, the boundaries of each unit should be obvious and clearly expressed on the street façade.
- (b) The apparent scale should furthermore be reduced by other aspects, such as floor to floor heights, horizontal elements, changes in material, and the proportion and placement of openings.

5.1.3 Massing of Infill and Courtyard Rowhouses on the Lane

- (a) Courtyard rowhouses at the rear of the site should be designed to reduce apparent massing adjacent to the lane and neighbouring properties.
- (b) The upper floor facing the lane should be stepped back or contained in a roof form. See section 5.1.1. (a).

5.3 Entrances, Stairs and Porches

The intent of these guidelines is to maximize active street life by enlivening the streetscape with residents' use of front entries and porches and front facing yards.

5.3.1 Entrances

- (a) For stacked townhouses, each stacked unit should have one unit entrance facing the street and the other unit in the 'stack' may have their entrance facing the courtyard/rear yard. The location of unit entrances should generally align with adjacent units in the 'row'.
- (b) For back-to-back townhouses, units in the back row can have their entrance facing the courtyard/rear yard.
- (c) For courtyard configurations, units in the rear building should have main entrances facing to the internal courtyard and secondary entrances facing the lane.
- (d) Pedestrian pathways to units facing the courtyard should be clearly visible for wayfinding purposes (such as through lighting, addressing and arbours/trellises).

5.3.2 Porches

- (a) For stacked townhouses, each stacked unit should be designed with a major private outdoor space on the principal street-facing facade in the form of a front porch, a front patio, a balcony or a roof deck.
- (b) Entrance porches can range from a small stoop area to a large, more usable porch.

5.3.3 Stairs

- (a) Exterior porch landings and stairs ("stoops") may access the first storey above grade and play a role as places for informal social interaction. It is recommended that landings are generally no more than 1.5 m (5 ft.) above grade or a courtyard.
- (b) Stairs to upper levels above the main floor either within a unit or to provide access to an upper level stacked unit can be accommodated within the internal space of the house or partially externally.
- (c) Steps are allowed in required side yards where they are designed to facilitate grade changes from the front to the rear of the site.

5.4 Windows and Skylights

Window placement and design play important roles in the overall visual composition of a building. Windows are also significant for the liveability of a unit because they let in natural light and air.

- (a) When a window or skylight is the only source for natural light for a room, it should also be possible to open it to guarantee natural ventilation throughout the dwelling.

5.5 Balconies and Decks

- (a) Balconies and decks should be designed as integral parts of the building massing and façade composition.
- (b) In order to minimize overlook of neighbouring properties, projection of balconies located above the first floor are discouraged.
- (c) Privacy screens on roof decks should be set back from the roof edge and not exceed 1.8 m (6 ft.) in height so that their visibility from the street and adjacent properties is minimized.

5.6 Exterior Walls and Finishing

The finishing materials of new development should be durable. High-quality materials that last longer are more sustainable and create less waste. Materials that perform well over a long period of time also increase the affordability of the dwelling.

In addition to durability, the following guidelines should be considered when choosing exterior materials:

- (a) Materials should be used in a way that is true to their nature. For example, stone facing should be used as a foundation element, and as the base of columns, but should not be used as a facing on upper levels with no clear means of support below.
- (b) In general, the same materials should be used in consistent proportions on all facades and not just on the street face. Materials should carry around corners and terminate at logical points to avoid appearing as a thin veneer or 'false front'.
- (c) All sides of a building that extend in front of an adjacent building are visible from the public realm and warrant appropriate design. For corner buildings, the side façade should be articulated and have sufficient windows and detailing, comparable to the front façade.
- (d) Large blank walls should be avoided whenever possible. Window openings, detailing, materials, colour, wall articulation and landscaping should be used to enliven them and reduce their scale.
- (e) Exposed foundations should be limited to 30 cm (12 in.).
- (f) Garage doors should be single width.

5.7 Relationship to Finished Grade and Public Realm

The establishment of floor elevations should be considered carefully to respond to existing site topography. Conspicuous retaining walls should be avoided. Wherever possible, protrusions of the underground parking garage should not be evident above the natural grade, particularly in front and side yards.

6 Lane Frontage

For courtyard rowhouse developments, the lane will become a focus of development, and in effect, an exposure that is as important as the streetscape. The "lanescape" should be a visually interesting experience for passersby and a pleasant outlook for residences near the lane, while at the same time accommodating necessary services:

- (a) Entry porches, insets, projections and overhangs should be used to lend interest to the lane façade, and to emphasize the presence of living space;
- (b) Trellises should be provided to screen parkade entries and create places for planting.
- (c) Garbage and recycling storage is provided in the underground parkade, or within a screened enclosure.

7 Open Space

The provision of open space should be part of an overall site development and landscape plan and should take into consideration general site circulation patterns, including parking, existing landscape features, sun access, privacy and usability.

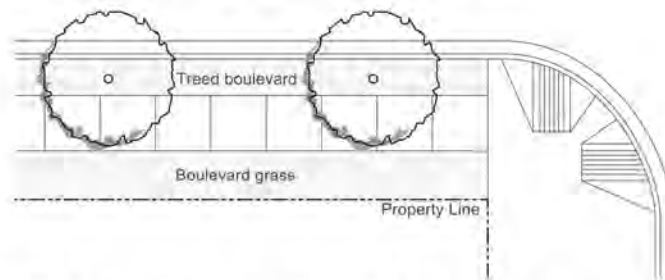
- (a) In rowhouse developments, open space should be organized in a way that every rowhouse unit has its own front and rear yard.

- (b) For courtyard rowhouse developments, semi-private space or garden/entry courtyards in the centre of the site, should be designed:
 - (i) as a focus of development and an organizing element, not as 'leftover' space,
 - (ii) as a primary outlook and entrance for units in the middle and rear sections of a site,
 - (iii) to provide sufficient distance, screening, landscape, and outlook considerations for the mutual comfort of dwellings overlooking the space.
- (c) For stacked townhouses:
 - (i) a ground-level yard is preferable, particularly for larger units;
 - (ii) alternatively, a spacious balcony or deck with a minimum depth of 1.8 m (6 ft.) should be provided;
 - (iii) units that could accommodate families with children (2 bedrooms or larger) should provide open space that is suitable for children's play.
- (d) For each lock-off unit, a minimum area of 1.8 m² (19 sq. ft.) should be provided immediately adjacent to and accessible from the unit.
- (e) Roof decks add considerably to the amenity of any unit. Care should be taken to avoid direct sightlines to neighbouring windows, balconies and yards. Roof decks should be well-integrated into the overall form, such as cut into sloped roofs in a way that does not upset roof geometry.

8 Landscaping

- (a) Existing trees should be kept and new trees introduced wherever possible.
- (b) Patio areas in the front yard should be screened with planting.
- (c) Visually undesirable building features, such as exposed foundation or utilities, should be screened with landscaping. Sidewalk and boulevard arrangement should be consistent with the City's **Streetscape Design Guidelines** or, in the case of sites in Cambie Corridor, with the **Cambie Corridor Public Realm Plan**. Typically, a treed boulevard should be provided between the sidewalk and the street (see Figure 6).

Figure 6: Typical sidewalk and boulevard arrangement



- (d) The front and back boulevard should be landscaped as green space. At a minimum, they should be retained as grassed areas, but more intense planting is encouraged. The space between the sidewalk and the front property line should receive similar treatment.
- (e) In general, the Zoning & Development By-law fencing height limit of 1.2 m (4 ft.) in front yards, and 1.8 m (6 ft.) in rear and side yards should be respected. However, exceptions may be made for entry arbours, and trellises or screening elements immediately adjacent to patio or deck areas. Over height elements in the front yard should assist with the definition of outdoor space but should not prevent all views or glimpses of the outdoor space from the street. Any over height element should be largely transparent and limited in extent.
- (f) Where walls or fences are provided, they should be combined with soft landscape to provide visual depth, screening and layering.
- (g) Landscaping in semi-private common spaces in courtyard rowhouse developments should be designed to provide screening and filtering of views. Planting larger caliper trees is particularly necessary in these locations.

- (h) Where courtyard rowhouses are located at the lane, every opportunity to enhance the lanescape with landscaping should be taken. This includes:
 - (i) Entry gates and arbors over pedestrian entrances.
 - (ii) Arbors over driveway entrances.
 - (iii) Planted areas or planter boxes between garage doors.
 - (iv) Trellised areas along the lane façade, between and above garage entries, to enable “vertical greening” with vines.
 - (v) Planters overhanging the lane on balconies and outside the windows of dwellings on upper levels.
 - (vi) Planting of trees near the lane where possible.

9 Garbage and Recycling

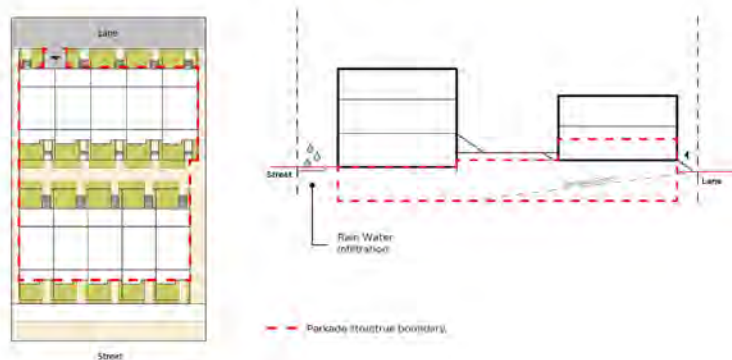
For multiple dwelling developments, garbage and recycling will be collected by private contractors. Measures should be taken to ensure that waste bins are not left in the lane. Appropriate areas for garbage and recycling bins should be provided to ensure convenient pick up – either in the underground parkade or directly off the lane. The document, **Garbage and Recycling Storage Facility Supplement**, provides detailed information on the number of containers required and dimensions and specifications of commonly used storage containers.

10 Rainwater and Groundwater Management

Underground parking structures should be absolutely minimized, and held back from site edges to allow for tree planting and rain water infiltration. The parking structure should not project into front or side yards (See Figure 7).

For sites in Cambie Corridor, specific rainwater and groundwater management requirements Apply. Please refer to the [Rainwater Management Bulletin](#) and the [Groundwater Management Bulletin](#) for more detail.

Figure 7: Parkade Structure - Plan and Typical Section



Guidelines

Guidelines for the Administration of Variances for
Zero Emission Buildings in RS, RT and RA Districts

Approved by Council January 16, 2018

Last amended ~~May 12, 2020~~ XX, 2021

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Guidelines

1 Zero Emissions Standards

In this guide, acceptable zero emission standards include Passive House, the CHBA Net Zero Home Labelling Program with electric equipment, ILFI Zero Energy, and PHI EnerPHit. Projects must achieve the standard using on-site, installed equipment. Consideration may be given to equivalent rating systems. Applicants should confirm the suitability of other standards with staff before making an application.

2 Regulation Variances

Achieving a low-energy, high-efficiency home through high quality thermal envelope design and better insulation will result in thicker wall and roof insulation than a typical building, which may affect floor area and height.

Applicants in RS, RT or RA districts may apply for variances to floor area, height, yard, and building depth regulations ~~provided that~~ if they demonstrate that they will achieve Passive House Certification or certification in another accepted zero emission standard. These variances may be granted at the discretion of the Director of Planning upon consideration of all applicable guidelines and policies. Please see section 10.23A of the Zoning and Development By-law for the requirements of these variances.

Because these conditional variances may allow extra height or floor space, the design of the project should consider impacts on neighbouring properties such as privacy, daylight, or shadowing in the application.

Other regulations that control building size, such site coverage or side yards, may still apply.

2.1 Floor Area - Fixed Exclusion

Section 10.23A.4 of the Zoning and Development By-law includes a floor area exclusion for zero emissions buildings in the RS, RT and RA districts that is 16% of the gross (or built) floor area in a one-family dwelling, or 18% in a two-family dwelling. This fixed exclusion replaces previous multiple and more complex exclusions for insulation, mechanical equipment and skylights. Built area that is excluded from overall FSR may be located where it fits within the overall envelope. Where there is more than one FSR limit, such as above-grade FSR in RS-5, calculate and locate each exclusion separately. The amount of gross floor area that can be built under this clause may be estimated with the following formula:

$$\text{Net Area} / (1 - \text{Exclusion Percentage}) = \text{Gross Area}$$

For example, a single-family house that is permitted to have a net floor area of 3,600 sq. ft. by the FSR limit in zoning would use the figures:

$$3,600 \text{ sq. ft.} / (1 - 0.16) = 4,286 \text{ sq. ft.}$$

Applications under section 10.23A.4 cannot use any other floor area exclusions in sections 10.11 or 10.23A, or bay window exclusions.

Background and Policy Context

Removing barriers to zero emissions building is part of the City's emerging policy context. The Zero Emissions Building Plan, Vancouver's Renewable City Strategy, and the Climate Emergency Response all prioritize removing regulatory barriers to the development of zero emission buildings.

Application and Intent

These guidelines explain the administration of variances to Zoning and Development By-law regulations and related processes for residential projects designed to zero emission standards. The guidelines apply to dwelling uses in the RS, RT and RA district schedules, except laneway houses. For other zones and uses, see the "Guidelines for the Administration of Variances for Zero Emission Buildings in Larger Projects".

Applicants must show how the building envelope and mechanical system have been designed to achieve the relevant standard before seeking related variances, and follow the process and requirements in this document.

These guidelines are to be used in conjunction with the relevant district schedule of the Zoning and Development By-law, as well as other applicable guidelines and bulletins. In particular, please consult section 10.23A: Passive House in the Zoning and Development By-law. Because this guideline document primarily addresses zoning considerations, applicants are encouraged to obtain early advice on meeting the requirements of Vancouver's Building By-law from a Registered Professional.

DefinitionsGlossary

The following definitions apply in these guidelines:

- **Canadian Home Builders' Association (CHBA) Qualified Net Zero Builder:** A builder who has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements which include: being a CHBA builder member, being a registered EnerGuide builder with NRCan, having successfully completed the CHBA NZ Builder Training, and having completed one Net Zero or Net Zero Ready labelled home.
- **CHBA Qualified Net Zero Energy Advisor (NZEa):** A professional who has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements and registered with the CHBA. The NZEA is eligible to perform home energy evaluations for homes pursuing the CHBA's Net Zero Home Label using energy modeling methods in accordance with EnerGuide Rating System (ERS) Technical Procedures.
- **CHBA Qualified Net Zero Service Organization (NZSO):** An organization that has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements and registered with the CHBA. The NZSO performs the administrative process for NZEA's and builders pursuing the qualification of homes under the program.
- **Certified Passive House Consultant (CPHC) or Certified Passive House Designer (CPHD):** A CPHC is a person certified by the Passive House Institute as a Passive House Consultant. A CPHD is a person with professional and educational experience in architecture or building who is certified by the Passive House Institute as a Passive House Designer. The CPHD or CPHC is responsible for designing the building to meet the PH standard. The terms are used interchangeably in this guide.

- **Energy Advisor (EA):** An EA is a licensed professional who conducts home energy evaluations. An EA can evaluate a home, and provide the modeling and testing required for the final certification of a home under EnerGuide. They are trained to use NRCAN's energy simulation software, HOT2000, and to perform blower door air leakage testing.
- **Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV):** An HRV is a mechanical device that exchanges stale indoor air with fresh outdoor air while recovering heat at the same time using a heat exchanger. An ERV performs the same function and also provides humidification or dehumidification.
- **Passive House (PH):** In these guidelines, a Passive House building is one that meets the definition in the Vancouver Zoning and Development By-law. For a general description, see section 3 of this document.
- **Passive House Building Certifier (Certifier):** In these guidelines, a Passive House Building Certifier is one that meets the definition in the Vancouver Zoning and Development By-law. A general description is a person accredited by the Passive House Institute in Darmstadt, Germany for the purpose of certifying buildings as being designed in accordance with its Passive House standards.
- **Passive House Planning Package (PHPP):** PHPP is software used to determine whether a building meets Passive House standards. The package, available through the Passive House Institute, assists with house design and window planning to test how different designs will affect energy use.
- **Qualified Green Building Consultant:** A professional with knowledge and practical experience in high-performance building design who ideally has worked on Zero Energy projects in the past. Training and experience in high-performing building design, energy modeling, efficient building systems, renewable energy assemblies, or comparable is likely necessary for ensuring Zero Energy targets are achieved.
- **Variance:** For readability, this guideline refers to the different allowances for zero emissions buildings in the Zoning and Development By-law that require the approval of the Director of Planning as variances.

Guidelines

1 Zero Emissions Standards

In this guide, acceptable zero emission standards include Passive House, the CHBA Net Zero Home Labelling Program with electric equipment, ILFI Zero Energy, and PHI EnerPHit. Projects must achieve the standard using on-site, installed equipment. Consideration may be given to equivalent rating systems. Applicants should confirm the suitability of other standards with staff before making an application.

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Because these conditional variances may allow extra height or floor space, the design of the project should consider impacts on neighbouring properties such as privacy, daylight, or shadowing in the application.

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For example, a single-family house that is permitted to have a net floor area of 3,600 sq. ft. by the FSR limit in zoning would use the figures:

$$3,600 \text{ sq. ft.} / (1 - 0.16) = 4,286 \text{ sq. ft.}$$

Applications under section 10.23A.4 cannot use any other floor area exclusions in sections 10.11 or 10.23A, or bay window exclusions.

2.2 Floor Area – Calculated Exclusions

Section 10.11 of the Zoning and Development By-law allows for the exclusion of floor area for insulation using two different calculations. For applications to exclude increased insulation under clause 10.11.2 in a conventional building, a Building Envelope Professional must be retained to calculate and verify the exclusion. In an application designed to the Passive House standard that provides a PHPP energy model, the Certified Passive House Designer or Certified Passive House Consultant may verify the exclusion instead. For more details on this exclusion, see the separate bulletin *Floor Area Exclusions for Improved Building Performance*.

Applications under section 10.11 cannot use the floor area exclusions in section 10.23A.4.

Section 10.23A.3 permits a floor area exclusion for the area occupied by heat recovery ventilators and connected shafts to a maximum exclusion of 2% of floor area being provided. The exclusion recognizes the larger space that may be required for high efficiency units or for additional units within a Passive House project. An HRV that is a Passive House “Certified Component” should be specified. The exclusion does not apply to mechanical equipment that uses the same floor area as a conventional system.

2.3 Height, Yards and Building Depth

Applicants building a zero emissions project may apply for a height variance via section 10.23A.1. This variance allows the Director of Planning to conditionally vary height regulations, including secondary envelopes, in RS, RT, and RA districts for Certified Passive House projects by a maximum of 1 m.

Applicants building a zero emissions project may also apply for front and rear yard setback variances via section 10.23A.1. Front yards that are expressed as a dimension can be varied by a maximum of 0.5 m. Rear yards that are expressed as a dimension can be varied by a maximum of 1.25 m.

Applicants building a zero emissions project may also apply for a variance to increase permitted building depth. Building depth, and front or rear yards that are expressed as a percentage, may be varied by a maximum of 5%.

2.4 Other Variances

Regulations that allow two-family dwellings in certain R districts include external design regulations that could constrain green building solutions. These regulations can be varied for zero emissions buildings. In RS-1 and other district schedules, the clause that allows a variance of design regulations may be found at the end of section 4.17.

Regulations in certain R districts that require interior spaces greater than 3.7 m in height to be counted into FSR twice may be varied using section 10.23A.1 (f).

The following table 1 provides a reference for zoning variances that are available for green building features. For example, the dimensions of window wells and below-grade entrances to basements can also be varied if they are designed to increase solar gain under clause 10.23A.1 (h).

Before making an application, please read the current and relevant regulation in the Zoning and Development By-law, and the related administration bulletins, along with other guidelines or policies. These documents can be found on the City of Vancouver Zoning and Land Use Document Library web page. For example, more information on shading devices located in yards can be found in the “Shading Devices and Yard Projections” bulletin.

Table 1: Summary of Conditional Variance Related to Zoning and Development By-law

Conditional Variance for Green Building Features	Zoning and Development By-law Section
Building depth	10.23A.1 (e)
Building height	10.23A.1 (a)
External design regulations	10.23A.1 (g)
Green roof access and infrastructure - height	10.18.5 (d)
HRVs and connected shafts	10.23A.3
Insulation	10.11.1 and 10.11.2
<u>Mechanical rooms with zero emission equipment</u>	<u>10.15A</u>
Rear yard depth	10.23A.1 (d) or (e)
Roof-mounted energy equipment - height	10.18.5 (d)
Shading devices, eaves, and overhangs - yards	10.32.1 (f)
Venting skylights and clerestory window - internal height	10.23A.1 (f)
Venting skylights and clerestory window - external height	10.18.5 (e)
Window wells and basement entry dimensions	10.23A.1 (h)

3 Submission Requirements

This section describes the submission requirements at each project phase. These requirements are in **addition** to those of the development and building permit process for a conventional building.

For zero emission projects pursuing building standards other than PHI's Passive House, such as the ILFI's Zero Energy Certification or the CHBA's Net Zero Home Labelling Program, applicants are expected to provide a comparable level of material. For example, where a PHPP model is required for PHI sites, applications using an alternate standard should submit an energy or carbon balance, and an energy modelling report. For projects pursuing ILFI's Zero Energy Certification, twelve months of energy performance data is required. For questions about submittals for alternate standards, please contact green.buildings@vancouver.ca.

Please see definitions of terms ~~in section 6 on page 4~~ of these guidelines, and note the different roles and responsibilities. For Passive House projects, ~~a of the Certified Passive House Consultant or Designer (CPHC or CPHD), the Energy Advisor (EA), and the Passive House Building Certifier (Certifier). Where a CPHC who is referred to in this guide, a CPHC who is also an EA can serve both roles. The either a CPHC or and CPHD may serve and CPHC roles are equivalent in this guide.~~

~~A CPHC who is also an EA can serve in both roles.~~

3.1 Scheduling a Pre-Application Appointment

When requesting an appointment, applicants should note that the application will be for a house that meets a zero emission standard, and that the project team will be requesting related relaxations.

Development Building (DB) Permit Application to Housing Review Branch: Before requesting an appointment, applicants should consult this document and all typical application documents (such as the "Intake Checklist"). After reviewing the material, applicants should contact the Supervisor of the Housing Review Branch to request an appointment.

3.2 Pre-Application Meeting

At an enquiry or pre-submittal meeting, applicants must provide:

- A design strategy that identifies the zoning variances sought, describes the primary design elements intended to achieve the standard, and shows the elements on conceptual drawings.
- A letter from a consultant who is qualified to administer the proposed zero emission standard, confirming they have been engaged to advise on the project.

Passive House applications: Provide a letter from the CPHC confirming that they have been engaged to do energy modelling and advise on the project. A member of the project team may serve in this role ~~provided that~~ if they are a CPHC.

Net Zero applications: Provide a letter from ~~the CHBA of British Columbia to confirm that the project has been enrolled to obtain a Net Zero label, and a letter from an NZEA a Qualified Net Zero Service Organization~~ confirming that they have been engaged to advise on the project.

Zero Energy applications: Provide confirmation of registration with ILFI's Zero Energy Certification, and a letter from a Qualified Green Building Consultant confirming they have been engaged to advise on the project.

Proposals should show how potential ~~impacts on effects on~~ neighbouring houses such as privacy, massing, and shadowing have been considered in the design. City staff may provide feedback at the pre-application meeting to inform the application.

3.3 Following the Pre-Application Meeting

Prepare a preliminary energy model or other material as specified in the chosen zero emission standard, and revise the design as necessary to meet or exceed the standard.

Passive House applications: Applicants are advised to model the project using the current version of the Passive House Planning Package (PHPP) software, and to revise the design as necessary to meet or exceed the Passive House requirements.

If specific challenges to meeting Passive House targets are identified, these must be resolved before applying for a Development Permit.

Development Building (DB) Permit Application to Housing Review Branch: The applicant must engage an EA. The EA must review the proposed assemblies, submit a detailed copy of the City of Vancouver's "Pre-Permit Checklist", and otherwise comply with pre-permit requirements for one- and two-family housing.

In addition to the PHPP file, applicants must provide the Housing Review Branch with a letter from a Certifier stating that the project design and specifications have been reviewed and, in the opinion of the Certifier, the project is capable of achieving Passive House certification if built to the design and specifications noted in the Certifier's letter.

Once the design, assemblies and components have been identified, and all of the above satisfied, applicants may submit their Development Building (DB) permit application to the Housing Review Branch.

Net Zero applications: Applicants should have the project modelled by an ~~NZEA-CHBA Qualified Net Zero Energy Advisor~~ to confirm it can achieve a 0 (zero) GJ rating using modelling methods and calculation in conformance with the EnerGuide Rating System v15, using HOT2000.

3.4 Development Permit Application

Applicants must submit:

- An updated design strategy that:
 - identifies the proposed zero emission standard,
 - specifies the related zoning relaxations being sought,
 - provides a rationale for the relaxation, and
 - identifies the design elements proposed to meet the zero emission standard on the application drawings

Zero Energy applications: Applicants should provide proof of an established energy target and a narrative as to how this target will be achieved, including strategies around energy efficiency, electrification of building systems, and on-site renewable energy generation, from a Qualified Green Building Consultant.

Net Zero applications: Applicants must provide a P-file-Homeowner Information Sheet prepared by ~~a CHBA Qualified Net Zero Energy Advisor~~ the NZEA showing a 0 (zero) GJ rating using modelling methods and calculation in conformance with the EnerGuide Rating System v15, using HOT2000. The design must meet all requirements as outlined in the most current version of the CHBA Net Zero Home Labelling Program Technical Requirements, ~~and~~ show that the design is fully Net Zero and ~~using~~ uses all electric ~~fuel sources~~ equipment. The applicant must submit signed letter from the NZEA that confirms the project is enrolled in the CHBA Net Zero program.

Passive House applications: Applicants are not required to prepare a HOT2000 model or to submit a "P-file" number. Instead, the CPHC must submit:

- a compliant pre-construction PHPP model (electronic copy of the Excel file),
- a printout of the completed "verification" page with relevant notes, signed by a CPHC, and
- a memo providing modelling input values for the PHPP.

If applying for the exclusion of floor area occupied by heat recovery ventilators and connected shafts under section 10.23.A3, additional material is required:

- a signed letter from a CPHC that recommends the proposed mechanical system and notes the dimensions required,
 - dimensioned drawings in the application set showing the additional floor area required for the Passive House system as compared to a conventional system, and
 - a summary table of the proposed exclusion for each building level.
- Identification of the design elements proposed to meet the zero emission standard on the application drawings.
 - A signed letter of commitment from the owner to complete the steps set out in the selected zero emissions standard, including registration, certification, or labeling.

Passive House applications: Provide a letter of commitment to certify the building through the Passive House Institute.

3.5 Mid-Construction

Before drywall has been installed, the consultant must conduct a site visit in accordance with requirements for all one- and two-family permit applications. In addition to typical mid-construction checks such as a blower door test, the consultant must verify that all assemblies, materials, and components are installed as required to meet the zero emission standard.

Zero Energy applications: Provide a letter from a Qualified Green Building Consultant that contains:

- a statement that the construction of the house and that the installed assemblies and components match those specified in the consultant's narrative; and
- a statement that there are no known barriers to the project achieving Zero Energy certification.

Passive House applications: The EA will verify that all assemblies, insulation materials, and components (including windows, doors and ventilation equipment) are installed as per the specifications provided in the Certifier's letter. The EA will conduct a mid-construction blower door test to the EN 13829 protocol, with modifications as prescribed by the Passive House Institute, in lieu of the HOT2000 protocol. The EA will provide the applicant with documentation verifying the construction details and the EN 13829 blower door test results as attachments to the typical "Pre-Drywall Checklist", and this must be submitted to the City.

In addition to the typical EA review, the applicant must also ~~at the time~~ provide the City with a letter from the retained CPHC that contains:

- a statement that the CPHC attended and inspected the construction of the house and that the installed assemblies and the doors and windows match those specified in the Certifier's letter;
- confirming there is no kitchen or dryer vent, unless modelled in the PHPP provided;
- bathroom and kitchen exhaust roughed in to the mechanical room;
- the results of the EA's mid-construction blower door test at 0.6 ACH; and
- a statement that there are no known barriers to the project achieving Passive House certification.

Net Zero Applications: The ~~NZEA Energy Advisor~~ will provide a preliminary report with a predicted EnerGuide Rating based on the results of the mid-construction fan test to the City for review.

3.6 Prior to Final Inspection

In addition to typical requirements such as conducting a review and final door blower test, the EA should provide the applicant with a report on the mechanical and other construction details required to achieve the zero emission standard. The applicant must submit a copy of the report to the City.

Passive House applications:

- The EA must conduct a review and final door blower test. This test must be conducted to the EN 13829 protocol, with modifications as prescribed by the Passive House Institute (e.g. both pressurization and depressurization).
- The EA will provide the applicant with documentation of mechanical and other construction details, as well as a report on the results of the EN 13829/PHI blower door test, which must be submitted to the City.
- In addition to the EA review, applicants must provide the City with a letter from a Certifier stating that the final PHPP and relevant documentation have been received and are being reviewed for final certification. The Certifier's letter must include a suggested date by which the City may expect to be notified of final certification to the Passive House Institute standard.

Once the project is certified by the Passive House Institute, a copy of the certificate must be provided to the City of Vancouver.

3.7 Building Certification

The project must complete the requirements of the zero emission standard, and provide a copy of the confirmation to the City of Vancouver.

Passive House applications: The project must meet the Passive House standard and achieve Certification to support the relaxations noted. The Certifier will review the project documentation, including the PHPP model, building envelope drawings, mechanical systems and other information. Once the project is certified by the Passive House Institute, a copy of the certificate must be provided to the City of Vancouver.

Net Zero applications: Once the project is labelled under the CHBA Net Zero Labelling Program, a copy of the Net Zero Label must be provided to the City of Vancouver.

Zero Energy applications: The project must meet the Zero Energy requirements and achieve Certification to support the relaxations noted. The ILFI Auditor will review the project documentation, including energy demand and production over 12 consecutive months, lack of combustion within the project, project drawings, site photographs, and other documentation. Once the project is certified by ILFI, a copy of the certification must be provided to the City of Vancouver.

6-Glossary

Building Envelope

~~A building's envelope is the structure separating the interior space from the environment.~~

Energy Advisor (EA)

~~An EA is a licenced professional who conducts home energy evaluations. An EA can evaluate a home, and provide the modeling and testing required for the final certification of a home under EnerGuide. They are trained to use NRCAN's energy simulation software, HOT2000, and to perform blower door air leakage testing.~~

Certified Passive House Consultant (CPHC) or Certified Passive House Designer (CPHD)

A CPHC is a person certified by the Passive House Institute as a Passive House Consultant. A CPHD is a person with professional and educational experience in architecture or building who is certified by the Passive House Institute as a Passive House Designer. The CPHD or CPHC is responsible for designing the building to meet the PH standard. The terms are used interchangeably in this guide.

CHBA Qualified Net Zero Builder

A builder who has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements which include being a CHBA builder member, being a registered EnerGuide builder with NRCan, having successfully completed the CHBA NZ Builder Training, and having completed one Net Zero or Net Zero Ready labelled home.

CHBA Qualified Net Zero Energy Advisor (NZE)

A professional who has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements and registered with the CHBA. The NZE is eligible to perform home energy evaluations for homes pursuing the CHBA's Net Zero Home Label using energy modeling methods in accordance with EnerGuide Rating System (ERS) Technical Procedures.

CHBA Qualified Net Zero Service Organization (NZSO)

An organization that has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements and registered with the CHBA. The NZSO performs the administrative process for NZE's and builders pursuing the qualification of homes under the program.

Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV)

An HRV is a mechanical device that exchanges stale indoor air with fresh outdoor air while recovering heat at the same time using a heat exchanger. An ERV performs the same function and also provides humidification or dehumidification.

Passive House (PH)

In these guidelines, a Passive House building is one that meets the definition in the Vancouver Zoning and Development By-law. For a general description, see section 3 of this document.

Passive House Building Certifier (Certifier)

In these guidelines, a Passive House Building Certifier is one that meets the definition in the Vancouver Zoning and Development By-law. A general description is a person accredited by the Passive House Institute in Darmstadt, Germany for the purpose of certifying buildings as being designed in accordance with its Passive House standards.

Passive House Planning Package (PHPP)

PHPP is software used to determine whether a building meets Passive House standards. The package, available through the Passive House Institute, assists with house design and window planning to test how different designs will affect energy use.

Qualified Green Building Consultant

A professional with knowledge and practical experience in high-performance building design who ideally has worked on Zero Energy projects in the past. Training and experience in high-performing building design, energy modeling, efficient building systems, renewable energy assemblies, or comparable is likely necessary for ensuring Zero Energy targets are achieved.

Variance

For readability, this guideline refers to the different allowances for zero-emissions buildings in the Zoning and Development By-law that require the approval of the Director of Planning as variances.

Note: Amendments to Council-adopted guidelines will be prepared generally in accordance with the provisions listed below, subject to change and refinement prior to posting. Italics and strikeout denote changes to the guide

Guidelines

Guidelines for the Administration of Variance in Larger Zero Emission Buildings

Approved by Council January 16, 2018

Last amended ~~May 12, 2020~~ XX, 2021

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Background and Policy Context

The Zero Emissions Building Plan, Vancouver's Renewable City Strategy, and the Climate Emergency Response all prioritize removing regulatory barriers to the development of zero emission buildings.

Application and Intent

These guidelines explain the regulations and application process for developments that are seeking variances or conditional approvals within the Zoning and Development By-law for zero emission buildings. These guidelines apply to all uses and zones, except certain dwelling uses in the RS, RT and RA district schedules. For those projects, please see the "Guidelines for the Administration of Variances for Zero Emission Buildings in RS, RT, and RA Districts". For rezoning applications, see the "Green Buildings Policy for Rezoning - Process and Requirements" bulletin.

Applicants must follow the process and requirements in this document before seeking related variances, and demonstrate how the building envelope and mechanical system have been designed to achieve the relevant standard.

These guidelines are to be used in conjunction with the relevant district schedule as well as other applicable guidelines and bulletins. In particular, please consult the Zoning and Development By-law, section 10.23A: Passive House. Because this guideline document primarily addresses zoning considerations, applicants are encouraged to obtain early advice on meeting the requirements of Vancouver's Building By-law from a Registered Professional.

DefinitionsGlossary

The following definitions apply in these guidelines:

- ~~**Building Envelope:** A building's envelope is the structure separating the interior space from the environment.~~
- ~~**Canadian Home Builders' Association (CHBA) Qualified Net Zero Energy Advisor (NZEA):** A professional who has met the requirements of the qualification as outlined in the CHBA Net Zero Administrative Requirements and registered with the CHBA. The NZEA is eligible to preform home energy evaluations for homes pursuing the CHBA's Net Zero Home Label using energy modeling methods in accordance with EnerGuide Rating System (ERS) Technical Procedures.~~
- **Certified Passive House Designer (CPHD):** A CPHD is a person with significant professional and educational experience in architecture or building that has been certified by the Passive House Institute as an accredited Certified Passive House Designer. The CPHD or CPHC helps design a building to meet the PH standard.
- **Certified Passive House Consultant (CPHC):** A CPHC is a person certified by the Passive House Institute as an accredited Passive House Consultant.
- **Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV):** An HRV is a mechanical device that exchanges stale indoor air with fresh outdoor air while recovering heat at the same time using a heat exchanger. An ERV performs the same function and also provides humidification or dehumidification.
- **Passive House (PH):** In these guidelines, a Passive House building is one that meets the definition in the Vancouver Zoning and Development By-law. For a general description, see section 3 of this document.
- **Passive House Building Certifier (Building Certifier):** In these guidelines, a Passive House Building Certifier is one that meets the definition in the Vancouver Zoning and Development By-law. A general description is a person accredited by the Passive House Institute in Darmstadt, Germany for the purpose of certifying buildings as being designed in accordance with its Passive House standards.
- **Passive House Planning Package (PHPP):** PHPP is software used to determine whether a building meets Passive House standards. The package, available through the Passive House Institute, assists with house design and window planning to test how different designs will affect energy use.
- **Registered Professional:** In these guidelines, a Registered Professional is one that meets the definition in Vancouver's Building By-Law. A general description is a person a person who is registered or licensed to practice as an architect under the Architects Act, or a person who is registered or licensed to practice as a professional engineer under the Engineers and Geoscientists Act.
- **Variance or Relaxation:** For readability, this guideline refers to the different allowances for zero emissions buildings in the Zoning and Development By-law that require the approval of the Director of Planning as variances.

Guidelines

1 Zero Emissions Standards

In this guide, acceptable zero emission standards include Passive House, the CHBA Net Zero Home Labelling Program with electric equipment, ILFI Zero Energy, and PHI EnerPHit. Projects must achieve the standard using on-site, installed equipment. Consideration may be given to equivalent rating systems. Applicants should confirm the suitability of other standards with City staff before making an application.

Passive House is a well-established ultra-low energy building performance standard and certification process. There are more than 65,000 Passive House buildings built in a wide range of climates and typologies. Using a high performance enclosure allows heating and air conditioning costs to be reduced without sacrificing thermal comfort. Certifying a building to the Passive House standard is a rigorous quality assurance process that confirms that the building has been designed to achieve high levels of occupant comfort with very low energy consumption. For a full description of the criteria for certification and for the most up to date information, please consult a Certified Passive House Designer.

2 Regulation Variances

Achieving a low-energy, high-efficiency building through high quality thermal envelope design and better insulation often results in thicker wall and roof insulation than a typical building, which may affect floor area and height.

Applicants may apply for variances to floor area, height, yard, and building depth regulations, ~~if provided that~~ they demonstrate that they will achieve Passive House certification or another accepted standard. These relaxations may be granted at the discretion of the Director of Planning upon consideration of all applicable guidelines and policies. Please see section 10.23A of the Zoning and Development By-law for detailed information on these variances.

Because these conditional variances may allow extra height or floor space, the design of the project should consider impacts on neighbouring properties such as privacy, daylight, or shadowing in the application.

Some regulations that control building size, such setbacks or height, may not be varied by the Director of Planning and will still apply.

2.1 Floor Area - Calculated Exclusions

Section 10.11 of the Zoning By-law permits a floor area exclusion to accommodate the additional thickness of walls for thermal insulation by excluding some of the floor area used for insulation. The exclusion is intended to mitigate the reduction of usable floor area. For detailed information on this exclusion and its submission requirements, please see the bulletin titled: "Floor Area Exclusions for Improved Building Performance: Thermal Insulation and Rain Screen".

As well, section 10.23A.3 permits a floor area exclusion for the area occupied by heat recovery ventilators and connected shafts to a maximum exclusion of 2% of the provided floor area. The exclusion recognizes the larger space that may be required for high efficiency units or for additional units within a Passive House project. An HRV that is a Passive House "Certified Component" should be specified. The exclusion does not apply to mechanical equipment that uses the same floor area as a conventional system.

2.2 Relaxation of Height

The extra insulation required in zero emissions building means thicker assemblies, not only at the walls, but also at ceilings and floors. When the building design includes overhangs, step-backs, or other envelope protrusions, it becomes necessary to insulate not only the uppermost ceiling and lowermost floor, but also each panel of ceiling and floor created by these corrugations in the building envelope. These assemblies are usually thicker than conventional assemblies, leading to extra building height.

Applicants may apply for a relaxation of height to a maximum of 1.25m via section 10.23A.2. The Director of Planning may also consider minor intrusions into angled height envelopes, bearing in mind the intent of the regulations to preserve light and privacy.

2.3 Simplified Process for Solar Shading Devices

The use of solar shading devices can be a key way for buildings to avoid unwanted solar heat gain. In particular, multi-unit residential buildings that are highly insulated should be tested for overheating to ensure thermal comfort. Carefully designed shading may allow buildings to pass this test without requiring the use of mechanical air conditioning.

Solar shading devices are expected to be located and designed to provide a significant decrease in solar heat gain, and they are included in the normal development permit review of applicable policies and guidelines.

Solar shading devices are currently permitted to project into a required yard within a private property site, and there is no requirement for solar shading devices projecting into side yards to be demountable. For more information regarding shades located in yards, please consult the "Shading Devices and Yard Projections" bulletin.

Applicants should use thermal breaks for best building practice. A thermal break is an element of low thermal conductivity placed in an assembly to reduce or prevent the flow of thermal energy between conductive materials.

Vancouver's Building By-law has also been amended to provide clarity on how solar shading devices can meet building code requirements, in Division C, Part 1, Section 1.8.9.

Simplified Process for Solar Shading Device Encroachments over City Property: In some cases, the optimal dimensions of a solar shade extend beyond the private property site. Solar shading devices proposed over City streets previously required a registered encroachment agreement. Revisions to the process to further support the use of effective shading devices in building designs now allow staff to issue a "Permit to Use City Property" instead of securing an encroachment agreement.

- If solar shading devices are to be considered, staff will require notation on drawings from the Registered Professional of record that the design complies with appropriate requirements of the Building By-law.
- Staff will review designs to ensure solar shading devices have appropriate clearances and are demountable. Applicants must supply (through a separate application to Engineering Services) and receive approval within the DP process by submitting the following:
 - Completed "Permit to Use City Property" application form.
 - Supporting documents, including drawings of the proposed solar shading devices that clearly show dimensions of the shades, property lines, clearances, adjacent curb alignment and street poles, as well as method of demountability.

Generally, solar shading device encroachments into City streets can be accepted under a Permit to Use City Property if they are in compliance with the Building By-law. In some instances, at the discretion of the General Manager of Engineering Services, a registered Easement and Indemnity Agreement prepared in accordance with the Encroachment By-law will be required.

Applicants are advised that building encroachments onto City street may inhibit subdivision by strata plan due to Section 244(1) (f) of the Strata Property Act. The City of Vancouver may not support the provision of easements for any parts of the building on a City street.

2.4 Horizontal Angle of Daylight Requirements

For most Passive House applications, there should be no significant change in applicants' ability to meet the horizontal angle of daylight regulations. In cases where the basic angle cannot be met due to a Passive House design, such as very narrow windows in a thick wall that is located close to an obstruction, applicants may seek Director of Planning approval to reduce the angle of daylight requirement using the available relaxation clause. Daylight regulations are typically found in section 4.10.4 of district schedules.

2.5 Other Variances

The following table provides a general reference for conditional zoning variances that are available for larger zero emissions projects and related green building features. For example, height limits may be varied for solar photovoltaic panels using section 10.18.5 (d).

Before making an application, read the current and relevant regulation in the Zoning and Development By-law, and related Administration Bulletins along with other guidelines or policies. These documents can be found on the City of Vancouver Zoning and Land Use Document Library web page. For example, information on floor area increases and floor plate limits in multi-family buildings can be found in the "Zero Emissions Building Catalyst Policy" and the related guideline.

Table 1: Summary of Conditional Variance Related to Zoning and Development By-law

Conditional Variance for Green Building Features	Zoning and Development By-law Section
Building depth or yard	10.23A.2
Building height	10.23A.2
Green roof access and infrastructure - height	10.18.5 (d)
HRVs and connected shafts	10.23A.3
Insulation	10.11.1 and 10.11.2
<u>Mechanical rooms with zero emission equipment</u>	<u>10.15A</u>
Roof-mounted energy equipment - height	10.18.5 (d)
Shading devices, eaves, and overhangs - yards	10.32.1 (f)
Venting skylights and clerestory window - height	10.18.5 (e)

3.1 Scheduling ~~a~~ Pre-Application Appointment

When requesting an appointment, applicants should note that the application will be for a house that meets a zero emission standard, and that the project team will be requesting related relaxations.

Development Building (DB) Permit Application to Housing Review Branch: Before requesting an appointment, applicants should consult this document and all typical application documents (such as the "Intake Checklist"). After reviewing the material, applicants should contact the Supervisor of the Housing Review Branch to request an appointment.

3.2 Pre-Application Meeting

At an enquiry or pre-submittal meeting, applicants must provide:

- A design strategy that identifies the zoning variances sought, describes the primary design elements intended to achieve the standard, and shows the elements on conceptual drawings.
- A letter from a consultant who is qualified to administer the proposed zero emission standard, confirming they have been engaged to advise on the project.

Passive House applications: Provide a letter from the CPHC confirming that they have been engaged to do energy modelling and advise on the project. A member of the project team may serve in this role ~~provided that~~ if they are a CPHC.

Net Zero applications: Provide a letter from the CHBA of British Columbia to confirm that the project has been enrolled to obtain a Net Zero label, and a letter from an NZEA a Qualified Net Zero Service Organization confirming that they have been engaged to advise on the project.

Zero Energy applications: Provide confirmation of registration with ILFI's Zero Energy Certification, and a letter from a Qualified Green Building Consultant confirming they have been engaged to advise on the project.

Proposals should show how potential ~~impacts on effects on~~ neighbouring houses such as privacy, massing, and shadowing have been considered in the design. City staff may provide feedback at the pre-application meeting to inform the application.

3.3 Following the Pre-Application Meeting

Prepare a preliminary energy model or other material as specified in the chosen zero emission standard, and revise the design as necessary to meet or exceed the standard.

Passive House applications: Applicants are advised to model the project using the current version of the Passive House Planning Package (PHPP) software, and to revise the design as necessary to meet or exceed the Passive House requirements.

If specific challenges to meeting Passive House targets are identified, these must be resolved before applying for a Development Permit.

Development Building (DB) Permit Application to Housing Review Branch: The applicant must engage an EA. The EA must review the proposed assemblies, submit a detailed copy of the City of Vancouver's "Pre-Permit Checklist", and otherwise comply with pre-permit requirements for one- and two-family housing.

In addition to the PHPP file, applicants must provide the Housing Review Branch with a letter from a Certifier stating that the project design and specifications have been reviewed and, in the opinion of the Certifier, the project is capable of achieving Passive House certification if built to the design and specifications noted in the Certifier's letter.

3 Submission Requirements

This section describes the submission requirements at each project phase for larger zero emissions projects seeking relaxations. These requirements are **in addition** to those of the development and building permit process for a conventional building. Applications that follow a rezoning should also see the recommended conditions of approval for sustainability.

For projects pursuing building standards other than PHI's Passive House, such as the ILFI's Zero Energy Certification or the CHBA's Net Zero Home Labelling Program, applicants are expected to provide a comparable level of submission material. For example, where a PHPP model is requested, an alternate standard may submit an energy or carbon balance and an energy modelling report. For questions about submittals for alternate standards, please contact green.buildings@vancouver.ca.

Please see definitions of terms on page 4 of these guidelines, and note the different roles and responsibilities. For Passive House projects, a CPHC who is also an EA can serve both roles. The CPHD and CPHC roles are equivalent in this guide.

Please see definitions of terms in section 6 of these guidelines, and note the different roles and responsibilities of the Certified Passive House Consultant or Designer (CPHC or CPHD), the Energy Advisor (EA), and the Passive House Building Certifier (Certifier). Where a CPHC is referred to in this guide, either a CPHC or CPHD may serve. A CPHC who is also an EA can serve in both roles.

3.1 Scheduling an Enquiry Appointment

When requesting a meeting through the Planner Appointment Request system or with a Project Facilitator, the applicant should:

- first consult this document and other applicable policies and guidelines
- note that the application will be for a project that meets an identified zero emission standard, and that the project team will be requesting related relaxations
- request assignment of a Development Planner or Project Facilitator with zero emission building experience

3.2 Enquiry Meeting

Enquiries must include:

- A design strategy that identifies the zoning relaxations sought and any alternative solutions that are anticipated under the Building By-law, and describes the primary design elements intended to achieve the standard, and shows the elements on conceptual drawings.
- A letter from a consultant who is qualified to administer the proposed zero emission standard, confirming they have been engaged to advise on the project.

Passive House applications: Provide a letter from the CPHC confirming that they have been engaged to do energy modelling and advise on the project. A member of the project team may serve in this role if provided that they are a CPHC.

Net Zero applications: Provide a letter from the CHBA of British Columbia to confirm that the project has been enrolled to obtain a Net Zero label, and a letter from an NZEAA-Qualified Net Zero Service Organization confirming that they have been engaged to advise on the project.

Zero Energy applications: Provide confirmation of registration with ILFI's Zero Energy Certification, and a letter from a Qualified Green Building Consultant confirming they have been engaged to advise on the project.

City staff may provide feedback at the pre-application meeting to inform the application. Applicants should consider potential impacts on neighbouring houses such as privacy, massing, and shadowing in their designs.

3.3 Following the Pre-application Meeting

- Prepare a preliminary energy model or other material as specified in the chosen zero emission standard, and revise the design as necessary to meet or exceed the standard.

Passive House applications: Applicants are advised to model the project using the current version of the Passive House Planning Package (PHPP) software, and to revise the design as necessary to meet or exceed the Passive House requirements.

If specific challenges to meeting Passive House targets are identified, these must be resolved before applying for a Development Permit.

Net Zero applications: Applicants should have the project modelled by a ~~NZEA/CHBA-Qualified Net Zero Energy Advisor~~ to confirm it can achieve a 0 (zero) GJ rating using modelling methods and calculation in conformance with the EnerGuide Rating System v15, using HOT2000.

3.4 Development Permit Application

Applicants must submit:

- An updated design strategy that:
 - identifies the proposed zero emission standard,
 - specifies the related zoning relaxations being sought,
 - provides a rationale for the relaxation, and
 - identifies the design elements proposed to meet the zero emission standard on the application drawings

Zero Energy applications: Applicants should provide proof of an established energy target and a narrative as to how this target will be achieved, including strategies around energy efficiency, electrification of building systems, and on-site renewable energy generation, from a Qualified Green Building Consultant.

Net Zero applications: Applicants must provide a ~~P file~~ Homeowner Information Sheet prepared by ~~the NZEA a CHBA-Qualified Net Zero Energy Advisor~~ showing a 0 (zero) GJ rating using modelling methods and calculation in conformance with the EnerGuide Rating System v15, using HOT2000. The design must meet all requirements as outlined in the most current version of the CHBA Net Zero Home Labelling Program Technical Requirements, ~~and~~ show that the design is fully Net Zero and ~~using-uses~~ all electric ~~fuel-sources~~ equipment. ~~Also, the~~ The applicant must submit a signed letter from NZEA that confirms the project is enrolled in the CHBA Net Zero program.

Passive House applications: The CPHC must submit:

- a compliant pre construction PHPP model (electronic copy of the Excel file),
- a printout of the completed "verification" page with relevant notes, signed by a CPHC, and
- a memo providing modelling input values for the PHPP.

If applying for the exclusion of floor area occupied by heat recovery ventilators and connected shafts under section 10.23.A3, additional material is required:

- a signed letter from a CPHC, or a letter provided by an Mechanical Engineer and then approved by the CPHC, that recommends the proposed mechanical system and notes the dimensions required,
 - dimensioned drawings in the application set showing the additional floor area required for the Passive House system as compared to a conventional system, and
 - a summary table of the proposed exclusion for each building level.
- A letter of commitment by the owner to complete the steps set out in the selected zero emissions standard, including registration, certification, or labeling.

Passive House applications: Provide a letter of commitment to certify the building through Passive House International.

- Documents and materials that indicate any known Alternative Solutions that will be sought to meet Building By-law requirements. Note that the Alternative Solution process is a separate application and process.
- If solar shades that encroach over City property have been approved as part of the design, submit to Engineering Services a "Permit to Use City Property" application form with supporting documents (drawings of the proposed solar shading devices that clearly show dimensions of the shades, property lines, clearances, adjacent curb alignment and street poles, as well as method of demountability).

3.5 Building Permit Application

Applicants must submit:

- Updated material to verify that the proposed design is on track to meet the proposed zero emission standard at the building permit stage. If there are known issues to meeting the standard, these must be resolved before applying for a building permit.

Passive House applications: Provide the following items:

- The project's compliant PHPP model together with a Passive House Design Summary report that details critical assemblies, components, and strategies.
- A letter from a Passive House Building Certifier noting specifications (assemblies, building components), and stating that the project design and specifications have been reviewed and, in the opinion of the Passive House Building Certifier, the project is capable of achieving Passive House certification.
- A written Passive House Verification Plan, with completed fronting checklist (found on the last page of this document). The Plan will be used to verify construction assemblies, components, insulation, air barrier, air tightness performance etc., and is designed to be a similar step to the energy checklists (ASHRAE, NECB) provided by Registered Professionals at this point in the permit process for projects not pursuing Passive House. The Verification Plan and checklist will be prepared by the project team and

verified by the Passive House Building Certifier (as part of his/her design stage review) on behalf of the project team. This plan must include, *at a minimum*:

- The name and credentials of the Passive House Building Certifier who will document and verify construction to plan.
 - The number of planned site visits and at what intervals.
 - A written plan for monitoring and grading insulation installation in all assemblies - including inspections of insulation layers below-grade and insulation installation within assemblies - to verify that all assemblies, insulation materials, and components (including windows, doors and ventilation equipment) are installed as per the specifications provided in the Passive House Building Certifier's letter.
 - A written plan for monitoring and verifying continuous air barrier in all assemblies and components.
 - A written plan for verifying all key components and assemblies specified in the Passive House Building Certifier's letter.
 - A written plan for air tightness testing, including who will conduct mid construction and final blower door tests to the protocol prescribed by the Passive House Institute.
 - Written plan for ventilation commissioning, including who will conduct.
 - Written plan for occupant training, including who will conduct.
- If there are known challenges to meeting Passive House criteria, these must be resolved before applying for a Building Permit.
 - If any element of the Verification Plan should become non-compliant, this must be immediately brought to the attention of the City of Vancouver by the Passive House Building Certifier who holds the responsibility for the Verification Plan.

Net Zero Applications: The ~~Energy Advisor~~NZEA will provide a preliminary report with a predicted EnerGuide Rating based on the results of the mid-construction fan test to the City for review.

- Information and documentation regarding any requested Alternative Solutions

3.6 Prior to Final Inspection

Applicants must submit:

- Updated material to verify that the building is on track to meet the proposed zero emission standard before applying for final inspection.
Zero Energy applications: Provide a letter from a Qualified Green Building Consultant that contains:
 - a statement that the construction of the house and that the installed assemblies and components match those specified in the consultant's narrative; and
 - a statement that there are no known barriers to the project achieving Zero Energy certification.

Passive House applications: Buildings may be certified by any of the Passive House Institute Accredited Building Certifiers operating worldwide. In addition to the documents already required at final inspection, applicants must provide the City with:

- A signed letter from a Passive House Building Certifier confirming that work implemented was as prescribed in the Passive House Verification Plan and that they are not aware of any reason the project will fail to certify.
- A letter from the Passive House Building Certifier stating that the final PHPP and relevant documentation have been received and are being reviewed for final certification. The Passive House Building Certifier's letter must include a suggested date by which the City may expect to be notified of final certification to the Passive House Institute standard.

3.7 Building Certification

Completion of the zero emission standard is required to support variances or conditional approval. The owner must follow the process in the chosen standard, which may conclude with issuance of a labeling or certification, and provide this confirmation to the City of Vancouver.

Passive House applications: The Passive House Building Certifier will review the project documentation, including the PHPP model, building envelope drawings, mechanical systems and other information. Once the project is certified by the Passive House Institute, a copy of the certificate must be provided to the City of Vancouver.

Net Zero applications: Once the project is labelled under the CHBA Net Zero Labelling Program, a copy of the Net Zero Label must be provided to the City of Vancouver.

Zero Energy applications: The project must meet the Zero Energy requirements and achieve Certification to support the relaxations noted. The ILFI Auditor will review the project documentation, including energy demand and production over 12 consecutive months, lack of combustion within the project, project drawings, site photographs, and other documentation. Once the project is certified by ILFI, a copy of the certification must be provided to the City of Vancouver.

6 Glossary

Building Envelope

~~A building's envelope is the structure separating the interior space from the environment.~~

Certified Passive House Designer (CPHD)

~~A CPHD is a person with significant professional and educational experience in architecture or building that has been certified by the Passive House Institute as an accredited Certified Passive House Designer. The CPHD or CPHC helps design a building to meet the PH standard.~~

Certified Passive House Consultant (CPHC)

~~A CPHC is a person certified by the Passive House Institute as an accredited Passive House Consultant.~~

Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV)

~~An HRV is a mechanical device that exchanges stale indoor air with fresh outdoor air while recovering heat at the same time using a heat exchanger. An ERV performs the same function and also provides humidification or dehumidification.~~

~~Passive House (PH)~~

~~In these guidelines, a Passive House building is one that meets the definition in the Vancouver Zoning and Development By-law. For a general description, see section 3 of this document.~~

~~Passive House Building Certifier (Building Certifier)~~

~~In these guidelines, a Passive House Building Certifier is one that meets the definition in the Vancouver Zoning and Development By-law. A general description is a person accredited by the Passive House Institute in Darmstadt, Germany for the purpose of certifying buildings as being designed in accordance with its Passive House standards.~~

~~Passive House Planning Package (PHPP)~~

~~PHPP is software used to determine whether a building meets Passive House standards. The package, available through the Passive House Institute, assists with house design and window planning to test how different designs will affect energy use.~~

~~Registered Professional~~

~~In these guidelines, a Registered Professional is one that meets the definition in Vancouver's Building By Law. A general description is a person a person who is registered or licensed to practice as an architect under the Architects Act, or a person who is registered or licensed to practice as a professional engineer under the Engineers and Geoscientists Act.~~

~~Variance or Relaxation~~

~~For readability, this guideline refers to the different allowances for zero emissions buildings in the Zoning and Development By-law that require the approval of the Director of Planning as variances.~~



Checklist - Passive House Verification Plan for
Building Permit Application
(December 2017)

Project Address:	Date:
Company:	Phone Number:
Name of Passive House Institute Accredited Building Certifier:	Email:
<p>The following items are enclosed as part of the Verification Plan:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A letter from a Passive House Building Certifier approving this Verification Plan <input type="checkbox"/> A document stating the number of planned site visits and at what intervals <input type="checkbox"/> A written plan for monitoring and grading insulation installation in all assemblies - including inspections of insulation layers below-grade and insulation installation within assemblies - to verify that all assemblies, insulation materials, and components (including windows, doors and ventilation equipment) are installed as per the specifications provided in Passive House Building Certifier letter <input type="checkbox"/> A written plan for monitoring and verifying continuous air barrier in all assemblies and components <input type="checkbox"/> A written plan for verifying all key components and assemblies specified in the Passive House Building Certifier's letter <input type="checkbox"/> A written plan for air tightness testing, including who will conduct mid-construction and final blower door tests to the protocol prescribed by the Passive House Institute <input type="checkbox"/> A written plan for ventilation commissioning, including who will conduct <input type="checkbox"/> A written plan for occupant training, including who will conduct 	
<p>If, at any point, any element of the Verification Plan should become non-compliant, this must be immediately brought to the attention of the City of Vancouver by the Passive House Building Certifier, who is responsible for the Verification Plan.</p>	
Passive House Building Certifier Signature:	Date:

lines.

Note: Amendments to Council-adopted guidelines will be prepared generally in accordance with the provisions listed below, subject to change and refinement prior to posting. Italics and strikeout denote changes to the guidelines.

Guidelines

Artist Studio Guidelines

Approved by Council September 10, 1996

Last amended XX, 2021

Please note that as part of the Artist Studio Regulatory Review, approved by Council October 6, 2011, these guidelines are being reviewed to improve the design and function of artist studios.

EXPLANATORY NOTE

~~Artist studio developments exceeding 1.0 FSR are generally not favoured in the IC 1 and IC 2, I and M districts where artist studios are limited to 1.0 FSR.~~

~~In the IC 1, IC 2, I and M zones, strata titling of artist studios is not permitted.~~

~~In the I and M zones, only artist studio class B is permitted.~~

1 Application and Intent

These guidelines are to be used in conjunction with a district schedule of the Zoning and Development By-law or the official development plans, which permit artist studios - class A, artist studio - class B and the associated residential units. These guidelines should be consulted in seeking approval for these conditional uses.

The intent of these guidelines is to encourage functional, liveable, affordable and safe artist "live/work" studios.

Wherever guideline provisions refer to artist studios:

- (a) they refer to both artist studio - class A and class B, unless otherwise noted; and
- (b) they refer to the residential unit associated with the artist studio.

Discretion may be used, and exemption may be considered in the application of the neighbourhood character or amenity space guidelines in the following situations:

- (a) the development is small in scale (less than 12 studios) with few artist "live/work" studios;
- (b) the use of the site is clearly for a short interim period (i.e., 5 years or less);
- (c) the provision of low cost rental artist studios is proposed;
- (d) renovation of an existing building is proposed; and
- (e) a heritage building will be preserved.

2 General Design Considerations

2.1 Neighbourhood Character

Community development plans have been approved for several areas of the City, including the Mount Pleasant and Strathcona neighbourhoods. The Mount Pleasant Pedestrian Walkway, which follows the historic Brewery Creek, is an example of an area wide initiative recommended in a community development plan. New artist studio developments, including renovations, should make significant contributions to the objectives outlined in approved community development plans. They should enhance the overall character of the neighbourhood.

New developments, including renovations, should contribute to objectives contained in the City's green policies. New developments should provide street trees adjacent to the site, if Engineering and Park Board assess them as feasible. Landscape buffers required by by-laws or other guidelines should be provided. Alternative measures such as screening can be proposed in renovations where it may not be physically possible to provide landscape setbacks.

2.2 Street Character

Artist studios on the ground floor of developments are generally not encouraged on pedestrian oriented streets in commercial, historic and comprehensive development districts. Where it can be shown that retail continuity will not be interrupted or reduced, artist studios should incorporate or retain design elements that reinforce their scale as shopping streets. Pedestrian interest should be maintained by retaining storefronts and windows. Windows should not be blocked and should allow for viewing work underway in the studio. Window displays should be used to present works of art.

Artist studios on the ground floor of developments located on pedestrian oriented streets in commercial, historic and comprehensive development districts should retain existing entrances, where possible. Buildings containing artist studios that exceed a 15.3 m frontage should contain more than one entrance. Ancillary galleries and other uses on the ground floor should have their own entrance.

The residential unit associated with the artist studio should be visually screened so that it cannot be viewed from the street. It should generally not be located adjacent to the ground floor front wall of the building.

2.3 Light and Ventilation

Adequate light is needed for the production of art. The residential unit, when located to the rear of the studio, can borrow light through the production area. Consideration should be given to other guidelines (e.g., specific guidelines for District Schedules).

3 Uses

3.1 Land Use Compatibility in the IC-3 District

The compatibility of artist studios with existing or proposed uses will be a concern when adjacent uses generate noise (vibrations) or odours that could impact on residential livability in the studios. In the IC-3 district, the applicant may be asked to demonstrate through a report from a qualified professional (e.g., acoustical or environmental engineer) that there are no impacts on residential livability or that the impacts can be mitigated through appropriate design.

3.2 Time Limited Development Permits

In the I, M, IC-1 and IC-2 districts a development permit that will be limited in time may be required for the use and occupancy of an artist studio in cases where the scale of the proposed development (12 studios or more) or increased parking may impact on the viability of surrounding industrial activities. In all cases, landowners and businesses will be consulted. The advice of a panel of artists will also be sought prior to approving the studios.

3.4.3 Time Limited Development Permits

There are two use options in the Zoning and Development By-law that permit Artist Studio use in live work premises – Live Work Use and "Residential Unit associated with an Artist Studio". An applicant's choice of option should be made with an awareness of the differences as discussed below.

- (f) Under Live Work Use, occupants including artists are permitted to have employees and walk in trade in their units. As noted in the Live Work Use Guidelines, Live Work units need to comply with Vancouver Building By-law requirements for both residential and non residential occupancies.
- (g) Under "Residential Unit associated with an Artist Studio", occupants are limited to the production of art only, and employees and walk in trade are not permitted. The Vancouver Building By-law allows these units to be designed as a residential occupancy, provided they comply with certain sprinklering and structural floor load requirements (i.e., generally the building code requirements are less onerous under this option). Where "residential units associated with an Artist Studio" permit an occupancy of more than two persons and are

located within a multi-unit development, consideration should also be given to ensuring a high standard of livability, including on-site amenity space, bicycle parking and where applicable, compliance with the requirements of the High-Density Housing for Families with Children Guidelines.

There are separate zoning regulations and guidelines for Live-Work use and residential units associated with an Artist Studio. For Live Work Use, refer to the Live Work Use Guidelines.

4 Guidelines Pertaining to the Regulations of the Zoning and Development By-law and Parking By-law

4.10 Off-street Parking and Loading

Loading bays should be adjacent to a direct route to an elevator.

Reduced parking and loading requirements may be considered in the case of a renovation of an existing building which cannot accommodate all the required parking or loading spaces and for low cost rental studios secured through a legal or housing agreement.

56 Internal Design and Facilities

56.1 Internal Design

Wide doors to studio units and over size elevators that can carry heavy loads are encouraged to facilitate moving larger works of art. Access and corridors between the loading bay and the elevator should be designed to permit the moving of large works of art.

56.2 Facilities

An amenity room should be provided in developments with 12 or more artist studios. The amenity room can be used for (among other functions): meeting space, an exercise facility or a display area for art work.

The separate common workshop should be provided in developments with 12 or more artist studios. It should provide a mechanical ventilation unit with associated ducting sufficient for the safe use of noxious or toxic materials and a 220 volt service for machinery. The common workshop is a facility separated from individual artist studios and associated residential units.

In cases where artist studio – class B (studios involving industrial processes or toxic materials or generating noise impacts) is proposed, plumbing should be located to permit the easy installation of a slop sink in each studio.



City of Vancouver *Land Use and Development Policies and Guidelines*

Planning, Urban Design and Sustainability Department

453 West 12th Avenue, Vancouver, BC V5Y 1V4 | tel: 3-1-1, outside Vancouver 604.873.7000 | fax: 604.873.7100
website: vancouver.ca | email: planning@vancouver.ca | app: VanConnect

REZONING POLICY FOR SUSTAINABLE LARGE DEVELOPMENTS

Adopted by City Council on July 25, 2018

Effective Date September 1, 2018*

Amended on September 15, 2020, ~~and~~ January 19, 2021, ~~and xx 2021~~

Note: This policy replaces Revised Action A-2 of the EcoDensity/EcoCity Revised Charter and Initial Actions

* Note: The affordable housing requirements in this policy apply to all large developments city-wide, except those areas that have recently adopted community plans (e.g. Cambie Corridor Unique Sites, large inclusionary housing projects in the West End) and large developments that have submitted a formal rezoning enquiry (application for rezoning advice) as of June 20, 2018. Those projects with an accepted letter of enquiry will proceed under the previous affordable housing requirements contained in the Rezoning Policy for Sustainable Large Developments amended December 16, 2014.

This policy is effective September 1, 2018 and is mandatory for all large development rezoning applications accepted as complete on or after September 1, 2018.

Large developments are those that:

- (a) Involve a land parcel or parcels having a total site size of 8,000 sq. m (1.98 acres) or more, or
- (b) Contain 45,000 sq. m (484,375 sq. ft) or more of new development floor area

Projects that are limited in scope may be excluded from the requirements of this policy, including:

- (a) Text amendments to the existing zoning for minor changes to large developments
- (b) Projects that contain less than 4,700 sq. m (50,590 sq. ft) of new development.

In such cases, a request for partial or total exemption from the policy requirements should be discussed with the rezoning planner prior to rezoning application submission. Alternatives can be considered and, if warranted, some of the requirements may be waived by the Director of Planning in cases of hardship or conflict between requirements.

OVERALL POLICY INTENT

Large developments are expected to demonstrate leadership in sustainable design. While the policy is divided into sections for ease of readability and implementation, it is expected that large developments will use an integrated design approach and employ district-scale solutions where appropriate.

Note that City staff may involve external agencies such as TransLink, Vancouver School Board, and Vancouver Coastal Health to inform the rezoning review.

~~January-xx 2021~~

REQUIREMENTS

A. Sustainable Site Design

A.1 Objective

The proposal must contribute to meeting the City's Greenest City 2020 Action Plan targets of improving access to nature and planting trees. The proposal must also contribute to meeting the Urban Forest Strategy, Biodiversity Strategy and Rain City Strategy objectives.

A.2 Intent

Principles of sustainable site design should be applied to large site land development and management practises. This can be done by retaining or mimicking natural processes and re-modelling healthy systems. Including nature in the city improves the health and wellbeing of the community, provides habitat, enhances ecosystem function and services, creates public open spaces for people to gather and socialize, and creates opportunities for people to directly experience nature in the city. Sustainable site design is directly linked to rainwater management and proposed designs should reflect this by providing integrated solutions that meet the requirements of Sections A and E. In addition to natural systems, large developments should ensure a rich mix of uses to bring the majority of daily needs within a 5 minute walk of residents, contributing to walkable communities with the associated health, social, and environmental benefits. Consideration of building orientation and shading will be important for meeting energy performance requirements of the Green Buildings Policy for Rezoning.

A.3 Requirement

- A.3.1 Development projects should consider current and future need for parks and incorporate design responses suitable for the site. Provision of parks space and recreation amenities shall be determined on a case by case basis, in consultation with the Vancouver Board of Parks and Recreation (Park Board).

Park dedication will be required where the Park Board determines that the site size is able to support it. At times, the Park Board may consider park dedication on smaller sites. On smaller sites where park dedication is not achievable, sites should be evaluated to determine how they can contribute to improving the connectivity of the park system. Anticipated population density and site size will be significant drivers in determining appropriate land dedicated for park. The Park Board's 1992 Management Plan metric of 1.1ha/1000 residents will be updated as Vancouver Board of Parks and Recreation strategies are updated.

Reference should be made to Vancouver Board of Parks and Recreation city wide strategic plans to guide delivery of parks and recreation opportunities, these plans will assist in identifying requirements, including, but not limited to, site area per capita metrics.

- A.3.2 At the parcel scale, maximize opportunities for a variety of open spaces that are contiguous, such as accessible rooftops, courtyards, or ground-level spaces. Non-accessible roofs should include extensive green roof treatment in combination with other sustainable features (e.g. solar panels, water storage). Accessible rooftops should prioritize common use (rather than private) with intensive green roof areas. Residential uses proposing significant private rooftop patios and decks may be subject to rooftop vegetative cover targets that strike a balance between hardscape and softscape ratio.

- A.3.3 Setbacks to some underground parking structures will be required to achieve benefits such as:

- (a) access to continuous soil volumes for rainwater management practises
- (b) soil conservation by minimizing site disturbance
- (c) significant tree retention
- (d) establishing long lived trees, planting, habitat and food production

Note: Consideration to relax this requirement may be given to highly urbanized or sites with unique conditions causing conflict with this requirement.

- A.3.4 Sites should explore and identify opportunities to maximize ecosystem benefits, biodiversity, and habitat provision through the redevelopment. Sites with existing high value ecosystems or significant established habitat or biodiversity should explore retention and enhancement of those items where possible. This could include creating connections between adjacent existing parks or biodiversity hotspots, habitat corridors, etc.
- A.3.5 Protect and retain healthy site trees and their soil protection zones, where feasible.
- A.3.6 Projects should strive to meet the canopy cover and vegetative cover targets specified in the Sustainable Large Developments Admin Bulletin.
- A.3.7 Incorporate opportunities for long-living “legacy” trees and landscape approaches that mimic natural environments (such as forest succession and habitat) by providing adequate growing conditions to support large species (e.g. typology A as per the Sustainable Large Developments Admin Bulletin).
- A.3.8 Adequate soil volumes are required for all plantings. For soil depth requirements on development projects, refer to the most recent version of the Canadian Landscape Standard. In many cases, staff will require that the standards be exceeded, and specify a performance standard for soil volumes, depending on the particular application and site context. Also, refer to recommended topsoil/ growing medium requirements specified in the City’s Integrated Rainwater Management Plan
- A.3.9 To protect natural and planted areas from damage, residential buildings with an occupant load greater than 30 (excluding townhouse developments) shall have at least one dog relief area marked with a legible sign.

Note: A dog relief area is for the sole purpose of allowing dogs to relieve themselves. It is not intended to be an off leash space for socialising of dogs, and should not be fully enclosed. Dog relief areas are well-draining areas, ideally at grade, that are easily cleaned, designed and constructed to be low maintenance, and suitable for intensive use.

A.4 Submission Checklist

- A.4.1 At time of rezoning application, applicants must provide the following that show how items A.3.1 to A.3.9 will be achieved, noting that for large master-planned sites, staff may defer some detailed submission documents to development permit stage.
 - (a) A Parks and/or Open Space plan(s), as per the Sustainable Large Developments Admin Bulletin.
 - (b) A schematic Site plan, Landscape plans and sections for each development parcel to verify the location of open spaces in relation to the parking garage setbacks, tree retention (where applicable) and excavation limits. Additional details can be provided in the design guidelines for the project.
 - (c) A written Landscape/ Planting Strategy with landscape plans showing details for soft and hard landscaping, including a plant palette for drought tolerant, native, or adaptive plant species.
 - (d) Provide an assessment of existing high value ecosystems or significant established habitat or biodiversity, both on-site and adjacent to the site.
 - (e) Incorporate retained and proposed elements on Open Space Plan or Landscape plan and written strategy to highlight ecological and biodiversity benefits, in response to the Biodiversity Strategy, Bird-Friendly Guidelines and Re-Wilding Strategy.

- (f) Overlay sheets showing vegetation cover area and ratio percentage, including: overall vegetative cover locations and calculations,
- (g) Separate calculations for types of vegetative cover, including soft landscape area, tree canopy, extensive and intensive green roof cover, (excluding hardscape area). Note: the calculations should forecast canopy cover of trees at time of maturity.
- (h) An overall Tree Strategy, including: detailed arborist report documenting status of all existing trees, a written rationale for proposed retention plan, proposed tree planting plan, proposed tree management plan.
- (i) A Soils Strategy (written and plans) with an accurate soil volume overlay sheet to describe the area and type/quality of soils. This is to be informed by the Rainwater
- (j) Management Plan, but should consider soil conservation practises, low impact construction practises, site constraints, enhancement opportunities and landscape soil standards.

A.4.2 At time of development permit application, for individual development parcels, applicants must provide the following to show how requirements A.3.1. to A.3.9 will be achieved:

- (a) A detailed site plan, landscape plans, sections for each development parcel to verify the location of open spaces in relation to the parking garage setbacks, tree retention (where applicable) and excavation limits. Additional details can be provided in the design guidelines for the project.
- (b) A written rationale and Landscape Plan/Planting Plan verifying details for soft and hard landscaping, including a plant palette for drought tolerant, native, or adaptive plant species.
- (c) A written rationale and verification on the Landscape plan of retained and proposed ecological and biodiversity benefits, in response to the Biodiversity Strategy, Bird-Friendly Guidelines and Re-Wilding Strategy. This should include a detailed assessment of existing high value ecosystem resources or significant established habitat or biodiversity, both on-site and adjacent to the site.
- (d) Detailed overlay sheets showing vegetation cover area and ratio percentage, including: overall vegetative cover locations and calculations, separate calculations for types of vegetative cover, including soft landscape area, tree canopy, extensive and intensive green roof cover, (excluding hardscape area). Note: the calculations should forecast canopy cover of trees at time of maturity.
- (e) A detailed Arborist Report and Tree Management Plan;
- (f) A site specific soil volume overlay sheet to describe the area, volume and type/quality of soils with emphasis on specifications for tree planting, re-landscape specifications, special soils and rainwater infiltration/absorption.

B. Sustainable Food Systems

B.1 Objective

The proposal will contribute to increasing city and neighbourhood food assets and supporting local and sustainable food systems as outlined in the Greenest City 2020 Action Plan and the Vancouver Food Strategy.

B.2 Intent

The City will require the applicant to demonstrate the overall increase of food system assets. Food assets are defined as resources, facilities, services, and spaces that are available to residents of the city (either at the citywide or neighbourhood scale) that enable a healthy, just, and sustainable food system.

B.3 Requirements

- B.3.1** Deliver a minimum of three food assets.

- B.3.2 If site is greater than 40,470 sq. m (10 acres), food assets will be expected to have more significant presence and impact than for smaller sites. Arrangements must be made for programming and maintenance of food assets for a minimum of five years (starting from date of occupancy).

B.4 Submission Checklist

- B.4.1 At time of rezoning application, applicants must provide the following to show how items B.3.1 to B.3.2 will be achieved:
- (a) Identification and description of a **minimum of three food assets** to be delivered
 - (b) Description of how selected food assets fit with the site context
 - (c) Early indication of how the food asset may be effectively programmed and maintained
 - (d) Drawings showing food asset locations and adequate space provision and infrastructure
 - (e) If site is greater than 40,470 sq.m (10 acres), provide a summary of arrangements for programming and maintenance of food assets for a minimum of five years
- B.4.2 At time of development permit application, applicants must provide the following to show how items B.3.1 to B.3.2 will be achieved:
- (a) Detailed design and layout for the three food assets:
 - (b) If site is greater than 40,470 sq.m (10 acres), provide documentation for operationalizing the asset, including any confirmed programmers, coordinators, or operators where relevant and outline of maintenance plans.

C. Green Mobility

C.1 Objective

The proposal will contribute to meeting the following citywide goals:

- (a) Transportation 2040 and Greenest City targets of having walking, cycling, and public transit trips make up at least 66% of all trips by 2040 and to reduce motor-vehicle kilometer traveled per resident by 20% from 2007 levels.
- (b) Greenest City target to reduce community-based greenhouse gas emissions by 33% by 2020 levels and the Renewable City target to reduce greenhouse gas emissions 80% below 2007 levels before 2050
- (c) Greenest City Clean Air target to always meet or beat the most stringent air quality guidelines.

C.2 Intent

The intent is to encourage sustainable transportation to:

- (a) Make walking and cycling safe, convenient and enjoyable
- (b) Support access to fast, frequent, and reliable transit
- (c) Reduce reliance on private automobiles
- (d) Accelerate the transition to electric vehicles, particularly for shared vehicles
- (e) Improve air quality and resident health

C.3 Requirements

- C.3.1 Provide a Transportation Demand Management Plan as per the Parking Bylaw.
- C.3.2 For sites 40,470 sq. m (10 acres) and larger, provide one publically-accessible fast charging hub with at least two chargers.

C.4 Submission Requirements:

At time of rezoning application, applicants must provide the following to show how items C.3.1 to C.3.3 will be achieved:

- (a) Submit a Transportation Demand Management Plan
- (b) Include a summary of electric vehicle charging provision in the project statistics.
- (c) Identify fast charging hubs on site plans, where applicable.

At time of development permit application, applicants must provide the following to show how items C.3.1 to C.3.3 will be achieved:

- (a) Submit a Transportation Demand Management Plan
- (b) Include a summary of electric vehicle charging provision in the project statistics.
- (c) Identify fast charging hubs on site plans, where applicable.

D. Potable Water Management

D.1 Objective

The proposal will contribute to the Greenest City goals of reducing potable water use by 33% from 2006 levels and meeting stringent water quality standards.

D.2 Intent:

The City of Vancouver is moving to an integrated water management approach, where all water within and around the city will be managed together as one system. This approach improves resiliency against climate change, allows the City to address current and future water demands and to protect aquatic systems. The City's objective for potable water management (conservation and efficiency) is to promote the sustainable use of the City's potable water supply, aspiring to offset growth impacts on water demand and avoid, defer, or minimise the financial, environmental and social costs associated with expanding potable water infrastructure. At a building scale, water conservation and efficiency can provide a beneficial reduction in water use by reducing waste, using less water to accomplish the same function or task and by using alternative non potable sources water that match the appropriate level of water quality to its end use. Water conservation and efficiency can provide operation cost management benefits and on site supply resiliency.

D.3 Requirements

Integrated Water Management Approach

- D.3.1 An integrated approach to water management at the site scale should be used. Opportunities to conserve water and use it more efficiently, as well as methods for managing rainwater more effectively through green infrastructure and harvesting rainwater for non-potable use should be taken advantage of.

The integrated water management approach for the building(s) and the site shall be demonstrated through the production of a Water Balance for the building(s) and parcel that quantifies water inputs, uses, and outputs. This shall include input water sources including potable water, and rainwater, and outflows to the sanitary, combined, and storm sewers. The Water Balance shall be produced for the 'baseline' and 'proposed' scenarios and demonstrate compliance with the minimum potable water use reductions over baseline specified in D.3.2 and D.3.3, achieved by taking an integrated approach to water management at the site scale.

Note: The Water Balance and accompanying supporting data, calculations, plans, reports and other materials shall be prepared by subject matter experts (such as an Engineer, Geoscientist, or other professional) and signed/sealed by same, subject to review by the City. Refer to

Sustainable Large Developments Admin Bulletin for baseline calculation assumptions and other details.

D.3.2 A minimum 20 per cent reduction in indoor potable water use is to be achieved through any combination of water conservation, efficiency and/or onsite non-potable water re-use. The reduction in potable water use shall be demonstrated by provision of 'baseline' and 'proposed' indoor water use figures, which shall be calculated as outlined in the Sustainable Large Developments Admin Bulletin.

D.3.3 A minimum 50 per cent reduction in outdoor potable water is to be achieved through a combination of water conservation, efficiency and/or onsite non potable water re-use. The reduction in potable water use shall be demonstrated through the use of the City of Vancouver's Water Wise Landscape Guidelines and the provision of 'baseline' and 'proposed' outdoor water use figures, calculated using the most recent version of the LEED Outdoor Water Use Reduction Calculator or other approved method. Note that planted landscapes on structures will require irrigation and as such these areas must be included when preparing the landscape plan and determining outdoor water use.

D.4 Submission Checklist

At time of rezoning application, applicants must provide the following to show how items D.3.1 to D.3.3 will be achieved:

- (a) Provide a preliminary Water Balance for the building(s) and parcel with the content and supporting documentation as per the specifications outlined in the Sustainable Large Developments Admin Bulletin.

At time of development permit application, applicants must provide the following to show how items D.3.1 to D.3.3 will be achieved:

- (a) Provide a refined Water Balance for the building(s) and parcel using final proposed occupancy figures.

E. Rainwater & Groundwater Management

E.1 Objective

The proposal will contribute to the City's Rain City Strategy and Integrated Rainwater Management Plan's target of capturing and treating 90% of annual rainfall on public and private property. It also aims to preserve sewer capacity, reduce the risk of combined sewer overflows and maintain wastewater treatment effectiveness through the reduction of groundwater flows entering the sewer system in alignment with the Metro Vancouver 2010 Integrated Liquid Waste and Resource Management Plan.

E.2 Intent

Rainwater should be recognized as a resource to enhance the community and environment. The use of water sensitive site design and green infrastructure practices or source controls adds resiliency to the City's drainage system in a changing climate and keeps harmful stormwater pollutants from entering our receiving waters. Green infrastructure approaches are to be maximized on site to the greatest extent possible, following a tiered approach, with onsite infiltration and rainwater re-use and being the most preferred approach, and detention being the least preferred.

City sewers are limited in their capacity and are not designed to convey groundwater. Problems arise when developments such as those with deep basements and/or underground parkades that

intercept the water table implement sub-drain systems that pump water to the sewer as a means to intercept groundwater seepage and limit hydrostatic forces on foundation walls and floor slabs. The intent of this policy is to prevent permanent groundwater discharges to the City sewers. Accordingly, developments are required to wholly manage groundwater onsite.

Definitions:

- (i) Groundwater: Water occurring below the surface of the ground within voids in a rock or soil matrix
- (ii) Water table: The level below which the soil or rock voids are saturated with water at a pressure of 1 atmosphere or greater

E.3 Requirements

E.3.1 All buildings and the site as a whole shall be designed such that no groundwater from systems at or below the yearly high water table is discharged to City sewers. Exceptions may be made for temporary construction dewatering.

E.3.2 A Hydrogeological Study shall be undertaken at the site that evaluates the potential for the proposed building(s) and site design to intercept the yearly high water table. The study shall be prepared by a subject matter expert, and include at minimum the items identified in the Groundwater Management Administrative Bulletin. If any groundwater interception is proposed (post-construction), a Groundwater Management Plan must be submitted as part of the Hydrogeological Study. The Groundwater Management Plan will demonstrate that no permanent groundwater discharge to City sewers will occur, and must include at a minimum the items identified in the Groundwater Management Administrative Bulletin.

Note: If temporary construction dewatering is proposed, an Impact Assessment must be submitted as part of the Hydrogeological Study. The Impact Assessment will demonstrate that no significant negative impacts result from groundwater extraction, and must include at a minimum the items identified in the Groundwater Management Administrative Bulletin.

E.3.3 The rainwater management system for the building(s) and site shall be designed such that the peak stormwater flow rate discharged to the sewer under post-development conditions is not greater than the pre-development peak flow rate for the return period specified in the City of Vancouver's Intensity-Duration-Frequency curves (IDF curves). The City of Vancouver's 2014 IDF curve shall be utilized for pre-development design flow calculations, and the City of Vancouver's 2100 IDF curve, which takes into account the effects of climate change, shall be utilized for post-development design flow calculations. Refer to the Groundwater Management Administrative Bulletin for further details.

E.3.4 The first 24 mm of rainfall falling on all pervious and impervious surfaces across the site shall be retained on site by means of infiltration, evapotranspiration, and/or re use for the purpose of reducing the volume of rainfall entering the City's sewers. To achieve this on-site retention target the rainwater management system shall manage rainfall in accordance with the green infrastructure tiered approach outlined in the [Groundwater Management Administrative Bulletin](#)~~Sustainable Large Developments Admin Bulletin~~.

Note: Landscaped areas designed with the appropriate depth of growing medium over native subsoil may be deemed to meet the 24 mm retention criteria. Appropriate growing medium depths shall be based on providing sufficient storage volume within the media to meet the retention criteria as outlined in the Metro Vancouver Source Control Guidelines and meet horticultural needs as outlined in the Canadian Landscape Standard.

E.3.5 The first 24 mm of rainfall from all pervious and impervious surfaces shall be treated to remove 80% Total Suspended Solids (TSS) by mass prior to discharge from the site. For impervious

surfaces with high pollutant loads, including roads, driveways, and parking lots the rainfall depth to be treated increases to the first 48 mm of rainfall. Treatment can be provided by either one green infrastructure practice or by means of a treatment train comprised of multiple green infrastructure practices that can be demonstrated to meet the 80% TSS reduction target.

E.4 Submission Checklist

At time of rezoning application, applicants must provide the following to show how items E.3.1 to E.3.5 will be achieved:

- (a) Provide a preliminary Rainwater Management Plan completed by a registered professional Engineer as per the specifications outlined in the Sustainable Large Developments Admin Bulletin.
- (b) Provide a preliminary Hydrogeological Study completed by a professional with experience in hydrogeology as per the specifications outlined in the Groundwater Management Administrative Bulletin.
- (c) Geotechnical Study shall be undertaken at the site that evaluates the potential and risks for onsite rainwater infiltration. The study shall be prepared by a subject matter expert and registered professional, and include at minimum:
 - (i) Infiltration testing at likely locations for infiltration practices and a proposed design infiltration rate;
 - (ii) Soil stratigraphy;
 - (iii) Depth to bedrock and seasonally high groundwater; and
 - (iv) Assessment of infiltration risks such as slope stability and soil contamination.

At time of development permit application, applicants must provide the following to show how items E.3.1 to E.3.5 will be achieved:

- (a) Provide a final signed and sealed Rainwater Management Plan completed by a professional engineer and signed and sealed Geotechnical Study prepared by a subject matter expert and registered professional. The content and supporting documentation is to be updated to reflect all material changes to the proposed development and new/refined supporting data, calculations, plans, reports and other materials following submission of the preliminary Plan and preliminary Geotechnical Study
- (b) Provide a final signed and sealed Hydrogeological Study, including Groundwater Management Plan and Impact Assessment, if applicable, completed by a certified professional with experience in hydrogeology. The content and supporting documentation is to be updated to reflect all material changes to the proposed development and new/refined supporting data, calculations, plans, reports and other materials following submission of the preliminary Hydrogeological Study submitted at time of Rezoning Application.

F. Zero Waste Planning

F.1 Objective

The proposal will contribute to the City's Greenest City target on Zero Waste and the objectives set out in the City's Zero Waste 2040 strategic plan with respect to waste avoidance, reduction, increased opportunities for material re-use and recycling, and reduced greenhouse gas emissions, and the overall goal of eliminating Vancouver waste disposed to landfill and incinerator by 2040

F.2 Intent

Projects are expected to be leaders in waste minimization and waste diversion. The ultimate objective is to facilitate the reorientation of peoples' habits and practices toward the City's zero waste target. The key objectives of a project's Zero Waste Design and Operations Plan are to

foster ongoing waste reduction and increased diversion of products and materials from the waste stream through avoidance, re-use, composting and recycling. The intent is to achieve the following:

- (a) Infrastructure and systems to facilitate product repair and re-use.
- (b) Infrastructure and systems to enable the reduction and/or elimination of single-use items (e.g. dishwashers to enable use of reusable dishware).
- (c) Innovative and leading edge measures to support waste diversion and minimize the environmental impacts of waste collection activities, such as the use of a pneumatic collection system, high-capacity waste containers (i.e. deep burial), and communal composting.
- (d) Increased opportunities to re-use/donate/exchange materials.
- (e) Connections with charities and other non-profit organizations to support the rescue and redistribution of nutritious food that would otherwise be disposed.
- (f) Reduce waste operations-related environmental emissions, notably GHG emissions, through strategies such as reduced service-vehicle trips.

F.3 Requirements:

- F.3.1 Buildings must be designed with adequate and well-designed storage spaces/collection points for waste management materials, including multi-stream recycling, food scraps, and extended producer take back items - as described in the Sustainable Large Developments Admin Bulletin.
- F.3.2 Zero waste/waste management communications and education programs for residents and businesses must be created and implemented, including a minimum number of actions from the Sustainable Large Developments Admin Bulletin.
- F.3.3 Buildings must incorporate zero waste efforts beyond the provision of standard recycling bins. A number of additional zero waste actions are required, as per the Sustainable Large Developments Admin Bulletin.
- F.3.4 Post Occupancy Plan Implementation Report. The applicant must provide the City with a report on implementation of the Zero Waste Design and Operations Plan within 18 months of occupancy. The implementation report shall include:
 - (a) Types and quantities of waste diverted.
 - (b) Types and quantities of waste disposed.
 - (c) Names and locations of recycling processing facilities used.
 - (d) Description of on-site re-use options, product stewardship facilities, NGO drop-off bins, etc. and estimates of the amount of waste reduced through those initiatives.
 - (e) Description of annual education initiatives undertaken.
 - (f) Overview of exterior litter removal program.
 - (g) Summary of initiatives to reduce GHG emissions related to waste.
 - (g) Summary of other initiatives undertaken to facilitate zero waste on-site.

F.4 Submission Checklist

At time of rezoning application, applicants must provide the following to show how items F.3.1 to F.3.4 will be achieved:

- (1) A Zero Waste Design and Operations Plan that includes the sections outlined below. The Plan should identify which zero waste actions are included in the design (see Sustainable Large Developments Admin Bulletin for details on required actions):
 - (a) Vision/goal statement
 - (b) Description of project and diversion objectives
 - (c) Space Allocations (site-wide and/or building scale)

- (d) Operations
 - (i) Occupant/public education and outreach
 - (ii) Facility operations training and support
- (2) Acknowledgement of intent to provide a Plan Implementation Report post-occupancy, with details regarding who will be responsible for submitting.

At time of development permit application, applicants must provide the following to show how items F.3.1 to F.3.4 will be achieved:

- (a) A refined, detailed Zero Waste Design and Operations Plan for each building. The refined Plan should reference, in the Space Allocation section, plan drawings confirming physical spaces provided.
- (b) Prior to DP issuance, a Letter of Commitment to supply a Plan Implementation Report post-occupancy will be required with details regarding who will be responsible for submitting.

G. Affordable Housing

G.1 Objective

The proposal will contribute to meeting the affordable housing objectives and targets of the Housing Vancouver Strategy (2018-2027), in particular to achieve the target of 12,000 new units of social, supportive and co-op housing through the delivery mechanisms outlined in the Affordable Housing Delivery and Financial Strategy (2018-2027).

G.2 Intent

The intent of this policy is to clarify the minimum requirements and priorities for delivering affordable housing on large development sites while providing flexibility in delivery to ensure financial viability and to accommodate varying development contexts. The Affordable Housing Delivery and Financial strategy identifies large developments as important sites to contribute to the delivery of social and supportive housing options for lower-income households and housing for moderate-income households. The priority for securing dirt sites under this policy contributes to the City's ability to provide publicly-owned sites for affordable housing development in a sustainable way to meet both current and future housing needs.

The affordable housing requirements in this policy apply to all large developments city-wide, except those areas that have recently adopted community plans (e.g. Cambie Corridor Unique Sites, large inclusionary housing projects in the West End) and large developments that have submitted a formal rezoning enquiry (application for rezoning advice) as of June 20, 2018. Those projects with an accepted letter of enquiry will proceed under the previous affordable housing requirements (the 20% policy) contained in the Rezoning Policy for Sustainable Large Developments amended December 16, 2014.

G.3 Requirements

The inclusionary housing requirements for large developments are a minimum of 30% of total residential floor area set aside for affordable housing. This includes two components: a minimum 20% social housing target and minimum 10% moderate income housing target, as detailed below:

- G.3.1 A minimum of 20% of total residential floor area set aside for social housing, prioritizing the transfer of unencumbered dirt site(s) to the City of sufficient size to accommodate the 20% of floor area as social housing.

Note: If it can be demonstrated by the proponent that providing dirt site(s) is not possible due to project context, consideration will be given to delivery of all or a portion of the 20% floor

area requirement as turn-key social housing designed in accordance with the Housing Design and Technical Guidelines, with ownership transferred to the City in the form of an Air Space Parcel.

- G.3.2 A minimum of 10% of total residential floor area set aside for affordable rental housing targeted to households with moderate incomes of \$30,000 to \$80,000/year provided in a variety of unit types (studios, 1, 2 and 3 bedrooms). Rental rates for these units will be secured through a Housing Agreement with the City.

The approach described above clarifies the City's policy priorities and outlines a standard approach to affordable housing delivery on large development sites. However, given the diversity amongst large development sites in Vancouver, the General Manager of Planning, Urban Design and Sustainability may recommend alternative approaches to Council where there is clear rationale and evidence in the context of individual projects that demonstrates an alternative approach is merited and would contribute to the goals of the Affordable Housing Delivery and Financial Strategy.

G.4 Submission Checklist

Refer to the Sustainable Large Developments Admin Bulletin.

H. Resilience

H.1 Objective

To better position the city to deal with significant shocks and stresses, particularly: earthquakes, extreme weather, extreme temperatures, sea level rise; and to assist in improving disaster preparedness and social connection. To meet the objectives of the Climate Change Adaptation Strategy, including the objective to increase resilience of the built environment to future climate conditions.

H.2 Intent:

The City of Vancouver is undertaking two initiatives related to resilience:

- (a) A broader Resilience Strategy, with forthcoming policies related to Vancouver specific shocks and stresses
- (b) The Climate Change Adaptation Strategy update, adopted by Council in 2012, the adaptation strategy is being updated with new climate projections and actions

While specific resilience policies are being developed, development projects should consider social and physical resilience and incorporate design responses where possible. Projects must identify building strategies that eliminate, reduce, and mitigate adverse impacts including those due to changing climate conditions.

H.3 Requirement

- H.3.1 Show how resilience is incorporated in the design. Submit a resilience worksheet summarizing design features that improve resilience for the development.

Notes: that this submission should be treated as a public disclosure and the City may display some or all of the information publicly. Submission of the completed worksheet will meet this requirement, no further action is required.

- H.3.2 All buildings with an occupant load greater than 30 (except townhouse developments) shall have at least one accessible, self-closing drinking water fountain, located in a common area inside buildings at or near the level 1 entrance and visible from the exterior. The fountain must be capable of operating on city water pressure alone and without electricity. The apparatus must

also include an appropriate fitting for filling water bottles. Fountains are to be installed on the shortest dead leg possible off of a line that is flowing regularly; this line would preferably be serving a washroom

H.4 Submission Checklist

At time of rezoning application, applicants must provide the following to show how items H.3.1 to H.3.2 will be achieved:

- (a) A preliminary resilience worksheet and text summary of any design features that contribute to site/building resilience.

At time of development permit application, applicants must provide the following to show how items H.3.1 to H.3.2 will be achieved:

- (a) An updated resilience checklist and text summary of any design features that contribute to site/building resilience.



City of Vancouver *Land Use and Development Policies and Guidelines*

*Community Services, 453 W. 12th Ave Vancouver, BC V5Y 1V4 ☎ 604.873.7344 fax 604.873.7060
planning@vancouver.ca*

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RM-6 WEST END GEORGIA/ALBERNI GUIDELINES

Adopted by City Council on June 20 and September 26, 1989

September 1989

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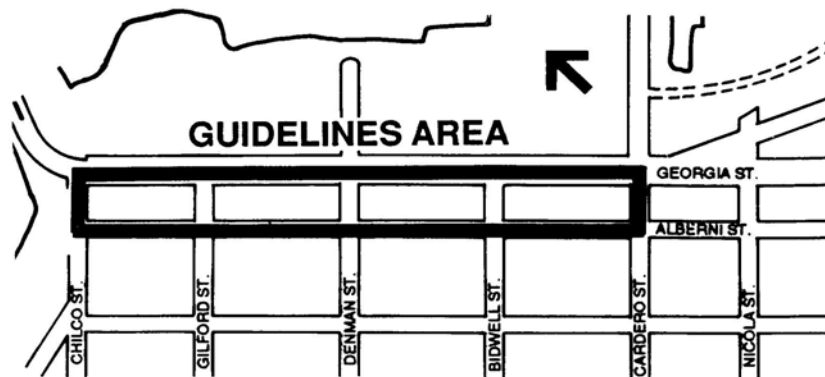
Note: The guidelines are organized under standardized headings. As a consequence, there are gaps in the numbering sequence where no guidelines apply.

1. Application and Intent

These guidelines are to be used with applicable regulations of the **Zoning and Development By-law** for approval of conditional uses or discretionary variations in regulations within a particularly sensitive area of the West End between Georgia, Alberni, Chilco, and Cardero Streets. The guidelines describe design opportunities. As well as assisting designers of projects, the guidelines will be used by City staff in evaluation of proposals.

The general intent is to assist in creating an urban character of distinction for this important city entry and exit; to ensure highest quality projects; and to enhance the livability and diversity of the West End.

Figure 1.



2. General Design Considerations

2.1 Neighbourhood Character

The West End is a high-density, mature residential community. Its character results from a variety of old and new, high and low buildings, incremental development and established landscaping and street trees.

- (a) The large properties between Georgia and Alberni should continue to reflect this neighbourhood characteristic in any development while providing a “formal” character for Georgia Street.

2.2 Street Character

General

The character of the streets contributes significantly to the West End's image. The mature street trees and lush landscaping of the front yards are major elements in creating the character. The variety of building types that can be found in a block co-exist because the streetscape ties them together.

This area is located at a main point of entry to both the city and Stanley Park. The street character on Georgia Street must reflect this important location. Developments on the 1600 to 1900 blocks between Georgia and Alberni must therefore incorporate a dual character into their design. The Georgia face of these developments must address the formal character of Georgia Street while their Alberni face must maintain a West End character.

Alberni Street

- (a) Alberni Street should be established with a West End character Street. New development facing Alberni should be relatively continuous, comprised of a combination of low structures (two to four storeys) set back from Alberni, and slim towers centred between north and south property lines.
- (b) Buildings should be separated and have architectural treatments that are distinct but compatible.

Georgia Street

- (c) Georgia Street should be developed as a distinctive formal street. The composition of high- and mid-rise towers, green courts and street landscaping on each of the 1600 to 1900 blocks should create a strong and unified image for the street.
- (d) Properties on the south side of Georgia Street should develop substantial landscaped “green courts” in order to create visual continuity. Architectural details within landscaped areas such as retaining walls and balustrades should allude to traditional detailing found in Stanley Park.
- (e) Private projects should contribute to achieving an ordered, continuous streetscape.

2.3 Orientation

The alignment of building faces with the orthogonal street grid is one of the main ordering principles in the West End and Downtown overall built form.

- (a) New development built form should respect the orthogonal street grid. Any non-orthogonal elements should be clearly subordinate.

2.4 Views

The area contains important public and private views. Public views to and from Stanley Park, to and from Coal Harbour and long views to the North Shore mountains are important amenities along Georgia Street as people arrive and leave the city. These views will establish the character of the entry experience to the city. Street-end views to Coal Harbour and the North Shore are also significant.

Impact of new development on private views is a contentious issue in the West End generally. In this area the opportunity exists to marry development interests with view preservation through the use of predominantly tall, slim towers. Views northward in general are important, but of particular importance is the view looking over Coal Harbour, toward Brockton Oval and Grouse Mountain beyond.

- (a) New development should minimize its impact on existing views and distribute these impacts as equitably as possible. New developments should provide attractive near views for existing development when distant views cannot be preserved. A view analysis should be provided for each new development.
- (b) Each of the 1600 to 1900 blocks should provide at least one public view slot at pedestrian level (+/-20 feet wide) from Alberni Street northward into the "green court" and if possible to Coal Harbour and mountains.

2.5 Topography

The topography of the area slopes both in a north/south and east/west direction.

- (a) Development and parking structures should be stepped to minimize blank retaining walls on Georgia Street and Alberni Street, particularly at the northwest corners of blocks. (Refer also to Section 8.1.)
- (b) Entrances to buildings on the 1600 to 1900 blocks of Georgia Street should be off Alberni Street, the high side of the site. These entrances should be at the same level as the sidewalk or be connected by a gradual transition of grade to prevent a "pit-like" condition.

2.6 Light and Ventilation

Natural light and ventilation are essential to residential livability. Light access to units can be a problem when they are partially below grade resulting in dark, and in some cases, damp living conditions.

- (a) If a unit is lower than the adjoining street grade because of a sloping site, the surrounding sloped area should be configured to permit more light to reach the unit.

2.7 Weather

The generally anticipated level of pedestrian traffic in the area is low and the uses mainly residential. One exception to this condition is along Denman Street (leading eventually to Coal Harbour) where retail continuity is desired.

- (a) Continuous weather protection from the rain should be provided along both sides of Denman Street, in the form of awnings or canopies.

2.8 Noise

The study area is severely affected by noise by heavy vehicular arterial traffic moving through the area. For new development, the impact of noise must be recognized and minimized to the greatest extent possible to ensure acceptable residential livability. The sloping sites and "green courts" in the area can potentially be used to advantage by installing terracing and low retaining walls which tend to deflect some direct tire noise.

- (a) All residential buildings should meet acoustic standards for noise within buildings and between buildings and the outside environment as set by the applicable zoning schedule.
- (b) Careful attention should be given to providing a good quality acoustic environment. The following list provides some indication of possible means of noise attenuation:
 - using concrete construction;
 - orienting outdoor areas and bedrooms away from noise sources;
 - utilizing glass block walls, or acoustically rated glazing;
 - using alternate ventilation (to minimize opening windows); and
 - managing interior noise levels (e.g. use of sound reducing materials).

2.9 Privacy

Privacy problems will be generated by heavy vehicular traffic (and headlights) as well as by pedestrians passing by. In addition problems of overlooking of private deck and patio space can also occur.

- (a) New development should mitigate any impacts on privacy enjoyed by adjacent residents and should ensure that adequate privacy for new units is provided through setbacks, landscaping and screening in conformity with other guidelines in this document.

2.10 Safety and Security

Safety is a key component of livability. New development must provide a secure environment.

- (a) Underground parking facilities should meet the standards contained in the City Council-approved document entitled, **Parking Facility Design Guidelines and Standards**.
- (b) Appropriate residential lighting should be provided on site to ensure good visibility of access routes and landscaped areas without over-spill to neighbours.
- (c) Lobbies should be visible from the street.

2.11 Access and Circulation

Traditionally, pedestrian access to buildings in the West End has been from a single, prominent entrance. The original houses provided access from a single stairway leading from the street. Most apartments provide access from a central lobby.

The "green courts" provided on Georgia Street blocks are primarily a visual amenity rather than for public use. Given the continuity of the conventional West End street grid through the area and the light volumes of pedestrian traffic, cross-block circulation for the public, while possible, is not considered necessary.

Vehicular access to parking garages traditionally is off lanes or streets. Access to blocks fronting Georgia Street is limited due to the fact that there are no lanes and access to parking is not permitted off Georgia.

- (a) The number of walkway access points to building entries from the street should be limited to avoid breaking front yards into small, discontinuous pieces of open space.
- (b) Vehicular access to 1600 to 1900 blocks Georgia Street should be from Alberni Street. Access should not occur off north/south streets in order that they be preserved for potential future mini-parks (Gilford and Chilco) or traffic connector (Bidwell) or traffic signal line-ups (Cardero).

- (c) In and out "drop-off" driveways are generally not desirable. They should be considered only for development on sites 300 feet or longer with a sufficient number of units and sufficient traffic conflict to necessitate this provision. Where provided they should be paved and landscaped to the highest standards, consistent with the rest of the project and the intent of the guidelines in this document to establish a residential character on Alberni Street. (Note that separate guidelines on this topic may result from future study. Applicants should enquire for the latest criteria.)
- (d) The visual impacts of parking ramps should be minimized by proper treatment. This might include ramps enclosed by structures or integrating ramp locations with slot views through properties. In all cases, ramps should be treated with high quality finishes and landscaping.

3. Uses

From a locational and amenity perspective, the best primary land use in this area is residential. Retail viability is limited (to Denman Street mainly) and while other commercial uses may be supported, very careful design must ensure their integration into the characters prescribed in these guidelines for Georgia and Alberni Streets.

- (a) The primary land use in developments in the area should be residential. However, non-residential land uses, as described below, may be permitted and may be suitable especially to low-rise development required on Alberni.
- (b) Hotel use is not desirable west of Denman Street, but may be considered east of Denman depending on meeting all guidelines in this document.
- (c) Social, recreational and (non-commercial) cultural amenities, both for project residents or for the public, may be considered.
- (d) Retail and restaurant uses are required along the Denman Street frontage. They may be located elsewhere if desired, but are not required.
- (e) Other types of small-scale commercial use may be permitted, particularly along Alberni Street east of Denman, with special attention to ensure their compatibility in type, scale, and design with these guidelines.

4. Guidelines Pertaining to the Regulations of the Zoning and Development By-law

4.2 Frontage

The opportunity exists to create a more active and urban pedestrian environment along Denman Street, eventually all the way to Coal Harbour.

- (a) Shop fronts should be limited to a maximum width of 50 feet (15.2 metres), with a smaller average preferred.

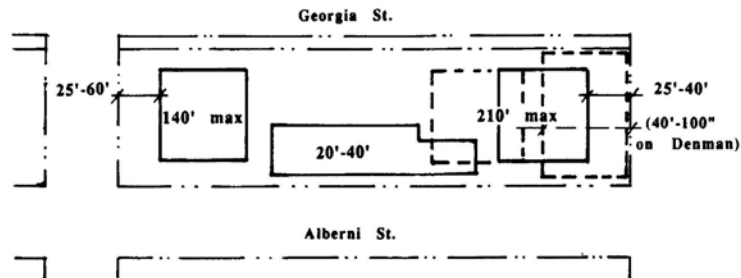
4.3 Height (and Length)

A variety of building heights characterizes the West End built form. It is important that despite the large property ownerships in this area, this pattern of diversity continue. However, in order to achieve a formal order suitable to Georgia Street, the massing for the 1600 to 1900 blocks should form a repetitive rhythm.

The importance of private view preservation makes the use of slim towers appropriate.

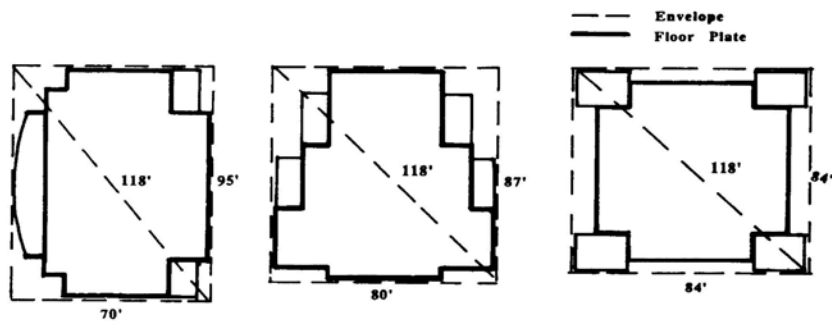
- (a) On the 1600 to 1900 blocks Georgia Street, the same general pattern should be followed:
 - A single tall (maximum 210 feet high) tower on the easterly end (approximately centred between north and south property lines);
 - A single mid-rise (maximum 140 feet high) building or tower on the westerly end (approximately centred between north and south property lines); and
 - Low-rise (minimum 20 feet, maximum 40 feet high) building(s) between the two taller forms, located on the Alberni Street side of the block.
- (b) On the 1900 block Georgia, the pattern described above should be modified to incorporate an approximately 50 to 60 foot building mass continuously along the Chilco Street edge to maintain the moderate scale to the Park edge and to accommodate the single separate 33 foot lot.
- (c) On the 1700 to 1800 blocks Georgia Street, the pattern described above should be modified to incorporate a low-rise massing along the Denman at the property line (minimum 20 feet, maximum 40 feet high) extending back from Denman a minimum of 40 feet.

Figure 2. Typical Block Massing



- (d) The taller towers should have distinctive roof forms.
- (e) In order to maintain slimness of both high- and mid-rise towers, floor plates above 40 feet above grade shall be limited:
 - maximum floor plate of approximately 5,500 square feet (not counting balconies normally excluded from F.S.R. calculation, but including elevator cores etc.); and
 - maximum diagonal dimension of the tower "envelope" (the rectangle containing the total floor plate including balconies) of 118 feet.

Figure 3. Floor Plate Limits



4.4 Front Yard (and Setback)

Note: Setbacks on Georgia Street are measured from the future property line, 3.5 metres in from existing property lines.

The front yard is the most public aspect of a site. Its treatment strongly influences streetscape character and how the building is seen from the street. In this area, front yards should contribute to the "greening" character of the area on both Alberni and Georgia Street.

- (a) Minimum setback along Georgia Street should be 10 feet for the mid- and high-rise buildings. An additional + 5 feet would be desirable as extra space for tree crowns is not essential. Minimum setback is 40 feet for the low-rise buildings (to create the "green courts").
- (b) Minimum setback from Alberni for all structures should be 12 feet. This may be reduced where commercial uses are incorporated on the Alberni frontage.
- (c) To insure approximately equal spacing of tall towers on the 1600 to 1900 block of Georgia Street, the high-rise towers should be setback from easterly flanking streets (Cardero, Bidwell and Gifford), a minimum of 25 feet and a maximum of 40 feet. The setback from Denman Street on the 1800 block should be 40 feet minimum, 100 feet maximum to allow for retail development. Low-rise building may occur in these setbacks.
- (d) The mid-rise towers should be set back from the westerly flanking streets (Bidwell and Gifford) a minimum of 25 feet and a maximum of 60 feet. The setback from Denman Street on the 1700 block should be a minimum of 40 feet and maximum of 80 feet to allow for retail development. Low-rise buildings may occur in these setbacks.
- (e) The tower positioning should be manipulated within the above requirements to preserve neighbours' views as much as possible.

4.5 Side Yards (and Setbacks)

For the 1600 to 1900 blocks of Georgia, there should be no pre-set minimum side yard. The individual building masses should be separated however. Where two separately-owned sites share an internal property line, adequate space should be provided depending on development anticipated on the adjacent site.

4.6 Rear Yards (and Setbacks)

As noted in 4.4 above, the sites on the 1600 to 1900 Georgia are not deemed to have "rears".

4.8 Site Coverage

For the 1600 to 1900 blocks of Georgia, a maximum site coverage is not necessary because building massing and setbacks are stringent.

4.9 Off-Street Parking and Loading

The 1600 to 1900 blocks between Georgia and Alberni are not serviced by lanes, unlike the majority of the West End. In order to create the "greening" character for the area, very little site area should be devoted to parking and loading functions.

- (a) Parking should be provided underground. On lots 50 feet or less in width, above ground parking may be considered and exempted from F.S.R. if enclosed.
- (b) Access for parking and service loading should be from Alberni.
- (c) Access points should present an attractive appearance using high quality materials (such as paving stones or brick) and landscaping.
- (d) Parking garage doors should screen garage interiors.
- (e) Porte cocheres and "drop-off" driveways, where permitted, should be attractively designed with the highest quality materials. (Refer to Section 2.11(c).)

4.17 External Design

One of the characteristics which makes the West End unique is the close juxtaposition of tall and low buildings, each with a distinctive architectural character. The collective developments on the 1600 and 1900 block Georgia need to strike a balance between diversity and similarity. Perceived from Georgia Street, they need to reflect a greater degree of similarity, while from Alberni Street they need to reflect a greater degree of diversity.

The degree of similarity between projects as perceived from Georgia Street will be largely a function of their repetitive massing and consistent landscape treatment.

- (a) Each separate building (high-, mid- and low-rise) should be treated somewhat differently so that the large site developments are perceived as harmonious but not as block-long "projects". Variation of colour, materials, fenestration and architectural treatment (within the broad limits set below) is appropriate.
- (b) Within a single building, all faces will be visible and should be finished and detailed to a consistent high standard.

- (c) Buildings at certain identified focal point opportunities should respond through the incorporation of special forms. These locations are the Chilco/Georgia corner, Denman/Georgia corner, and Cardero/Georgia corner (on axis with Pender Street).

5. Architectural Components

5.1 Roofs

The number of higher buildings in the West End makes roofs of lower developments very visible. Also the development of roofs of taller buildings will contribute to creating a distinctive skyline at this edge of the West End and entrance to the city. In light of this, the finishing and detailing of materials used must be attractive and visually interesting.

- (a) Tall and mid-rise buildings should have a distinctive roof treatment and large areas of flat roof should be avoided. Vents and mechanical equipment should be incorporated into an overall roof treatment that creates a strong image on the skyline.
- (b) The roofs of lower buildings should be designed and landscaped to be attractive seen from above. Mechanical rooms and elevator towers should be screened with materials and finishes compatible with those used on the facade and roof.

5.3 Entrances

Most West End buildings have clearly defined prominent entrances which animate the street and create identity.

- (a) Each individual building should have a distinctive entrance appropriate to the scale of building.
- (b) Each entrance should provide weather protection in a manner and scale appropriate to the buildings' overall scale.
- (c) Properties on the 1600 and 1900 blocks on the south side of Georgia should have their main pedestrian entrances on Alberni Street. If desired, towers may also have a pedestrian entrance from Georgia.
- (d) Development fronting Chilco Street should have its entrance on Chilco Street, if parking and access patterns make it possible.
- (e) Buildings and retail uses fronting Denman Street should have their entrances on Denman Street.

5.4 Balconies

- (a) Balconies should be a minimum of six feet deep to allow adequate usable space.
- (b) To create a cohesive image, balconies should be integrated with the building design and not "tacked on".
- (c) Balconies may be enclosed for acoustic purposes subject to current City guidelines and policies on balcony enclosure and floor space additions.

5.5 Exterior Walls and Finishing

Finishes and colours of many types are found in the West End. However, in light of the prominence of this area the highest quality of finish must be used and colours, while not uniform, should avoid extremes of dark and white.

- (a) Finishing materials such as brick, stone and painted or tinted concrete are desirable. Stucco may be acceptable on low-rise buildings if well detailed. Unpainted, natural concrete should be avoided except perhaps as a base.
- (b) The use of an appropriate colour palette that avoids extremes is essential in this area.

Colours for larger surface areas of buildings should be in rich beiges, sands and buffs to present a warm yet bright image. Colours for building trim such as window frames and railing should fall within a more traditional or "Victorian" palette: deep, rich colour with a very high pigment content rather than bright or pastel colours.

5.7 Lights

The proper illumination of the landscaped areas of properties fronting Georgia is essential to providing a strong visual continuity for this major entrance to the city. It is important that this lighting be coordinated with both the pedestrian level and street lighting of the public domain. The opportunity also exists to co-ordinate this lighting with that of Stanley Park.

The other dimension in the area which needs to be accentuated is the night skyline.

In both cases, light "spill over" must be avoided.

- (a) Private development building, landscape and site lighting should be incandescent.
- (b) The unique roof treatments of tall towers should be illuminated with subtle flood lighting.

7. Open Space

The single most significant element which will unify this area as both an extension of the West End and as a major entry experience to Vancouver is the treatment of the open space. In order to achieve both these goals — residential neighbourhood livability and urban significance — a consistent theme and treatment must be developed unifying public, semi-private and private open space.

7.1 Public Open Space

There are a number of public open spaces adjacent to the private sites in the area (Stanley Park and Devonian Harbour Park). There is also the future possibility of public mini-parks in the Chilco and/or Gilford Street ends. The resolution and design of these will take some time, however.

The existing public space — particularly Stanley Park — provides a source of architectural design details and landscape palette which can be adapted for use in the semi-private green courts and future mini-parks so that a thematic design continuity can be established for the whole area.

7.2 Semi-Private Space

The semi-private “green courts” on Georgia and front yards on Alberni are traditionally a visual amenity for both residents and the general public, with soft landscaping and minimal paved area.

- (a) “Green Courts” on the 1600 to 1900 blocks should be clearly contained on three sides by buildings and be open and clearly visible from the fourth side facing Georgia Street.
- (b) Landscape plans for the “green courts” on the 1600 to 1900 blocks should be coordinated among the different projects in order to achieve a high degree of visual integration with public realm design for the overall area.
- (c) Any pools or playground areas should be located in an internal or screened location away from the street.
- (d) Architectural elements within the landscaped ground plane should be of a character similar to that found in Stanley Park (e.g. rough granite retaining walls, stone balustrades and, if possible, concrete lamp standards).

7.3 Private Open Space

The provision of quality, usable private open space is key to maintaining livability in a high-density setting such as the West End. It is usually provided by balconies and in some cases, patios. The opportunity exists in this area to provide more communal private space within ground level landscaped areas.

- (a) Private open spaces for residents should meet C.M.H.C. standards and utilize features such as balconies, roof decks and terraces.
- (b) Private open spaces should be oriented to capture sunlight, take advantage of views and reduce noise impacts.
- (c) Where private open spaces face Georgia Street (e.g. patios within the green courts) special care must be taken with design and screening.

8. Landscaping

8.1 Green Courts

In order to create a unified ground plane, and to achieve a whole greater than the sum of the parts, common thematic elements must be defined in some detail for the green courts and other private open space facing Georgia.

- (a) Each block should install a similarly laid out series of planting beds, contained in low retaining walls. Retaining walls may vary in height but for most of their length should be low enough for a driver to clearly see the landscaping behind.
- (b) Adequate depth of soil should be provided above parking decks to allow planting good sized trees and shrubs.
- (c) Retaining walls should be faced in granite with a random rubble unpointed face, and an 8 inch minimum thick granite slab cap overhanging the wall face by at least 4 inches. Interruptions in the wall may occur for features, entries etc.
- (d) Planting beds in the courts should slope up from front to back to present the maximum area to the line of sight. Fronts should be planted in seasonal floral display beds (e.g. daffodils en masse as on the Causeway) or low or trailing blossoming plants. Rear of beds should have low flowering shrubs with interesting branching patterns (e.g. low dogwoods and magnolias as in the planters at the English Bay Bath House). Lush, larger landscaping such as rhododendrons and trees are appropriate further back in the green courts, to screen the low-rise development.
- (e) "Green courts" will vary from block to block, as functional and aesthetic requirements are met for specific conditions, but they should tend to be open at the front near the planters, and more lushly landscaped at the back, adjacent the buildings in the development

8.2 Georgia Streetscape

A preliminary street landscape plan for Georgia Street was developed in 1986 and set out in the **Georgia Street Second Century** report. The recommendations regarding street tree planting and sidewalk paving contained there are appropriate to this area with some modifications necessitated by the Georgia Street "building line" and road widening.

- (a) A double row of "red sunset" red maples should be planted along the Georgia Street sidewalk at intervals of about 30 feet. There will be sufficient sidewalk space after road widening to allow both rows to be planted outside the new property line. However, it may be necessary for underground parking garage walls to indent to provide adequate space for the tree rootball.
- (b) Planting details and tree grates should be as described in **Georgia Street Second Century** with modification as required for specific circumstances.
- (c) Sidewalk paving should be as described in **Georgia Street Second Century**.
- (d) Pedestrian level street lighting and other street furnishings are still to be determined. City staff should be consulted.

Figure 4. Sidewalk and Green Court Section

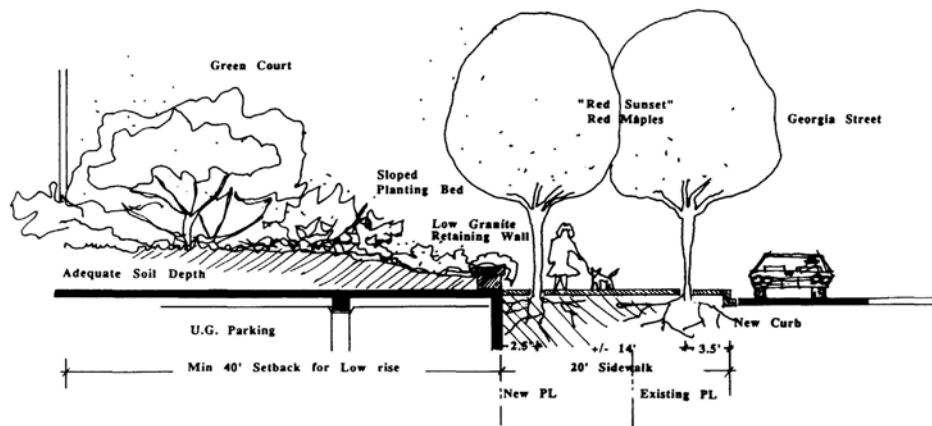
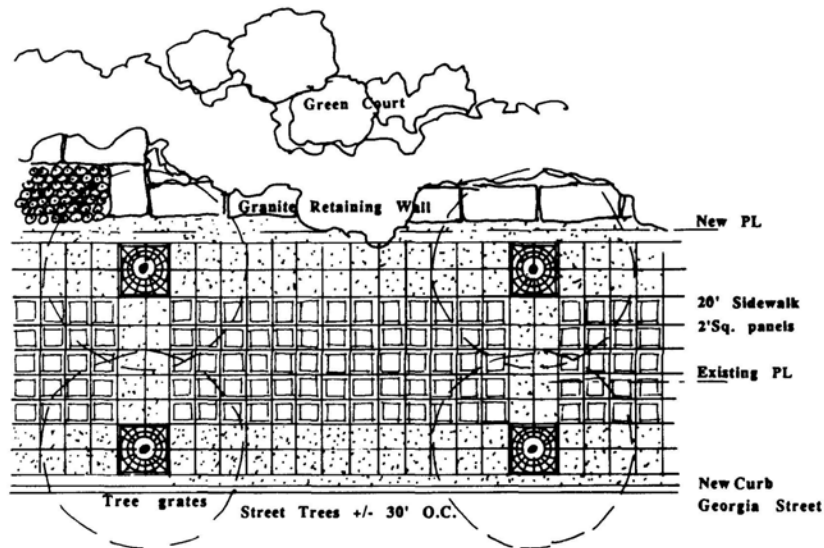


Figure 5. Sidewalk and Green Court Plan



8.3 Alberni Street Front Yards and Streetscape

New development can contribute to creation of a typical West End residential street character on Alberni. Typically, buildings will be set back 12 feet to create a landscaped “front yard”, and all buildings will have their front doors on this side of the “double block”.

- (a) Generally, the Alberni setbacks must give the feeling of typical West End residential front yards. This may be modified where commercial uses are located on Alberni.
- (b) “Front” yards for mid-rise and high-rise towers are for visually-oriented planting not active use. As such, fences are not appropriate, although low retaining walls and foundation plantings are acceptable.
- (c) Fences may be permitted for low-rise buildings to fence in ground level residents’ gardens or patios. However they must be designed and detailed to be compatible with the building. Low retaining walls, patios, decks and planters may also be permitted in the front yards of low-rise buildings. However, care must be taken to ensure that the overall appearance from the street is not dominated by walls and private space, but rather than the West End “front yard” character prevails.

- (d) The design of the Alberni streetscape should reflect that of the existing special routes and mini-parks west of Denman with concrete unit paver sidewalks and grass boulevards planted with a single row of street trees.

Appendix

Submission Requirements

Applicants should refer to the information required for significant development permit applications contained in the checklist in Brochure #3: **How To...Development Permits for Major Applications**.