



City of Richmond

6911 No. 3 Road
Richmond, BC V6Y 2C1
www.richmond.ca

Bulletin
Building Approvals Division
Permits Section

604-276-4000 Fax 604-276-4063

**Green Roofs and Other Options
Involving Industrial and Office Buildings
Outside the City Centre Bylaw 8385**

No.: PERMITS-44

Date: 2008-10-23

Purpose:

- To assist builders/owners and designers in meeting the objectives of Bylaw 8385, which are to reduce the amount of storm water runoff and to increase the amount of landscaping or to encourage other green building initiatives in industrial and office buildings outside the City Centre.

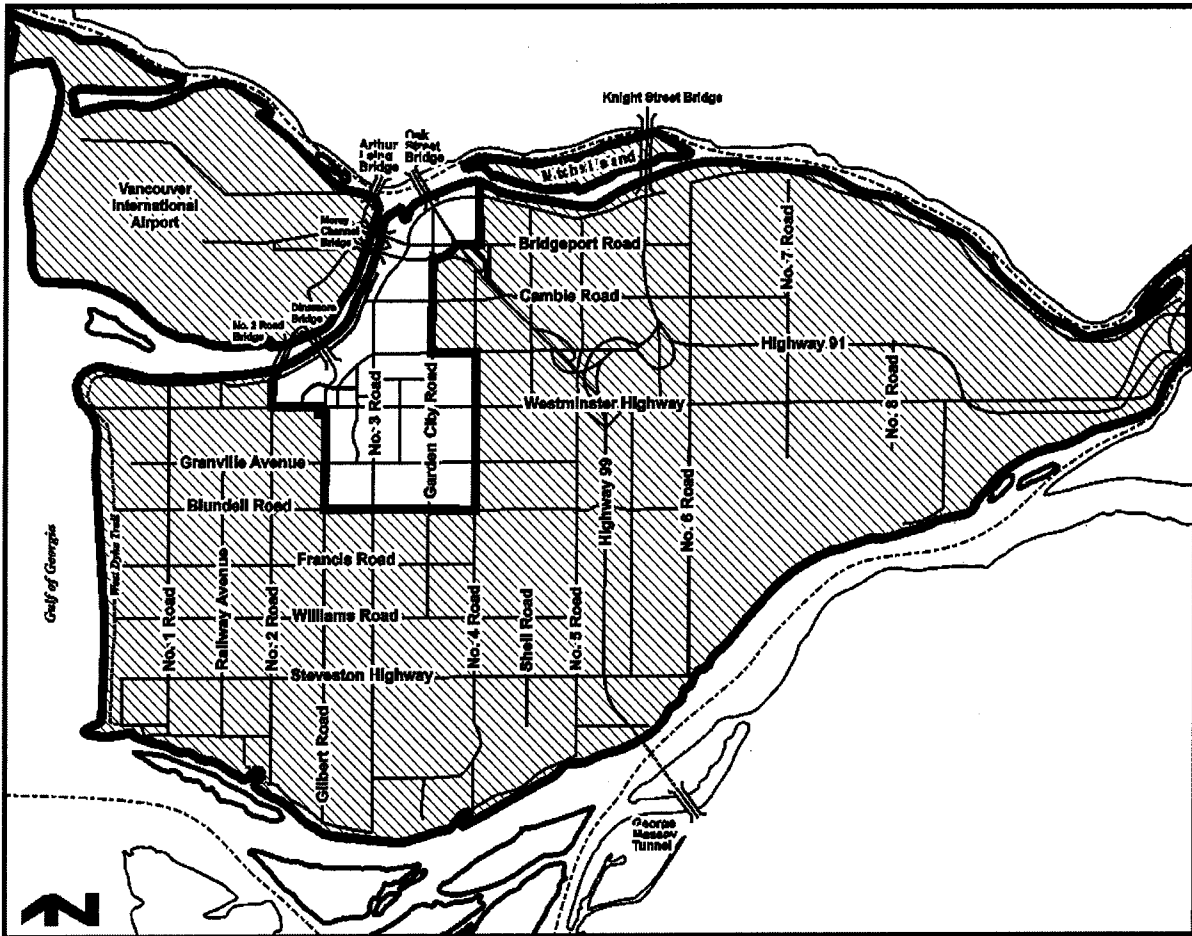
Background:

- Bylaw 8385 applies to every building or building addition:
 - (i) that will contain industrial or office uses in all or part of the building or building addition;
 - (ii) where those industrial or office uses will occupy a gross floor area* of 2,000 m² (21,529 ft²) or more; and
 - (iii) in the area outside the City Centre shown shaded on Attachment 1.
- * - Gross floor area is defined as "means the horizontal area of all or part of every building containing industrial or office uses measured above grade to the outer surface of the exterior walls, and to the midpoint of interior walls separating industrial or office uses from other uses". It applies to multiple Building Permits where the cumulative gross floor area is 2,000 m² (21,529 ft²) or more.
- Bylaw 8385 does not apply to:
 - (i) any building for which a Building Permit application was received prior to January 1, 2009;
 - (ii) internal renovations or alterations to existing buildings;
 - (iii) exterior renovations or alterations to existing buildings;
 - (iv) temporary buildings permitted under the City's Building Regulation Bylaw; and
 - (v) the existing building where a building addition is involved.
- Bylaw 8385 establishes a runoff control and storm water management objective to reduce the total annual volume of storm water runoff entering the City's storm sewer or drainage system by at least 20 percent of the volume that would enter the system by means of conventionally designed and constructed roof drains from a totally impermeable roof of equal area.
- Bylaw 8385 also establishes a landscaping enhancement objective to duplicate the amount of landscaping required by the City's Zoning and Development Bylaw with an equal area of landscaping on the building site or, with the City's approval, on other land owned by the City.

Implementation:

- Every Building Permit application subject to this Bylaw must be accompanied by assurance from a coordinating registered professional (i.e., a person who is registered or licenced to practice as an architect under the *Architects Act* or as a professional engineer under the *Engineers and Geoscientists Act*).
- Building Permit applicants can comply with the objectives of Bylaw 8385 if:
 - (1) a green roof* covering at least 75 percent of the roof area of the building or building addition to which this Bylaw applies is designed, constructed, operated and maintained;
or
 - (2) a LEED** Silver certification or equivalency, including the LEED Storm Water Management Credit, is obtained for the building or building addition.
- * - Green roof is defined as "means a professionally designed roofing system that allows for the propagation of rooftop vegetation and the retention of storm water while maintaining the integrity of the underlying roof structure and membrane, having a growing medium or soil depth of at least 2.54 cm (1 inch) planted with sedums, grasses or other vegetation that can withstand drought and excess water".
- ** - LEED stands for *Leadership in Energy and Environmental Design*. It is a *Green Building Rating System* used by the *Canada Green Building Council (CaGBC)* and is based on the work of the *United States Green Building Council (USGBC)*. For details regarding LEED Silver, the LEED Storm Water Management Credit and/or the LEED certification process, please consult a LEED accredited registered professional or the *CaGBC* and their various publications. A Building Permit applicant can achieve LEED Gold or Platinum instead of LEED Silver.
- Building Permit applicants can also comply with the objectives of Bylaw 8385 by designing, constructing, operating and maintaining a combination of building and site features or systems contained in Attachment 2. In doing so, the applicant must achieve a minimum of 100 points. The applicant may comply with the objectives of Bylaw 8385 and other additional objectives by means not specified in Attachment 2. This attachment will be reviewed as other green building initiatives are developed.
- Building Permit applicants should review all of the requirements of Bylaw 8385. For example:
 - The roof must be recognized by the *Roofing Contractors Association of B.C.* as being suitable for a green roof.
 - A landscape architect registered with the *B.C. Society of Landscape Architects* must prepare required landscape plans and undertake the necessary field review of the landscaping.
 - A covenant must be registered on the title of the building site in favour of the City indicating the owner's responsibilities in perpetuity or until approved redevelopment.
 - Council's approval will be required if the landscaping enhancements are proposed to be located on other land owned by the City of if the applicant proposes to vary or not comply with the requirements of the Bylaw.
- Should you have any questions, comments or suggestions concerning this bulletin, please contact the Building Approvals Division at 604-276-4285 or the Policy Planning Division at 604-276-4164.
- For a complete copy of Bylaw 8385, please visit the City of Richmond website at www.richmond.ca/cityhall/bylaws.
- Bylaw 8385 is scheduled to be reviewed in approximately 2 years after its adoption (e.g., early 2011). Builders/owners and designers will have the opportunity to be involved in this review.

Bylaw 8385 only applies to the area outside the City Centre shown shaded on the following map



Green Roof and Other Options Involving Industrial and Office Buildings Outside the City Centre Bylaw 8385
POINT SYSTEM – 100 POINTS MINIMUM REQUIRED

Mandatory Objective: Minimum reduction in the total annual volume of storm water runoff from the building site, equivalent to 20% of the building roof runoff (Must Be Met) by means of conventionally designed and constructed roof drains conducting storm water runoff from a totally impermeable roof of equal area

Option (Must chose at least one)	Methods	Total Number of Points
1. Green Roof covering at least 75% of the roof area	a) Extensive green roof or b) Intensive green roof, which could be used for local food production or outdoor amenity space	100 points
2. Built to LEED	a) Minimum LEED Silver certification or equivalency and meet the LEED Storm Water Management Credit b) Other LEED Credits that are encouraged but not required to be met include the LEED Renewable Energy Credit, LEED Green Power Credit and LEED Optimize Energy Performance Credit	100 points
3. Reduce Runoff by any one or combination of methods besides 1. Green Roof or 2. Built to LEED	a) Rainwater and detention cistern b) Permeable pavers or asphalt in the parking areas and manoeuvring aisles, not loading bays or drive aisles used by truck traffic c) Bioswale d) Partial green roof that does not address mandatory objective by itself e) Gravel ballast and other innovative roof structures f) Other methods	70 points

Secondary Objective: Minimum double the amount of landscaping required in the Zoning and Development Bylaw

Option (May chose one or both)	Methods	Total Number of Points
1. Rooftop Parking	a) Parking on the roof and equivalent area of intensive landscaping at grade	50 points
2. Enhanced Landscaping by any one or combination of a) to e) methods	a) Area is used for local food production, outdoor amenity space and/or as an environmentally sensitive area b) Vertical landscaping on at least 50% of the length of the walls visible from any highway, public trail or natural watercourse (which could, but doesn't need to be used for local food production) c) Trees in the staff and visitor parking area to provide 50% canopy cover in 10 years d) Other methods e) Intensive landscaping including native species in the rainwater and detention cistern, bioswale or other methods used for runoff control and storm water management	50 points 30 points

Bonus/Optional Objective: Encourage green building initiatives

Non-Mandatory Option (May chose more than one)	Methods	Total Number of Points
1. Energy & Atmosphere LEED Credits	a) LEED Renewable Energy Credit – supply at least 20% of the building's total energy use (as expressed as a fraction of annual energy cost) through the use of on-site renewable energy sources b) LEED Green Power Credit – provide at least 50% of the building's regulated electricity from renewable sources by engaging in at least a 2-year renewable energy contract c) LEED Optimize Energy Performance Credit – reduce building design energy cost compared to the energy cost of the reference building for energy systems regulated by standards stated in LEED	30 points

The applicant may comply with the objectives of Bylaw 8385 and other additional objectives by means not specified above.
 The point system will be reviewed as other green building initiatives are developed.