

Report to Council

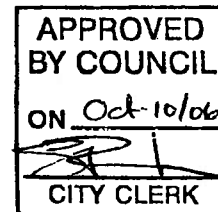
OCT 10 2006

DATE: October 2, 2006

TO: Mayor Scott Young and Councillors

FROM: Community and Economic Development Committee (CEDC)

SUBJECT: ZONING BYLAW AMENDMENT TO REQUIRE GREEN ROOFS
(Community and Economic Development Committee – September 28, 2006)



RECOMMENDATION

That Zoning Bylaw, 1987, No. 2240, be amended to require green roofs for all buildings with a footprint larger than 5,000 square metres (53,800 sq.ft.).

PURPOSE: To promote protection of the natural environment and environmentally responsible development by requiring large format buildings to have green roofs.

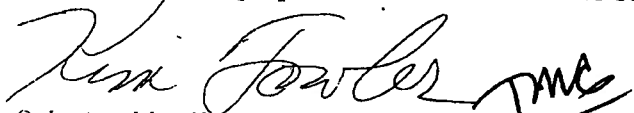
1. SUMMARY

At its meeting held September 28, 2006, the CEDC considered the attached staff report dated September 21, 2006 and resolved to support amending the Zoning Bylaw to require green roofs for large buildings. The primary purpose of the proposed regulation is to obtain environmental benefits including intercepting and reducing storm water run-off, improving building thermal performance and energy consumption and reducing the urban heat island effect. Secondary benefits would relate to enhanced views where dwelling units or offices overlook the roofs.

2. OPTIONS

Council may:

- 1) Direct staff to bring forward the amending bylaw as outlined in the staff report, following review of the draft wording by the municipal solicitor (recommended);
- 2) Request additional information regarding the concept prior to bylaw introduction; or
- 3) Reject the proposal if it does not wish to support the proposed requirement.



Submitted by Kim Fowler, MCIP, Director of Development Services with the concurrence of the Chair.

Attachment 1 - Staff report dated September 21, 2006 re Zoning Bylaw Amendment – Green Roofs

Report to Committee

DATE: September 21, 2006
TO: Community and Economic Development Committee (CEDC)
FROM: Kim Fowler
Director of Development Services
SUBJECT: ZONING BYLAW AMENDMENT FOR GREEN ROOFS

RECOMMENDATION

Zoning Bylaw, 1987, No. 2240, be amended to require green roofs for all buildings with a footprint larger than 5,000 square metres.

PURPOSE: To introduce an amendment to the Zoning Bylaw to require green roofs on very large commercial and industrial buildings.

1. BACKGROUND

1.1. Proposal. This report recommends an amendment to the Zoning Bylaw to require the roofs of buildings with a footprint of over 5,000 square metres (53,820 sq.ft.) in size to be "green roofs". A green roof is an engineered roofing system planted with vegetation to obtain environmental benefits.

2. POLICY AND REGULATIONS

2.1. Official Community Plan (OCP) Policy. Relevant policies included in the OCP promote protection of the natural environment and environmentally responsible development, including the consideration of low impact development standards (such as green roofs) for implementation.

2.2. Zoning Bylaw. Currently, the Zoning Bylaw does not impose low impact development standards and implementation of OCP policy in this regard is limited to negotiations either at the Development Permit stage or in site-specific zoning amendments. This proposed amendment would introduce a new regulation to implement a green roof requirement.

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3. COMMENTS AND ANALYSIS

3.1. Green Roof Technology & Benefits. The primary purpose for the new regulation is to obtain environmental benefits including intercepting and reducing storm water run-off, improving building thermal performance and energy consumption, and reducing the urban heat island effect. Secondary benefits would relate to enhanced views where dwelling units or offices overlook the roofs.

There is increasing technical knowledge about green roofs. One of the best local sources of information is the BCIT Centre for the Advancement of Green Roof Technology (www.greenroof.bcit.ca).

3.2. Regulatory Options. Green roofs are encouraged by Council policy, but unless there is either a requirement or an incentive, it is unlikely any buildings would be built with green roofs due to higher initial capital costs. This report proposes to make green roofs mandatory by adoption of a Zoning Bylaw regulation pursuant to s.909 authority of the *Local Government Act* to use landscaping to protect and enhance the natural environment .

The proposed regulation applies only to very large buildings to maximize the environmental benefits without significant impact on staff resources or costs to the development community if the regulation applied to smaller structures. Large format buildings typically exceed 5,000 sq.m. (53,821 sq.ft.) in size and many are well in excess of 10,000 sq.m. (over 100,000 sq.ft.) such as Costco (135,000 sq.ft.) and Home Depot (102,000 sq.ft.). As the implementation of green roof technology becomes more wide spread for smaller buildings, then reconsideration of the minimum building size may be made at a future date.

The regulation as drafted does not limit its application to a specific use. It is most likely to only apply to commercial and industrial buildings, because these may have such large footprints, although a large institutional building would also be subject to the regulation.

Existing buildings in Port Coquitlam which are larger than 5,000 sq.m. would become non-conforming to the green roof regulation as drafted. An alternative approach would be to make the regulation apply only to buildings built after a certain date, but this approach is not recommended because date-sensitive regulations can, over time, become difficult to administer. Furthermore, the non-conforming provisions of the *Local Government Act* allow repair and maintenance, including roof replacement, to existing buildings without being required to conform to the new regulation.

Some municipalities use density bonusing to encourage use of environmental measures. This approach is not applicable in our Large Format Commercial or Industrial Zones because the Zoning Bylaw regulations do not impose a limit on achievable density. There is also authority under the s.907 – Runoff Control of the *Local Government Act* which some communities may use to encourage green roofs by reducing infrastructure requirements. This approach is also not recommended. Although a green roof will reduce storm water flows in smaller events, it is unlikely to significantly affect peak flood rain events and the infrastructure requirements remain unaltered.

3.3. Financial Implications. The installation cost of a green roof is higher than a traditional roof; however the lifecycle cost is considered to be competitive by most analyses. The design of a green roof in the initial stages will minimize initial costs to the developer. Over the long term, green roofs offer substantial off-setting benefits to the owner including reduced heating and cooling costs. Green roofs reduce the energy required to cool or heat a building leading to significant cost savings. In summer, the green roof protects the building from direct solar heat. In winter, the green roof minimizes heat loss through added insulation on the roof.

The type of green roofs on large format buildings is typically designed as an “extensive” green roof, which does not allow for public use and is the least cost solution. If a green roof is designed for public access then costs are considerably higher. Examples of such “intensive” green roofs are found in many urban high density residential buildings, where the outdoor amenity area is designed as an intensive green roof over the parking podium.

3.4. Administration and Maintenance. The design professional for the large format building is required to ensure the building is appropriately designed to carry the roof load including plant material. The green roof should be designed by, and its installation overseen by, a Landscape Architect (BCSLA). The Development Permit authority to regulate landscaping can ensure this and require the BSCLA to inspect the planting and certify installation.

4. DRAFT ZONING BYLAW AMENDMENT

The wording of the draft bylaw amendment would be forwarded for review by the municipal solicitor following a decision by the CEDC in support of the amendment. The proposed draft wording for the bylaw amendment is as follows:

a) To insert the following definitions:

GREEN ROOF

Means an engineered 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.

BUILDING AREA

Building Area means the greatest horizontal area of a building above grade within the outside surface of exterior walls.

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b) To add the following Supplementary Regulation in Part V:

A commercial or an industrial building occupying a minimum Building Area of 5,000 sq.m. (53,821 sq.ft.) shall have a Green Roof that covers at least 75% of the entire roof area excluding areas covered by mechanical equipment.

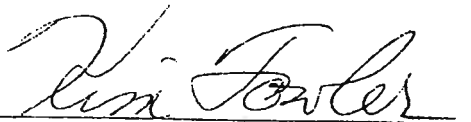
5. OPTIONS

The CEDC:

1. Recommend proceeding with the Zoning Bylaw amendment to require green roofs on large format buildings as proposed (recommended);
2. Request additional information or advice on the proposed regulation;
3. Request staff bring forward a proposed Zoning Bylaw amendment which applies only to buildings with building permits issued after a certain date or applies to other land uses or sizes of buildings; or
4. Reject the proposal if the Committee is of the opinion it does not wish to establish a mandatory green roof requirement for large format buildings.

6. SUMMARY

Council's policies call for the implementation of low impact development standards. As an important part of our initiatives to attain sustainable development, it is recommended our regulations be amended to require very large buildings to have green roofs.



Kim Fowler, MCIP
Director of Development Services