

BRIEFING NOTE

To: Deputy Mayor Joe Pantalone, Deputy Mayor Sandra Bussin, Members of the Roundtable on the Environment and the Roundtable on a Beautiful City

Topic: Making a Sustainable City Happen: The Toronto Green Development Standard

Background:

The report, *Making a Sustainable City Happen: The Toronto Green Development Standard 2006*, was presented to the Roundtable on the Environment on June 6, 2006, to the Roundtable on a Beautiful City on June 19, 2006, and to the Policy and Finance Committee on June 20, 2006.

At the request of the Roundtable on the Environment, the Policy and Finance Committee authorized the July 10 joint meeting of the Roundtables on the Environment and on a Beautiful City on the Toronto Green Development Standard, in order to provide an opportunity for further discussion and public input on it. The Chief Planner and Executive Director, City Planning, in consultation with the two Chairs of the Roundtables, is to report back to the July 18, 2006 meeting of the Policy and Finance Committee.

This briefing note addresses the some of the issues which arose during the above noted meetings with each of the Roundtables.

The Policy and Finance Committee also approved the recommendation of the Roundtable on the Environment requesting that the report on Toronto Green Development Standard be amended so that green roof infrastructure be identified as the optimum roofing structure while not discouraging the use of reflective roof material. The first part of this briefing note addresses that recommendation.

At the June 19 meeting of the Roundtable on a Beautiful City, a question was raised as to the benefit of having a Green Development Standard unique to Toronto, rather than making use of a well-recognized standard such as LEED. The second part of this briefing note addresses that question.

Issues

Proposed Amendment to the Toronto Green Development Standard: Urban Heat Island Reduction (see attached)

In order to address the Roundtable on the Environment's request to identify green roofs as the optimum roofing structure while not discouraging the use of reflective roof material, an amendment to the Urban Heat Island (UHI) Reduction development feature of the Toronto Standard is proposed, as per the attachment to this briefing note. It should be noted that Green roofs have also been identified as implementation strategies under other development features, including stormwater management and wildlife habitat, to achieve the Toronto Standard.

This amendment makes the Toronto Green Development Standard more consistent with the City's Green Roof Strategy, adopted by City Council in January/February 2006. It addresses the Roundtable on the Environment's motion by breaking down the Standard's minimum requirements for roof treatment by type of development. This is comparable to the approach taken by the City of Chicago, which was identified in the discussion of the Roundtable on the Environment as a good example of green roof requirements.

Chicago's Example

Chicago does not require green roofs on general development. However, it has a "Building Green/Green Roof" matrix, which is applied to about 5-10% of development applications (usually including the largest and most visible developments). These include "Planned Developments" (large scale projects – size varies according to zoning) and projects close to the lakefront or abutting the river.

Chicago's "Building Green/Green Roof" matrix includes some requirements for green roofs, but distinguishes its requirements according to the type of development. For example, it does not require green roofs on industrial buildings, unless the City provides financial assistance, in which case 10% coverage is required. As there is concern in Chicago to attract and retain industry, there was care not to make the green roof requirements too onerous for industry. Further, residential development with more than 20% affordable units requires no green roof. By contrast, the green roof requirements for large commercial buildings in the downtown core are much stronger, because the stormwater infrastructure in the downtown core is antiquated and stressed. Also, it is usually relatively easy to put a green roof on new large commercial buildings.

Chicago's Matrix allows green roof requirements to be waived in favour of the building being LEED certified or a smaller green roof plus LEED Certification (depending on the category). However, this rarely occurs, because the Mayor is a strong supporter of green roofs.

Explanation of the Proposed Amendment

The proposed amendment distinguishes between types of developments in its minimum requirements for roof treatment, with respect to UHI mitigation.

Minimum

For new public development, the amendment makes the Toronto Green Development Standard more consistent with the City Council adopted Green Roof Strategy which requires that, where feasible and practical, green roofs with coverage of 50% be constructed on all new City-owned buildings (and the buildings of Agencies, Boards and Commissions). The proposed amendment requires that public buildings have at least 50% green roof coverage, with the rest of the available roof space (not covered by green roof, other environmental technologies or mechanical equipment) covered with light coloured roofing that meets Energy Star performance standards. (This is equivalent to the preferred standard below).

For new private development, the amendment requires that the largest 10% of commercial and residential development projects (by Gross Floor Area) also meet the preferred standard of at least 50% green roof coverage, with the rest of available roof space covered with light coloured roofing that meets Energy Star performance standards. Focusing on the largest 10% of commercial and residential development is comparable to the Chicago approach, which applies green roof requirements to large developments and the lakefront area, amounting to approximately 5-10% of development applications.

For all other private development (such as industrial, smaller residential and smaller commercial development, amongst others), the minimum requirement is installation of a green roof, designed to the City's performance criteria, with at least 50% coverage, OR installation of light coloured roofing materials that meets Energy Star performance standards (SRI greater than 78 and emissivity greater than 0.9 according to ASTM Standard 408) for 75% of the roof, OR installation of a combination of both for 75% of the roof.

Preferred

The Toronto Green Development Standard's preferred option for roof UHI mitigation is a minimum of 50% green roof coverage, designed to the City's performance criteria, with the rest of available roof space covered with light coloured roofing that meets Energy Star performance standards.

Excellent:

The Toronto Green Development Standard's excellent option for roof UHI mitigation is at least 75% green roof coverage for both private and public buildings. The rest of available roof space must be covered with light coloured roofing that meets Energy Star performance standards.

The Reasons for Having a "Made-in-Toronto" Standard

There are several well-recognized private standards that are becoming popular rating systems for green development. A significant part of the discussion during the stakeholder consultation on the Toronto Green Development Standard surrounded the question of whether Toronto should adopt an

existing private standard, such as LEED, or formulate its own – and if so, how a “made-in-Toronto” standard should relate to private green rating systems. The details of the discussion on this topic can be found in Section 3 of *Making a Sustainable City Happen: The Toronto Green Development Standard 2006*.

It is important for the City that any Green Development Standard it adopts and promotes particularly addresses its key environmental issues or drivers. The Standard should reflect the City’s climate, geography, urban infrastructure, and legislative context, and help Toronto achieve its own particular environmental objectives. A detailed comparison of LEED, Green Globes, Energy Star for Homes, and R-2000 against Toronto’s environmental drivers showed that each of these systems had deficiencies in fully addressing Toronto’s key environmental needs. For example, no private rating system addresses the City’s objectives to improve the urban tree canopy. Moreover, the relative weighting of points or credits in private systems sometimes indicates a different set of priorities as compared to the City’s primary environmental drivers. Further, simply adopting a private standard would relegate responsibility for the setting of targets in the hands of a private third party agency.

In addition, a made-in-Toronto approach involves a process of extensive consultation with key stakeholders and the public which ensures that the Standard reflects the City’s evolving environmental objectives and community buy-in on what categories are included and where targets are set. This approach goes a long way to promoting acceptance of the Standard among developers, builders, and designers, as well as city staff.

For all of the above reasons, it was decided that Toronto’s Standard should be tailored to the City’s specific needs and policy direction. This is being achieved by drawing on existing City standards and targets from City programs, and supplementing them with the standards from private green rating systems like LEED and Green Globes.

It is important to note that the Toronto Standard is being designed so that it is complimentary to other popular standards, like LEED, since there is much value in the increasing popularity and marketability of those standards. As the Toronto Standard is being composed, close attention has been paid to LEED, Green Globes, and other credible green rating systems, to ensure compatibility. A column is included that identifies the specific credits or points from other rating systems that address each requirement of the Toronto Standard. This enables those who want to build to LEED, for example, to ensure that they can meet the Toronto Green Development Standard at the same time.

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Attachment: Proposed Amendment of the Toronto Green Development Standard: Urban Heat Island Reduction

Proposed Amendment of the Toronto Green Development Standard: Urban Heat Island Reduction

	Development Feature	Existing City Standards, Guidelines or Targets	The Toronto Green Development Standard 2006	Relationship to other standards
Air Quality	Urban Heat Island: At-grade		<ul style="list-style-type: none"> ▶ Provide natural cover, including trees, that shade at least 30% of surface parking areas and other hard surfaces ▶ Use light coloured materials for 50% of the hardscape. 	<ul style="list-style-type: none"> • Satisfied by LEED SS 7.1 • Satisfied by Green Globes Site B.2
	Urban Heat Island: Roof	<ul style="list-style-type: none"> • Green Roof Strategy, adopted by City Council in 2006. • Green Roof Performance Criteria: 6 inch depth, 50% coverage, non-monoculture. 	<ul style="list-style-type: none"> ▶ <u>Minimum:</u> Public Buildings: install a green roof with 50% minimum coverage according to preferred criteria, described below. Commercial Properties with a Gross Floor Area (GFA) > 10,000 m² and Residential Properties with a GFA > 20,000 m²: install a green roof with 50% minimum coverage according to preferred criteria, described below. For all other development: install a green roof with 50% minimum coverage OR install light coloured roofing materials with SRI greater than 78 and emissivity greater than 0.9 according to ASTM Standard 408 for 75% of the roof OR install a combination of both for 75% of the roof. • <u>Preferred:</u> Install a green roof with at least 50% coverage of the roof. The rest of available roof space (not covered by green roof, other environmental technologies or mechanical equipment) must be covered with light coloured roofing materials, as defined above. • <u>Excellent:</u> Install a green roof with at least 75% coverage of the roof. The rest of available roof space must be covered with light coloured roofing materials, as defined above. 	<ul style="list-style-type: none"> • Addressed by LEED SS 7.2 • Addressed by Green Globes Site B.2 • Light coloured roofing requirements satisfied by Energy Star