



The Corporation of **THE CITY OF NORTH VANCOUVER**  
**FINANCE DEPARTMENT**

**FINANCE INFORMATION REPORT**

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To: Mayor Darrell R. Mussatto and Members of the Council

From: Glenn Stainton Manager, City Facilities

**SUBJECT: LEED STANDARDS FOR CITY OF NORTH VANCOUVER BUILDINGS**

File:

Date: November 30, 2006

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*The following is a suggested recommendation only. Please refer to Council Minutes for adopted resolution.*

**RECOMMENDATION**

**THAT the City adopt the LEED Canada Building Rating System as the standard by which to assess building performance;**

**AND THAT the City undertakes to achieve LEED Gold accreditation as its preferred standard for all newly constructed civic buildings greater than 929 sq.m. (10,000 sq.ft);**

**AND THAT the City establish LEED Silver level of building performance as the minimum acceptable building standard for all newly constructed civic buildings greater than 929 sq. m. (10,000 sq, ft); and all such civic building projects that are classified as “Major Renovation” projects in the City Capital Plan;**

**EXCEPT THAT when a major renovation is undertaken of an existing facility which is also a Registered Heritage Property, priority shall be given to heritage conservation in the event that a conflict exists between heritage retention and the application of the LEED construction standard.**

## **PURPOSE**

The purpose of this report is to recommend to Council the adoption of a LEED construction standard as a mean to encourage the sustainable high performance construction practices for City owned buildings and building construction projects. This policy would require that all civic buildings that are owned, constructed, financed or utilized by the City of North Vancouver be constructed to performance standards comparable to that of LEED standards.

## **DISCUSSION**

According to reports published by the United States Green Building Council (USGBC), buildings in North America account for 17% of the amount of fresh water used 25% of the use of wood forest products, 35% of Carbon Dioxide emissions and 54% of the energy consumption annually in North America.

Given the City of North Vancouver's ongoing commitment to the reduction of green house gas emissions, and continuing support of the principles of environmental sustainability, it is important the City reinforce this commitment through the adoption of a leadership position that sets an example in the encouragement of the use of high performance building standards in the management and construction of its building infrastructure.

The LEED building rating system, or Leadership in Energy and Environmental Design, for Green Building Systems, was developed by the US Green Building Council to provide building performance rating levels. This rating system was adapted by the Canadian Green Building Council in 2002 to reflect Canadian environmental conditions. The City of North Vancouver is a member of the Canadian Green Building Council. Under the LEED rating system, a project or building earns a series of credits for various building attributes that provide for of sustainable building performance. The LEED design process results in an environmentally sustainable building that provides significant long term benefits in reduced operational costs, as well as a reduced environmental impact and longer capital life expectancy.

Current studies indicate that a typical additional capital investment of two percent in construction costs to incorporate LEED features will yield overall lifecycle cost savings of approximately ten times the initial capital investment, through the reduction of energy expenditures, and operational maintenance savings, as well as potential employee productivity improvements.

Environmentally sustainable building practices are being more and more implemented by the construction industry and as a result the incremental costs of 'building green' have come down substantially to the point where the level of LEED Silver has in effect become the building norm for sustainable construction practices.

A 2003 LEED audit of the City of Vancouver South East False Creek Olympic project has indicated that the incremental cost of a LEED Silver project was 1 to 2% over standard building practices. This cost relationship is such that the additional incremental cost decreases to less than 1% if the overall capital cost exceed one million dollars and the building size increases.

<b>LEED™ Rating</b>	<b>Certified</b>	<b>Silver</b>	<b>Gold</b>	<b>Platinum</b>
LEED™ Points	26 to 32	33 to 38	39 to 51	52 to 69
Energy Savings	25 to 35%	35 to 50%	50 to 60%	>60%
Annual Utility Savings	\$0.75/ft <sup>2</sup>	\$1.00/ft <sup>2</sup>	\$1.25/ft <sup>2</sup>	\$1.50/ft <sup>2</sup>
Typical Payback	Under 3 yrs	3-5 yrs	5-10 yrs	10+ years

The City's current experience on the Library and Civic Precinct project has indicated that the cost to achieve LEED Silver will be approximately 1% of the total cost of construction (TCC). It is anticipated that the cost premium to achieve LEED Gold on the Library / Civic Precinct project will be between 2.5 to 3% of the total cost of construction.

The incremental or premium cost to move from one LEED level to another is best considered as a range, as the cost differential is dependant on many specifics that are unique to each project. More simply stated, the cost of obtaining LEED Gold is not the same percentage on all projects. This is partially due to the fact that LEED points cost different amounts on different projects. Furthermore, as the following table indicates, not all LEED points are created equal, nor do they have the same cost to achieve:

## A “Value-Based” Perspective



It must also be remembered that the LEED rating system is only one of many types of building performance rating systems and these rating systems are simply guides to aid in the selection of environmentally friendly building choices. The LEED system in particular does not provide an overall rating of environmental sustainability, as many environmental initiatives are not recognized by the LEED system.

On the current Library Civic Plaza project, there is no acknowledgement or LEED credit given for the Lonsdale Energy Corporation (LEC) mini plant and the use of a community based energy distribution system, even though from an overall community perspective this is an important environmental initiative.

On all construction projects, staff are invariably faced with a basket of environmentally desirable choices from which to select. Individually, each choice represent a sound and supportable environmental practice, however at a higher level the project rapidly experiences a scenario of diminishing economic and environmental return on investment. For example, is the incremental cost of reducing water use on the project from 30% to 20%, or the provision of a renewable energy system (photo voltaic), simply in order to achieve a LEED Gold level, the best use of project funds? Perhaps these funds should be spent on other community environmental options that are perhaps not recognized by the LEED system, but that support larger community sustainability initiatives?

For these reasons, staff feels that it is important that the proposed City standard for building construction allows a degree of flexibility regarding which LEED rating level will be applied to a specific project. This flexibility will allow Council the opportunity to choose from a range of environmental initiatives on a project by project basis, in

accordance with available corporate budgets and the range of sustainability choices that will be available for each project.

Finally, the recommendation contained in this report discusses only the aspect of complying with the LEED certification. An additional step that may be considered is the actual certification of the work/building by an external consultant. This process may be onerous (\$60,000 per building) and will lead to the projects accreditation, it is suggested that this accreditation process be considered on a project by project basis. The current Library Civic Plaza project is seeking full accreditation under the LEED program.

Almost all municipalities within the Greater Vancouver Regional District have adopted the principles of environmentally sustainable building design for new civic construction projects.

For example:

The City of Vancouver has adopted a policy that requires that all civic buildings greater than 500 sq.m. (Approximately 5,000 sq.ft.) be constructed to minimum of a LEED's Gold standard including the full cost of accreditation under the LEED program.

The City of Richmond has adopted a policy that requires that the LEED Gold accreditation level be set as the desired standard of building performance for new City buildings greater than 2000 sq.m. (approximately 20,000 sq.ft.), and LEED Silver certification standard for all new buildings and major renovations to existing facilities and for new city buildings smaller the 2000 sq.m., without necessarily seeking formal LEED accreditation.

The City of Victoria is currently considering the adoption of a minimum of a LEED Silver certification standard for all new civic buildings (although this policy is still under review).

Neither the City of New Westminster, nor the City of White Rock, has formal policies that require the use of an environmental rating system such as the LEED rating system. However both municipalities do strive to incorporate sustainable building principles into their civic projects.

## **FINANCIAL IMPLICATIONS**

The cost implications of this recommendation will vary on a project by project basis. However the adoption of a minimal LEED Silver construction standard on civic projects can be justified in terms of financial payback, given the operational cost savings and other benefits achieved.

The adoption of a preferred LEED Gold standard would likely result in an increase in project capital costs of between two to three percent, and possibly more, dependant on the specifics of that project. Whether the environmental and sustainability benefits

achieved by this expense are reasonable in relation to the capital expenditures is a decision that should be made on a project by project basis and balanced against other competing environmental initiatives.

**INTER-DEPARTMENTAL IMPLICATIONS**

The input and involvement of Community Development, Engineering, Parks, and Finance Departments has been sought in the creation of this report.

**CORPORATE PLAN AND/OR POLICY IMPLICATIONS**

This project supports the City of North Vancouver’s overall Strategic Plan Objectives and the specific community goal of “Our goal is to achieve a safe and sustainable community by providing new and renewed public amenities and services that our community values, within our fiscal framework...”

**RESPECTFULLY SUBMITTED BY:**

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Glenn Stainton, Manager, City Facilities  
Finance

**APPROVED BY:**

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Isabel Gordon, Director of Finance  
Finance

**REVIEWED BY:**

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A.K. Tollstam  
City Manager