Agenda - Council – July 21, 2010

Report - Standing Policy Committee on Property and Development – July 6, 2010

Item No. 2 Green Building Policy – New City-Owned Buildings and Major Additions
eFile EB

STANDING COMMITTEE RECOMMENDATION:

On July 14, 2010, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Property and Development and submits the following to Council:

1. That the City of Winnipeg adopt the "Green Building Policy – New City-Owned Buildings and Major Additions", as outlined in Appendix 1 to the report of the Winnipeg Public Service dated June 28, 2010, for all new City buildings and major additions larger than 500 square meters (5,400 square feet) effective January 1, 2011.

2. That the Winnipeg Public Service be directed to prepare a Green Building Policy for existing civic buildings and report back within 120 days.

3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Agenda - Council – July 21, 2010

Report - Standing Policy Committee on Property and Development – July 6, 2010

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On July 14, 2010, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Property and Development and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On July 6, 2010, the Standing Policy Committee on Property and Development concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

On June 8, 2010, the Standing Policy Committee granted the Winnipeg Public Services an extension of time to July 6, 2010 to report back to the appropriate committee of Council with a Green Building Policy that includes, but is not limited to, the following criteria:

1. Demonstration of anticipated cost savings through the implementation of a life-cycle costing model;

2. Provisions to ensure that all new City buildings will be built to the LEED silver standard or an equivalent; and

3. Anticipated emission reductions as a result of its implementation

On February 2, 2010, the Standing Policy Committee on Property and Development passed the following motion, namely:

WHEREAS on April 30, 2008 the Executive Policy Committee passed a motion that directed the Winnipeg Public Service to develop a Green Building Policy that includes, but is not limited to:

1. Demonstration of anticipated cost savings through the implementation of a life-cycle costing model;

2. Provisions to ensure that all new City buildings will be built to the LEED silver standard or an equivalent; and

3. Anticipated emission reductions as a result of its implementation

Report - Standing Policy Committee on Property and Development – July 6, 2010

DECISION MAKING HISTORY: (continued)

STANDING COMMITTEE RECOMMENDATION: (continued)

AND WHEREAS it is desirable to provide the Winnipeg Public Service with a specific date by which such Green Building Policy should be submitted to the appropriate committee of Council for consideration;

THEREFORE BE IT RESOLVED THAT the Winnipeg Public Service be directed to report back to the appropriate committee of Council within 120 days with a Green Building Policy including, but not limited to, the above criteria.

ADMINISTRATIVE REPORT

Title: **Green Building Policy --New City-owned Buildings and Major Additions**

Critical Path: **Standing Policy Committee on Property and Development – Executive Policy Committee - Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
P. Regan	D. Joshi	J Ferrier	A Robinson Deputy CAO

RECOMMENDATIONS

1. That the City of Winnipeg adopt the "Green Building Policy – New City-Owned Buildings and Major Additions", as outlined in Appendix 1, for all new City buildings and major additions larger than 500 square meters (5,400 square feet) effective January 1, 2011.

2. That the Winnipeg Public Service be directed to prepare a Green Building Policy for existing civic buildings and report back within 120 days.

3. That the proper Officers of the City do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

On April 30, 2008, Executive Policy Committee directed the Winnipeg Public Service to develop a Green Building Policy that includes, but is not necessarily limited to:

- Demonstration of anticipated savings through the implementation of a life-cycle costing model;

- Provisions to ensure that all new City buildings will be built to LEED Silver standard or an equivalent;

- Anticipated emission reductions as a result of its implementation.

IMPLICATIONS OF THE RECOMMENDATIONS

Why a Green Building Policy?

- Studies carried out by the U.S Green Building Council as well as the Department of Natural Resources Canada have shown that building use is responsible for:
    - 65% of total electricity consumed
    - 36% of total energy consumed
    - 12% of potable water
    - 40% of global material flow

- In addition, building supply and construction activities generate:
    - 33% of the waste stream through construction, renovation and demolition activities
    - 30% of greenhouse gas emissions

- It has been well documented that municipal green buildings can:
    - Optimize capital, operating, and life cycle costs
    - Reduce long-term infrastructure costs for large-scale projects
    - Protect against volatile energy prices
    - Increase productivity in the workplace

- The Council- endorsed *A Call to Action for OurWinnipeg* identifies the establishment of green building standards for new and renewed City-owned buildings, as a short-term action supporting the *OurWinnipeg* Plan. Further, the Draft *A Sustainable Winnipeg Direction Strategy* puts forward a Direction to incorporate sustainable practices into internal civic operation, programs and services

- As a key player in community development, the City has the opportunity to demonstrate leadership in sustainable development by ensuring its buildings are of high quality, managed in a fiscally responsible and environmentally sustainable manner

- All new buildings and major additions to existing buildings have the potential to be designed, constructed and operated in accordance with the Canada Green Building Council's Leadership in Energy and Environmental Design (LEED) Rating System

What is LEED Certification?

- **Leadership in Energy & Environmental Design (LEED)** is a green building certification system developed by the U.S. Green Building Council. LEED is a set of internationally recognized standards for the design, construction and operation of "green" buildings.

- LEED outlines a specific design process and provides a checklist of items for projects to follow, with each item assigned one or more points. These items are divided into seven categories:
    - Sustainable Sites
    - Water Efficiency
    - Energy and Atmosphere
    - Resources and Materials
    - Indoor Environmental Air Quality
    - Innovation in Design
    - Regional Priority

- The specific standard being referenced in the City of Winnipeg's Green Building Policy is LEED Canada NC 2009. This standard applied a points system (maximum 110 points) to a new building (or major addition), with those scoring 50-59 points eligible for "Silver" level certification.

- To be certified, a building must be registered prior to construction, and then certified (verified) after construction is complete. A third-party verification process is required to formally receive LEED certification.

- Buildings certified as LEED Silver have been shown to cost less to operate, to provide improved employee productivity and satisfaction, and to reduce strain on local infrastructure. Generally, LEED certification is seen as a benchmark in green building achievement and as a marketable recognition of a commitment to sustainable development.

Green Building Policies in Other Canadian Cities

- Appendix 2 provides a summary of Green Building Policies for new civic buildings in other Canadian municipalities. All cities are utilizing the Canada Green Building Council LEED Rating System. The majority of municipalities have mandated the LEED Silver standard, with one municipality mandating Gold and another mandating Certified, with a goal of Silver. All municipalities require LEED registration and certification for their new civic buildings.

- The Province of Manitoba has established a Green Building Policy that requires all new Provincial buildings to be constructed to LEED Silver standard. In addition, all building projects funded by the Province must meet LEED Silver standard. Several City projects that have received provincial funding have been designed and constructed to LEED Silver standard.

Proposed Green Building Policy for New City-owned Buildings and Major Additions

The proposed Green Building Policy outlined in Appendix 1 will provide a framework and set of tools to construct City-owned buildings in a more efficient, healthy and ecologically-responsible manner.

The policy proposes that all new City-owned buildings and major additions larger that 500 square meters be designed, delivered and constructed to a LEED Silver standard at minimum, and that projects be formally LEED certified. The anticipated additional costs associated with the implementation of the policy are estimated to be about 5% of the capital costs of a given project, although this will be balanced (and offset) by operational savings over the life of the building. This cost premium includes the cost of enhanced building systems, materials and practises to meet the LEED Silver standard, as well as project registration, documentation and third-party certification. For this reason, the proposed policy directs Departmental Directors to factor in an additional 5% into the capital budget estimates for the design and construction of new city-owned buildings and major additions.

Following are the anticipated impacts of this proposed policy:

Economic Implications:

A discussion on costs for green municipal buildings must include the building's total cost of ownership over a period of 35 to 50 years. This means capital, operational, and external costs. It has been demonstrated that when compared to all costs related to building ownership, operation and maintenance, the capital cost is often a small percentage of the total cost. Considering cost for the entire life of the building allows for a complete and accurate picture of the cost implications of green building.

- Capital Costs
    - There is no formula to calculate the capital cost premium with certainty for green projects, or to determine whether any premium will exist. In fact, the *US GSA LEED Cost Study,* by the U.S. General Services Administration concluded that:
        - A range of different strategies and costs can often be used to earn the same individual LEED credit
        - Multidisciplinary integrated design solutions can significantly reduce the cost of achieving LEED credits
        - The costs of some credits vary significantly based on the building type, size, and location
        - Costs of LEED certification according to a study by Gregory Kats show that the cost premium for a building certified to Silver standard varies from: 0% - 5% of the total capital cost for the project

- Operating and Maintenance Costs and Benefits
    - For green buildings, the focus must look beyond capital costs to consider the impact of the LEED credits selected on the recurring operating costs that will be paid by the owner over the life of the building.
    - Experience with LEED certified buildings has demonstrated annual utility cost savings of up to 25% over current practices
    - Reduced life cycle costs through enhanced material selection. A comprehensive report prepared by California's Sustainable Buildings Task force entitled "The Costs and Benefits of Green Buildings" determined that an additional minimal upfront investment of about 2% of construction costs typically yields savings of over ten times the initial investment – through things such as increased insulation, upgraded windows, enhanced use of lighting controls and enhanced water management devices.

- Project Registration and Certification Costs
    - To be LEED certified, a building must be registered prior to construction, and then certified (verified) by a third party after construction is complete.
    - Registration fees are paid at the time of registration, and currently range from $500 to $3,000 based on building area.
    - Certification fees are paid when the project's documentation is submitted and currently range from $3,700 to $18,500 based on building area.

- Other Economic Benefits
    - Green building practices support the local economy and the creation of local new jobs and industries
    - Increased value of buildings - whole building studies exploring the net present values of pursuing green buildings versus conventional buildings have illustrated increased values from $10 to $400/ft2 ($107 - $4,300/m2) depending on the length of time analyzed (20 - 60 years) and the degree to which the buildings employ green strategies. Generally, current studies also conclude that the greener the building, the higher the net present value.
    - Reduced material consumption during manufacturing and transportation of selected building products

Staffing Implications

- Although not required, it is recommended by LEED (and advantageous to the project) to have a LEED Accredited Professional working on the integrated design team for the project from its inception. Currently, eight City of Winnipeg employees have attained LEED Accredited Professional status and several others are pursuing accreditation.
- Minimal additional staff time is anticipated to implement the Green Building Policy. Staff within the Municipal Accommodations Division of the Planning, Property and Development Department are currently applying LEED requirements to the Silver standard on new construction projects for City-owned building projects that have received funding from the Province of Manitoba, in accordance with the Provincial policy put in place in 2008 requiring that all projects receiving provincial funds be constructed to LEED Silver standard.

Environmental Implications:

The adoption of sustainable building practices such as those defined by LEED Silver will result in significant environmental benefits and associated cost savings, including:

- Reduced greenhouse gas emissions
- Reduced CO2 emissions through reduced overall energy usage
- Reduced environmental impact of construction on local ecosystems (i.e., by reducing storm water run-off and decreasing pollutants)
- Reduced landfill requirements through the reuse and recycling of construction, renovation and demolitions of other solid waste materials (which in turn closes the loop by encouraging the use of materials that contain recycled content);
- Demonstrated leadership in the employment of innovative green technologies, encouraging their eventual adoption by the private sector (such as green roofs, waterless urinals, or photovoltaic panels)

Social Implications:

- The following green building strategies have been shown to mitigate health-related problems associated with poor building design and construction practices:
    - Use of natural ventilation
    - Selection of low-toxic and low-emitting materials
    - Access to daylighting and views
    - Improved thermal comfort and user control
- Studies demonstrate that productivity increases from 6% to 16% can be expected as a result of green construction
- In addition to productivity gains, green buildings can also reduce health care costs by:
    - Reducing communicable diseases by 9 – 20%
    - Reducing allergies and asthma by 18 – 25%
    - Reducing general health complaints and discomfort by 20 – 50%
- The indoor air quality of green buildings can contribute to the popularity of these facilities. Following its green renovation and expansion, the West Vancouver Aquatic Centre experienced a 300% increase in visitors. Users indicated they appreciated the improved indoor air quality as a result of the renovations.

Green Building Policy for Existing Civic Buildings

New buildings constitute a very small percentage of the City's building inventory. Recommendation 2 of the report proposes that the Public Service prepare a complementary Green Building Policy for existing buildings to ensure that renovations and upgrades incorporate green building technologies and practices where appropriate. Both LEED and BOMA (Building Owners and Managers Association) have certification processes for existing buildings and as such, both will be considered as part of the analysis for the development of the policy.

HISTORY

On February 2, 2010, Standing Policy Committee on Property and Development directed the Winnipeg Public Service to report back with a Green Building Policy within 120 days.

FINANCIAL IMPACT

Financial Impact Statement Date: June 25, 2010

Project Name:

Green Building Policy – New City-owned Buildings and Major Additions

COMMENTS:

The recommendations contained in this report include that the City of Winnipeg adopt the "Green Building Policy – New City-Owned Buildings and Major Additions", as outlined in Appendix 1, for all new City buildings and major additions larger than 500 square meters (5,400 square feet) effective January 1, 2011. The anticipated additional costs associated with the implementation of the policy are estimated to be about 5% of the capital costs of a given project, although this will be balanced (and offset) by operational savings over the life of the building.

The financial implications of this proposed policy will be included in future capital budget submissions, beginning with that of 2011, as well as future current budget submissions with respect to reduced operating expenditures.

"Original Signed By"
Mike McGinn, CA
Manager of Finance

CONSULTATION

In preparing this report there was consultation with:

Planning, Property and Development
- Municipal Accommodations Division, Planning, Property and Development
- Environmental Coordinator, Planning, Property and Development

SUBMITTED BY

Department	Planning, Property and Development
Division	Planning and Land Use
Prepared by:	P. Regan
Date:	June 28, 2010
File No.	O:/Reports Directive/Planning and Land Use/Manager/Green Building Policy.doc

Appendix 1:

City of Winnipeg Green Building Policy – New City-owned Buildings and Major Additions

Effective Date: January 1, 2011

Policy Statement

The City of Winnipeg (the "City") is committed to leading by example in environmental, economic and social stewardship, by ensuring that new City-owned* buildings and major additions be designed and constructed in accordance with the Canada Green Building Council (CaGBC) LEED Green Rating System LEED NC - Canada "Silver" standard, and be formally LEED certified.

* In this policy, City-owned buildings refers to buildings used to deliver municipal services, that are owned outright by the City of Winnipeg as well as those acquired under capital lease arrangements and/or developed under other arrangements such as public-private partnerships.

Purpose

The purpose of this policy is to ensure that City-owned new facilities and major new additions are designed, constructed and operated to an environmentally, economically and socially sustainable standard that benefits all Winnipeg residents, now and in the future, in support of the City of Winnipeg's vision:

Living and caring because we plan on staying.

The Policy will:

- Fulfill the commitment to the development of Green Building Standards outlined in *A Call to Action for OurWinnipeg;*
- Reduce operating costs to the City through the use of improved energy and water efficiency and storm water management;
- Reduce landfill requirements by encouraging the reuse and recycling of construction, renovation and demolitions other solid waste materials (which in turn closes the loop by encouraging the use of materials that contain recycled content);
- Show leadership in terms of sustainable design and encourage all development within the city to follow the principles set out in this policy;
- Promote a safe, healthy and productive place for employees and visitors

Policy Requirements

All newly constructed City-owned buildings and major additions with a footprint greater than 500 square meters (5,400 square feet) must be designed and constructed to meet the Canada

Green Building Council (CaGBC) LEED Green Rating System LEED NC - Canada “Silver” standard as a minimum, and be formally LEED certified.

All new City-owned buildings or additions of 500 square meters or under will be designed and constructed using LEED NC as a guide for the incorporation of green building strategies appropriate to the intended use of the building.

Application

This policy applies to all employees involved in the design and construction of new City-owned buildings and major additions with a footprint greater than 500 square meters (5,400 square feet).

Exemptions

No new City-owned buildings or major additions with a footprint greater than 500 square meters (5,400 square feet) will be exempt from this Policy without a LEED audit supporting an exemption.

Responsibilities

Departmental Directors:
Will be responsible to ensure that project budgets contain the 5% investment funding required to support the delivery of LEED – Canada “Silver” building projects.

Municipal Accommodations Division, Planning, Property and Development Department:
Project managers implementing individual projects governed by this policy will be responsible for:

- delivering LEED – Canada “Silver” certified new building and major addition projects using an integrated design approach
- ensuring that all RFP and tender documents identify the requirement to have project compliant with LEED – Canada ‘Silver’ ratings.
- ensuring that the required documentation for LEED registration and certification are compiled and submitted at the appropriate interval(s) during the project
- conducting LEED audits as required

Monitoring/Contraventions

The Municipal Accommodations Division of Planning, Property and Development are responsible for the delivery of all new or renovated city buildings. When a building project falls within the parameters of the "Green Building Policy", Municipal Accommodations Division will include the appropriate language in both the consultant and the construction contracts to ensure

compliance with the policy requirements. Failure to comply with the requirements of the contract language will be administered through the legal avenues provided within each contract.

The Municipal Accommodations Division will produce an annual report identifying the conformance of City projects with the "Green Building Policy".

The Municipal Accommodations Division will be responsible for reporting on building performance of City-owned LEED “Silver” certified buildings on an ongoing basis.

The Environmental Coordinator will be responsible for reporting on greenhouse gas emission reductions associated with City-owned LEED “Silver” certified buildings on an ongoing basis.

Background to the Standard - Leadership in Energy & Environmental Design (LEED)

As the sector of green building evolves, it is helpful to have standards to guide design and new construction. These standards provide comparability across projects and ensure achievement of desired performance through third-party verification of green building results.

Leadership in Energy & Environmental Design (LEED) is a green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance related to energy and the environment, including: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. LEED is an internationally accepted benchmark for the design, construction and operation of high performance green buildings.

LEED was created by the United States Green Building Council in 1998 and has since expanded to include national standards elsewhere. In Canada, LEED is administered by the Canadian Green Build Council (CaGBC). A variety of LEED standards exist – including those related to new construction (NC), schools, commercial interiors and neighbourhoods.

The specific standard being referenced in the City of Winnipeg’s Green Building Policy is LEED Canada NC 2009. This standard applied a points system (maximum 110 points) to a new building (or major addition), with those scoring 50-59 points eligible for “Silver” level certification.

To be certified, a building must be registered prior to construction, and then certified (verified) after construction is complete.

Buildings certified as LEED “Silver” have been shown to cost less to operate, to provide improved employee productivity and satisfaction, and to reduce strain on local infrastructure. Generally, LEED certification is seen as a benchmark in green building achievement and as a marketable recognition of a commitment to sustainable development.

See: http://www.cagbc.org/leed/systems/new_construction/index.php

Appendix 2:
Green Building Policies in Other Canadian Municipalities

Municipality	Approval Body Date	Certification Level	Policy Detail
Calgary	*Sustainable Building Policy* Adopted September 13, 2004	LEED Gold	All municipal facilities over 500 square meters are required to meet LEED Gold standard.
Edmonton	*Sustainable Building Policy – Leadership in Energy and Environmental Design (LEED) Silver* Adopted June 19, 2007	LEED Silver	Effective January 1, 2008, all new City-owned buildings will be designed and constructed to meet LEED Silver Standard at a minimum, and be formally LEED certified.
Ottawa	*Green Building Policy for the Construction of Corporate Buildings* Adopted September 28, 2005	LEED Certified	All new civic buildings (greater than 500 square meters) will be designed and delivered in accordance with the 'Certified' performance level of the LEED Canada Building Rating System.
Vancouver		LEED Gold	All new civic facilities over 500 square meters are required to be LEED Gold and 30% more energy efficient that standard construction.
Victoria	*Civic Green Building Policy* Adopted August 23, 2007	LEED Silver – with a goal of LEED Gold	All new construction of civic facilities to be LEED Silver – with a goal of LEED Gold.