

**Report to
Rapport au:**

**Environment and Climate Change Protection Committee / Comité de
l'environnement et de la protection climatique**

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**Submitted by
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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE File Number: ACS2018-PIE-IS-0006

SUBJECT: Green Building Report – Status Update

OBJET: Politique sur les bâtiments écologiques – rapport de situation

REPORT RECOMMENDATIONS

**That the Environment and Climate Protection Committee receive this report for
information.**

RECOMMANDATIONS DU RAPPORT

Que le Comité de l'environnement et de la protection climatique prenne connaissance du présent rapport.

EXECUTIVE SUMMARY

Assumption and Analysis

The Green Building Policy for the Construction of Corporate Buildings, approved by Council on September 28, 2005, and amended on September 26, 2007, requires an annual status update on City of Ottawa building projects.

The City of Ottawa demonstrates a strong commitment to sustainable environmental practices. Green building practices show responsible management and good business sense; they reduce the impact of construction and building operation on the environment and resources, and reduce the cost of maintaining and operating a building over its life cycle.

Public Consultation/Input

The Environmental Stewardship Advisory Committee (ESAC) received a presentation on the Green Building Policy on March 29, 2018.

RÉSUMÉ

Hypothèse et analyse

La Politique sur les bâtiments écologiques régissant la construction des immeubles municipaux, approuvée par le Conseil le 28 septembre 2005 et modifiée le 26 septembre 2007, exige la production d'un rapport de situation annuel sur les projets de construction.

La Ville d'Ottawa est fermement déterminée à appliquer des pratiques environnementales durables. Les pratiques de construction écologique témoignent d'une gestion responsable et d'un bon sens des affaires, réduisent les conséquences de la construction et de l'exploitation des bâtiments sur l'environnement et les ressources, et réduisent les coûts liés à l'exploitation et à l'entretien d'un bâtiment pendant son cycle de vie.

Consultation publique et commentaires

Le Comité consultatif sur la gérance environnementale (CCGE) a assisté à une présentation sur la Politique sur les bâtiments écologiques le 29 mars 2018.

BACKGROUND

The Green Building Policy for the Construction of Corporate Buildings, approved by Council on September 28, 2005, and amended on September 26, 2007, requires an annual status update on City of Ottawa building projects.

The Green Building Policy requires that all newly constructed municipal buildings with a footprint greater than 500 square metres (5,400 square feet) be designed, delivered and certified by the Canada Green Building Council (CaGBC) as being Leadership in Energy and Environmental Design (LEED®) Certified at minimum. The current practice for retrofit and renovation projects is to apply sustainable design principles.

In 2015, Environment Committee supported targeting LEED Gold where appropriate, given the facility size, type, and project complexity. Report [ACS2015-PAI-INF-0001](#) provides further information on the LEED program and targets.

Last year, on April 18, 2017, Environment and Climate Protection Committee received the [Green Building Report – Status Update](#).

DISCUSSION

The City of Ottawa continues to demonstrate a strong commitment to sustainable environmental practices. Green building practices show responsible management and good business sense; they reduce the impact of construction and building operation on the environment and resources, and reduce the cost of maintaining and operating a building over its life cycle.

The City uses LEED to verify that municipal buildings have achieved sustainability targets. LEED is an internationally-recognised rating system that independently certifies a building that has achieved energy efficiency and reduced environmental impacts. It is administered by the Canada Green Building Council (CaGBC).

The City began participating in the LEED program in 2005. It pushes the industry to maintain high standards for sustainability during design and construction. Architecture and engineering professionals, as well as the construction industry, have become more proficient with the LEED process. Many of the design approaches, materials, and technologies once intended for LEED now simply represent sound building design.

LEED continues to be an important driver in the building world. It pushes consultants and contractors to continuously improve design and construction practices and holds them accountable to maintain high standards for sustainability.

LEED certified buildings realize many of the following benefits:

- Reduced greenhouse gas emissions
- Reduced water consumption
- Reduced material consumption during manufacturing and transportation
- Reduced waste generation during construction
- Reduced life cycle costs
- Utility cost savings
- Improved indoor environments due to thermal controls, reduced toxins/irritants, daylighting and views to the outdoors

The approximate cost to pursue LEED ranges from no incremental cost for Certified level, two percent for Silver and up to five percent for Gold. The marginal upfront costs can translate to significant savings over the life of a building.

Changes to LEED Certification

The Canada Green Building Council has recently made significant changes to its rating system, going from LEED 2009 to LEED v4. LEED Certification is a point-based system where a project can earn points for satisfying specific green building criteria. There are four levels of certification: Certified, Silver, Gold and Platinum. Each level requires a minimum amount of points and prerequisites.

Many of the changes in LEED v4 are focused on a project's continued performance, rather than just its initial design. This is important to ensure reduced energy requirements and lower lifecycle costs over the life of the buildings.

Through LEED v4, changes have been made to the following sections that apply to building design and construction projects:

- Location and Transportation
- Sustainable Sites

- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environment Quality

After October 31, 2016, new LEED registrations will only be accepted under LEED v4. Though not mandatory, projects not yet certified but registered before the deadline could explore certification under the new LEED v4. The decision would be based on whether or not the changes would be helpful for the given project.

The City is reviewing and becoming familiar with the new LEED v4 requirements and implications. The City is committed to working with the CaGBC to evaluate and assess the new certification system.

The City will evaluate new projects in the early stages with a LEED consultant to assess feasible targets. Aiming to target Gold, there will be a balance between sustainable construction and cost effectiveness.

Canada is a global leader in green building and in consultation with the CaGBC, Ottawa is researching best practices to strive for excellence. The CaGBC has a [LEED V4 Leaders website](#), which is updated on a regular basis to include certification details and case studies of the projects that are beginning to certify using the new LEED V4.

Later in 2018, the United States Green Building Council (USGBC) is expected to release an update on the results observed under the LEED V4 certifications. The CaGBC maintains a close relationship with the USGBC in delivering certifications in Canada. The goal of the update is to share lessons learned and may involve updating performance thresholds, offering additional compliance options, including additional international standards and streamlining documentations.

A joint venture between the CaGBC and Green Business Certification Inc. (GBCI) was recently launched called [GBCI Canada](#), to deliver certification of LEED projects in Canada. This organization aims to work closely with clients for certification programs in Canada, recognizing the excellence in sustainability and green building.

Update on City LEED Buildings

The City has 27 LEED certified buildings, of which five have achieved Gold, 12 have achieved Silver and 10 have achieved Certified ratings.

In 2017, Silver certification was received for the Minto Recreation Complex.

Table 1 provides a list of all LEED certified municipal buildings.

	Project	Construction Completion	LEED Rating
1	Minto Recreation Complex	Nov. 2014	Silver
2	Beaverbrook Branch of the Ottawa Public Library	Aug. 2014	Silver
3	Richcraft Sensplex (Ottawa East)	Aug. 2014	Certified
4	Richcraft Recreation Complex – Kanata	Aug. 2013	Gold
5	Trail Road Waste Facility	Jun. 2013	Silver
6	François Dupuis Recreation Centre (East District Pool)	Feb. 2013	Silver
7	Conroy Public Works Yard	Sep. 2012	Silver
8	Goulbourn Recreation Complex Arena Expansion	Mar. 2012	Silver
9	Barrhaven Fire Station No. 47	Dec. 2011	Silver
10	Kanata Recreation Complex Expansion (LEED Commercial Interiors – CI)	Sep. 2011	CI Silver
11	OC Transpo Articulated Bus Garage & Dispatch Building	Sep. 2010	Certified
12	Kanata West Fire Station No. 46	Jun. 2011	Silver
13	Greenboro Community Centre Expansion	Mar. 2011	Certified
14	Overbrook Community Centre Expansion	Mar. 2011	Gold
15	CentrepoinTE Theatre Expansion	Mar. 2011	Silver
16	James Bartleman Archives and Library Materials Centre	Mar. 2011	Gold
17	Carlsbad Springs Community Centre	Dec. 2010	Certified
18	Huron Early Learning Centre	Sep. 2010	Silver

	Project	Construction Completion	LEED Rating
19	Ottawa Central Ambulance Communications Centre	Jun. 2010	Certified
20	Hunt Club-Riverside Park Community Centre	Mar. 2010	Certified
21	OC Transpo Interior Fit-Up (<i>LEED Commercial Interiors – CI</i>)	Aug. 2009	CI Gold
22	Shenkman Arts Centre	Jun. 2009	Silver
23	Albion-Heatherington Community Centre	Dec. 2008	Certified
24	Goulbourn Recreation Complex Expansion	Nov. 2008	Certified
25	Rideau Valley Conservation Authority Headquarters	Oct. 2007	Gold
26	Vars Fire Station No.73	Mar. 2007	Certified
27	Ottawa Paramedic Service Headquarters	Mar. 2006	Certified

The City has six buildings currently undergoing the LEED certification process. Infrastructure Services anticipates certification for the following projects:

- Blackburn Arena Renovation and Expansion
- Trim Road Works Yard
- Bloomfield Works Yard
- François Dupuis Recreation Centre Expansion
- Fire Station No. 36
- Fire Station No. 55

Update on Major City Projects Pursuing LEED

There are several major City projects underway that plan to pursue LEED certification, which Infrastructure Services is tracking separately.

Lansdowne Redevelopment

The Lansdowne Redevelopment project, completed in 2014, is Ottawa's first green community designed to follow LEED. Lansdowne has received Silver Plan Pre-Certification (Stage 2) under the LEED™ for Neighbourhood Development (ND) program and joins five neighbourhoods in Ontario with another 12 across Canada that are leading the way in sustainability.

The full certification for LEED ND with the United States Green Building Council (USGBC) was submitted in early 2018 and was recently received on March 27, 2018. All credits were achieved and it has been certified LEED-ND Stage 3 (Built Project) Silver. Based on current information provided by the CaGBC, Lansdowne is the first project in Canada to receive LEED ND Stage 3 certification.

CaGBC is the license holder for the LEED rating system in Canada. They work very closely with the USGBC on LEED certification, and for certain registrations they are processed through the United States instead of Canada.

Lansdowne has been transformed through smart growth and green building into a sustainable and vibrant mixed-use community that is a positive example for the rest of Ottawa. The site is open and well-connected, and encourages walking, cycling, and public transit use. The location reduces urban sprawl and automobile dependence. The 14.8 hectares of urban park, public plazas, and heritage buildings create a sense of place and animate the site through programming. All new buildings were designed to be energy efficient and incorporate green features. Lansdowne has become a unique destination for both residents and visitors to live, work, and play. Lansdowne recently hosted the 105th Grey Cup game in November 2017 and the NHL Classic in December 2017, with approximately 70,000 in attendance.

Ottawa Art Gallery (OAG) Expansion and Arts Court Redevelopment

The OAG officially opened to the public in April, 2018. The public component of the project will create a new, landmark OAG, a theatre and classrooms for the University of Ottawa, and will renovate spaces within Arts Court for artistic creation and production. The private sector component includes a boutique hotel, condominiums, and underground parking.

The public component (new building) is striving for LEED Silver certification. It is targeting the following sustainability features: diversion of construction waste from landfill through recycling, optimized energy performance with LED fixtures and high efficiency mechanical systems, reduced water use with low-flow fixtures, materials with

recycled content and that were sourced regionally, sustainably-sourced wood products, enhanced commissioning of mechanical and electrical systems, and low-emitting finishes for a healthier indoor environment.

The Innovation Centre

The Innovation Centre at Bayview Yards welcomed its first tenants in November 2016. The heritage designated, former City public works building is in its second year of operations.

The Innovation Centre provides a centralized hub for entrepreneurs, start-ups and supporting program agencies. It contains business incubators, work spaces, meeting rooms, a training room, an auditorium, a digital media lab and an advanced prototyping lab. The site is a former brownfield and the renovated building is targeting LEED Gold Certification with the application currently under review.

The building's sustainability features include optimized energy performance, increased building durability, reduced water use, enhanced commissioning of mechanical and electrical systems, low-emitting materials and furniture, and maximizing natural day lighting.

The Innovation Centre has implemented a green housekeeping policy and is working with families in the neighbourhood to plant, maintain and harvest an on-site community garden and orchard. It also supports active and green transportation, providing three electric vehicle charging stations, a designated Vrtucar space, high occupancy parking, a generous number of indoor bikes lockers and showers for building occupants.

The Innovation Centre at Bayview Yards boasts a number of initiatives, including:

- A partnership with the Parkdale Food Market
- Investigating the feasibility of solar panels on the roof
- A small section of a green roof in the front of the building

There is an educational display monitor in the lobby, which provides information to the public about the centre's low levels of energy consumption year around.

Light Rail Transit (LRT) Maintenance and Storage Facility (MSF)

The Maintenance and Storage Facility for Ottawa's Light Rail Transit project is now being used for LRT vehicle assembly and office space by the Light Rail consortium. It was scheduled to open in 2018, but as part of Stage 2 work, the facility is being expanded and vehicle assembly will continue in the facility past 2018. The building will pursue a LEED Certified rating after it is no longer used for assembling vehicles.

The facility targeted the following sustainability features: 90 per cent of materials generated from the demolition of the buildings located on the MSF site have been recycled, storm water is managed on site with the use of a retention pond and energy efficient technologies such as boilers and lighting systems have been installed. The actual percentage of materials recycled was 97 per cent, exceeding the projected 90 per cent target.

Glebe Parking Garage

The Glebe Parking Garage, completed in October 2015, was designed to be a mobility hub for the local community. This project is the first in the City to target Green Garage Certification, which is an international rating system administered by the Green Parking Council that recognizes sustainable practices in parking structure design, construction, and management.

The four-level garage has 144 vehicle parking spaces, which include two car share spaces, two electric vehicle charging stations, and preferred parking for low-emitting, fuel efficient, and alternative fuel vehicles. The garage also provides 29 ring-and-post covered bicycle spaces, two of which have electrical outlets for rechargeable bikes or scooters, and a bike repair station. The building's sustainability features include: solar panels feeding energy back into the Hydro grid to offset onsite energy use, natural ventilation; controlled, energy efficient lighting; regionally-sourced and recycled materials; and two parkettes with water efficient landscaping.

The Photo-Voltaic (PV) system installed generated a little over 9,100 kilowatt-hours in 2017 at the Glebe garage, the equivalent of the electricity used in one home for a year.

Infrastructure Services has submitted and is currently pursuing the Green Garage Certification for this project.

NEW – Ottawa Central Library

The Ottawa Central Library will be a new joint facility shared by Ottawa Public Library and Library and Archives Canada. As a design objective, the project will look to demonstrate leadership in environmental sustainability and as per the policy, it will target LEED Gold certification under the new system LEED v4. The project's design and construction timelines will be provided in the staff report to the City's Finance and Economic Development Committee (FEDCO) later this year.

RURAL IMPLICATIONS

The Green Building Policy has city-wide applications.

CONSULTATION

The Environmental Stewardship Advisory Committee (ESAC) received a presentation on the Green Building Policy on March 29, 2018. ESAC has provided the following statement:

ESAC commends the City for its continued commitment to green buildings; the benefits of sustainable municipal structures outweigh cost increments and provide numerous positive lifecycle impacts.

We would like to reiterate some comments that we have made on this and on previous reports:

1. The number of municipal buildings and total floorspace covered by this policy is a fraction of our total, and more efforts should be taken for the proactive renovation of existing buildings to be more "green";
2. Energy is not a core element of LEED design, and the City must adopt measures, which reduce gross consumption and transition towards renewable energy sources in line with Council's SI on 100 per cent renewable;
3. The City should ensure that municipal facilities have recycling and waste diversion elements in their design (including organic material) where possible to promote these practices;
4. LEED is a well-understood design concept, but the City should not exclude support for standards such as Energy Star and R-2000, which offer greater emphasis on energy performance;

5. Priority for green infrastructure should be placed on facilities with high public access or occupancy, to assist and facilitate awareness of the concept among our residential and ICI sectors;
6. Greater clarity is needed on elements included under the adjective “green” in light of greenwashing by technologies and techniques which do not reduce energy consumption nor increase use of renewable energy;
7. The emphasis on electricity should be tempered by acknowledgment that 2/3 of energy consumed in ICI facilities is for temperature load, which has much higher carbon content than our nuclear electricity;
8. The evaluation of impacts from our 33 LEED installations should inform a strategy to be developed as soon as possible for the residential and ICI sectors in Ottawa.

COMMENTS BY THE WARD COUNCILLORS

This is a city-wide report – not applicable.

LEGAL IMPLICATIONS

There are no legal impediments to receiving this Report for information.

RISK MANAGEMENT IMPLICATIONS

There are no risk management implications for this report.

ASSET MANAGEMENT IMPLICATIONS

This report is consistent with the City’s Comprehensive Asset Management (CAM) Program (City of Ottawa Comprehensive Asset Management Program) objectives. The Green Building Policy, in accordance with the LEED program, supports and promotes environmental and fiscal sustainability.

FINANCIAL IMPLICATIONS

There are no direct financial implications.

ACCESSIBILITY IMPACTS

There are no accessibility impacts associated with this update.

ENVIRONMENTAL IMPLICATIONS

As outlined in the background section of the report, constructing LEED certified buildings benefits the City, society and the environment through reduced electricity, natural gas, and water consumption; reduced green house gas emissions; and healthier indoor environments for building occupants.

The importance of bird-friendly design is a consideration in reducing the environmental impacts of buildings. An evaluation of the need for municipal bird-friendly guidelines will be undertaken by the Planning, Infrastructure and Economic Development Department.

TERM OF COUNCIL PRIORITIES

This report aligns with the following Term of Council priorities:

Sustainable Environmental Services (ES): To provide sustainable environmental services that balance protection of our natural resources and support the planned growth of the city with the duty to ensure fiscal sustainability and meet legislative requirements in the delivery of municipal services.

Governance, Planning and Decision-Making (GP): Achieve measurable improvement in residents' level of trust in how the City is governed and managed, apply a sustainability lens to decision-making, and create a governance model that compares well to best-in-class cities around the world.

DISPOSITION

Infrastructure Services will continue to deliver construction projects in accordance with the Green Building Policy.