

Update to City Policy C532 to Align with the Goals for a Sustainable, Energy Resilient, Low Carbon Edmonton

Recommendation:

That Executive Committee recommend to City Council:

That amendments to City Policy C532 - Sustainable Building Policy– Leadership in Energy and Environmental Design Silver, as set out in Attachment 2 of the May 2, 2017, Sustainable Development report CR_3959, be approved.

Report Summary

City Policy C532, Sustainable Building Policy – Leadership in Energy and Environmental Design Silver, was adopted by City Council on June 19, 2007, with an effective date of January 1, 2008. The policy established the City’s commitment to environmental leadership and stewardship in the design and construction of City-owned buildings. This report presents the updated City Policy C532, considered necessary because various aspects of the original policy were obsolete and did not sufficiently support the strategic directions called for in *The Way We Green* and *Edmonton’s Community Energy Transition Strategy*. This renewed policy positions the City of Edmonton as a municipal leader in sustainable building practices.

Previous Council/Committee Action

At the August 16, 2016, Executive Committee meeting, the following motion was passed:

That Administration update City Policy C532 to reflect the policy recommendations outlined in the August 16, 2016, Sustainable Development report CR_3782, and report back to Committee.

Report

The City Policy C532 - Sustainable Building Policy was approved by City Council, with a purpose to ensure City-owned buildings were designed and constructed to an environmentally sustainable standard. The policy requires new City-owned buildings and major renovations to achieve Leadership in Energy and Environmental Design Silver certification as a minimum, and new City-owned buildings to be designed and constructed

to achieve 30 percent or greater energy efficiency than the 1997 Model National Energy Code for Buildings.

Since its inception, the policy has significantly influenced the design and construction of City-owned buildings. Approximately 18 percent of the City-owned building portfolio (by gross floor area) was built after 2008, with 11 percent achieving or awaiting Leadership in Energy and Environmental Design certification, and 7 percent exempt from Leadership in Energy and Environmental Design certification due to the building size, use and occupancy type. Building on the policy's success, and the lessons and insights gleaned through its implementation, an update of the policy was considered necessary to address three main shortcomings:

- The existing policy was too narrowly focused on the design and construction lifecycle stages of new buildings. Given that sustainability outcomes are a function of many factors over a building's life, the policy should be updated to establish sustainable building practices over the full service cycle.
- The existing policy was too narrowly focused on City-owned buildings and did not address either those leased for City use, or privately-owned buildings funded by the City.
- The policy's existing energy efficiency requirements for new buildings references an obsolete code, and must be updated to reflect building energy efficiency advancements and restate the requirement relative to the mandatory 2011 Model National Energy Code for Buildings.

The update of the policy involved an intensive, collaborative, cross-departmental review spanning 16 months. The result of this effort is an updated City Policy C532 that establishes overarching sustainability principles, intent, and direction for all categories of buildings (Attachment 3), and provides a number of specific policy standards based on category and criteria.

A key element of the new policy is that it establishes nation-leading energy and carbon performance expectations for City buildings. Together, the requirement for a minimum of next generation Leadership in Energy and Environmental Design v4 Silver certification, dedicated 1 percent funding for on site energy generation, and the above code energy standard, constitute one of the most ambitious new construction standards adopted by any Canadian municipality. Secondly, this updated policy will also make the City of Edmonton one of the only Canadian municipalities with an integrated sustainable building policy that holistically addresses energy use, greenhouse gas reduction, and other sustainable building practices over the course of the entire building lifecycle. This, coupled with the establishment of a new BOMA BEST Certification Program, will ensure and validate continuous improvements in the sustainable operations and management of existing City buildings.

Summary of Key Policy Updates

The following is a summary of the key updates to City Policy C532.

Policy Updates for City-owned Buildings (New Construction and Major Renovation)

The updated policy:

- Establishes a new “40-40-80” energy performance standard for new construction, representing one of the highest energy performance standards of any Canadian municipality (Attachment 2):
 - Minimum 40 percent better in energy efficiency as compared to the 2011 National Energy Code of Canada for Buildings (2011 NECB);
 - Minimum of 40 percent better in greenhouse gas reduction as compared to the 2011 NECB; and
 - Maximum annual heating demand of 50 kilowatt hours per square meter for office buildings and 80 kilowatt hours per square meter for all other building types.
- Establishes a requirement that 1 percent minimum of the total capital budget of a new construction building project be allocated to on-site renewable or alternative energy technologies (Attachment 4).
- The new construction standards apply to all new City-owned buildings and new additions to City-owned buildings, greater than 500 square meters in gross floor area, and occupied buildings. Historic buildings, unoccupied buildings, and buildings that are not regularly occupied or not occupied year round (such as park pavilions and outdoor pools) are exempt from the standards.
- Retains minimum Leadership in Energy and Environmental Design Silver certification for new construction and major renovations. (Attachment 5).
- Enables alternative third party certification systems to be used, if it can be demonstrated that they can meet or exceed the minimum standards outlined above.

The new construction and major renovation related policy standards will apply to the same buildings as in the past (such as recreation centres, fire halls, libraries, police stations, City operation and service delivery buildings), and any newly constructed City-owned buildings that might be leased to others, such as non-profit organizations that provide community services.

Policy Updates for Existing City-owned buildings (Attachment 6)

The updated policy does not establish quantitative energy consumption or carbon emission targets for existing buildings. Energy and carbon emissions differ greatly between buildings due to age, type and purpose. Rather than apply a one-size-fits-all performance target for existing buildings, the policy will pursue sustainable performance on an informed, building-by-building basis (or groups of similar buildings).

The updated policy:

- Requires energy benchmarking to be performed for all commissioned buildings;
- Requires specific opportunities for improvement to be identified through energy

- efficiency audits;
- Integrates energy modeling, energy audits and lifecycle cost benefit analysis methodologies into routine lifecycle replacement and capital rehabilitation project planning processes;
 - Strengthens integration and accountability for the City Operations (Corporate) Greenhouse Gas Management Plan through the creation of four-year building energy retrofit plans; and creation of a pathway (with interim targets) to an ultimate zero-carbon emission target year for the building portfolio;
 - Establishes a more formal approach for operating and maintaining of existing buildings based on the BOMA BEST certification framework. This will advance continuous improvement and validate the various internal best practices being used to address greenhouse gas reduction and sustainability in existing City buildings, and help to address any design versus actual energy performance gap; and
 - In situations where a non-City owned building is being considered for purchase and intended to be retained by the City or leased to others to carry out community programming or services, such as the acquisition of the MacEwan West campus, the updated policy will require that an energy assessment be performed to understand the building's energy and greenhouse gas impact, and the extent of upgrades needed to raise the energy performance to an optimized level.

Policy Updates for City-Leased Buildings (Attachment 7)

The updated policy:

- Requires energy use and greenhouse gas impacts of leased buildings to be considered as a part of the leasing bid selection criteria; and
- Requires BOMA BEST certification, at a minimum, for new office and commercial leases and lease renewal over 1,000 square meters in situations where the term is greater than five years and that leased space is greater than 50 percent of the total building area.

Policy Updates for new City-Funded Buildings (not City-Owned or City-Operated):

The updated policy:

- Requires new buildings to meet the same standards that are required of new City-owned building if they are greater than 1,000 square meters in gross floor area, anticipated to be greater than \$3 million in capital project cost, and the capital request to the City accounts for 33 percent of the project capital funding or more.

Policy implementation considerations and timelines are outlined in Attachment 8. Details include those related to existing City-owned buildings that are operated and occupied by non-City organizations through long term non-profit lease/licence agreements.

Policy

Policy C532 - Sustainable Buildings

Policy C585 - Edmonton's Community Energy Transition Strategy (Strategic Action 4)

The Way We Green (Goals 5, 6 and 7)

Corporate Outcomes

This report contributes to the corporate outcomes "The City of Edmonton has sustainable and accessible infrastructure," "The City of Edmonton's operations are environmentally sustainable" and "Edmonton is an environmentally sustainable and resilient city" by establishing policy direction for sustainable buildings in Edmonton.

Risk Assessment (Refer to Attachment 9)

Public Consultation

Public consultation was carried out through engagement of City Council's Energy Transition Advisory Committee (Attachment 10). As well, members of the local building design and construction industry were engaged and invited to provide feedback on the new energy performance standards (Attachment 4).

Budget/Financial Implications

The capital costs related to the approval of the updated City policy will depend on the building projects approved by Council in future years and will be incorporated in new capital budget requests as they are brought forward beginning with the 2019 capital budget cycle. The increase in costs is projected at four percent (range 0 percent to seven percent) to meet 40-40-80 Energy performance standards and one percent to meet On-site Renewable and Alternative Energy Generation, for a total impact of approximately five percent increased costs for new construction of City-owned buildings. The incurred costs will vary year to year depending on the timing of projects.

If the updated City Policy is approved, BOMA BEST Certification fees paid for City-owned buildings will cost less than \$25,000 in total per year for all buildings being certified. Initial program implementation, including certification fees, will be achieved within existing resources. Staffing requirements will be reviewed as the program scales up. The program is designed to recognize good asset and property management practices no matter the age of the building. The certification validates best practices such as energy audits and upgrades that have taken place in the past three years, and other existing internal best practices such as presence of water and energy conservation plans.

BOMA BEST Certification for large office and commercial leased spaces for City use will add approximately 1 percent to leasing expenses, or approximately \$300,000 based on the

2018 budget. This expense increase will be gradual over several years, applying to new leases and lease renewals and will be considered in future leasing budgets.

Metrics, Targets and Outcomes

(Refer to Attachment 11)

Justification of Recommendation:

City Policy C532, Sustainable Building Policy – Leadership in Energy and Environmental Design Silver, has outdated policy standards and, in its current state, is unable to effectively contribute to the achievement of desired outcomes in City Policy C585, Edmonton’s Community Energy Transition Strategy, and *The Way We Green*. A policy renewal is considered necessary at this time to ensure that the City continues to lead by example in demonstrating the benefits of sustainable building practices through the buildings it owns, leases, and supports through City funding.

Attachments

1. Existing C532 Sustainable Building Policy
2. New C532 Sustainable Building Policy
3. Summary of the City’s Building Portfolio
4. Rationale on the “40-40-80” Above Code Energy Performance and 1% Dedicated Capital for On-site Energy Generation
5. Rationale on the Minimum LEED Rating
6. Rationale on Policy for Existing City-owned Buildings
7. Rationale on Policy for Leasing
8. Implementation Considerations and Timelines
9. Risk Assessment
10. Memo to Council from the Energy Transition Advisory Committee
11. Metrics, Target and Outcomes

Others Reviewing this Report

- A. Laughlin, Deputy City Manager, Integrated Infrastructure Services
- R. Smyth, Deputy City Manager, Citizen Services
- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- D. Jones, Deputy City Manager, City Operations