Climate Resilience Policy C627 Annual Report

Climate Resilient Design and Construction of City Buildings

The Administrative Procedure for the design and construction of city buildings includes the requirement for policy evaluation in the form of compliance reporting: annual reporting to the City Manager and City Council on policy compliance, including all exceptions to the Administrative Procedures.

Key policy requirements are to:

- Assess if an identified real estate need can be met through the existing building portfolio
- Assess potential for integration into a district energy node
- Design to be emissions neutral, while consuming 20 per cent less energy than the 2017 code reference building and having a thermal energy demand intensity (TEDI) of less than 50 kilowatt hours per square meter for office buildings and less than 80 kilowatt hours per square meter for non office building archetypes
- Dedicate 1 per cent of total capital project budget to incorporating on-site renewable or alternative energy generation systems
- Include an embodied carbon assessment, and considering use of materials with the lowest embodied carbon
- Design and construction to provide flexibility for emerging technology installations, such as solar, geothermal, energy storage, and district energy
- Design and construction to support ongoing optimal performance management of the building, such as through installing building automation systems
- Attain a minimum of Leadership in Energy and Environmental Design (LEED) Silver certification
- Design and construction to mitigate the risk and impacts of climate change, including the completion of a climate risk assessment
- Support Building Owners and Managers Association (BOMA) BEST certification upon occupancy through provision of required design and construction documentation

New build construction projects currently underway under this Administrative Procedure, and their compliance status are found in the table below:

Project Name	Compliance Status	Notes
Blatchford Fire Station No. 8	Partially compliant	This project will connect to the Blatchford District Energy System but will not incorporate onsite renewable energy (exception request in progress);
Riverbend Library	Compliant	Schematic Design is complete and compliant
Rollie Miles Recreation Centre	Partially compliant, with approved exception	An exception was provided as it was not feasible for the natatorium to meet the TEDI target
Walker Fire Station	Compliant	In prime consultant RFQ phase
Police Seized Vehicle Lot Administrative Building	Under review	In design development phase. As this project is less than 600 square meters, it requires only demonstration of intent to meet requirements. Due to budget constraints, it is uncertain which targets will be achieved.

Full compliance with the Climate Resilience Policy C627 requirements has been a challenge for many projects. Project budgets have been impacted by inflation and supply chain issues related to pandemic recovery, while the City faces budget constraints due to limited debt space. Despite this, these projects will still be designed and constructed to achieve energy and GHG savings above the required code performance standard.

Climate Resilient Existing Buildings

This Administrative Procedure requires existing city buildings to reduce energy use and greenhouse gas emissions. Procedure requirements and current implementation status are found in the table below.

Requirement	Implementation Status
Participation in the Building Energy Benchmarking Program	The 2021 Building Energy Benchmarking program results were published in 2023. 160 properties including 165 City-owned buildings are participating. Those remaining City buildings without complete, verifiable energy use data were not included in the program, but will be once their energy use data can be collected and verified.
Obtaining BOMA BEST certification	Thirty City-owned buildings have been BOMA BEST certified since 2019, including 15 in 2021 and 10 in 2022. More certifications are planned for 2023-2026.
Participation in the Corporate Greenhouse Gas Inventory	The Corporate Greenhouse Gas Inventory includes all City-owned buildings.
The development of a renewable energy plan outlining proposed renewables installations within the Corporate Climate Management Plan	Not yet actioned
A carbon accounting process is to be established for any energy retrofit project, routine lifecycle replacement, and capital rehabilitation processes that claim energy savings	The City released its first carbon budget in 2022, which included quantification of GHG emissions impacts of building rehabilitation projects when information was available. The carbon accounting process will continue to be developed and refined.

Requirement	Implementation Status
Measurement and Verification is to be completed on specific projects to help verify persistence of energy savings and inform the implementation of an energy savings reserve fund at the City.	Measurement and Verification has been completed for six projects in total.
Public communications are to be developed to communicate climate resilient features of buildings, including signage, online information, and public engagement through the Change for Climate program.	Public communications efforts have included sharing stories about BOMA BEST certifications and Building Energy Benchmarking program on the Change for Climate website, and installing signage for LEED certifications
Develop an Emissions Neutral portfolio plan and decision making framework, including a Recommissioning and Continuous Optimization program.	The Emissions Neutral portfolio plan and decision making framework is currently under development.
Conduct energy audits to identify opportunities for improvement when new buildings are acquired, to select eligible buildings for energy retrofits, and to complete BOMA BEST certifications.	Energy audits were completed as required in support of these three programs.
Develop a climate and risk assessment guidance process and use to identify a method for building climate resilience into facility assets	Three facility climate risk assessments have been completed for existing buildings as a part of the rehabilitation process in 2022. Nineteen climate risk assessments are being prepared in 2023 for the retrofit projects planned for 2023-2026.

In the last budget cycle, 52 buildings underwent energy efficiency retrofits that are delivering GHG savings. The average cost per building is approximately $600,000, for a total of $30 million spent from 2019-2022. A $53 million capital profile was approved for climate resilient City facility upgrades as part of the 2023-26 budget. Planning is currently underway to assess how this fund can be best utilized.

126 buildings are currently being reviewed for upgrade opportunities, and may consider use of funds from the $53 million profile.

Climate Resilient Acquisition of City Buildings

The majority of acquisitions have been for land. The North East River Valley Park (formerly Our Lady Queen of Peace Ranch) was acquired in 2022. An energy audit was completed as part of the acquisition and included water conserving measures. Climate risk assessments will be included in the property acquisition procedures after the Facility Climate Risk Assessment pilot is complete. Additional work is required to incorporate the policy requirements into the property acquisition process.

Climate Resilient City Building Leasing (City as Landlord)

The current state for leasing has a number of agreements that reference Sustainable Building Policy C532. However, leasing has received feedback from tenants that adhering to City Policies as part of lease requirements could prove difficult due to the operation-ownership models specific to those leases. An assessment of how the lease must be changed to incorporate C627 requirements is under way and will be addressed in the next revision of the policy.

Climate Resilient City Building Leasing (City as Tenant)

Administration has initiated, for the leasing process, a program to screen potential buildings and facilities based on the requirements of Policy C532. Process for application of the new C627 policy to lease renewal is currently under revision.

Climate Resilient City-funded non-City owned Buildings

New eligible non-City owned buildings that are more than 33 per cent funded by the City are meeting the same policy standards that are required of new City-owned buildings that are eligible by C627 policy. These are reported in the “new construction projects” section.

Policy C532 - Sustainable Building Policy - Annual Report 2022

There are several ongoing projects which were initiated under the previous sustainable building policy, C532.

Key requirements under C532 for the design and construction of city buildings are as follows:

- LEED Silver certification
- Achieve 40 per cent or greater energy efficiency than the National Energy Code of Canada for Buildings (NECB) 2011
- Achieve 40 per cent or greater greenhouse gas reduction than the NECB 2011 reference building
- Shall not exceed 50 kilowatt hours per square meter for Annual Heating Demand for office buildings and 80 kilowatt hours per square meter for Annual Heating Demand for all non office building archetypes
- Provide 1 per cent (of capital cost) towards on-site renewable or alternative energy generation

As no update has been provided since 2020, projects completed in 2021 are also included. The compliance statuses are found in the table below:

Project Name	Compliance Status	Notes
Capital Line Operations and Maintenance Facility (OMF)	Under review	Stage 1 of this building is intended to meet requirements of the previous policy (C532) with the intention of compliance with C627 at full project implementation (Stage 2 - currently unfunded). Installation of a solar PV system may be deferred to Stage 2 of the project, with provisions for its future installation if not installed as part of the 1 per cent budget dedicated to renewable energy generation in Stage 1. The Design Build Agreement for Stage 1 will require the design to be compliant with C532.

Ambleside Integrated Site	Under review	This project was re-initiated in December 2022 and plans to meet the requirements of C532, it will not be emissions neutral but will include as many C627 requirements as the budget allows
Fort Edmonton Park Indigenous People's Experience	Partially compliant	Building does not include on-site renewable energy generation
Gerry Wright OMF	Not Compliant, exception provided	Project will achieve 25 per cent above code energy efficiency, 20 per cent above code GHG reduction and an Annual Heating Demand of 220 kWh/m^2
Fire Station No. 31 Windermere	Compliant	This is the first city project to be designed and constructed to be Net Zero Energy
Coronation Park Sports and Recreation Centre	Compliant	Project is compliant
EVLW: Lewis Farms Storage Facility	Not compliant, exception provided	Project will achieve 30 per cent above code energy efficiency and an Annual Heating Demand of 220 kWh/m^2
Lewis Farms Recreation Centre	Compliant	Annual heating demand calculation will exclude arena operations (in alignment with policy development report)

Projects Under Previous Sustainability Policies

Projects initiated between 2007 and 2017 fall under the previous sustainable building policy, which required LEED certification. 34 projects achieved LEED certification, with 9 achieving Gold, 23 achieving Silver and 2 achieving Certified. The eight projects which have not yet achieved the certification are found in the table below.

Project Name	Compliance Status
Edmonton South Soccer Centre	1st submission required
Whitemud Park Amenity Buildings	2nd Submission required
South Haven Cemetery Service Building	2nd Submission required
Fire Station No. 29 Lewis Farms	2nd Submission required
Fire Station No. 30 Pilot Sound	2nd Submission required
Jasper Place Bowl Grandstand Replacement	2nd Submission required
Fire Station No. 28 Heritage Valley	Submitted for review
Borden Park: Natural Swim Experience	Submitted for review
Edmonton Valley Zoo: Nature's Wild Backyard, Phase 1	Submitted for review