The City of Calgary's Sustainable Building Policy

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June 18, 2020

What is the Sustainable Building Policy?

- A council approved Policy
- Applies to City-owned and financed buildings (City owned and Civic Partner projects)
- Ensures they are constructed in a sustainable manner incorporated triple bottom line considerations
- First Introduced as a pilot in 2004

What drives the continues improvements of the Policy?

New Industry Standards & Benchmarks

- Alberta Building Code / National Energy Code for Buildings
- New and Updated Green Building Certification Programs

New Government Policies & Programs

- Corporate Energy Plan
- Climate Resilience Strategy and Plan
- Municipal, Provincial and Federal Climate Strategies

Economic Resiliency

- Streamline project development process
- Address capital & operating cost constraints
- Greater transparency around investments

What is the Vision for the Policy?

A City that demonstrates that smart infrastructure investment goes beyond the one-time cost of construction, by addressing the lifecycle impacts on operating cost, the environment, and the people who use the infrastructure.

How Was the Policy Updated?

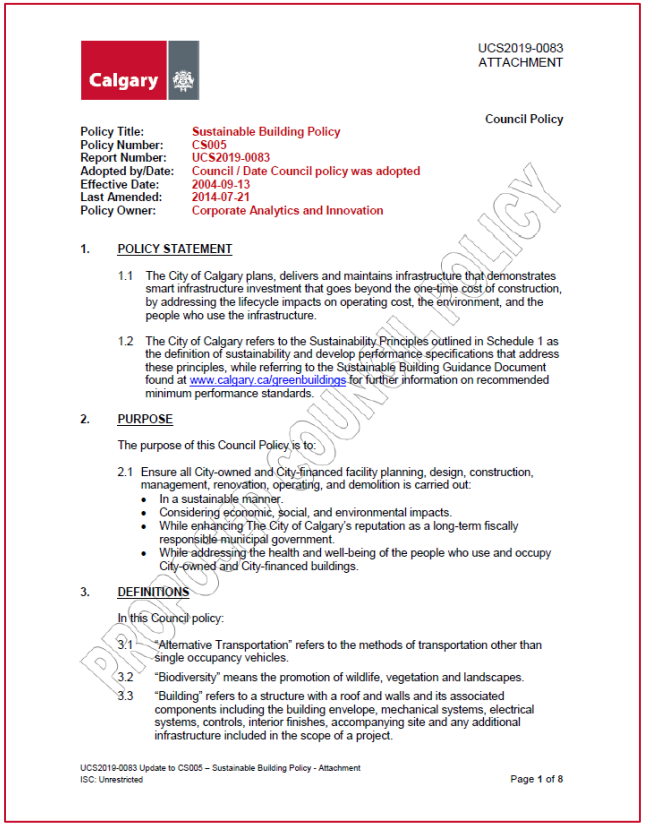
- Internal and external multi-stakeholder consultation and working groups
- Iterative Process

The Old Sustainable Building Policy

Job Type	Infrastructure Type	Size of Floor Area (m^2)	RATING SYSTEM USED						
			LEED™ New Construction			LEED™ Commercial Interiors		BuiltGreen™	Use of Sustainable Building Best Practices
			Certified	Silver	Gold	Certified	Silver	Silver	
New - Non-Brownfield	City-Owned Building	> 500			✓				
New - Brownfield	City-Owned Building	> 500			✓*2				
Major renovation*1	City-Owned Building	na	✓				✓		
New	Affordable housing*4	na						✓	
Major renovation*1	Affordable housing*4	na						✓*3	
Minor renovation*1	City-Owned Building	na							✓
New & All Renovations	Unoccupied buildings	na							✓
New	City-Owned Building	< 500							✓
New & All Renovations	Landscapes & Non-building infrastructure	na							✓

- High level LEED certification objectives

The New Sustainable Building Policy Structure



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UCS2019-0083
ATTACHMENT

Council Policy

Policy Title: Sustainable Building Policy
Policy Number: CS005
Report Number: UCS2019-0083
Adopted by/Date: Council / Date Council policy was adopted
Effective Date: 2004-09-13
Last Amended: 2014-07-21
Policy Owner: Corporate Analytics and Innovation

1. POLICY STATEMENT

1.1 The City of Calgary plans, delivers and maintains infrastructure that demonstrates smart infrastructure investment that goes beyond the one-time cost of construction, by addressing the lifecycle impacts on operating cost, the environment, and the people who use the infrastructure.

1.2 The City of Calgary refers to the Sustainability Principles outlined in Schedule 1 as the definition of sustainability and develop performance specifications that address these principles, while referring to the Sustainable Building Guidance Document found at www.calgary.ca/greenbuildings for further information on recommended minimum performance standards.

2. PURPOSE

The purpose of this Council Policy is to:

2.1 Ensure all City-owned and City-financed facility planning, design, construction, management, renovation, operating, and demolition is carried out:
- In a sustainable manner.
- Considering economic, social, and environmental impacts.
- While enhancing The City of Calgary's reputation as a long-term fiscally responsible municipal government.
- While addressing the health and well-being of the people who use and occupy City-owned and City-financed buildings.

3. DEFINITIONS

In this Council policy:

3.1 "Alternative Transportation" refers to the methods of transportation other than single occupancy vehicles.

3.2 "Biodiversity" means the promotion of wildlife, vegetation and landscapes.

3.3 "Building" refers to a structure with a roof and walls and its associated components including the building envelope, mechanical systems, electrical systems, controls, interior finishes, accompanying site and any additional infrastructure included in the scope of a project.

PROPOSED COUNCIL POLICY

UCS2019-0083 Update to CS005 – Sustainable Building Policy - Attachment
ISC: Unrestricted

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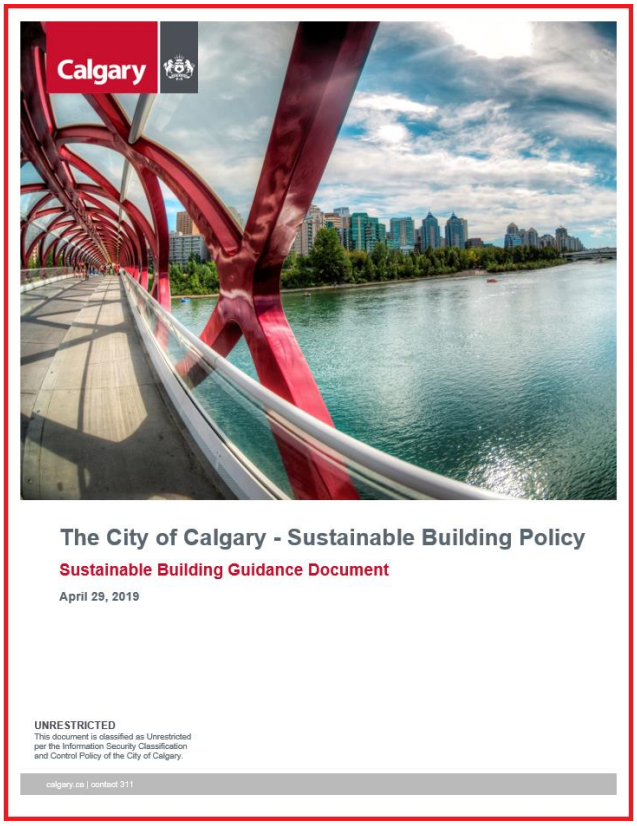

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The City of Calgary - Sustainable Building Policy

Sustainable Building Guidance Document

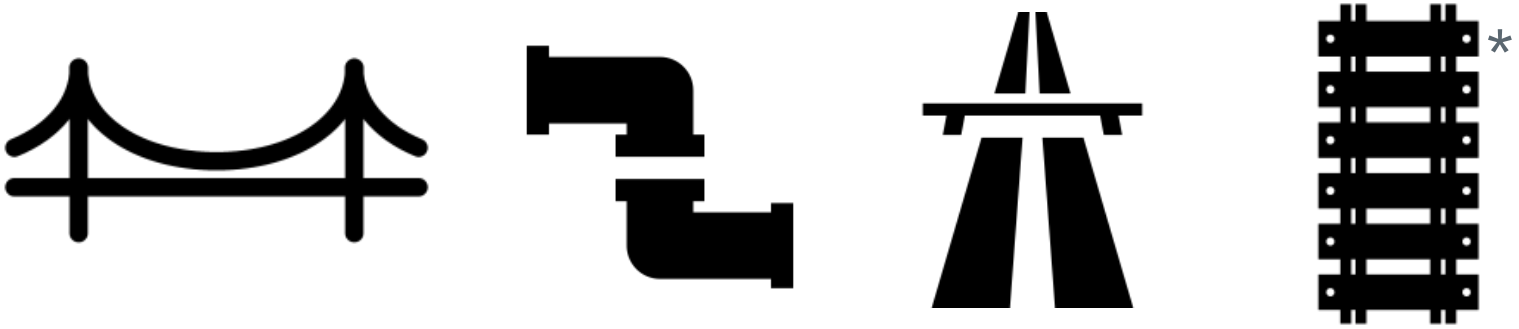
April 29, 2019

UNRESTRICTED
This document is classified as Unrestricted per the Information Security Classification and Control Policy of the City of Calgary.

calgary.ca | contact 311

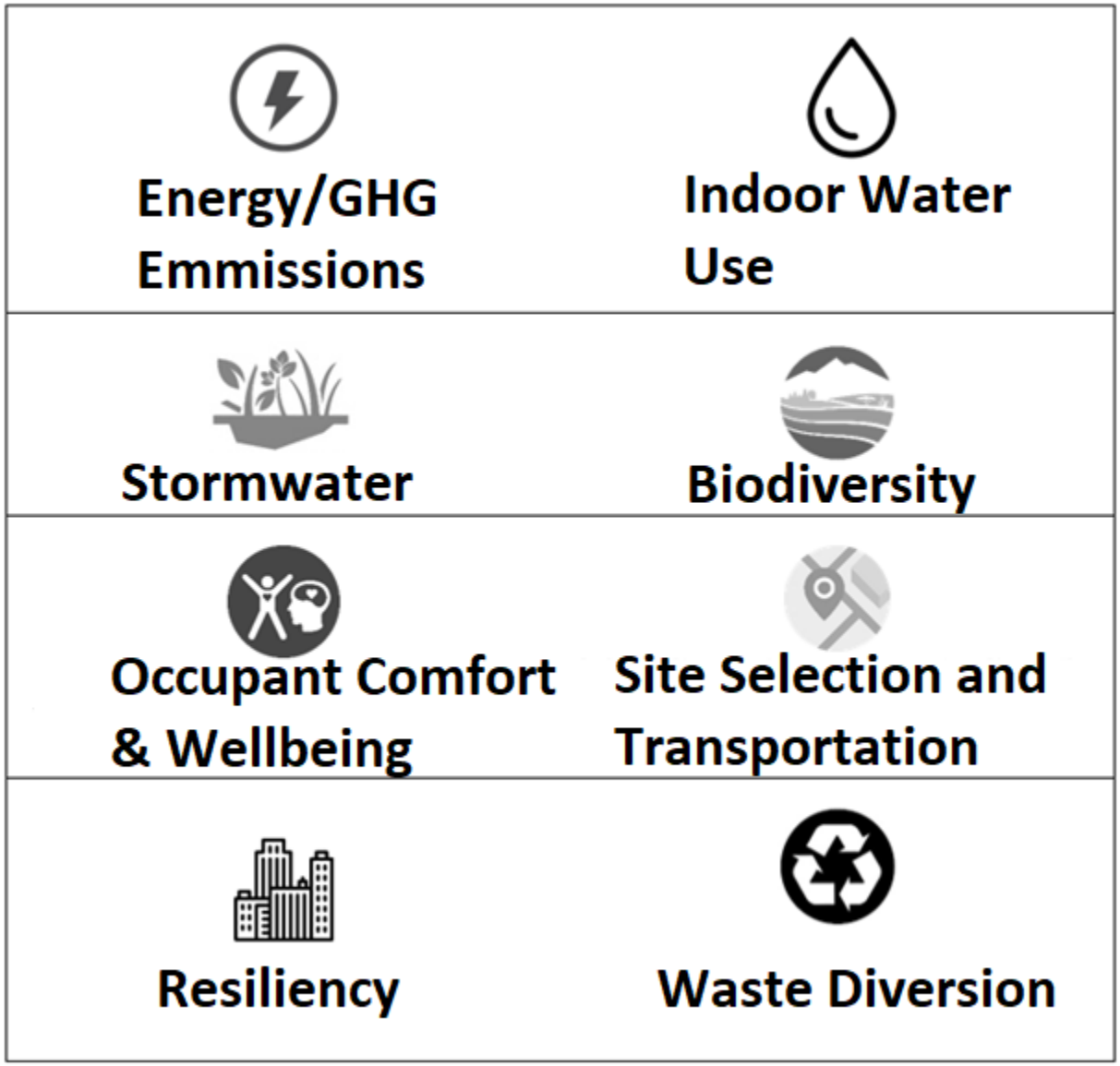
1. The Council Approved Policy – simple
2. The Sustainable Building Guidance Document – detailed & technical information
3. Go to www.Calgary.ca/greenbuilding for access to the Policy document and supporting documents

Policy Scope: Exclusions



Linear infrastructure such as bridges, roads, water conveyance, roadways and track continue to be excluded, however, we are exploring how to The Policy would apply to integrated transit systems such as the Green Line.

Introducing Sustainability Principles



Provides a definition to sustainability

Introduction of a Performance Based Approach

Categories of Performance Specifications

Optimize Energy Performance - 30% improvement (cost and performance) from NECB 2017 Baseline	**Multimodal Accessibility** Prioritization of pedestrians, cyclist and public transit users
Commissioning – Enhanced commissioning, including building envelope as per new SOW	**Indoor Water Use Reduction** 35% reduction from baseline (see LEED V 4.0 for methodlogy)
Green Power and Carbon Offsets – To be decided upon on a project specific basis.	**Enhanced Refrigerant Management** Low impact or no refrigerants
Future Resiliency Planning – PV ready and EV ready design + solar gain modelling	**Construction and Demolition Waste Diversion –** Divert 80% of waste generated from landfill
Stormwater Management – Green stormwater management based on LEED V4.0 guidance (90th Percentile)	**Construction Indoor Air Quality Management** IAQ Plan required
Responsible Landscaping – Reduction in potable water use from implementing landscaping strategies	**New Specifications To Come**

Building Certification

Evaluated on project-by-project basis with recommendations made to the Project Sponsor in the Schematic Design Report

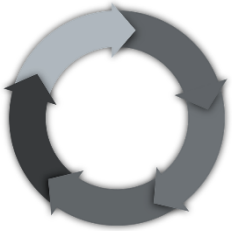
Future Consideration for Policy

TEDI

Thermal Energy Demand Intensity (TEDI) is a metric of the building's modeled heating needs. A more highly insulated, airtight enclosure with heat recovery ventilation will achieve a better TEDI value.

Heat Gain

Consider impacts on occupants as we design air tight buildings and as we become more cooling dominant



Greater consideration of material lifeycle, including the embodied carbon associated with our building materials

NET ZERO READY
NEW CONSTRUCTION

Demonstrate how buildings are designed and ready for a net-zero annual emissions target, including minimum on-site renewable energy targets

ZERO CARBON
CARBONE ZÉRO

CaGBC Net Zero Carbon Certification

Expected Results for 40% Energy and Energy Cost Savings Over NECB

Archetype	40% energy saving target	40% energy cost saving target	PV Required to meet Targets	Range of Incremental cost (%)
Admin	Achievable	Achievable	None	2.2-12.0%
Fire Hall	Achievable	Achievable	None	1.5-4.0%
Data Centre (excluding IT equipment load)	Achievable	Achievable	65kW PV system	0.5-3.0%
Rec Centre (excluding pool energy)	Achievable	Achievable	95kW PV system or use GSHP	2.0-7.5%
Vehicle Maintenance	Achievable	Achievable	None	5.0-17.0%
Warehouse	Achievable	Achievable	None	1.0-11.0%

Note: Incremental costs ranges are based on baseline systems that would typically be used to achieve NECB compliance

Cost Benefit Analysis is Completed

Part of the Design Approach