



Pathways and Support Tools to Plan to Achieve Healthy Buildings

Windfall Ecology Centre

Sept 25th, 2024



Welcome

Introductions

- Harry French, Program Manager ClimateWise Network



What you will learn

- How to access free expert services to guide multi-unit building owners through the deep energy retrofit process;
- How to significantly improve building performance without affecting the balance sheet; and
- How Durham Greener Buildings can help identify your buildings' opportunities for cost savings and GHG reductions.

Land Acknowledgement

Windfall Ecology Centre is located on the traditional territories of the Wendat, Haudeno-saunee, and the Anishinaabe peoples and the treaty land of the Williams Treaties First Nations and other Indigenous peoples whose presence here continues to this day.

We thank them for sharing this land with us.

We acknowledge the contributions and historic importance of Indigenous people to this place and our collective commitment to make the promise and the challenge of Truth and Reconciliation real in our community.

Agenda and Administration

Agenda

- This is an invitation webinar focused on housing providers in the Region of Durham
- Introduction
- Overview of Durham Greener Buildings
- Each Presenter will be followed by question period
- How to enroll in Durham Greener Buildings

Administration

- You can use the chat for questions
- We'll start off All muted
- However, you can Unmute to ask questions of presenters – raise your hand
- Session is being recorded for placement on the DGB website

What is Durham Greener Buildings

- A building benchmarking and disclosure program.
- A first step in the development of a comprehensive platform to mobilize deep energy retrofits in commercial, institutional, and multi-unit residential buildings.
- Public disclosure of energy performance.
- Source of intelligence on buildings decarbonization



More later on Durham Greener Buildings.

Our Presenters Today

Keith Burrows, Director Low Carbon Buildings



The Atmospheric Fund

- Keith will speak on The Atmospheric Fund's Retrofit Accelerator Program.
- TAF supplies free expert services to guide multi-family building owners in the GTHA through the deep energy retrofit process.
- Keith will discuss how to access this free program and how it will support the long-term scale-up of multi-residential buildings.



Durham Greener Buildings

TAF's Retrofit Accelerator

Keith Burrows
Director, Low Carbon Buildings
September 2024





A regional climate agency investing in low-carbon solutions for the Greater Toronto & Hamilton Area + illuminating paths to scale.

Team

Experienced team co-creates with private, public and non-profit sector stakeholders to reduce carbon emissions.

Impact

We invest in, grant, influence policies, and run programs to advance promising concepts.

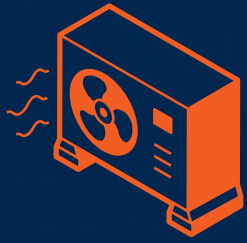
Flexible Funding

We're game to collaborate to define innovative funding structures that help businesses establish their solutions.

LC3

Low Carbon Cities Canada network member.

TAF Retrofits



EXPERTISE

Over 10 years of multi-residential retrofits



EXPERIENCE

Over 3,000 homes retrofitted (most of these in social housing)



KNOWLEDGE

Collected millions of data points as part monitoring, research, and optimization work

Top Retrofit Barriers



FINANCIAL

High upfront costs and long payback periods



ORGANIZATIONAL

Project complexity and perceived risk



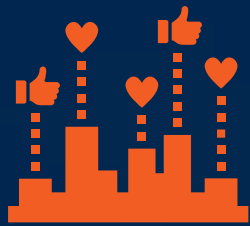
MARKET CAPACITY

Underdeveloped market for retrofits

Theory of Change



Existing building policy landscape



Disclosure



Building Performance Standards (BPS)



Maximum temperature bylaws



Retrofit Accelerator

Accelerating the adoption of energy-efficient retrofits in buildings across the Greater Toronto and Hamilton Area (GTHA).

Originating Projects

It's never been more important and easier for building owners and operators to invest in green retrofits.

Funding/Financing Support

We facilitate access to funding, financing, and grants.

Building Owner Support

TAF supplies free expert services to guide multi-family building owners in the GTHA through the deep energy retrofit process.

Capacity Building

Innovate, share lessons learned and findings to help future retrofit projects

Originating Retrofits



**Outreach to social housing providers, municipalities,
and apartment building owners**



Co-funding preliminary studies and audits



Enhanced Reserve Fund Studies

Funding and Financing Support



Understanding the Business Case



Identifying grant and financing opportunities available



Supporting application processes



Referrals to financing partners

Guiding Building Owners



Resident engagement support



Project management support



Procurement and contracting support



M&V planning



Q + A and feedback



Services are FREE

Capacity Building



Knowledge sharing



Retrofit delivery and contracting innovation



Social procurement



Market development activities



Retrofit Accelerator Criteria

REQUIRED

- ☐ Multi-residential building in the GTHA
- ☐ Four storeys or more above ground or have a building footprint of at least 600 m² or townhouse complex
- ☐ Targeting minimum 40% emissions reduction
- ☐ Partial or full electrification

NICE-TO-HAVES

- ☐ Key systems nearing end-of-life
- ☐ At least 20 years old



Financial Support

DECARBONIZATION STUDIES

- Up to 70% of study costs
- Carbon Reserve Fund Studies

DESIGN COSTS

- Up to 15% of deep retrofit design costs

COMMISSIONING (Cx)

- Up to 50% of Start-up and optimization commissioning costs

SOCIAL CONTRACTORS

- Up to 50% of social contractor costs

In-Kind Support

- ✓ Resident engagement
- ✓ IEQ monitoring
- ✓ Procurement and contracting
- ✓ Quality assurance

- ✓ Funding and financing
- ✓ Project management
- ✓ Measurement and verification
- ✓ Knowledge sharing

Retrofit Progress



Support for 47 Buildings and 4,700 homes



Retrofits of 27 buildings in progress or complete across 16 sites (1,500 homes)



\$67M in capital mobilized for deep retrofits

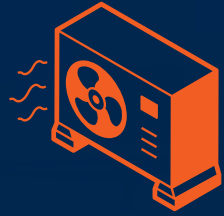


Emissions reductions of 40% to 85%



Cost per suite

Technologies and innovation



Heat pumps of all types (split systems, VRF, packaged, air-to-water, DHW, geo)



Prefabricated overcladding



Energy recovery ventilation



Grid interactive buildings



Collaborative contracting and Lean construction

Retrofit Funding Programs and Incentives

(Affordable Housing)

PROGRAM	SECTOR	REQUIREMENTS	DESCRIPTION
FCM Sustainable Affordable Housing	Affordable Housing	Minimum 25% energy reduction	- Financing up to 80% of retrofit costs up to \$10M - Grants available for 25-50% of financing amount - Grants for feasibility studies
CMHC Canadian Greener Affordable Homes (CGAH)	Affordable Housing	70% energy and 80% GHG reduction - Retrofit work completed within 2 years from approval	- Funding for 100% of eligible retrofit costs, up to \$170k per unit - Forgivable loan up \$85k per unit or 80% of eligible costs - Grants for feasibility studies

Retrofit Funding Programs and Incentives

PROGRAM	SECTOR	REQUIREMENTS	DESCRIPTION
CMHC MLI Select	Apartments	• 5 or more units. • Benefits based on affordability, energy, carbon, and accessibility	• Provides mortgage loan insurance relief for construction, purchase, or re-financing of multi-family residential buildings.
Clean Technology ITC	Apartments / Taxable Entities	• Taxable entity installing renewable energy systems, ground or air-source heat pumps	• Tax credit of up to 30%
CIB aggregator funding	Privately owned multi-residential and commercial buildings	• Minimum 30% GHG reductions • Compliance with Investor Ready Energy Efficiency certification	• Financing for up to 80% of project costs through a retrofit aggregator (e.g. Efficiency Capital) • Projects must comply with Investor Ready Energy Efficiency certification



Keith Burrows
**Director, Low-
Carbon Buildings**
kburrows@taf.ca

Retrofit Accelerator
[https://taf.ca/
retrofit-accelerator/](https://taf.ca/retrofit-accelerator/)
accelerator@taf.ca

Ask me anything!

Our Presenters Today

**Beata Domanska, Director
Development Efficiency Capital**



Efficiency Capital

- Beata understands the challenges housing providers encounter in implementing deep energy efficiency retrofits, such as expertise, time, and money.
- Beata will delve into how EC delivers fully funded, turnkey retrofit projects that include mechanical, electrical, building envelope, renewable energy, and water-saving systems.



EFFICIENCY CAPITAL

BUILDING ENERGY SAVINGS

**“Win-win-win for building owners,
the environment and investors.”**



La fondation
McConnell
Foundation

WHO WE ARE



- ❖ Developer, investor & owner of Energy Efficiency & Net Zero projects
- ❖ Works with building owners to reduce energy & GHG using a service approach
- ❖ Canada's first Energy-as-a-Service (EaaS) development & investment platform
- ❖ Incubated by TAF and accelerated by McConnell Foundation
- ❖ Multiple awards & industry recognition for innovative model
- ❖ Successful project track record since 2012



“Best ESG Solution Canada 2023”

- Global Financial Market Review



2021
REPORT ON BUSINESS
CANADA'S TOP GROWING
COMPANIES



WHY CLIENTS CHOOSE EC

CAPITAL



- No upfront capital required
- Monthly service fee over time with up to 20-year terms

RISK



- Fully transfer risk
- 3rd party certified savings

CAPACITY



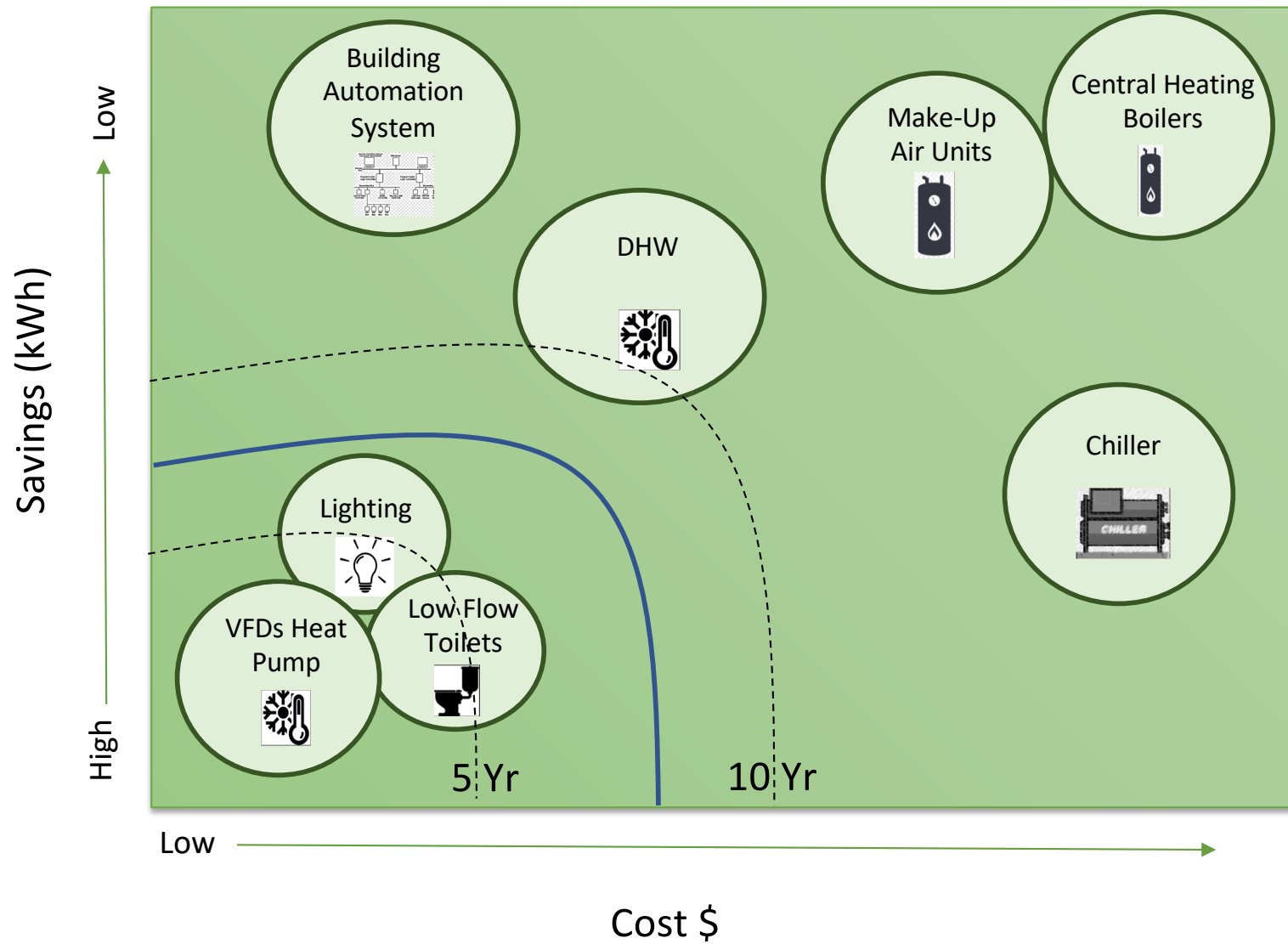
- Outsourced project development partners
- Finance, technical, and asset finance expertise

SCALABILITY

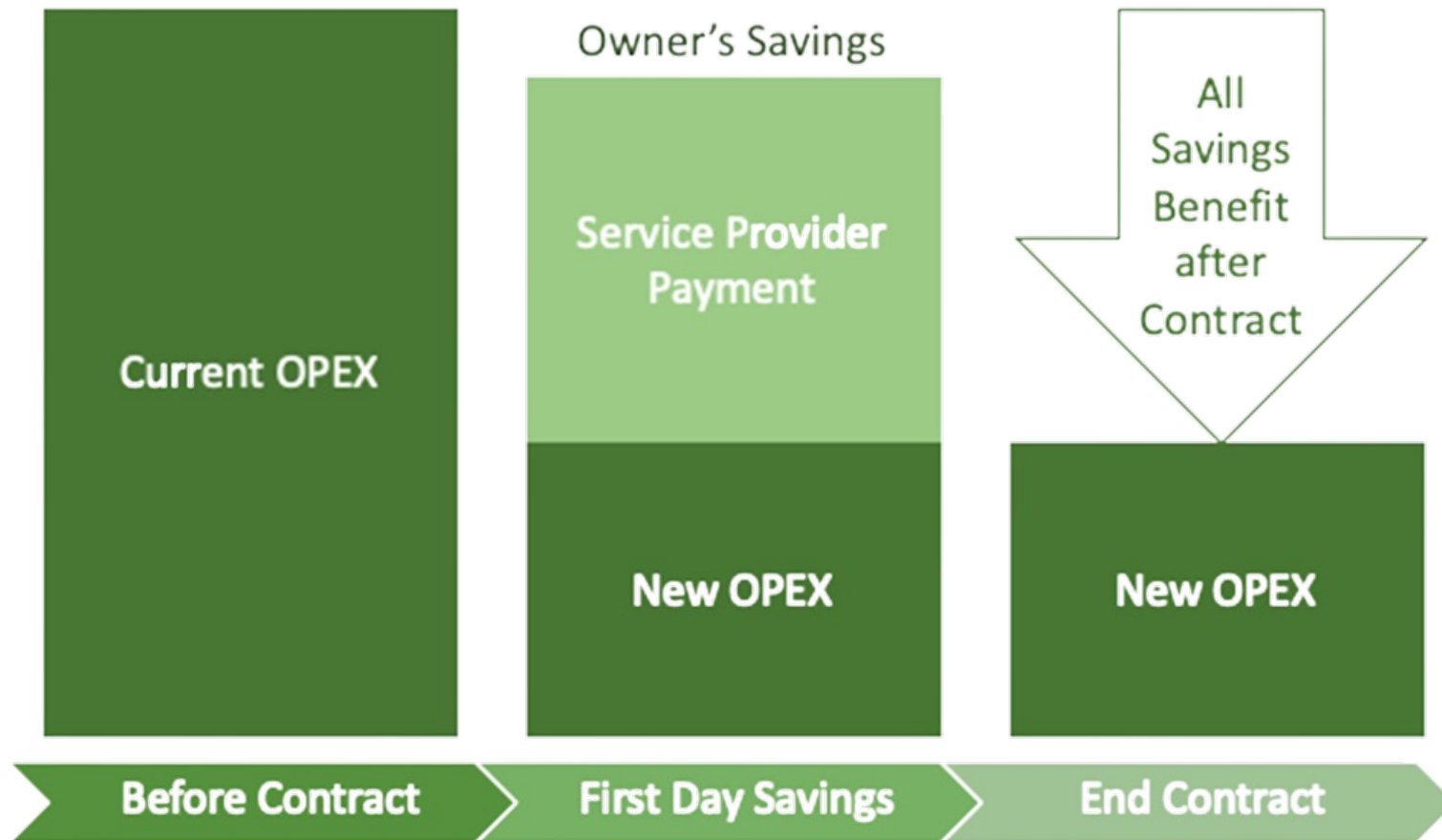


- Upgrade multiple measures & assets across a portfolio simultaneously
- Maximize impact - more & deeper measures

COMPREHENSIVE APPROACH



HOW IT WORKS



OUR SOLUTIONS



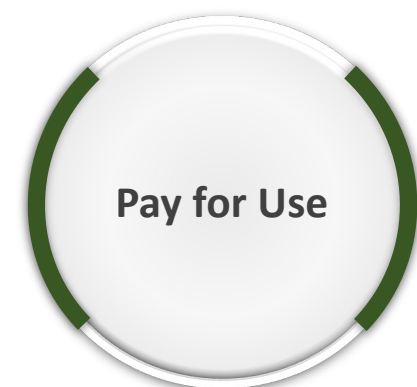
Energy Savings Performance Agreement

- Paid from measurable savings
- Savings are guaranteed
- Monitored & verified



Energy Upgrade Agreement

- Rates tied to GHG reductions
- 3rd-Party certified
- Fees based on savings



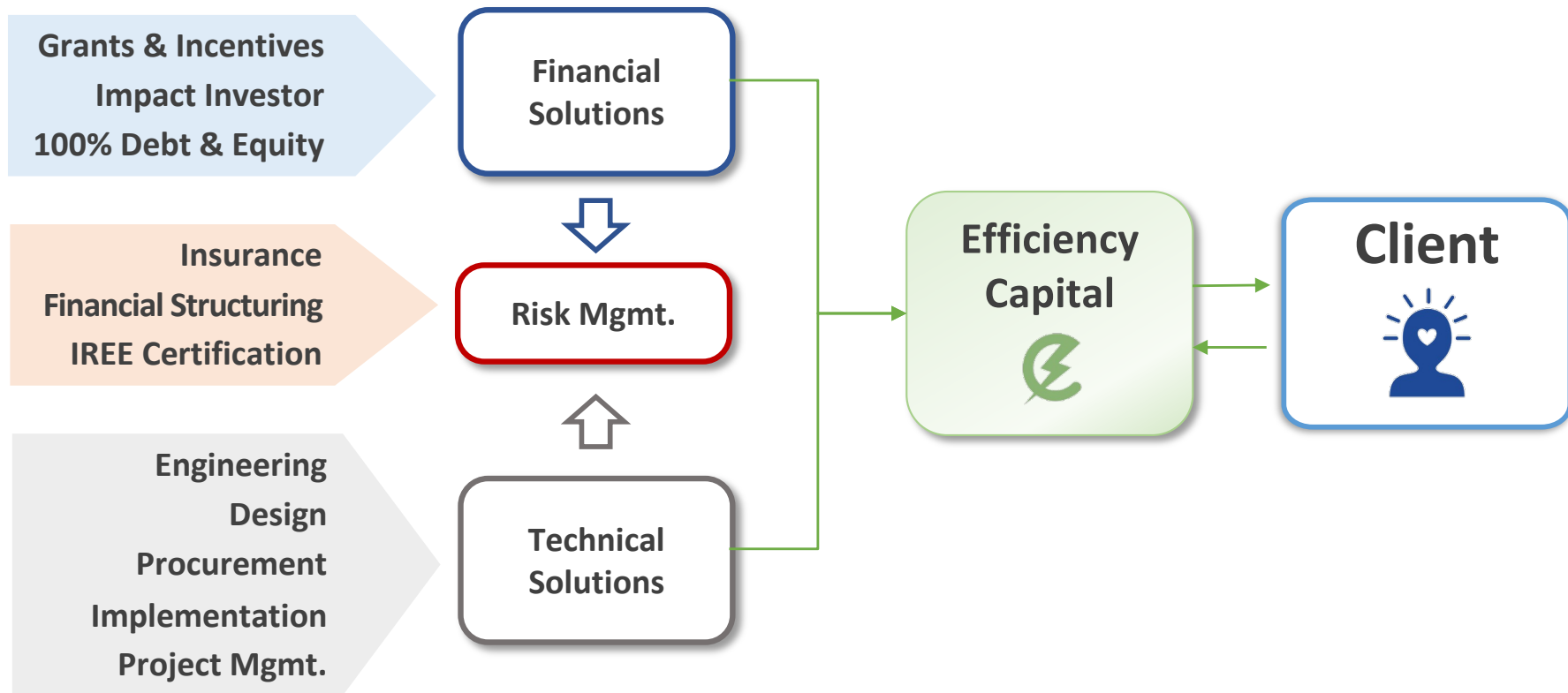
Energy & Net-Zero Service Agreement

- Full outsource of energy-related infrastructure
- Service fees tied to usage

PRODUCT FEATURES



SERVICE DELIVERY MODEL



Transparent, open book delivery

PROCESS

- **Heating & Cooling Systems**
(Heat pumps, chillers, exchangers)
- **Smart Controls and Automation**
(Monitoring, predictive maintenance)
- **Renewable Generation & Storage**
(Solar PV, geo, hydrogen, batteries)
- **EVs & Charging Solutions**
(Chargers, electrical upgrades)
- **Pumps & Motors**
(Variable, electronically commutated)
- **Lighting**
(LED, lumen optimization)



6-18 months*

WOODGREEN CASE STUDY

WOODGREEN CASE STUDY

► Assets Needed Renewal and Capital Reserves Were Insufficient

Infrastructure deficits across 800 units over next 30yrs (~\$70 M)



EC provides innovative solution collaborating with 3rd parties



Integrated Long-Term Capital Asset Management & Finance Strategy

EC Solution Addressed and Modernized:

Asset
Management

Property Management

Maintenance Equipment
Operations

Energy Management,
Controls & Analysis



High efficiency boilers & air-cooled chillers



High-efficiency toilets & other water measures



Controls, sensors & building automation



Pumps & make-up air units with variable drives



Infiltration improvements

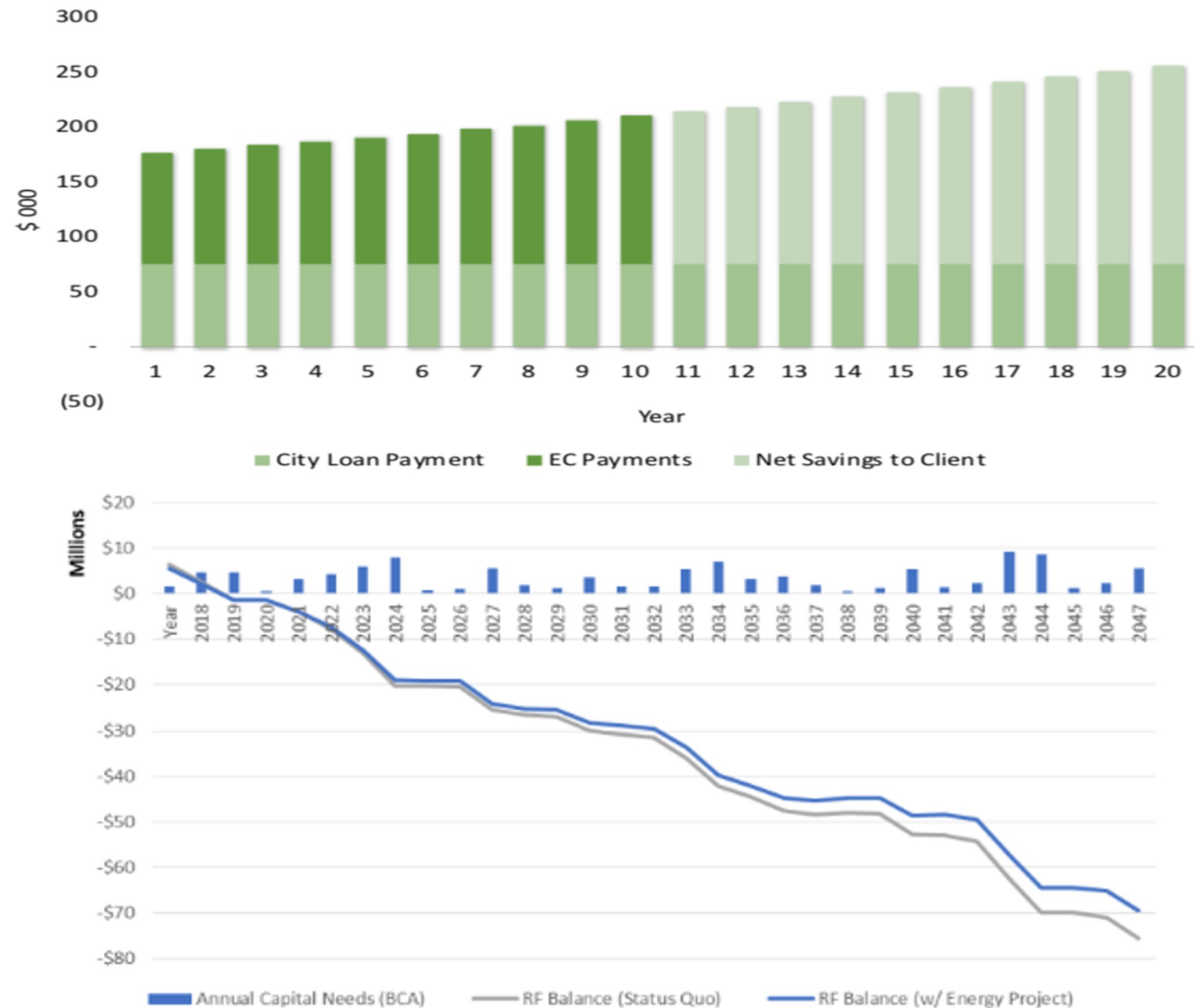


LED lighting

WOODGREEN CASE STUDY

\$1.3M investment
from WCS was
leveraged into a
\$3.4M capital
project.

The investment will
provide a **\$6.1M**
improvement
to reserves over **30**
years.



“We recognize EC for its innovative financing approach which enables building owners to execute on major energy efficiency retrofit projects without the need for any upfront, working capital deployment.”



EHREN CORY,
CEO

CIB  **BIC**

Canada
Infrastructure
Bank



QUESTIONS?

Beata Domanska

Director, Development

beata.domanska@efficiencycap.com



Our Solutions

ESPA™

Energy Upgrade Agreement

Efficiency as a Service

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Keith Burrows, Director Low Carbon Buildings



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Durham Greener Buildings "You Can't Manage What you Don't Measure"

Owner	Buildings required to report to the EWRB as of July 1, 2023	Compliance Rate	Buildings not required to the EWRB	BPS Buildings	Buildings Reporting to Durham's Program
	50,000 SF +		20-50,000 SF	Public Sector	
Total / Max No. Buildings	663	-	692	683	2,038
2021 (Actual)	86	31% <i>Based on buildings 100,000 SF +</i>	-	-	N/A
Approach	Increase compliance especially as the requirements expands to building over 50,000 SF		Encourage voluntary benchmarking	Get BPS buildings to report to Durham's Program to demonstrate leadership	
Year 1 Targets	150 - 200	20 - 30%	0 - 50	300 - 400*	450 - 650
Year 2 Targets	350 - 400	50 - 60%	50 - 100	400 - 500*	800 - 1,000
Year 3 Targets	400 - 450	60 - 70%	100 - 150	500 - 600*	1,000 - 1,200

Voluntary Program that builds on the Provincial EWRB (Energy and Reporting & Benchmarking for buildings over 50,000 sqft)

DGB Program Components

- “Building Challenge” modelled on USA EPA Battle of the Buildings
- Energy Star Portfolio Manager metrics
- Voluntary Public Disclosure
- Annual recognition event

November 13th, 2024 in Town of Whitby





Challenge Website is "live"

[JOIN THE CHALLENGE](#)[Sitemap](#)[Home](#)[About ▾](#)[The Challenge ▾](#)[Participants](#)[Awards](#)[Resources ▾](#)[FAQ's](#)[Blog](#)

Building owners, managers, tenants — taking action on climate change



Offers resources to "take action" on climate change



[Home](#) [About](#) [The Challenge](#) [Participants](#) [Awards](#) [Resources](#) [FAQ's](#) [Blog](#)

Climate Emergency

The buildings sector needs to take urgent action

According to the Canada's [2030 Emissions Reduction Plan](#), for Canada to reach [net-zero by 2050](#) the emissions from buildings need to be reduced by over 47 Megatonnes (mt) of GHG emissions. To meet this goal, the buildings sector needs to take urgent action to decarbonize operations. Benchmarking your building(s) and eliminating energy waste is the place to start.





Participants can register now.

[JOIN THE CHALLENGE](#)[Sitemap](#)[Home](#)[About ▾](#)[The Challenge ▾](#)[Participants](#)[Awards](#)[Resources ▾](#)[FAQ's](#)[Blog](#)

Join the Durham Building Challenge

Registration is now open

Please complete the form below and we will reach out to you to discuss how you will benefit from being part of the Durham Greener Buildings Challenge.

First name ***Last name *****Company name *****Job title *****Address *****City *****E-mail *****Phone number ***

Company Information

Relationship to building(s) ***Multiple buildings managed? ***[What is The Challenge](#)[Benefits of joining](#)[Steps to get started](#)[Join The Challenge](#)

Buildings Dashboard

258

Addresses Reported

2331

Times Reported

Energy Intensity (GJ/Sqft)



GHG Emissions (Kg)

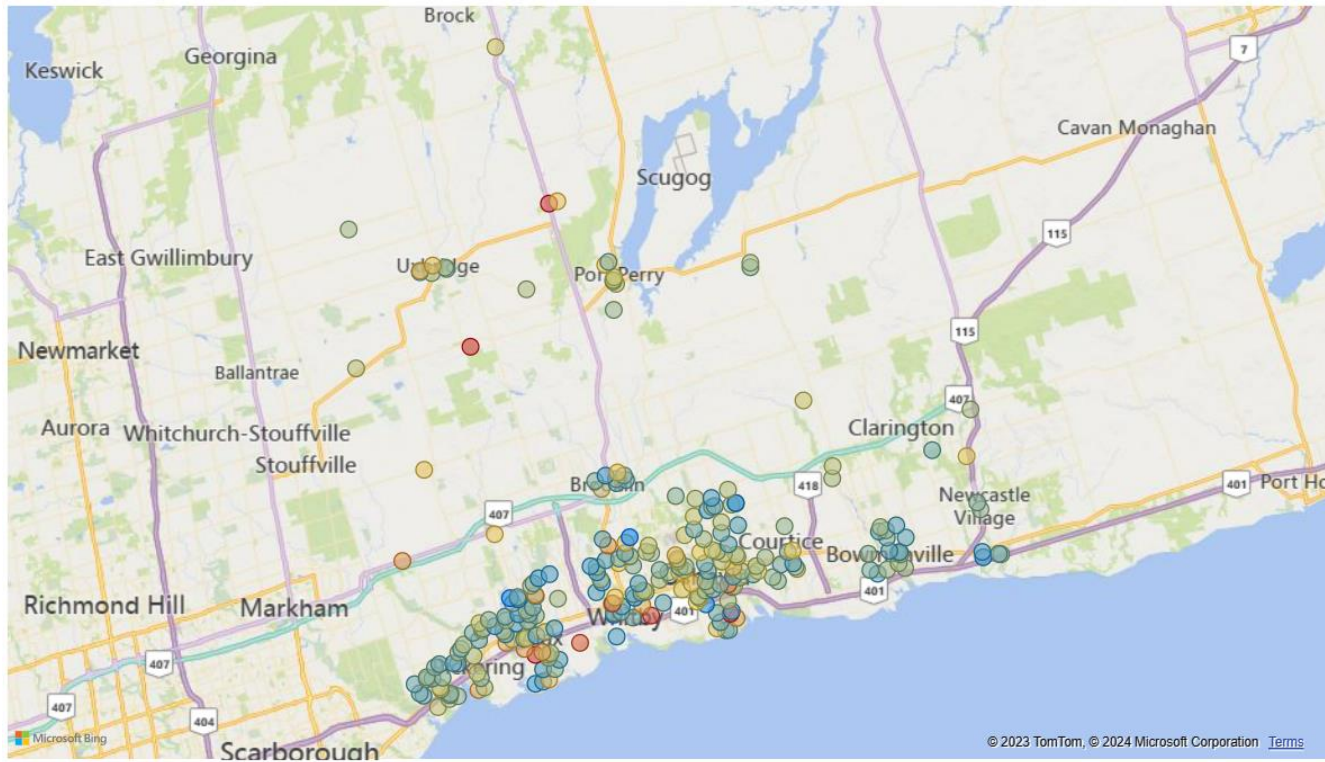


Reporting Year

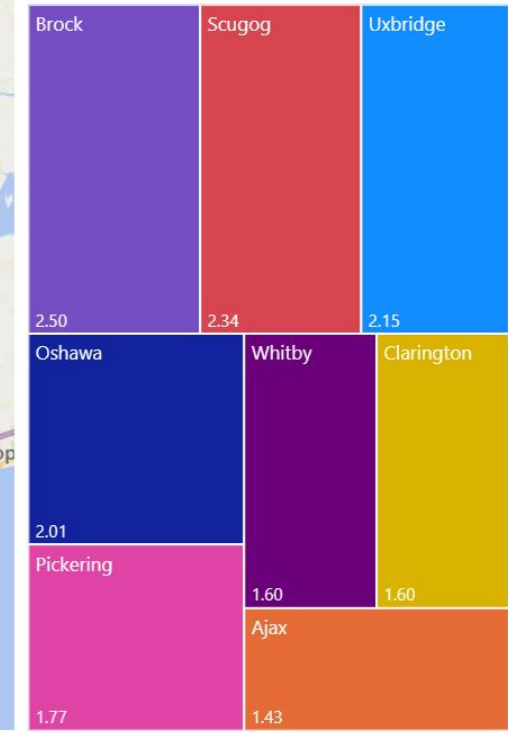
All

Building Type

School Board



Regions by Median GHG Emission Intensity



Data Visualizations by Windfall centre . ca

Sample Building Benchmark Report

- Site Energy Use Index
- Energy Star Score
- Total GHG
- GHG Intensity Ranking
- Benchmarking Profile – regional and local

Portfolio Average Total (Location-Based) GHG Emissions Intensity

+2.3 ▶ Change in Average Total (Location-Based) GHG Emissions Intensity

11.7 ▶ Current Average Total (Location-Based) GHG Emissions Intensity

9.4 ▶ Baseline Average Total (Location-Based) GHG Emissions Intensity

Properties Included: 2

Your Properties Compared to the National Median Total (Location-Based) GHG Emissions Intensity

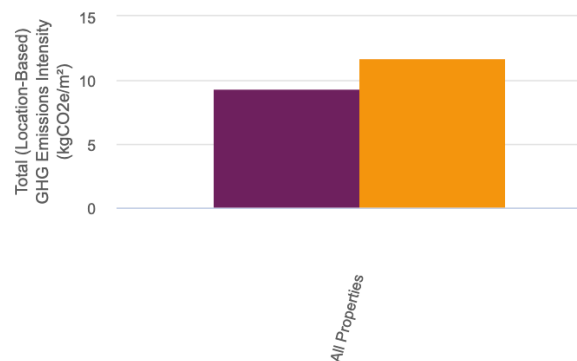
● Total (Location-Based) GHG Emissions Intensity Equal to or Below the Median

● Total (Location-Based) GHG Emissions Intensity Above the Median



Total (Location-Based) GHG Emissions Intensity by Group

[Select Groups](#)

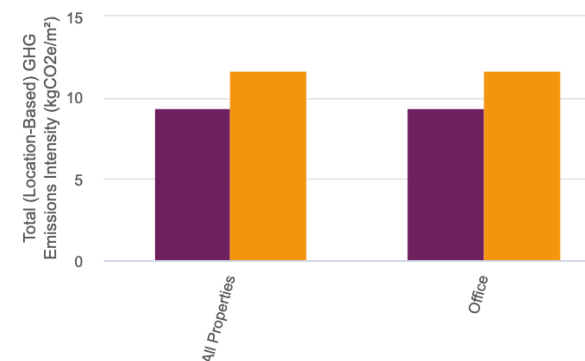


● Baseline Total (Location-Based) GHG Emissions Intensity

● Current Total (Location-Based) GHG Emissions Intensity

Total (Location-Based) GHG Emissions Intensity by Property Type

[Select Types](#)



● Baseline Total (Location-Based) GHG Emissions Intensity

● Current Total (Location-Based) GHG Emissions Intensity



Thank you – Join the Durham Greener Building Challenge!

info@durhamgreenerbuildings.ca