



RANGEVIEW ESTATES DEVELOPMENT MASTER PLAN SUSTAINABILITY STRATEGY

Prepared by:

**URBAN
EQUATION**

Prepared for:

Rangeview Landowner's Group

November 10, 2022

Land Acknowledgement

We recognize that the Rangeview Estates, located in the present-day City of Mississauga, as being part of the Treaty and Traditional Territory of the Mississauga's of the Credit First Nation, the Haudenosaunee Confederacy the Huron Wendat and Wyandot Nations. We recognize these peoples and their ancestors as peoples who inhabited these lands since time immemorial.

TABLE OF CONTENTS

4	SECTION 1 INTRODUCTION
6	SECTION 2 PROJECT CONTEXT
11	SECTION 3 VISION, PRINCIPLES AND GOALS
13	SECTION 4 STRATEGIES
34	SECTION 5 IMPLEMENTATION STRATEGY
36	APPENDIX A: COMMUNITY SCALE PERFORMANCE METRICS
40	APPENDIX B: BUILDING SCALE PERFORMANCE METRICS
43	APPENDIX C: CERTIFICATION



SECTION 1 INTRODUCTION

1.1 Call to Action

Warming in Canada is approximately double that of the global average. Heat waves, coastal erosion, droughts, wildfires, flooding, and risks to critical infrastructure are already being felt across Canada. Research overwhelmingly ascribes these unprecedented changes to human behaviour and warns of significant risk to biodiversity, human health, security, and economic growth.

In 2019, the City of Mississauga joined a growing number of Canadian municipalities in declaring a climate emergency and committed to taking action against climate change. Cities are increasingly being relied upon to develop and implement sustainability strategies that consider their streets, buildings, open spaces, and people.

By adopting best-practice in sustainable development, the

Rangeview Estates will be a future-focused community which will contribute to the City's climate action objectives. To achieve a balance between what we consume and what nature produces, we all have to do our part – regulators, developers, and citizens alike.

1.2 What is Sustainable Development?

Research has shown that North Americans are living, building, and consuming as if we have five planets worth of resources. Sustainable development is development which meets the needs of the present without impacting the availability of resources for future generations. Sustainable development is about creating communities which foster a healthy natural and built environment, a thriving society, and a stable economy, all within the means of our one planet

1.3 One Planet Living®: An Organizing Framework

At Rangeview Estates, the One Planet Living (OPL) Framework will be used to guide our approach to developing a complete and comprehensive plan that will tackle climate change, build resilient communities, and regenerate the living systems around us.

The OPL Framework offers a holistic approach to sustainability that goes beyond green building standards for materials, water and energy conservation, and indoor air quality. It aims to create a future where it is easy, attractive, and affordable for people to lead happy and healthy lives using a fair share of the earth's resources.

OPL is unique in that it is universal. Its 10 Guiding Principles cover all aspects of social, economic, and environmental sustainability. It addresses all phases of a project, from design to construction, through to operations, programming, and personal lifestyle choices. In this way, One Planet Living embeds sustainability into a projects' DNA rather than making it a stand-alone topic.

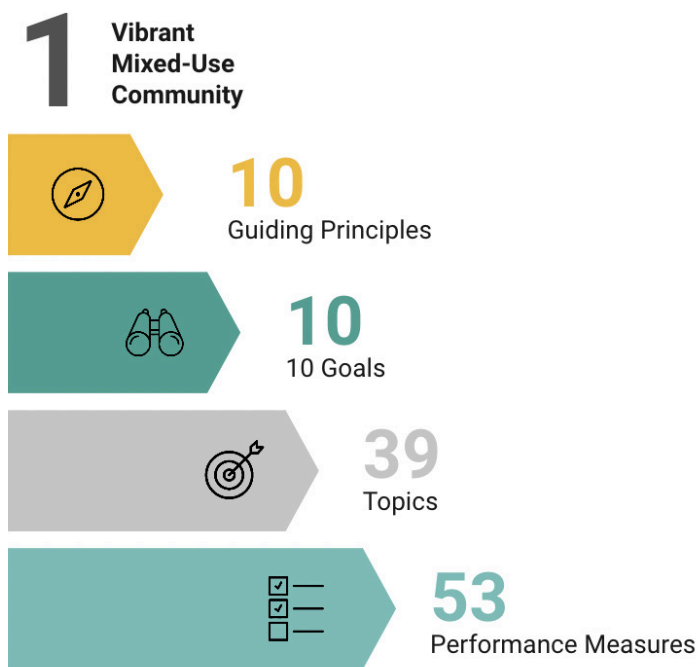
The ten OPL principles are:

- Health and Happiness
- Equity and Local Economy
- Culture and Community
- Land Use and Nature
- Sustainable Water
- Local and Sustainable Food
- Travel and Transport
- Materials and Products
- Zero Waste
- Zero Carbon

Note: While the Rangeview Estates is organized around the OPL principles, there is no commitment to pursue OPL endorsement at this time. The performance measures listed in the appendices are not equivalent to the level of performance required for full OPL endorsement.

1.4 Purpose of this Document

This document defines sustainability commitments for Rangeview Estates. For each OPL principle, this document outlines sustainability topics, performance measures, and strategies to meet the community's sustainability goals.





SECTION 2 PROJECT CONTEXT

Aerial View of Rangeview Estates Towards Lake Ontario

2.1 What Makes Rangeview Estates Unique

The Rangeview Estates area is a roughly 25 ha site in Mississauga. The site is located adjacent to Lakeview Village and is a roughly 5-minute walk from both Douglas Kennedy Park and Ogden Park. When complete, the Rangeview Estates area will be a healthy and sustainable community, complete with liveable neighbourhoods, integrated greenspaces, a connected transit system, and thriving commercial areas. The community is expected to accommodate approximately 5300 residential units and over two hectares of parkland.

The following are a few key sustainability relevant features of the existing Rangeview Estates site:



Strengths:

- Proximity to Lake Ontario
- Proximity to planned higher-order transit
- Adjacent to future Lakeview Village mixed-use development
- Proximity to several existing parks and open spaces (Lakeview Park, Douglas Kennedy Park, Lakefront Promenade Park, Lakeshore Park)
- Proximity to diversified services and retail on Lakeshore Road E

Opportunities:

- Industrial brownfield land area
- “Somewhat walkable” area (57 Walkscore) with “Some Transit” (42 Transit Score)
- Car oriented streetscape design
- Highly mineralized site

2.2 Policy Alignment

Five main policy documents are relevant for sustainable urban development in Mississauga, one being specific to the Lakeview redevelopment area. The Rangeview Estates Sustainability Strategy has been developed to support these policies and push Mississauga’s sustainability objectives further.

Our Future Mississauga (2009)

Adopted in 2009, Our Future Mississauga serves as the City’s Strategic Plan. This document guides decision-making, priority-setting and focuses the City’s efforts on those specific areas of strategic change that will make its Vision for Our Future Mississauga a reality.

It is guided by the following five strategic pillars for change:

The sustainability principles outlined in the Rangeview Estates Sustainability Strategy align with the five strategic pillars of the Strategic Plan as seen in diagram below.



Health and Happiness				
Equity and Local Economy				
Culture and Community				
Land Use and Nature				
Sustainable Water				
Local and Sustainable Food				
Materials and Products				
Travel and Transport				
Zero Waste				
Zero Carbon				

OPA 89 Lakeview (2018)

The Official Plan Amendment for Lakeview contains eight guiding principles developed with the community through City initiated Inspiration Lakeview visioning:

- **Link:** connect the City and the water
- **Open:** Open the site with accessible public spaces for all
- **Green:** Create a green, sustainable innovative model community
- **Vibrant:** Create a mixed-use community affordable and welcoming to all
- **Connect:** Provide multiple ways to get around: transit, walking & cycling
- **Destination:** Create a special place to draw visitors
- **Remember:** Commemorate history while creating a new legacy
- **Viable:** Balance public & private investment economically sustainable

The sustainability principles outlined in the Rangeview Estates Sustainability Strategy align with the eight principles of OPA 89 as seen in the diagram below.



	Link Connect the City and the water	Open Open the site with accessible public spaces for all	Green Create a green, sustainable innovative model community	Vibrant Create a mixed-use community affordable and welcoming to all	Connect Provide multiple ways to get around: transit, walking & cycling	Destination Create a special place to draw visitors	Remember Commemorate history while creating a new legacy	Viable Balance public & private investment to be economically sustainable
Health and Happiness		✓		✓		✓		
Equity and Local Economy				✓				✓
Culture and Community						✓	✓	
Land Use and Nature			✓					
Sustainable Water	✓							
Local and Sustainable Food			✓					
Materials and Products			✓					
Travel and Transport					✓			
Zero Waste			✓					
Zero Carbon			✓					

Mississauga Green Development Standard (2012)

Developed in 2012 in response to the City Council's adoption of the Green Development Strategy, the Mississauga Green Development Standard defines "low impact development" requirements for local construction in the following four areas:

- Stormwater Retention
- Soft Material Landscape
- Pedestrian and Cycling Comfort
- Exterior Building Design

In 2021, the City received a grant to update the Mississauga Green Development Standard to reflect current best-practice in sustainable development. The new Green Development Standards will improve energy efficiency, building resiliency and sustainable sites for private development.

Living Green Master Plan (2012)

The Living Green Master Plan (LGMP), adopted in 2012, is Mississauga's environmental sustainability action plan. It provides a framework for the City, in collaboration with the community, businesses and other levels of government, to meet environmental goals in the Strategic Plan. The LGMP primarily focuses on three of Our Future Mississauga Strategic Plan Pillars Strategic Pillars for Change: "Move", "Connect" and "Green".



Transportation



Urban
Form



Natural
Areas System



Air



Water



Waste



Energy

City of Mississauga Climate Change Action Plan (2020)

Adopted in 2020, the City of Mississauga Climate Change Action Plan includes actions to both mitigate and adapt to climate change. It is built around the central vision that Mississauga will be a low carbon and resilient community. This vision is the long-term outcome and end-state that the City aims to achieve over the next 30+ years across the following five 'action pathways':



**Buildings &
Clean Energy**



**Resilient & Green
Infrastructure**



**Accelerating Discovery
& Innovation**



**Low Emissions
Mobility & Transportation**



**Engagement &
Partnerships**

Build Beautiful (Under Development)

Build Beautiful is the City of Mississauga's Stormwater Master Plan. Build Beautiful is currently under development and will outline actions and recommendations for managing rainwater over the immediate and long-term in Mississauga. Managing stormwater is crucial to help protect public safety and health, reduce flood risks, control erosion, and maintain local water quality and waterways.



SECTION 3 VISION, PRINCIPLES AND GOALS

Aerial View of Ogden Park Towards Lake Ontario

3.1 Vision

Rangeview Estates will showcase exceptional design quality that will embrace holistic sustainability by addressing healthy environmental, social and economic practices. It will contribute to achieving local climate action ambition in Mississauga and respond to relevant sustainability policy.

3.2 Guiding Principles & Goals

The Rangeview Estates Sustainability Strategy used the ten OPL principles to organize its sustainability commitments. The diagram below describes the goals of each principle.

									
Health and happiness		Encouraging active, social, meaningful lives to promote good health and wellbeing							
Equity and local economy		Creating safe, equitable places to live and work which support local prosperity and international fair trade							
Culture and community		Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living							
Land and nature		Protecting and restoring land for the benefit of people and wildlife							
Sustainable water		Using water efficiently, protecting local water resources and reducing flooding and drought							
Local and sustainable food		Promoting sustainable humane farming and healthy diets high in local, seasonal organic food and vegetable protein							
Travel and transport		Reducing the need to travel, encouraging walking, cycling and low carbon transport							
Materials and products		Using materials from sustainable sources and promoting products which help people reduce consumption.							
Zero waste		Reducing consumption, re-using and recycling to achieve zero waste and zero pollution							
Zero carbon energy		Making buildings and manufacturing energy efficient and supplying all energy with renewables							



SECTION 4 STRATEGIES

Aerial View of Central Square Looking Northwest Towards Street 'L'

4.1 Overview

The following sustainability topics, performance measures, and strategies are the heart of the Sustainability Strategy. This section is meant to inspire creativity and innovation throughout the development of Rangeview Estates. Organized by the ten One Planet Living principles, the following pages give a holistic overview of how the sustainability vision can be achieved. For each principle, topics, performance measures, and location specific strategies have been identified which will help achieve the overall goal of each principle. Details for each performance measure can be found in the appendices.



HEALTH AND HAPPINESS

Encouraging active, social, meaningful lives to promote good health and wellbeing.

Topics

Access to Parks and Open Spaces: Providing access to a variety of green spaces close to residential and work places in an effort to encourage physical and mental health of residents, employees and visitors.

Physical Activity Spaces: Creating community spaces which support physical and mental health of its residents.

Heat Island Effect: Using infrastructure to mitigate high city temperatures.

Building Resilience: Designing communities and buildings to withstand the impact of extreme weather events and the changing climate.

Outdoor Amenity Space: Creating private spaces for community members.

Related Performance Measures

Community Scale:

- CS.HH1
- CS.HH2
- CS.HH3

Building Scale:

- BS.HH1
- BS.HH2
- BS.HH3



Intensive Green Roof



White Roof



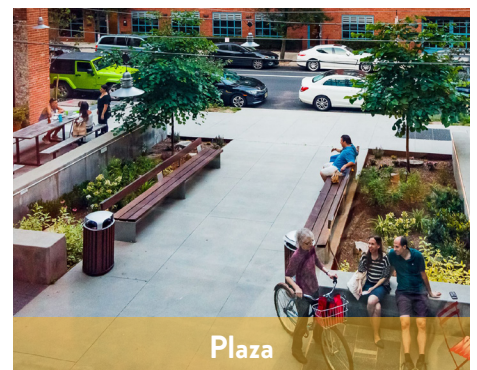
Passive Park



Extensive Green Roofs



Green Walls



Plaza



HEALTH AND HAPPINESS

Encouraging active, social, meaningful lives to promote good health and wellbeing.

Location Specific Strategies

- Improve visibility and direct pedestrian connections towards the water through the addition of two linear parks along Lakefront Promenade and the Ogden Park extension along Ogden Avenue
- Create a human scaled street wall framing parks and streets to foster a pedestrian-scale experience at ground level
- Dedicate parkland area or parkette within each character area to serve the local residents
- Provide publicly accessible spaces and mid-block connections between buildings to create a permeable network of pedestrian routes connecting to public parks, the waterfront and other open spaces
- Include sports and active spaces such as: Play zones, Fitness POD, Games Tables, Pickle Ball, Water Play/ Cooling Spot, Soccer Pitch, Yoga Platform, Ice Rink

Additional Strategies Being Explored

- Planters (at-grade or raised)
- Shade with structures covered by energy generation systems
- Shade with architectural devices or structures
- Shade with vegetated structures.
- Paving materials with a three-year aged high solar reflectance (SR)
- Open-grid pavement system
- Refuge areas with heating, cooling, lighting, potable water, and power available and 72 hours
- Common roof terraces, pools, playgrounds, and spaces to cook and eat
- Green roofs and cool roofs
- Solar ready roofs
- Green walls



EQUITY AND LOCAL ECONOMY

Creating safe, equitable places to live and work which support local prosperity and international fair trade

Topics

Affordable Housing: Providing access to housing at reasonable costs to segments of society requirement assistance.

Accessibility: Ensuring public spaces and building are accessible and easily usable to residents, employees, and visitors of all ages and levels of ability.

Housing Types and Size: Enabling citizens from a wide range of economic levels, household sizes and age groups to live within the community by providing a sufficient variety of housing sizes and types.

Related Performance Measures

Community Scale:

- CS.ELE1
- CS.ELE2
- CS.ELE3

Building Scale:

- BS.ELE1



Automated Entrances



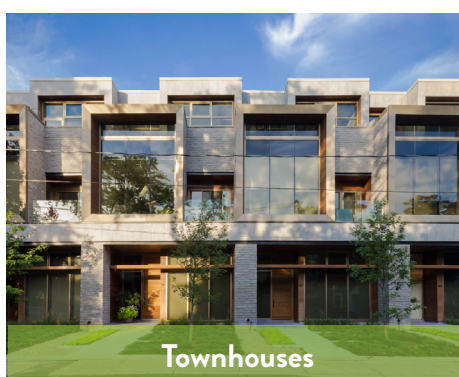
Mid-Rise Apartments



Affordable Ownership Housing



Tactile Surface Indicators



Townhouses



Affordable Rental Housing



EQUITY AND LOCAL ECONOMY

Creating safe, equitable places to live and work which support local prosperity and international fair trade

Location Specific Strategies

- Mix of tall buildings (9-15 storeys), mid (5-8 storeys) and low-rise (up to 4 storeys)
- Low-rise buildings range from 3-storey back-to-back town house and 4-storey back-to-back town house
- Non-stacked townhouses contemplated at a minimum unit dimension (per floor) of 6m x 14m
- Stacked townhouses contemplated at a minimum unit dimension (per floor) of 6m x 9m
- Mid-rise and tall buildings contemplate an average unit size of 80 sq m

Additional Strategies Being Explored

- Variety of housing types
- Variety of housing opportunities and values
- Variety of housing layouts and aesthetics
- Tactile walking surface indicators



CULTURE AND COMMUNITY

Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living

Topics

Public Art: Bolstering local identity, pride, and sense of belonging by featuring art through the community in a way that contributes value to its cultural, aesthetic and economic vitality.

Outdoor Community Spaces: Providing access to a variety of parks and public spaces to encourage community gatherings.

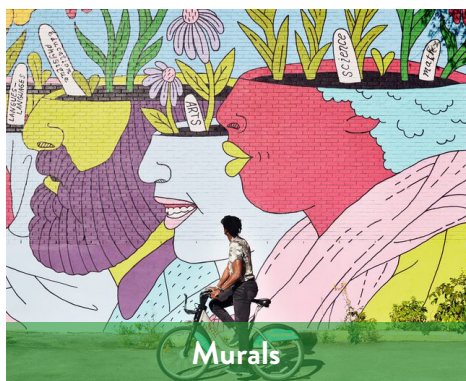
Indoor Gathering Spaces: To enhance community participation by providing facilities that enhance social interaction and networking.

Engagement: To create a shared vision for the community.

Related Performance Measures

Community Scale

- CS.CC1
- CS.CC2
- CS.CC3
- CS.CC4



Murals



Sculptures



Youth Art Activity



Indoor Community Space



Festive Park Gatherings



Programming with Local Artists



CULTURE AND COMMUNITY

Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living

Location Specific Strategies

- Gateway
- Public Art Features
- Gathering Circle
- Seating
- Seating Plaza
- Games Table
- Performance Area/Shelter
- Picnic Shelter
- Outdoor Cooking

Additional Strategies Being Explored

- Sculptures and murals
- Plaza
- Square
- Park
- Amphitheatre
- Community Center
- Woonerf / Pedestrian Street
- Atrium
- Engagement



LAND USE AND NATURE

Protecting and restoring land for the benefit of people and wildlife

Topics

Light Pollution: Minimizing ambient light levels to protect public and ecological health, increase night sky access, improve nighttime visibility, and reduce the consequences of development for wildlife and people.

Tree Planting Soil: Providing high quality soil to support urban landscaping.

Tree Planting Canopy: Providing adequate tree-lined and shaded streetscapes in order to reduce urban heat island effects, improve air quality, and reduce cooling loads in buildings.

On-Site Landscaping: Incorporating native plants and reducing the use of potable water for landscaped irrigation.

Bird-Friendly Glazing: Providing infrastructure to reduce bird collisions.

Related Performance Measures

Community Scale:

- CS.LUN1
- CS.LUN2
- CS.LUN3
- CS.LUN4

Building Scale:

- BS.LUN1
- BS.LUN2



On Street Trees



Downcast Lighting



Pollinator Friendly Landscapes



Soil Quantity and Quality



Wildflower Verges



Deeproot Urban Landscaping



LAND USE AND NATURE

Protecting and restoring land for the benefit of people and wildlife

Location Specific Strategies

- Street lined trees and planted public spaces

Additional Strategies Being Explored

- LED lighting
- Reduced backlight-uplight-glare (BUG) design
- Optimized circulation network lighting
- Deeproot urban landscaping
- Wildflower verges
- Protection of imperiled species
- Bird-friendly buildings
- Large growing shade trees along street and public space frontages
- Native, drought-tolerant plants
- Reduce the use of potable water for irrigation
- Absence of invasive species
- Visual markers applied to glass
- Non-reflective glass
- Visual markers for birds on balcony railings and fly-through conditions
- Visual markers on elevations facing high hazard area for birds



SUSTAINABLE WATER

Using water efficiently, protecting local water sources and reducing flooding and drought

Topics

Stormwater Quality: Creating infrastructure to properly manage and treat stormwater.

Stormwater Management: Employing design strategies to reduce runoff volume, prevent erosion, and flooding.

Water Friendly Landscaping: Using water-efficient landscaping strategies to limit the use of potable water for landscape irrigation.

Water Efficiency: Reducing the burden on potable water supply and wastewater systems by maximizing indoor water efficiency.

Related Performance Measures

Community Scale:

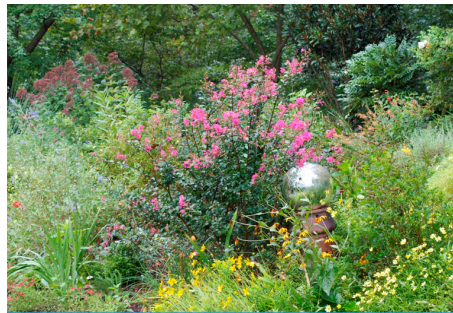
- CS.SW1
- CS.SW2
- CS.SW3
- CS.SW4
- CS.SW5

Building Scale:

- BS.SW1
- BS.SW2



Stormwater Capture



Self-Sustaining Plantings and Soils



Low-Flow Fixtures



Hydrozoned Irrigation Systems



Bioswales



On-Street Rain Garden



SUSTAINABLE WATER

Using water efficiently, protecting local water sources and reducing flooding and drought

Location Specific Strategies

- On street bio-retention areas 1.5-2.75m wide (with and without trees)
- Limited use of large, sodded areas

Additional Strategies Being Explored

- Blue/green infrastructure
- Exposed low impact development
- Pervious paving materials
- High-density planting
- Off street bio-retention areas (parking)
- Construction activity pollution prevention plan
- Sedimentation control plan for construction (including strategies like sediment controls, drain inlet protection, etc.)
- Water metering
- Low flow equipment
- Drought-tolerant plants



LOCAL AND SUSTAINABLE FOOD

Promoting sustainable human farming and healthy diets in local, seasonal organic food and vegetable protein

Topics

Local Food Production: Encouraging local involvement in and education about food production through community gardens, planters, and other design strategies, in an effort to improve health and wellbeing.

Rooftop Gardens: Providing space for residents to enjoy locally grown food.

Related Performance Measures

Community Scale:

- CS.LSF1

Building Scale:

- BS.LSF1



Planters and Terrace Growing



Edible Landscaping



Food Forest



Community Garden



LOCAL AND SUSTAINABLE FOOD

Promoting sustainable human farming and healthy diets in local, seasonal organic food and vegetable protein

Location Specific Strategies

- Community gardens in public parks

Additional Strategies Being Explored

- Rooftop gardens on mid and high-rise buildings
- Edible landscaping
- Planters and terrace growing
- Orchards
- Beehives
- Farmers Markets



MATERIALS AND PRODUCTS

Using materials from sustainable sources and promoting products which help people reduce consumption

Topics

Recycled/Reclaimed Materials: Using recycled and re-purposed materials in building design in order to reduce impacts stemming from material extraction and processing.

Sustainable Materials: Reducing the environmental impacts of building materials and products through design and operations strategies.

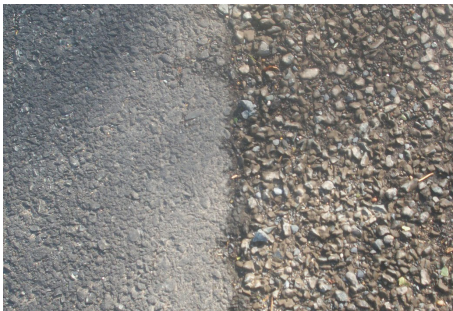
Related Performance Measures

Community Scale:

- CS.MP1

Building Scale:

- BS.MP1



Pavement Re-Use



Low Embodied Carbon Materials



Sustainable Labeled Products



Bio-Based and Non-Toxic Materials



MATERIALS AND PRODUCTS

Using materials from sustainable sources and promoting products which help people reduce consumption

Location Specific Strategies

- To be determined later

Strategies Being Explored

- Low embodied carbon materials
- Natural and biobased materials
- Renewable materials
- Reused/reclaimed content and recycled materials in landscaping materials



TRAVEL AND TRANSPORT

Reducing the need to travel, and encouraging walking, cycling and low carbon transport

Topics

Walkability: Encouraging walking by designing accessible and connected sidewalk and crosswalk networks as a means of improving public health and reducing environmental impacts.

Bikeability: Providing access to cycling networks, bike lanes, and related infrastructure to encourage active lifestyle and low carbon transportation.

Compact Development: To conserve land, promote livability, walkability, and transportation efficiency and reduce vehicle distance travelled while improving public health by encouraging daily physical activity and access to amenities

Car Dependency Reduction: To create communities which encourage people to take fewer and shorter vehicle trips and support public and active transportation.

Access to Transit: Providing adequate access to public transportation for all members of the community.

Parking: Providing enough public parking to support the community.

Bicycle Parking: Providing short- and long-term parking to residential buildings.

Electric Vehicle Charging: Providing infrastructure to support and encourage the use of electric vehicles.



Electric Vehicle Charging Stations



Reduced Parking Footprint



Small Blocks



Indoor Bike Storage



Protected Bike Lanes



Bike Network



TRAVEL AND TRANSPORT

Reducing the need to travel, and encouraging walking, cycling and low carbon transport

Related Performance Measures

Community Scale:

- CS.TT1
- CS.TT2
- CS.TT3
- CS.TT4
- CS.TT5
- CS.TT6
- CS.TT7
- CS.TT8
- CS.TT9
- CS.TT10
- CS.TT11
- CS.TT12
- CS.TT13

Building Scale:

- BS.TT1
- BS.TT2

Location Specific Strategies

- New street grid network with compact new blocks
- Woonerf/living street
- Midblock pedestrian connections
- POPS connections
- Continuous sidewalk provision (2m wide)
- Dual Cycling Tracks
- Two new one directional bike lanes on Lakeshore Road Est
- Transportation Demand Management (TDM) Plan
- Minimizing surface / reduced parking footprint
- Maximizing underground parking
- Optimizing on-street parking

Additional Strategies Being Explored

- Electric vehicle charging stations
- All-weather routes
- Public transit shelters
- Crime Preventions through Environmental Design (CPTED)
- Building-height to street ratio
- Promoting car-sharing
- Protected bike parking in parks
- Support the provision of bicycle and/or scooter sharing on-site to connect residents and visitors to local transit or area amenities



ZERO WASTE

Reducing consumption, reusing and recycling to achieve zero waste and zero pollution

Topics

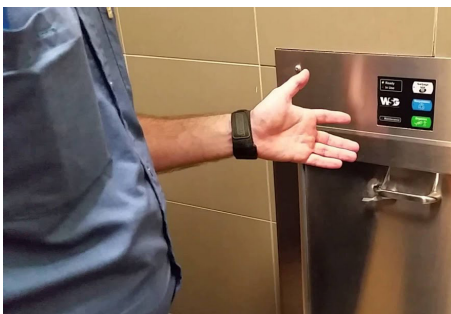
Waste Collection and Storage: Providing adequate waste collection storage space to facilitate effective waste management and disposal.

Construction Waste Management: Ensuring appropriate treatment and diversion of non-hazardous construction and demolition debris while reducing construction waste sent to landfills

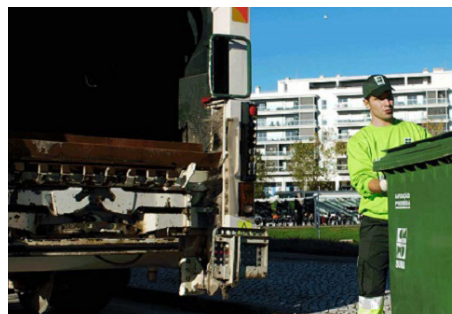
Related Performance Measures

Building Scale:

- BS.ZW1
- BS.ZW2



Tri-sorter Waste Chutes



Waste Haulers Dedicated Area



3R Regulations



Landfill Diverted Materials



Organics Collection (Green Bin)



Waste Management Plan



ZERO WASTE

Reducing consumption, reusing and recycling to achieve zero waste and zero pollution

Location Specific Strategies

- To be determined later

Additional Strategies Being Explored

- Areas accessible to waste haulers and building occupants for the collection and storage of recyclable material
- Satisfy provincial “3R’s” regulations for construction activities
- Construction waste management plan
- Diversion target for construction, demolition and land clearing waste from landfill



ZERO CARBON

Making building and manufacturing energy efficient and supplying all energy with renewables

Topics

Community Energy Plan: Reducing the environmental and economic impacts at the community scale associated with excessive energy use by employing various design strategies that promote energy conservation and minimize heat loss.

Energy Efficiency: Reducing the environmental and economic impacts at the building scale associated with excessive energy use by employing various design strategies that promote energy conservation and minimize heat loss.

Related Performance Measures

Community Scale:

- CS.ZC1

Building Scale:

- BS.ZC1





ZERO CARBON

Making building and manufacturing energy efficient and supplying all energy with renewables

Location Specific Strategies

- To be determined later

Additional Strategies Being Explored

- Renewable Energy
- Increased insulation
- High-Performance Glazing
- Reduced Thermal Bridging
- High-Efficiency Mechanical System
- Solar Readiness
- Passive Solar Alignment
- Off-Site Generation
- Solar Walls



SECTION 5 IMPLEMENTATION PLAN

5.1 Overview

The following sections present suggested tasks and responsibilities for each phase of the community build-out. The intent of this Plan is to provide guidance to set the project up for success, while remaining inherently flexible to adapt to the realities of design and construction. Additional potential strategies for each performance measures are further outlined in other parts of the document.

Stakeholders, including local energy providers, regional authorities, conservation authorities, and the public will act as participants through the implementation of the Rangeview Estates Sustainability Strategy and the annual reporting. The Rangeview Estates project team will also rely on the City of Mississauga Staff to provide input and confirm sustainability compliance during the development of the community.

5.2 Master Plan

To achieve the sustainability goals for Rangeview Estates, a coordinated effort is required across a variety of disciplines and teams. By embedding sustainability within existing processes rather than an “add-on”, these goals are more likely to be achieved. This is important to consider right from the Master Plan Phase, to realize synergies and cost efficiencies most effectively. As well as communicate the goals and values to regulatory bodies, and to set a clear direction for subsequent phases.

Task 1: Review all project delivery processes against the Sustainability Strategy and allow the time and space to effectively address sustainability. This includes allowing for an effective integrated design process and incorporating decision-making criteria into proforma evaluations that address the sustainability goals.

Responsibility: The Rangeview Landowner's Group

Task 2: Bring the sales and marketing teams on board early to help communicate the market value and benefits of sustainability features that are included in the Strategy. Their input can help inform implementation of various design features based on market value.

Responsibility: The Rangeview Landowner's Group; Sales & Marketing Teams

Task 3: Maintain Sustainability Performance Measures as part of Master Planning and contract documents. The partners should ensure the Performance Measures are maintained throughout the evolution of the Master Plan and Contract Documents. This includes reviewing documents against sustainability goals and proposing any revisions that will result in a more positive outcome for the project. Criteria that are recommended to be included in contract documents are identified under the Implementation Strategies in section 4.

Responsibility: The Rangeview Landowner's Group

5.3 Design & Construction

The foundation for success is advanced in the Master Plan phase. During Design & Construction, it is critical that expectations are clear and that all parties involved are on board to ensure the Performance Measures are achieved. The steps in this Phase are iterative for each development block.

Task 1: Ensure consultant and contractor procurement documents effectively communicate project goals and performance measures. When procuring products and services that push the envelope of conventional design and construction, it is critical that expectations are clearly set from the beginning. This can help alleviate costly change orders and will more likely achieve the project goals.

Responsibility: The Rangeview Landowner's Group

Task 2: Define and implement process for progress/ compliance tracking. This includes defining the level of tracking, acceptable deliverables, and who is responsible for submitting and reviewing. The process will vary depending on whether individual performance thresholds are being reviewed by a 3rd party verification entity, such as LEED, EnergyStar or One Planet Living. Other options for consideration include whether the project will comply with a particular target vs prescriptive requirements. Once the process is defined, having consistent implementation is key. Embed the agreed upon tracking approach into the design and construction processes, with clear roles and responsibilities that can be passed along to others as needed.

Responsibility: The Rangeview Landowner's Group

Task 3: Update Implementation Strategies and Plan to reflect any changes during design. Regular and ongoing review of the Implementation Strategies and this more detailed Plan are required to ensure the design and construction progress towards successful achievement of the Performance Targets. The Rangeview Landowner's Group will review progress and make any adjustments to the documents necessary based on the current status of the project.

Responsibility: The Rangeview Landowner's Group. As the project evolves, this will eventually become the community members' responsibility.

APPENDIX A

COMMUNITY SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Culture and Community		
Public Art	CS.CC1	Incorporate at least one public art feature into at least one open public space or a public building
Outdoor Community Spaces	CS.CC2	Include at least three of the following public use spaces where people can interact and congregate at no cost are within the project boundary: Plaza or square, Park, Amphitheatre, Pedestrian street, Community garden.
Indoor Gathering Spaces	CS.CC3	Include at least one indoor public use spaces such as an atrium or a senior center where people can interact and congregate at no cost within the project boundary
Engagement	CS.CC4	Engage members of the community in a shared vision for the development
Equity and Local Economy		
Affordable Housing	CS.ELE1	Include a minimum of 5% affordable ownership housing units for moderate-income households OR 2.5% affordable rental housing units for moderate-income households as per by-law 0213-2022.
Accessibility	CS.ELE2	Include tactile Walking Surface Indicators on all new and repaired infrastructure, per Ontario's Integrated Accessibility Standards including: - Stairs that connect to exterior paths of travel - Curb ramps and depressed curbs on an exterior path of travel AND Pedestrian infrastructure that meets the Accessibility for Ontarians with Disabilities Act (AODA)
Housing Types and Size	CS.ELE3	Include a variety of housing sizes and types in the project such that the total variety of planned housing is approximately 11% Low-Rise Building (Up to 4 Storeys), 69% Mid-Rise Buildings (5-8 Storeys) and 20% Tall Buildings (9-15 Storeys)
Health and Happiness		
Access to Parks and Open Spaces	CS.HH1	Locate 90% of planned and existing dwelling units and nonresidential use entrances within a ¼ mile (400 meters) walk of at least one civic or passive use space, such as a square, park, or plaza. The spaces must be at least 1/6 acre (0.067 hectare) in area. Spaces less than 1 acre (0.4 hectare) must have a proportion no narrower than 1 unit of width to 4 units of length. Projects larger than 10 acres (4 hectares) must have a median space size of at least 1 acre (0.4 hectare). Spaces over ½ acre (0.2 hectare) that are used to meet the 90% threshold are included in the median calculation. All civic or passive use space to be flanked by at least one public street or be clearly identified and fully visible if located internal to a block (CPTED standards).
Physical Activity Spaces	CS.HH2	At least two sports and active spaces are available for public use (at no-cost) within an 800 m walk distance of all residential buildings.
Heat Island Effect	CS.HH3	Per LEED ND v4, Use any combination of the following strategies for 50% of the nonroof site paving (including roads, sidewalks, courtyards, parking lots, parking structures, and driveways). <ul style="list-style-type: none"> • Use the existing plant material or install plants that provide shade over the paving areas on the site within 10 years of plant material installation. • Install and plant planters, either at grade or raised. Plant material cannot include artificial turf. • Provide shade with structures covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines, that produce energy used to offset some nonrenewable resource use. • Provide shade with architectural devices or structures that have a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation, • Provide shade with vegetated structures. • Use paving materials with a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation. • Use an open-grid pavement system (at least 50% unbound).

APPENDIX A

COMMUNITY SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Land Use and Nature		
Light Pollution	CS.LUN1	All exterior fixtures must be Dark Sky compliant and must be controlled by motion detectors or timers to reduce or extinguish non-essential lights between 11 pm and 6 am. In addition, meet the requirements of LEED ND v4 (Light Pollution Reduction) related to exterior lighting for residential areas; exterior lighting for circulation network; uplight and light trespass requirements in exterior lighting; etc.
Tree Planting Soil	CS.LUN2	<p>Provide the following volumes of high-quality soil:</p> <ol style="list-style-type: none"> 1. 30 m³ high quality soil for large street trees. Soil calculations are not to be shared between public and private properties. High quality soil excludes compacted soil, further details are provided in the Landscape Plan Terms of Reference. 2. 15m³ for ornamental trees. Ornamental trees are to be planted where large street are not feasible. <p>AND</p> <p>Provide the total amount of soil required on the site and in the adjacent public boulevard to support tree canopy by using the following formula: 40% of the site area ÷ 66 m² x 30 m³ = total soil volume required.</p> <p>AND</p> <p>Trees to be maintained and warranted for a minimum of 2 years.</p>
Tree Planting Canopy	CS.LUN3	Plant large growing shade trees along street and public space frontages that are spaced appropriately. Ensure that space is provided to accommodate mature trunk and root flare growth of each tree.
On-Site Landscaping	CS.LUN4	<p>Plant the at-grade landscaped site area using a minimum of 50% native plants (including trees, shrubs and herbaceous plants) comprising at least two native flowering species that provide continuous bloom throughout all periods of the growing season.</p> <p>AND</p> <p>Where potable water is used for irrigation, native and non-native plants must also be drought-tolerant;</p> <p>AND</p> <p>Do not plant any invasive species.</p> <p>AND</p> <p>Include pollinator plant species in at least 10% of the landscaped area.</p>
Local and Sustainable Food		
Local food production	CS.LSF1	<p>Dedicate permanent and viable growing space within the project public spaces as specified below:</p> <p>Ensure solar access and provide fencing, watering systems, garden bed enhancements (such as raised beds), secure storage space for tools, and pedestrian access for these spaces. Ensure that the spaces are owned and managed by an entity that includes occupants of the project in its decision making, such as a community group, homeowners association, or public body. Establish covenants, conditions, and restrictions (CC&R) or other forms of deed restrictions stating that the growing of produce is not prohibited in any project area.</p>
Materials and Products		
Recycled/Reclaimed Materials	CS.MP1	At least 10% reused/reclaimed content in landscaping materials (hardscaping such as paving or walkways) is provided. AND At least 10% recycled content in landscaping materials (hardscaping such as paving or walkways).

APPENDIX A

COMMUNITY SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Sustainable Water		
Stormwater Quality	CS.SW1	Demonstrate best management practices (BMPs) are used to treat runoff, removing at least 80% of the average annual post-development total suspended solids (TSS).
Stormwater Management	CS.SW2	In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the 80th percentile of regional or local rainfall events, using low-impact development (LID) and green infrastructure.
Water Friendly Landscaping	CS.SW3	Where irrigation is required, irrigate for the first four years after planting and then decommission AND Limit the use of large, sodded areas AND Where potable water is used for irrigation, native and non-native plants must be drought-tolerant.
	CS.SW4	Limit the use of large, sodded areas
	CS.SW5	Where potable water is used for irrigation, native and non-native plants must be drought-tolerant.
Travel and Transport		
Walkability	CS.TT1	FUNCTIONAL ENTRIES: At least 90% of new buildings have a functional entry onto the circulation network or other public space, such as a park or plaza, but not a parking lot, per LEED ND v4.
	CS.TT2	BLOCK LENGTHS: Provide neighbourhood permeability by designing blocks to be no more than 400 metres in length to promote active transportation, discourage excessive driver speed, and disperse traffic movements. No cul de sacs are included.
	CS.TT3	SIDEWALK PROVISION: Design the public realm to ensure efficient walking routes forming a continuous network to key destinations with continuous sidewalks, or equivalent provisions for walking like multi-use paths.
	CS.TT4	SIDEWALK PROVISION: Continuous sidewalks OR equivalent all-weather routes for walking are provided along both sides of at least 90% of the circulation network block length within the project, including the project side of circulation network bordering the project, per LEED ND v4.
Bikeability	CS.TT5	Develop a cycling plan that illustrates the route from the boundary street(s) to the on-site occupant and visitor bicycle parking locations. The route must operate at 30 km/hr for mixed traffic or provide a separate facility for cyclists. The plan must illustrate that bicycle parking is accessible (5% grade maximum) and that there is opportunity for passive supervision for visitors and tenants when accessing bicycles and leaving the site.
	CS.TT6	BIKE NETWORK: Incorporating additional cycling infrastructure that goes beyond the bike network design requirements of the City of Mississauga Cycling Master Plan.
Compact Development	CS.TT7	DENSITY: Achieve a density that is greater than the minimum density targets applicable to the area, but is consistent with the policies of the Official Plan regarding compatibility with the built form OR For areas in a Secondary Plan, provide the maximum when there is a minimum/maximum range given for density and/or storeys.
	CS.TT8	ACCESS TO SERVICES: 50% of dwelling units are within a 400-meter walking distance of at least 10 diverse uses, per LEED ND v4

APPENDIX A

COMMUNITY SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Travel and Transport		
Car Dependency Reduction	CS.TT9	Develop and implement a comprehensive Transportation Demand Management (TDM) Plan that includes measures that encourage people to take fewer and shorter vehicle trip, support transit and active transportation choices, enhance public health and reduce harmful environmental impacts of travel
Access to Transit	CS.TT10	If the building is next to a transit stop or requires that a new transit stop is added, install a shelter space for transit users with size based on mode share target. This space is preferred in the right-of-way but can be provided in the building if insufficient right-of-way is available. Shelter space refers to transit waiting area that provides protection from sun and rain.
Parking	CS.TT11	FLEXIBLE PARKING STRUCTURES: For each major parking structure, develop a strategy that details how the parking structure could be adapted to accommodate a 50% reduction in parking stalls.
	CS.TT12	SURFACE PARKING: Where it is not feasible to locate parking in structures either below or above grade, parking should be located to the rear of the principal buildings or within the interior side yard. Appropriate landscaping and screening measures shall be provided AND Surface parking lots should be screened from view from roads, open spaces, and adjacent residential areas with low fencing, architectural features, landscaping and/or other mitigating design measures, such as lowered parking surfaces with landscaped buffers.
	CS.TT13	SURFACE PARKING: Less than 20% of the total development footprint area is used for new off-street surface parking facilities, with no individual surface parking lot larger than 0.8 hectares, per LEED ND v4.
Zero Carbon		
Community Energy Plan	CS.ZC1	<p>Complete a Community Energy Plan and establish target for TEUI, GHG intensity, and TEDI by building type.</p> <p>AND</p> <p>Hold a meeting with Lakeview partners and Endwave on the potential implementation of district energy</p> <p>AND</p> <p>Minimally explore options to integrate district energy by completing a feasibility study.</p>

APPENDIX B

BUILDING SCALE PERFORMANCE MEASURES

Note: Additional building scale performances measures will be identified as the master plan phase progresses towards site plan applications

Topics	No.	Performance Measure
Equity and Local Economy		
Accessibility	BS.ELE1	Accessibility measures and design features are provided in accordance with the Accessibility for Ontarians with Disabilities Act (AODA) AND the Ontario Building Code or beyond
Health and Happiness		
Building Resilience	BS.HH1	For residential buildings four storeys or more and non-residential buildings, provide a refuge area with heating, cooling, lighting, potable water, and power available and 72 hours of backup power to the refuge area and essential building systems AND Implement measures for basement flood protection, extreme wind protection or extreme heat protection.
Heat Island Effect	BS.HH3	For flat roofs (low slope $\leq 2:12$) over 500 m ² , buildings must provide: Green roof for at least 50% of available roof space; OR Cool roof installed for 90% of available roof space and if the roof is over 2,500 m ² a minimum of 1,000 m ² will be designated solar ready. OR A combination of a green roof, cool roof and solar PV installed for at least 75% of available roof space.
Land Use and Nature		
Bird-Friendly Glazing	BS.LUN1	For Mid and High-Rise Buildings, use a combination of the following strategies to treat a minimum of 85% of all exterior glazing within the first 16 m of the building above grade, or to the height of the mature tree canopy, whichever is greater: Visual markers applied to the 1st surface of glass with a maximum spacing of 50 mm x 50 mm; Building-integrated structures to mute reflections on glass surfaces; or, Non-reflective glass. Areas where visual markers are required include: Balcony railings and fly-through conditions; Elevations facing a High Hazard Area.
On-Site Landscaping	BS.LUN2	Plant the at-grade landscaped site area using a minimum of 50% native plants (including trees, shrubs and herbaceous plants) comprising at least two native flowering species that provide continuous bloom throughout all periods of the growing season. Where potable water is used for irrigation, native and non-native plants must also be drought-tolerant; Do not plant any invasive species. Include pollinator plant species in at least 10% of the landscaped area.

APPENDIX B

BUILDING SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Local and Sustainable Food		
Rooftop Gardens	BS.LSF1	Create space for rooftop gardens of mid and high-rise buildings that can be managed by the condo corporation and/or a resident's association group. To be appropriate for growing food, those spaces must: be located where there is excellent sun exposure (min. 7-8 hours). access to potable water for watering purposes
Materials and Products		
Sustainable Materials	BS.MP1	Will be identified at a later time for Site Plan Applications
Sustainable Water		
Water Efficiency	BS.SW1	Reduce indoor water consumption by 40% (residential) or 20% (commercial) compared to baseline (see LEED water use calculation methodology).
Water Runoff	BS. SW2	Achieve 5mm retention through reuse tanks for greywater irrigation
Travel and Transport		
Bicycle Parking	BS.TT1	<p>For mid and high-rise residential and non residential buildings, provide: 0.75 long-term bicycle parking spaces per unit in weather protected areas located within a secure area of the building or common garage.</p> <p>AND</p> <p>At least 5% of the required long-term bicycle parking spaces, or one parking space, whichever is greater, shall include an Energized Outlet (120 V) adjacent to the bicycle rack or parking space.</p> <p>AND</p> <p>For residential buildings, provide 0.1 short-term bicycle parking spaces per dwelling unit in locations that are highly visible and in close proximity to primary entrances.</p> <p>AND</p> <p>For non-residential buildings, provide at least one on-site shower with changing facilities for the first 100 regular building occupants and one additional shower for every 150 regular building occupants thereafter.</p>
Electric Vehicle Charging Stations	BS.TT2	<p>For residential buildings four storeys or more and non-residential buildings: At least 20% of parking spaces are equipped with electric vehicle charging stations. All remaining spaces are designed to EV-Ready.</p>
Zero Carbon		
Energy Efficiency	BS.ZC1	<p>Achieve building level energy targets in line with EnergyStar Certification for residential and LEED Gold levels of performance for office.</p> <p>Further targets will be defined as part of the Community Energy Plan</p>

APPENDIX B

BUILDING SCALE PERFORMANCE MEASURES

Topics	No.	Performance Measure
Zero Waste		
Waste Collection and Storage	BS.ZW1	<p>Provide dedicated areas accessible to waste haulers and building occupants for the collection and storage of recyclable materials for the entire building, per LEED BD+C v4.1. Collection and storage areas may be separate locations. Recyclable materials must include mixed paper, corrugated cardboard, glass, plastics, and metals</p> <p>AND</p> <p>Take appropriate measures for the safe collection, storage, and disposal of two of the following: batteries, mercury-containing lamps, electronic waste.</p> <p>AND</p> <p>For Mid-High Rise residential buildings, provide a waste collection and sorting system for garbage, recycling and organics.</p>
Construction Waste Management	BS.ZW2	<p>Recycle, reuse, or salvage at least 80% of nonhazardous construction, demolition, and renovation debris</p> <p>AND</p> <p>Prioritize reuse where possible following the 3 Rs waste hierarchy of reduce, reuse and recycle</p> <p>AND</p> <p>Develop and implement a construction waste management plan that identifies the materials to be diverted from disposal and specifies whether the materials will be stored on site or commingled.</p>

APPENDIX C

CERTIFICATION

Topics	No.	Performance Measure
LEED	C1	Achieve LEED-BD&C certification for all non-residential buildings. Include requirement for Gold certification using the most recent version of LEED in the contract documents.
	C2	Complete a LEED-ND certification feasibility study to determine the potential applicability for the site.
EnergyStar	C3	Achieve EnergyStar certification for all residential buildings. Include requirement that all single family and multifamily residential buildings are EnergyStar certified in the bid documents.
OPL Endorsement	C4	Consider becoming a One Planet Living endorsed community. Perform feasibility study to confirm effort required to achieve OPL Endorsement.



URBAN EQUATION

Neighbourhood Gathering Space within Central Square