



# LeBreton Flats – Library Parcel

**One Planet Living® leadership review**  
March 2023



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# Project overview and status



# Project overview

## Project name:

LeBreton Flats Library Parcel (LeBreton Flats)

## Project type:

Real estate

## Developer:

Dream Unlimited

## Description:

A mixed-use development with over 600 new rental units in two towers of 31 and 36 storeys, each with a five-storey terraced podium.

Situated just 20 minutes' walk from Parliament Hill and on the edge of downtown Ottawa, the Library Parcel is an early phase in the National Capital Commission's (NCC) redevelopment of the wider LeBreton Flats masterplan.

The 1-hectare site includes community amenities, retail and a series of new public realm spaces linking the neighbourhood with the Pimisi O-Train light rail transit station. The site enjoys views of Parliament Hill and the Ottawa River and is near the site of the future central Ottawa library.

## Reviewer:

Nicole Lazarus

## Sign-off and quality review:

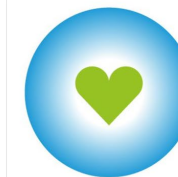
Ronan Leyden

## Date of review:

January 2023



## Leadership status:



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# Current status of LeBreton Flats

## Current status

In 2022, The National Capital Commission, in partnership with the Canadian Mortgage and Housing Corporation, selected Dream Unlimited to acquire the Library Parcel and build an inclusive and sustainable development.

Dream Unlimited is currently going through the federal design approval process as well as the municipal site plan control process and expects to begin construction in 2023.

## Review summary

Dream Unlimited and its team have shown inspiring sustainability leadership on this project. It has responded to current societal needs; it is innovating technically by bringing forward Ottawa's first waste heat from sewage scheme, and by optimising the business case for holistic One Planet Living thinking in this high-profile location. The scheme delivers a robust and realistic net-zero carbon strategy along with comprehensive measures to address all 10 One Planet Living principles.

**Following a detailed review of the One Planet Living Action Plan, we are pleased to endorse LeBreton Flats Library Parcel as a One Planet Living Global Leader for 2023.**



LeBreton Flats Library Parcel site plan



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# Bioregional and One Planet Living leadership



# Bioregional and One Planet Living

## About Bioregional

Bioregional is a purpose-led sustainability consultancy. It has worked in over 20 countries on sustainable development, working with local communities, cities, and companies.

Bioregional devised the One Planet Living framework in 2003 with WWF, based on our experiences creating the multi-award-winning BedZED in South London, the UK's first large-scale sustainable community. One Planet Living has guided the development of real estate across the world, shaping exemplar communities that enable sustainable living.



## About One Planet Living

One Planet Living® is a vision of a world where it is easy and attractive to live happy, healthy lives within the limits of our Earth's resources.

We need this vision because if everyone lived as we do in Western Europe, we would need almost three planets to support us. The measure of this is called 'ecological footprinting'. Meanwhile, many lack what they need for a good life, and wildlife is being pushed out to make room for our demands.

The One Planet Living framework consists of 10 principles which cover the activities that drive resource consumption, and the elements that form the basis of a good life for everyone. The principles are used to identify the needs in a local area, to relate these to the planetary bottom-line, and then to structure responses to those needs.

	Health and happiness
	Equity and local economy
	Culture and community
	Land and nature
	Sustainable water
	Local and sustainable food
	Travel and transport
	Materials and products
	Zero waste
	Zero carbon energy



# What is a One Planet Living leadership review?

**A One Planet Living Leadership Review is when you open your action plan to scrutiny from a suitable qualified expert from Bioregional. It includes:**

- Reviewing the action plan as a whole and providing advice and suggestions on how it might be improved
- Evaluating it against several criteria including impact, systems change, ambition and delivery
- Assessing the action plan against the One Planet Living goals and guidance and local industry best practice.

This document reviews the action plan created by Dream Unlimited and Purpose Building for the LeBreton Flats Library Parcel.





# Review summary and highlights

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One Planet Living® | Global Leader 2023



LeBreton Flats Library Parcel site plan

# Review summary

## Comment from Dream Unlimited



Dream Unlimited strives to build better communities that leave a lasting impact on the lives of our residents, customers and stakeholders. The LeBreton Flats Library Parcel represents an exciting opportunity to expand the company's impact investing mandate with an innovative development centered on building towards a people-first sustainable future.

Using the One Planet Living framework to guide visioning and implementation, the Library Parcel will become an active conduit to the capital and civic experience, and a building block toward a much larger inclusive LeBreton Flats community. The path forward for the Library Parcel considers the site's Indigenous heritage, the existing topography, its strategic location along the Confederation light rail transit line, opportunities to harvest renewable sources of energy and the potential to create a world-class mixed-use community that delivers affordable and accessible housing near the river's edge. We are proud that this One Planet Living community is destined to become the largest residential zero carbon development in the Nation's Capital.

## Comment from Purpose Building



Dream's mandate for the project team is to create the infrastructure needed for a community that positively impacts both people's lives and the planet. Delivering on this vision is an ongoing process to realize a diverse set of outcomes. It involves building a sense of belonging, providing opportunity and engaging residents as sustainability stewards.

The 10 One Planet Living (OPL) principles provide a clear framework for defining, organizing and communicating a clear set of outcomes in a way that builds commitment within the project team, the federal and municipal regulators, the development partners, and the future residents and retail tenants who will define the community. OPL's ongoing progress-reporting process also aligns with Dream's commitment to measure the impact of their developments. For the Library Parcel, we have created metrics and targets for each outcome that will be used to assess impact, from design through construction, occupancy and ongoing operations.



# Action plan summary

Bioregional uses a simple red/amber/green traffic-light approach to indicate how well the action plan addresses the One Planet Living principle and their goals. More detailed comments and recommendations are in the 'full review' section.

- Well addressed
- Adequately addressed
- Not fully addressed

	<p>The project creatively focusses on welcoming spaces for gathering and bumping into each other. Indoor air quality measures are excellent and there will be a programme of healthy living workshops.</p>	<span style="color: green;">●</span>		<p>Creating a community scale network increasing access to local, fairly traded and organic food. Connecting with farmers and community supported agriculture schemes.</p>	<span style="color: green;">●</span>
	<p>Partnering with Multifaith Housing initiative to deliver affordable rental units to four target groups in need. Comprehensive Algonquin Nation Benefits Plan.</p>	<span style="color: green;">●</span>		<p>Excellent location next to light rail transit station with multi-use pathway. Ample cycle storage with social space for communal bike maintenance. Good electric vehicle charging provision.</p>	<span style="color: green;">●</span>
	<p>Sustainability culture is clearly expressed through design, partnerships and community development plans. A One Planet Ambassador will run an engagement programme for 20 years.</p>	<span style="color: green;">●</span>		<p>Despite its high-rise concrete frame construction, low embodied carbon is achieved through lean design and carefully selected innovative suppliers. Aiming to embed a culture of reducing and reusing.</p>	<span style="color: green;">●</span>
	<p>High density downtown development relieves pressures on greenfield sites elsewhere. Thoughtful roof gardens and mini parks target 200% biodiversity increase.</p>	<span style="color: green;">●</span>		<p>Good plans and targets for minimising waste during construction and post-occupancy. Buildings include a waste chute with tri sorter, separating recycling, organic waste and residual.</p>	<span style="color: green;">●</span>
	<p>Water efficient fittings, empowering residents with water-saving tips and water metering. Rainwater reuse and stormwater retention. Near-zero pollution from surface water runoff.</p>	<span style="color: green;">●</span>		<p>Good building fabric and heat pump specifications. Leading innovation meeting heat demand from heat exchange with the mains sewer passing under the site. PV array generates a portion of total energy consumed at the site with residual emissions offset.</p>	<span style="color: green;">●</span>

# Project highlights

## 1. A welcoming space for all:

Dream and its development team have placed an intense focus on creating a welcoming space at the LeBreton Flats Library Parcel. It seeks to embrace lessons from the pandemic and the global refugee crisis, and it is responding to the urgency of Indigenous Truth and Reconciliation. Words like kindness, empathy, respect, and compassion have been made central to this development plan and they are reflected through commitments to:

- 41% affordable rental units and a partnership with the Multifaith Housing Initiative to target deep discounts for specific groups in need.
- An Algonquin Nation Benefits Plan, drawn up in a long-term partnership with Algonquin Nation advisors to maximise training, jobs, contracting and housing opportunities.
- Creatively designed high-quality amenity spaces, twice the amount typical for a development of this size, designed to create community through planned and incidental social interaction, and providing reasons for people to do things together both indoors and outdoors.

## 2. Clean green energy:

The project addresses the climate crisis with robust, business-savvy clarity and ground-breaking innovation. Ottawa benefits from a low-carbon electrical grid and Dream has made the most of this regional attribute by carefully sourcing both power and construction materials from local suppliers. These suppliers have in turn been able to radically reduce their footprint by switching from fossil fuels to clean grid electricity.

The project delivers zero-carbon operational performance by using good fabric standards and excellent heat pump performance. In a first for Ottawa, Canada's capital city, the project uses the waste heat of the city's sewer to meet all its heating needs. The heat recovery plant room is designed for prominent public visibility, and the building includes a solar PV array that complements the zero-carbon equation. The LeBreton Flats Library Parcel targets LEED Gold and Canada Green Building Council Zero Carbon Building certification for both Design and Performance.

## 3. Active, low-carbon travel:

Dream has used lean design principles alongside a bold decision to minimise parking provision to further reduce its embodied carbon compared with any other development benefitting from Ottawa's clean power supply. So the embodied carbon of this high-rise concrete frame development is amongst the lowest of any One Planet Living Communities (see metrics and targets in the Materials and Products principle).

Lastly, one of the many highlights for this ultra-low car neighbourhood is the community cycle hub with facilities for maintaining bikes, socialising and making cycling culture the place to be.

# Suggestions from the reviewer

## 1. Travel

The action plan should include a travel-related Indicator and Target, either for modal share or for transport related carbon emissions. This could be monitored through planned periodic travel surveys.

## 2. Culture of sustainability

The action plan could include more ambition around fostering a sustainability culture amongst the site team during construction. This could cover all 10 principles and could certainly include engagement on health and wellbeing and on healthy sustainable food choices.

## 3. Wider than the Library Parcel

Whilst recognising that Dream does not own or control land outside of the Library Parcel, there may be an opportunity for the team to inspire high sustainability standards across the wider LeBreton Flats masterplan, particularly around green space provision, biodiversity and edible landscaping, perhaps even on zero carbon and all 10 One Planet Living principles.

## 4. Nature and biodiversity

As a date for first occupants approaches, the team might like to consider partnering with a local nature provider or an organisation working on addressing a prominent local biodiversity issue. LeBreton Flats residents might appreciate playing a collective part in some nature restoration.



# Detailed action plan review

# Overall leadership qualities

In this section, the action plan is assessed for how well it addresses scope, ambition and deliverability. It then assesses its potential to bring about wider transformation and system change.

## Scope

The action plan addresses all 10 principles. It considers all the direct impacts and opportunities associated with delivering the development and most indirect impacts.

The team have considered and look to address future trends and societal needs. They have also taken learning from modelling of future weather scenarios completed for prior developments.

*Suggestion: address the indirect impacts of the planned community, namely air travel and off-site ecological impacts.*

## Ambition

The outcomes align with the One Planet Living goals for new communities.

Indicators are generally appropriate, and the targets are ambitious.

The project is pursuing the following certifications that address multiple OPL principles:

- Canadian Green Building Council Zero Carbon Building Design
- Canadian Green Building Council Zero Carbon Building Performance
- LEED BD+C New Construction Gold
- LEED Neighbourhood Development Gold

*Suggestion: include an indicator and target either for transport modal share or for travel-related carbon emissions. The survey question on health outcomes could look to establish health improvements.*

## Implementation

Dream's 100% rental approach provides it with a game changing opportunity to maintain the asset and all its sustainability credentials long-term.

The action plan and supporting documents provide a comprehensive and realistic set of actions for delivering all design stage project goals.

Construction stage actions are comprehensive.

The provision of a One Planet Ambassador and a wide range of design measures make implementation of One Planet Living highly possible once the residents are living here.

*Suggestion: create the next level of detail for sustainability culture during construction phase.*

## Transformation

The delivery team shows leadership on many fronts. The project champions technical innovation through the sewer heat recovery. They champion social innovation through their vision for a welcoming space and through their Algonquin Nation partnerships. They champion the business case for One Planet Living through skilful procurement and design choices. The team communicate their One Planet Living story through publicly visible design features and through public engagement in this high-profile capital city location.

# 1

## Health and happiness

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



### Headline outcome:

LeBreton creates healthy environments and programming that empowers residents to build community, health, and happiness

#### Physical health

##### Highlights

- Comfortable indoor temperatures are maintained during heatwaves by limiting window to wall ratio to ~40% and by providing sufficient active cooling capacity. In addition, the team have used learning from generic regional modelling to prepare for future heatwave scenarios.
- Smoking is prohibited anywhere on the site. Walk-off mats or entryway grates will help prevent air quality contaminants from entering the building.
- Health measures for the construction team focus on good indoor air quality during construction, following SMACNA IAQ Guidelines to meet LEED requirements.

#### Happiness and wellbeing

##### Highlights

- The design includes spaces that encourage residents to socialise, gather and bump into each other. These spaces will all enjoy ample natural daylight.
- The multipurpose rooms, fitness rooms, co-working spaces, common terraces and community gardens are key enablers of this social interaction. The multi-purpose rooms are strategically located near windows on the outer edge of the buildings to provide daylight access.
- The One Planet Ambassador will host events and workshops for the community to increase socialization opportunities.

#### Suggestions

- Consider reporting an 'increased satisfaction with health' for Indicator HH2 health outcomes.
- Consider a broader range of measures to enhance health and happiness of the construction team.



# 2

## Equity and local economy

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



### Headline outcome:

## LeBreton creates an accessible, supportive community that celebrates the Algonquin Anishinaabe Nation

#### Diversity and equality of opportunity

- LeBreton Flats will provide 41% affordable units with an average rental 80% of the local market rate.
- Of these affordable units, 118 will be delivered in partnership with the Multifaith Housing Initiative (MHI). These will have deeper discounts averaging 59% market rate, targeting 4 priority groups in need.
- Affordable units are dispersed throughout the buildings to encourage social cohesivity between residents.
- Shared spaces are twice the typical provision and include spaces for kids, party rooms, quiet spaces, all designed to be welcoming, accessible and comfortable to a diverse set of residents.
- Dream has engaged Innovation Seven as Algonquin Advisor for the duration of project. Together they have prepared a comprehensive Algonquin Nation Benefits Plan focussed on training, jobs, contracting and housing opportunities. The Plan commitments include:
  - Targeting 5% of project value (\$6million) in contracts to Algonquin and Indigenous businesses.
  - 5% of onsite staff to be Algonquin and Indigenous workers, amounting to 57,680 hrs (28.5 FTE) in employment
  - Algonquin and Indigenous awareness training for all project staff
  - 15 (5 per year) apprenticeships during construction
- \$500 referral bonus for successful hires referred by Algonquin employees and who retain employment for a minimum of three months.
- \$5,000/year to support Algonquin traditional activities
- A preferential leasing program that addresses common barriers to leasing for Indigenous People
- *Suggestion: Incorporate some of the ABP targets into the action plan, to communicate best practice through OPL lens.*

Continued overleaf

# 2

## Equity and local economy

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



### Vibrant local economy

- The design strategically locates the retail space in a high demand area with good street visibility. It also allows for flexible sizing to accommodate business of various sizes.
- Targeting 50% of retail space to be smaller, local and/or ethically run enterprises, and at least one business to be indigenous owned
- Aiming to connect residents with local businesses whose values align with One Planet Living.

### Fair international trade

Covered under sustainability culture below.

# 3

## Culture and community

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



### Headline outcome:

LeBreton creates a vibrant culture and community with sustainability and history engrained throughout

#### Sense of place and belonging

See under Health and Happiness and Equity and Local Economy.

#### Local culture and heritage

- To honour LeBreton Flats' heritage, Dream will work with an advisory council to include spaces for art, name-placing, and wayfinding that acknowledges and celebrates local culture, including the Algonquin Anishinaabe.
- The Algonquin Nation Benefits Plan includes \$5,000/year to support Algonquin traditional activities.

#### Active citizenship and sustainability culture

- During construction, the project will foster a sustainability culture through environmental protection leadership and workshops. Every individual working on site will be required to participate in a One Planet Living Onboarding session. One Planet Living signage will be installed on site.
  - The district thermal energy plant is designed to be visible from street level as a showcase of sustainability and innovation. The plant will also be available for educational tours. The building integrated solar panels on the west elevation of each building and roof mounted solar arrays also represent a visible commitment to renewable energy.
- Dream has committed to employing a One Planet Ambassador for 20 years. They will implement programming to achieve community-based targets in the One Planet Action Plan. The One Planet Ambassador will help to educate residents and facilitate events and workshops that promote a sustainable lifestyle.
  - *Suggestion: explore plans to facilitate appropriate active citizenship in the future.*

# 4

## Land and nature

Protecting and restoring land for the benefit of people and wildlife



### Headline outcome:

Biologically diverse, accessible ecosystems are built into LeBreton and are stewarded by the community

- **Positive contribution to local biodiversity**
- **Enhance ecosystem services**
- **Carbon sequestration**
- **Engage people in the value of nature**

- The ex-industrial site is currently bare and contaminated, with very little biodiversity value.
- The project maximises housing density in this downtown location, arguably reducing development pressures on greenfield sites.
- The site will be remediated and targets a 200% increase in biodiversity of plants and animals

- The landscaping design includes native and adapted plant species, as well as drought tolerant plants and species that are considered culturally significant to the Algonquin Anishinaabe.

- The site will have a high % hard landscaping due to high footfall. Nonetheless there will be approximately 175 new trees, an extensive green roof on a portion of the Level 3 podium rooftop and 35% of the open space will be green space.

- Light pollution will be minimised through design.
- Approximately 40% of the wider masterplan will be dedicated to parks including park fronting the river, a 10-minute walk from the project site.

- The One Planet Ambassador will provide education to residents on how to avoid the purchase of ornamental invasive plants.

### *Suggestions*

- *Include more detail on biodiversity features in the landscape design, such as additional integrated biodiversity solutions like beehives and nest boxes.*
- *Partner with significant nature providers nearby e.g. a local or regional nature reserve.*
- *Address the wider ecological crisis that all city residents contribute to, by providing opportunities for residents to engage with nature, volunteer or campaign.*



# 5

## Sustainable water

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



### Headline outcome:

LeBreton embeds a sustainable approach to water, reducing potable water use and wisely managing surface water flows

#### Water efficiency

- Targeting a 15% reduction in potable water use by using best in class water-saving fixtures and fittings, compared with municipal average.
- Includes water metering and plans to educate residents

*Suggestions: consider a more ambitious target for water efficiency.*

#### Surface water management

- The site is designed to retain the 80th percentile of regional or local rainfall events.
- Collected rainwater will be stored in a cistern and be reused on-site for irrigation and sewage conveyance.

#### Runoff during construction

- Targeting a near-zero export of pollutants via stormwater outflow.
- The design includes oil/grit separators/filters to remove total suspended solids in run-off.

# 6

## Local and sustainable food

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



### Headline outcome:

LeBreton nurtures local and sustainable food sources by integrating agriculture into the healthy food options urban landscape

- **Fresh, local, seasonal, healthy produce**
- **Diets high in vegetable protein**
- **Promote sustainable, humane farming**
- **Eliminate food waste**

- 630m2 of community managed food growing space, including dwarf fruit trees, herbs and vegetables.

- The One Planet Ambassador will deliver workshops and connect residents with local businesses that will enable sustainable and healthy purchasing habits.

- Create a community scale food distribution network to improve connections between food and farmers, community supported agriculture partners and increase access to local, fairly traded and organic food.

#### Suggestions:

- *Explicitly promote diets high in vegetable protein.*
- *Incorporate food waste reduction into community engagement.*

- *Incorporate healthy, sustainable food initiatives for the construction team e.g. through the procurement of the site canteen or other food related engagement.*
- *Influence more extensive food growing or edible landscaping in the wider masterplan.*

# 7

## Travel and transport

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



### Headline outcome:

LeBreton makes active and low-impact travel and transport convenient and preferred.

- **Reduce car dependence and the need to travel**
- **Promote walking and cycling**

- Located just 20 minutes' walk from downtown Ottawa with easy access to cultural destinations (e.g., the Canadian War Museum and Parliament Hill), the University of Ottawa, and shopping e.g. RF Rideau Centre
- A new multi-use pathway is being created from Pimisi station to the site, and toward Ādisōke.
- An exciting bicycle hub with ample storage and a dedicated area for socialising whilst maintaining bikes. Designed to be a sociable space, making cycling culture fun and community-focussed.

### Promote car-sharing and public transport

- A mainline transit station adjoins the site with trains every 5 to 15 minutes (5 minutes or less during peak times) running east to west from Blair Station to Tunney's Pasture. There will be priority parking for car share initiatives.
- Total parking provision is just 206 spaces, for both residents and visitors. For residents, provision is 0.33 spaces per dwelling and helps further incentivise alternatives.

### Promote low/zero-carbon vehicles

- Charging infrastructure is excellent with 42 (20%) charge points from day 1 and ready-to-go conduit in all other parking bays.

#### *Suggestions:*

- *Include an Indicator and Target for modal share or transport related carbon emissions. Monitored through planned periodic travel surveys.*
- *Consider ways to accelerate the uptake of EVs. For example, EV champions have worked very well at the NW Bicester eco-town - these are early adopters who let their neighbours have a test drive to help overcome range anxiety and other uncertainties.*

# 7

## Travel and transport

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



### Raise awareness of the impacts of, and promote alternatives to, air travel

*Suggestions:*

- *Incorporate air travel as an important lifestyle consideration into OPL Ambassador engagement.*
- *Highlight the impacts of flying and the typical air travel footprint to residents.*
- *Consider community activities that celebrate flight-free holiday options.*
- *Consider long distance rail and coach promotions/incentives.*



# 8

## Materials and products

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



### Headline outcome:

LeBreton is built from products and materials that benefit the environment and its residents

#### Reduce consumption of materials and products

- A smart, lean structural design has minimised the quantity of concrete in the frame by maintaining continuity of columns and avoiding the need for lateral load transfer beams.
- Aiming to embed a culture of reducing and reusing. One Planet Ambassador will enable and encourage residents in this.
- Online platform for occupants to share and pass on items.

#### Choose materials and products with minimum impact

- Low impact construction materials with environmental credentials have been selected, as reflected in the LEED Materials & Resources credits.
- Embodied carbon is exceptionally low at 330kgCO<sub>2</sub>e/m<sup>2</sup>.
- By selecting local suppliers, the team have not only reduced haulage distances, but they also benefit from the clean grid electricity in the region.
- The concrete supplier, representing some 50% of the embodied carbon, has upgraded their plant systems over the last 5 years to reduce fossil fuel use and has well established supply chains to source supplementary cementing materials that reduce “virgin” Portland cement use. The cladding and rebar suppliers are also vetted for their low-carbon credentials as part of the procurement process.
- Building on the benefits of the clean grid electricity, Dream has committed to a further 10% reduction in embodied carbon compared with an already low baseline.
- At least 70% of the timber on the project will be either reclaimed, reused or FSC certified.

Continues overleaf

# 8

## Materials and products

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



### Choose materials and products with minimum impact (continued)

*Suggestion:* include the absolute embodied carbon figure in the OPAP, as well as the 10% reduction commitment.

### Non-toxic materials and products

- Low VOC-content materials selected to meet most recent LEED requirements, targeting paints and coatings, flooring, ceiling products, insulation

# 9

## Zero waste

Reducing consumption, re-using and recycling to achieve zero waste and zero pollution



### Headline outcome:

LeBreton creates a community that is on the path to zero waste

- **Reduce wasteful consumption**
- **Upcycling, reuse and recycling**
- **Zero waste to landfill**

- Targeting a 90%, by weight, of construction waste diverted from landfill through training and a blend of on- and off-site sorting for recycling.

- Targeting a 10% reduction, by weight, in total residential waste compared to regional average and >70% landfill diversion.

- Buildings include a waste chute with tri sorter, separating recycling, organic waste and residual.

- Collection areas will be provided for residents to recycle two of the following: batteries, lamps, and electronic waste.

- The One Planet Ambassador will provide continuing education on waste diversion practices, providing links to organisations and services aimed at reducing waste.

*Suggestion: maximise opportunities to influence improvements in local waste handling services over the life of the project.*

# 10

## Zero carbon energy

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



### Headline outcome:

LeBreton aims to be a zero-carbon community from design through to operations

#### Energy efficient buildings

- Good fabric performance, despite current supply chain challenges.
- Heat pumps supplying heat and cooling have excellent coefficients of performance >4.0.
- Excellent Energy Use Intensity <80kWh/m<sup>2</sup>, some 45% less than typical.
- Dream will track emissions from energy consumption and refrigerant leaks and purchase sufficient carbon offsets each year to reach a zero-carbon balance.
- Energy use intensity and peak demand will be reported as part of the annual ZCB-Performance submission.

- The One Planet Ambassador will organise workshops and a mobile monitoring app to empower residents to be energy efficient, and to be stewards of the zero-carbon aspiration.

#### 100% renewable energy

- No fossil fuels on site post construction, except as emergency backup.
- Ground-breaking heat recovery and cooling through heat exchange with the city's sewage system, with excess heat being discharged to the river - a 1st for Ottawa.
- Solar PV array on site meets 2% of total energy demand.

- Electricity purchased from Ottawa Hydro is almost entirely generated from hydro, nuclear and renewables with gas used for peak loads. Its carbon intensity is very low at ~30gCO<sub>2</sub>/kWh.
- Pursuing Zero Carbon Building Certification for Design and Performance.

#### Suggestions:

- *Extend the heat provision beyond the Library Parcel.*
- *Use demand shift incentives to reduce peak demand.*



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