



Bioregional
Championing a
better way to live

Zibi One Planet Living[®] Action Plan
Progress Review

June 2020

Table of Contents

Zibi's One Planet Action Plan.....	2
The Zibi development project	2
One Planet Living	2
One Planet Action Plan	2
Summary of progress	5
Review of progress against Zibi's One Planet Action Plan	8
Health and Happiness	8
Equity and Local Economy	9
Culture and Community	10
Land and Nature	12
Sustainable Water	13
Local and Sustainable Food	13
Travel and Transport	14
Materials and Products	15
Zero Waste	17
Zero Carbon Energy	18

Zibi's One Planet Action Plan

The Zibi development project

Zibi – meaning 'river' in the Algonquin language – is a unique redevelopment project by Theia Partners and Dream Unlimited Corp; it is located on islands on the Ottawa River, at the crossroads between the cities of Gatineau and Ottawa, Canada.

The status of the buildings onsite is:

Complete or mostly complete:

- The 70 units of O Condominium (block 13) are now fully occupied.
- Four of the six stories of Kanaal (block 205a) are now occupied, with the remainder of the 71 units to be occupied this summer
- Block 2/3, a restoration of an industrial brick building into a commercial office space, is essentially complete with occupation delayed by COVID-19
- Block 301, a public underground car park in Ontario.

Under construction:

- Block 10, a predominantly affordable 162-unit rental building in Quebec, with plenty of amenity space within the building. Construction has started
- Block 208 is a commercial building with a retained façade, which is currently under construction
- The foundations of block 211, rental accommodation for government employees, have been poured.

In design:

- Block 7, a grocery store
- Block 206 – shared rental accommodation.

One Planet Living®

Bioregional's One Planet Living® Framework is a practical, intuitive and globally recognised framework, which makes it easy and attractive for everyone to lead happy and healthy lives within the environmental limits of our planet.

It is made up of ten Principles (see Table 1), which grew out of Bioregional's experience of developing the pioneering BedZED ecovillage in south London. These Principles address the social, economic and environmental aspects of sustainability in a holistic and interconnected way.

One Planet Action Plan

The Zibi One Planet Action Plan was developed in April 2015. The One Planet Principles have now been embedded into the by-laws of the project, in both the Gatineau and the Ottawa municipalities.

The One Planet Action Plan was updated in December 2017, following changes in the development site. This Annual Review document looks at these changes and reviews the progress made since 2015 and Zibi's 2017 data.

	         
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

Table 1. One Planet Living® Principles

Comment by Ashley Graham, Sustainability Project Manager at Zibi

In 2019, at Zibi, we began to lay the foundation of our community with our first residents moving into Condominium O in Gatineau. In the spring of 2019, we received a reminder of the threat of climate change as the National Capital Region experienced unprecedented and catastrophic flooding. As a project building on islands and the shores of the Ottawa River, climate change vulnerability is top of mind, and our buildings are constructed to accommodate the '1 in 1000-year' flood and additional flood mitigation measures including waterproofing of underground infrastructure. As a result, we were spared from the flooding of 2019 and will continue to follow climate change science closely to adapt to future changes.

During 2019 Zibi undertook major infrastructure works that will have a truly positive impact on the region. Working with many land managers, Zibi closed a major commuting corridor connecting Gatineau and Ottawa for three months over the summer to install site services and to install cycle and pedestrian infrastructure. The corridor, which was previously a harrowing experience for cyclists, will now facilitate safe and accessible cycling and pedestrian access across the Ottawa River to and from Zibi. This project also made a significant step forward for our zero-carbon district heating system.

Lastly, with our One Planet Design and Contractor Specifications in place, we became better at systemizing our approach to sustainability. Throughout the year, we developed procedures that allow us to track our progress on our One Planet Action Plan, building by building. Ultimately, this enhances accountability and enables us to publicise our leadership in sustainability with confidence, which will hopefully encourage change and improvement in neighbouring projects.

Comment by Peer Reviewer - Benjamin Gill

Just a few months ago the world's attention was focused on the unprecedented forest fires in Australia, and there was a sense that public opinion had turned a corner in respect to climate change. This has not necessarily changed with Covid-19, but our attention has shifted away from climate change despite the fact that its impact on global health has the potential to be far greater than Covid-19.

Therefore, the need for inspiring sustainability stories and leaders is more important than ever. We need to demonstrate, both quantitatively and at the emotional level, how rebuilding our economy on a more sustainable, more resilient, footing will create a better quality of life for all.

By demonstrating how a project can rehabilitate an ex-industrial zone, balancing the desires of the land's First Nation's owners with the needs of a modern capital city, Zibi can be one of those examples. The excellent infrastructure planning is coming to fruition, offering sustainable transport connections and zero carbon energy.

As residents move in, attention is turning to community creation and enabling sustainable living. By committing to have a One Planet Living Ambassador in place for the first five years there is plenty of opportunity to engage with residents and encourage them to switch to new, more sustainable habits concerning travel choices, shopping and dietary habits.

For the buildings the main impact that needs to be reduced or mitigated is the embodied carbon of the materials. The Zibi team are starting to look at low-carbon cement options, and we encourage them to pursue this further to mitigate the embodied carbon of the buildings.

The pace of construction is quickening. Ensuring that there is a clear process for keeping all this on track alongside the sustainability objectives, while also ramping up community engagement, will require real focus in the coming years. But the start to construction made at Zibi in its first few years has been impressive and the project continues to be a Global Leader in implementing One Planet Living.

Comment by Bioregional – Nicole Lazarus

Having reviewed the information provided we concur with the Peer Reviewer that Zibi's sustainable infrastructure, commitment to stakeholder engagement and detailed implementation of its Action Plan makes it a standout example of how to implement the One Planet Living Principles.

2019 summary of progress and highlights

Highlights of 2019

- The work on remodelling the Eddy-Booth transport corridor is almost complete. This was where a multi-lane highway converged onto an aged bridge. It has been converted into a multi-modal route with single lanes in each direction and pedestrian and cycle links. The bridge was planned to open at the end of 2019, but a small delay and the Covid-19 lockdown mean it will open later in 2020.
- There has been rapid progress on the design and construction of a number of buildings, all continuing to meet the ambitious energy and water specifications as well as the air quality and light pollution (amongst other) standards.
- Zibi has been engaging with key material suppliers for timber and cement to encourage them to increase their certified timber and cement replacement options – changes that will have a positive impact on the local construction industry.
- Progress was made on connecting the community to local organic farm Roots and Shoots, and Zibi will host a Community Supported Agriculture program pick-up spot onsite. Therefore, participating residents have access to fresh, local and organic produce delivered to their building throughout the year.
- The arrival of a One Planet Ambassador has seen a rapid step up in engagement activities with 12 community engagement events, and further events with construction workers. They have also led on data collection for site-wide construction initiatives and integrating OPL design and construction specifications into future blocks, including Block 10.
- The project continues to demonstrate true leadership in reconciliation, with the target for the number of First Nations individuals finding work outside their reserves already exceeded by 50%. And as well as benefitting local biodiversity, the parks and landscaping and their names are being used to highlight local Algonquin Anishinabe culture.
- The heat network continues to expand, with infrastructure installed in Ontario. Once demand increases the network will be connected to a neighbouring Kruger facility and this waste heat used across the site to provide zero-carbon heat.

Overview of progress in 2019

Since the review undertaken last year there has been significant improvement against many One Planet Living Principles, with a number of them already having a high degree of certainty over their deliverability at this early stage of the project. Progress is shown in the table overleaf using the following traffic-light system.

	Not able to assess progress at this stage
	Substantially or entirely completed, or a high degree of certainty over deliverability
	On track for a long-term target
	Substantially incomplete, behind schedule or doubt over delivery

One Planet Principle	Summary of activity	Performance & progress
Health and happiness	The OPL Ambassador undertook repeat surveys with residents and construction workers and hosted 12 events. As the community expands, more events and activities will be held.	Unchanged
Equity and local economy	While the first two residential buildings contain no affordable units, the third building will be predominantly affordable. The construction continues to provide training, employment and long-term investment for the Algonquin Community, with over 30 individuals gaining off-reserve work.	Improvement
Culture and community	Zibi continues to implement the Heritage Interpretive Plan while highlighting the traditional ownership of the site, with all parks named in the Algonquin language. Zibi is culturally complex and the developer continues to show an unprecedented level of engagement.	Unchanged
Land and nature	The remediation is underway and ahead of schedule. The public spaces will meet the requirements of four key stakeholder groups, including the Memengweshii Council, with Zibi Plaza including 17 native species, and 11 that are culturally significant to First Nations people	Unchanged
Sustainable water	O Condominium has been built to meet water efficiency and rainwater harvesting targets. All buildings are designed to the same standard. Stormwater treatment infrastructure installed.	Unchanged
Local and sustainable food	O Condominium provides allotments for 20% of apartments – which may not meet demand. Working with a local organic farm Roots and shoots, a Community Supported Agriculture pick up point has been established at Zibi, and 13% of residents are already participating in the scheme.	Improvement
Travel and transport	The remodelled Eddy-Booth corridor, changed from a 4-lane highway to 2 lanes with dedicated pedestrian and cycle connections, will open in early 2020. The light rail has also opened providing further improved connections. Car parking ratios in early buildings are above the required target but will be balanced by reductions in later buildings.	Unchanged
Materials and products	Building and material reuse has been maximised with 50% of buildings reused and 99% of demolition and construction waste recycled. Strategies to reduce the embodied carbon of construction have been limited to including recycled content. The team are starting to look at low-carbon concrete options and this needs to be incorporated in subsequent buildings.	Unchanged
Zero waste	Construction waste recycling is close to 100%. Residential recycling facilities are in place, with building specific strategies to make recycling easy. Nonetheless, the role of the One Planet Ambassador in encouraging recycling will be key.	Unchanged
Zero carbon energy	Final analysis shows the first building is just exceeding its 30% energy reduction target. Both this and all other buildings are powered with renewable electricity by Ottawa Hydro. The heat network is being expanded and is ready to switch to a zero-carbon source of waste industrial heat.	Unchanged

Key plans for 2020

- The opening of a second condominium building will enable a greater resident engagement, aimed at creating a strong sense of community, reinforcing sustainable behaviour and facilitating interaction with nature. They will also look to start the community-wide residents' association.
- The first commercial tenants will be moving in, and these tenants will be selected to have values that align with Zibi's values and aspirations.
- Pangishimo Park and Head Street Square will further incorporate native plants of significance to First Nations people.
- Start actively tracking VOC content of products used and will continue to include these requirements in specifications.
- Undertake a waste audit of the first occupied buildings.
- One Planet Living induction session for businesses moving onto the site and development of a specific strategy to educate residents about low-carbon diets and other key environmental issues.

Suggestions from the peer reviewer

Having reviewed the information provided, the peer reviewer has the following recommendations for the year ahead:

- On such a large project it is important to minimise the embodied carbon of construction. The contractor specifications focus on local materials and recycled content, which will help reduce the embodied carbon somewhat. But as outlined last year the most impactful strategy is likely to be avoiding the use cement and steel. It would be helpful to:
 - Undertake a very simple assessment of the embodied carbon of the completed buildings to understand what has been achieved, and to ensure that this issue is effectively addressed in future buildings.
 - Use this information to set requirement for subsequent buildings that use low carbon cement as well as alternative construction techniques such as timber.
- O Condominium provides a food-growing area for 20% of households, though in a survey two-thirds expressed an interest in having a plot (though the response was quite low). It is likely that not all those expressing interest would take a plot, but it is likely that more than 20% of the total would. Therefore, it would be sensible to increase provision in future buildings or through a communal facility elsewhere on the project. The opportunity should also be taken to build on activity in the Zibi Facebook group and engage with residents about healthy and sustainable diets.
- Now that the City of Ottawa light rail link is in place and the sustainable transport corridor is ready to open, this is the time to engage with residents over sustainable transport options. Ideally incentives such as bus passes or bike subsidies could be offered to new tenants to persuade them to try alternatives to owning a car when they move in.
- As commercial tenants move in it will be important to both require them to follow sustainability protocols, particularly around waste and energy, and encourage them to engage with Zibi's One Planet Action Plan. Ideally each business could develop their own sustainability plan linked to Zibi's own plan.

Review of progress against Zibi's One Planet Action Plan

This section reviews the progress against the targets set out in Zibi's One Planet Action Plan; it takes into account the latest changes made to the Action Plan in 2017.

	Substantially or entirely completed, or a high degree of certainty over deliverability
	On track for a long-term target
	Substantially incomplete, behind schedule or doubt over delivery

Health and Happiness

Progress

Outcomes	Indicators	Baseline	Progress
Increase happiness for Zibi residents	> 75% of residents 'happy' with their lives	Ottawa-Gatineau: 8/10 2018: 3.75/4	Survey: approx. 4/5
Create opportunities for community involvement, learning and creative expression	> 70% of residents feel actively involved in their community > 12 events/classes held per year within community spaces	58% for Ottawa-Gatineau, (O&G) 65% for all of Canada	Just under 50% feel engaged. 12 events were hosted in 2019
Support better health outcomes	> 85% of residents/workers indicate overall satisfaction with their health >85% of workers indicate increased satisfaction working at Zibi compared to other sites	63.6% of O&G residents perceive their health as very good; and 72.3% perceive the same for their mental health. Canadian average is 59.9% and 72.2% respectively	Survey: >90% of residents feel their health allows them to meet their daily needs >80% of workers rate themselves in good health

Key achievements and challenges

With the first residents moving in during 2018, 2019 is really the first year of resident engagement, with surveys undertaken to understand their baseline wellbeing. In these early years, with a small number of people on site it is a challenge to create a

sense of community. It's also a huge opportunity to set the project off in the right way. The small number of people onsite probably explains why only 50% feel part of the community, nonetheless Zibi have put in infrastructure to allow them to host a variety of workshops (e.g. yoga room, community garden partnership, Zibi House bee hive as well as other indoor spaces).

A new One Planet Living Ambassador started with a real focus on community building, and Zibi has run 12 events. The interactive honey extraction workshop was really popular amongst the residents, and the board game evening had a great turnout. The Ambassador has also set up a garden committee to facilitate the interest in gardening. This role is fully funded for the first five years to support the community through programming of public spaces, tenant training, and farm-to-table programmes.

All construction workers received a One Planet Living induction, including a short video and guidance on wellbeing and healthy eating. Ongoing engagement remains a challenge as most workers have a specific trade and so are onsite to perform a specific short-term task and then move on. This prevents longitudinal studies of the impact of working at Zibi.

Equity and Local Economy

Progress

Outcomes	Targets / indicators	Baseline	Progress
Plan for 7% affordable housing	7% of total units social housing	Frequently zero	First two buildings - zero, next building close to 100% affordable
Promote and give precedence to smaller, local and/or ethically run enterprises	50% of retail space storefronts that contain small, local, and/or ethical businesses, compared to the total number of storefronts at Zibi	n/a	Pop-up artisan market
Develop Zibi beneficially with and for the Algonquin Anishinabe Nation and people - to ensure indigenous culture is not only present at Zibi, but that indigenous people truly live, work and play at Zibi	<ul style="list-style-type: none"> • At least 20 First Nations individuals are bridged from on-reserve work to off-reserve work experience • At least 2 opportunities for long-term investment throughout project lifecycle • Offer a preferential residential pricing program for indigenous purchasers 		9 individuals bridged to off-reserve work – total of 31. Investment discussions ongoing Pricing programme in place

Key achievements and challenges

While the first two buildings, with a total of 140 units, contain no affordable housing, the 162 units of Block 10, which is under construction, will be almost entirely affordable. Negotiations are ongoing with Canada Mortgage to deliver this. This affordable housing is supplemented by the preferential pricing programme which offers a significant discount to the indigenous population, though as yet there have been no purchases through this programme.

It is a goal of Zibi to support indigenous workers to gain work outside of their reserves (off-reserve work), which helps them gain the experience to work outside their reserves. This is ongoing and nine individuals gained off-reserve work experience with Zibi in 2019, bringing the total to 31. Additionally, in the formation of the District Utility Company, a 10% placeholder for Algonquin share ownership has been earmarked, and the offer is under consideration.

Zibi has already started to create a new tourism centre and 2019 saw over 140,000 visitors, mainly due to the Cirque du Soleil. While this figure will not be maintained this year, Zibi is well placed to create a new economic centre in Ottawa, and a pop-up artisan market was run in 2019. There remains an opportunity to engage more with event organizers to maximise the sustainability of the event and engage with visitors.

Culture and Community

Progress

Outcomes	Target / indicator	Baseline	Progress
Create a cultural identity that reflects the history of the locale	A Heritage Plan, endorsed by Municipal Heritage Planners and regional Algonquin communities, developed and implemented	Heritage Interpretive Plan in place since March 2017	Ongoing – all Parks to be named in Algonquin language
Engage with Algonquins to ensure First Nations history, presence and culture are reflected throughout the development	<ul style="list-style-type: none"> Mention traditional Algonquin territory in 100% of all media events. 15% of place names will be in Algonquin. Establish an advisory council of Algonquin Anishinabe to guide on cultural matters. Minimum of 2 youth engagements per year 	2-3 public speaking engagements/month Council in place Outreach undertaken	Continue to make this clear On track for 15% 6 meetings in 2019 One summer student

Create a sense of belonging through a culture of sustainability	70% of residents 'know their neighbour' 80% of all residents and workers indicate their awareness of sustainability has increased		75% know > 1 neighbour Over 50% of residents, staff and workers surveyed report increased or good awareness of sustainability
---	--	--	--

Key achievements and challenges

Zibi continues to implement the agreed Heritage Interpretive Plan, both recognising the traditional ownership and retaining the industrial buildings of heritage value with three facades and two buildings to be preserved and repurposed in phase 1. The project continues to highlight the traditional ownership of the site and promote the Algonquin culture through place names and engagement with the advisory council of the Algonquin Anishinabe.

Zibi has been working successfully with the Memengweshii Advisory Council since 2014, which advises on Algonquin protocols and culture in all aspects of the project. It was actively involved in the design of the parks to be handed over to the National Capital Commission. Zibi has two Collaborative Benefits Agreements with a total of 10 Algonquin communities, which outline what the communities want to get out of the project. Zibi continues to work to deliver these requirements. This is a great success and is probably one of the first instances of a real-estate developer working in this way in the region.

A reassessment of the flood risk of the area has led to one of the proposed parks being redesigned as a climate resilient public space. The new design is likely to focus on the natural history of the site, and its exposed bedrock. This will further celebrate Algonquin cultural history as well as incorporating elements of the Ottawa River's natural history.

Currently Zibi isn't managing to achieve two youth engagements per year and so intends to develop a plan to engage indigenous youth in 2020, with support from Algonquin partners, this should increase summer employment opportunities for indigenous youth.

Zibi aims to build a strong community around sustainability, and in this first year of occupation surveys have been done to get an estimate of the baseline engagement and sustainability awareness. Residents that participate in the Zibi Community Facebook group receive frequent posts about One Planet Living topics, including healthy and sustainable diets. With few people on site still there is limited community action, but it is heartening to see that already most people know several neighbours.

Land and Nature

Progress

Outcomes	Targets	Baseline	Progress
Remediate contaminated land and revitalize the area to maximize the benefit to natural ecosystems	<ul style="list-style-type: none"> • 100% of the site area to meet provincial regulations after remediation • 14% of the site to be parks • 400% increase in biodiversity with all to contain at least 1 plant of significance to First Nations people 	Contam- inated land	Remediation is ahead of schedule. Zibi plaza: 17 native species, 11 plant species identified as being culturally significant to First Nations people.
Foster a love for nature through education and enhanced opportunities to interact with the natural world	50% of all residents will increase their time "in nature"		20% residents spending increased time in nature

Key achievements and challenges

Much like the cultural story, the land and nature story at Zibi is complex. The ecologically important site had become significantly degraded through industrial activity, so while there are many opportunities for habitat creation compared to the recent past it is also important to relate back to the pre-industrial state of the site.

The first park, Pangishimo (Sunset) Park, was delayed due to the unprecedented flooding but will open in 2020 balancing the desire of the Memenguweshii Council to maximise the natural landscaping while satisfying park requirements of the National Capital Commission. Pangishimo Park and Zibi Plaza will both contain native species and species important to the Algonquin community.

The rehabilitation work is ahead of schedule with 56,300 tons of soil remediated in 2019, and the first survey was undertaken with residents on their engagement with nature. Although the figure engaging more with nature was low at 20%, this is to be expected before the parks have been finished.

Sustainable Water

Progress

Outcomes	Targets	Baseline	Progress
Reduce potable water use for residents and irrigation	<ul style="list-style-type: none"> • 138L potable water consumed per resident, per day • 0% of potable water used for permanent irrigation systems • 10% toilet flushing with non-potable water 	163l	All installations to LEED platinum standard, no irrigation installed, O Condominium has > 45m ³ rainwater storage
Achieve near-zero export of pollutants via stormwater outflow	Total suspended solids will be reduced by 80% prior to discharge	Infrastructure planned,	Infrastructure installed

Key achievements and challenges

O Condominium has been completed to specifications to meet the water target, but the metering has yet to be commissioned. Once it has been, this will allow performance to be monitored. The building also includes rainwater harvesting that is supplied to about 50% of residential toilets in the building. Additionally, no irrigation systems have been installed on site.

Stormwater infrastructure was installed in 2019 but had no significant flow into the environment.

Local and Sustainable Food

Progress

Outcomes	Targets	Baseline	Progress
Provide access to modest garden spaces for 90% of households that want it	1.4 m ² Area of food-growing garden spaces onsite per household (m ²)	Planned for first building	Plots in place for 20% of residents, but 2/3rds of survey respondents express an interest
Create a community-scale food distribution network to increase access to local, fairly traded, and organic food	5% in year 1, growing to 25% by year 5 of Zibi residents participating in 'farm-to-table' schemes		13% of residents participated
Engage residents to encourage a reduction in consumption of high-carbon foods	50% of all residents will report a decrease in high-carbon food consumption year over year		No specific initiatives

Key achievements and challenges

Zibi aims to provide some food-growing space to all residents through the welcome gift of a balcony planter. Additionally, they aim to ensure that at least 9 out of 10 residents who would like additional food-growing space have access to a small garden space. O Condominium includes 15 gardens for the 70 apartments. Extrapolating from an initial survey shows that 45 gardens may be required to meet the two thirds of residents who expressed an interest. This is almost certainly an over-estimate, but it will be important to follow demand at O Condominium and feed this into designs of future buildings.

Zibi has initiated a Community Supported Agriculture partnership with a local organic farm, Roots and Shoots, and will be a prime drop-off location for the weekly organic vegetable box delivery. This will help make Zibi a local food hub. So far 13% of residents have been participating, and it is excellent that this is available from day one as new residents will develop fresh habits as they move in. It also presents an opportunity for engagement around sustainable diets.

Travel and Transport

Progress

Outcomes	Targets	Baseline / 2017	Progress
Reduce carbon dioxide (CO2) emissions associated with local transportation of residents	20% of parking spaces with electric car charging stations	Ontario: > 20%	First building designed with 10%
	0.7 household car parking ratio	Car ownership in O&G > 1.45 per household	First two buildings designed with 1:1 ratio, latter buildings will be closer to 0.5
	Modify roadway reducing lanes from 4 to 2,	Planned	Opening in 2020
	Auto Driver: 25%, Auto Passenger: 10%, Transit: 45%, Non-motorized: 20%	n/a	Planned, but not yet executed
Reduce the travel distance for basic goods and services to within walking distance	Community Walkscore >90 at 50% build-out	Gatineau 92, Ottawa 44, (O&G region 54)	Block 2/3 will provide local employment space; further services will be delivered in later phases

Key achievements and challenges

The Eddy-Booth corridor has been delayed but will open in 2020, which will be a fantastic step forward in creating sustainable transport connections to the site. Furthermore, Ottawa's Light Rail Transit opened in late 2019 and with a stop just 800 meters from the site this will have a significant positive impact on transit access. These services are being promoted to residents by the One Planet Ambassador, and take-up of these services should be reviewed to see if further resident engagement is required.

O Condominium and other early buildings do not meet the target car-parking ratio or electric vehicle charging points; however later buildings will have a lower parking ratio to ensure that the 0.7 ratio is achieved. For the commercial buildings, Block 2/3 has no dedicated parking and the block 301 underground parking, which is open to the public, will also service residential parking. So the block 301 parking is now partially considered in the overall target, slightly reducing parking spaces onsite.

Materials and Products

Progress

Outcomes	Targets	Baseline	Progress
Reduce the impact of construction	<ul style="list-style-type: none"> • 50% of existing building area retained • 90% of demolition materials recycled • 5% of demolition materials reused 		Retaining of facades and demolition recycling on track, reuse not always being met
	20% of materials contain recycled content 20% materials locally sourced/manufacture	n/a	Some building specific successes
	80% of timber or wood products reclaimed, reused or certified by FSC	n/a	Zibi Plaza: 100% FSC, Block 2: 25% FSC by value O Condominium – about 2/3rds
Meet or exceed best practice standards for indoor air quality	Achieve relevant LEED credits	n/a	Delivered in O Condominium
Embed a culture of reducing and reusing within the development	At least one sharing centres and/or related web-based sites established at Zibi	n/a	Online forum set up

Key achievements and challenges

Zibi undertook a thorough review of what buildings could be retained and materials recycled and reused. This has ensured that the project is well on track in these areas, with the exception of material reuse – though this is compensated for by the façade and building reuse. Use of sustainable materials in the buildings has been a little more piecemeal:

- The concrete used in Block 301 (the underground parking lot in Ontario) achieved 1/3rd post-industrial recycled content
- Block 2 used 46% post-consumer steel scrap and 17% pre-consumer steel scrap in the concrete, achieving nearly 2/3rds recycled material
- FSC certified timber varying from 25-100%

These are good achievements but significant reduction in the embodied carbon of the materials will require replacing high-embodied carbon materials, particularly cement and steel. Zibi is undertaking an embodied carbon analysis of O Condominium and is looking into lower-carbon concrete options starting with an embodied carbon chart with key materials. It has also been working directly with its main cement supplier, Tomlinson, to maximise cement replacement. Tomlinson have been sourcing Ground Granulated Blastfurnace Slag (GGBS), as waste product from steel production, and incorporating the maximum replacement percentage into the cement, often achieving 25-50% cement replacement. This is an excellent start, but these initiatives will need to be ramped up quickly into future buildings if the 20% reduced embodied carbon target is to be achieved.

Sourcing of FSC-certified timber initially proved challenging and so Zibi engaged directly with the local suppliers. These suppliers are committed to sourcing FSC for Zibi, and there is a growing list of products that are available in certified timber from local suppliers.

This engagement with timber and cement suppliers is a great example of Zibi demonstrating real leadership and helping to change the local supply chain.

In terms of sustainable materials in operation, the new One Planet Ambassador has set up an online forum for the exchange of goods and also developed One Planet Living guidelines for commercial tenants, to be handed over before fit-out or business activities. This will be supported by a One Planet Living induction session and a One Planet Living property managers guide. For the residents, more events are planned to co-create a culture built on the sharing of durable goods.

Zero Waste

Progress

Outcomes	Targets	Baseline	Progress
Divert 70% of total annual residential and commercial waste from landfill	> 70% of residential and commercial waste diverted from landfill	n/a	Waste audit planned for 2020
Reduce residential waste	291 kg/person/year, a 20% reduction compared to municipal average	n/a, 365 kg/person/year	Waste audit planned for 2020
Divert 90% of construction waste from landfill	<ul style="list-style-type: none"> • 90% construction waste diverted from landfill • Concrete: 75% re-use on site, 20% re-use off-site, 5% clean fill 	98%	99%

Key achievements and challenges

Construction waste recycling targets continue to be met and exceeded, though there has been less onsite reuse of demolition materials, particularly concrete, than anticipated. This is primarily because Zibi does not require a significant amount of fill material, so the bulk of demolition concrete was taken off-site for recycling.

For residents, the collection of mixed recycling, organic waste and non-recyclable waste is covered by the municipal services. Residents are provided with sorting bins when they move in and continuous education through signs and workshops, and so are comfortably able to achieve a 70% recycling rate if they follow the guidelines and make full use of the facilities. Buildings have been designed to facilitate recycling, for example Block 10 will have a tri-shoot for organics, recycling and waste. Zibi is planning a waste audit for 2020 to develop a better understanding of the performance of different buildings and the benefits of different design solutions. The One Planet Living ambassador also continues to run events that promote recycling.

Additionally, with the opening of the commercial offices in block 2/3, effective waste management will need to be driven through contractual obligations and engagement.

Zero Carbon Energy

Progress

Outcomes	Targets	2017	Progress
Ensure 100% of Zibi energy needs met from renewable energy	100% of total building energy demand met through zero carbon sources		Energy company and infrastructure installed to supply zero carbon heat when demand allows
Decrease building energy demand by 30%	30% reduction in building energy demand during operations, compared with a code-compliant baseline building	N/A	30% saving at O condominium

Key achievements and challenges

The final energy modelling report for Condominium O showed that the building will exceed local building requirements (ASHRAE 90.1) by over 30%, achieving the target set.

The Zibi Community Utility to provide zero-carbon heat was established in 2018 and received its first customers in 2019, the occupants of O Condominium. The heat network has been expanded with infrastructure installed in Ontario. The utility is currently using natural gas to generate the heat. This will switch to waste heat from the neighbouring pulping mill as soon as enough buildings have been completed to provide the required demand. The commitment is for this to be in place by 2025, but current projections are that it is likely be ready sooner – potentially 2022.

Electricity is all zero-carbon electricity, sourced from Quebec Hydro.