



Bioregional
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better way to live

Zibi One Planet Action Plan
Progress Review

June 2019

Table of Contents

| | |
|---|----------|
| Zibi's One Planet Action Plan..... | 2 |
| The Zibi development project | 2 |
| One Planet Living | 2 |
| One Planet Action Plan..... | 2 |
| Review of changes to the 2015 One Planet Action Plan. Error! Bookmark not defined. | |
| Summary of progress | 5 |
| Review of progress against Zibi's One Planet Action Plan | 8 |
| Health and Happiness | 8 |
| Equity and Local Economy | 10 |
| Culture and Community | 12 |
| Land and Nature | 14 |
| Sustainable Water | 15 |
| Local and Sustainable Food | 16 |
| Travel and Transport | 17 |
| Materials and Products | 18 |
| Zero Waste | 20 |
| Zero Carbon Energy | 21 |

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:

- The first residential building (block 13, O Condominium made up of 70 condos) is now complete and the first residents moved in in late 2018
- Kanaal (block 205a) will be the second residential block to be completed. This is under construction and is set to open in late 2019. The building, offering views across Parliament Hill is:
 - Comprised of 71 units,
 - Targeted to achieve LEED for Gold
- Block 2/3 is also under construction and scheduled to open in 2019. This restoration of industrial brick building will be a commercial food hall showcasing the industrial past of this building.
- Block 10 will be the next building to break ground in 2019 and will be 162 unit rental building in Quebec. The building will have a focus on community with plenty of amenity space within the building and the majority of the units will be affordable.

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 10 principles (see Table 1), which grew out of Bioregional's experience of developing the pioneering BedZED ecovillage in south London. These principles allow a holistic and interconnected view which addresses social, economic and environmental aspects of sustainability.

One Planet Action Plan

The Zibi One Planet Action Plan was developed in April 2015. The One Planet Living 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

Using the One Planet Living framework we have set out to make Zibi the most environmentally conscious and sustainability-focused development project in Canada’.

This past year was a momentous year at Zibi where we have put in place the groundwork for ensuring sustainable operations and also seen the completion of the first buildings and arrival of residents. The One Planet Ambassador is in place to greet these tenants, the first phase of the district energy system is complete, and One Planet Design and Contractor specifications have been incorporated into our processes.

We have been continuing to work with our Algonquin Anishinabe partners who are providing invaluable direction on the design of our public realms and green spaces that will allow for Zibi to continue to be a leader in social sustainability and indigenous reconciliation in the region.

While we have a long way to go, we’re confident that we are on track to deliver our vision of making Zibi a global leader in implementing One Planet Living.

Comment by Peer Reviewer - Benjamin Gill

Zibi's initial vision was to rehabilitate an ex-industrial zone and create a truly sustainable community. The groundwork for delivering this vision has been put in place with the site ready to provide zero carbon heat once demand is sufficient, the sustainable transport links under construction and the One Planet Living Ambassador in place to encourage and support residents make sustainable lifestyle choices.

The first building is complete with several more to be completed, and others to break ground, in 2019. This first building has broadly met the targets and objectives set-out in the One Planet Action Plan. Where this is not the case, for example in terms of social housing provision and parking ratios, there is a clear plan to ensure that subsequent buildings compensate to ensure these targets are met. For example the third residential building, with as many apartments as the first two combined, will be close to 100% affordable.

The redevelopment of the site which is unceded Algonquin territory has complex social and cultural requirements and opinions to balance. No development can ever satisfy the requests of all groups. But it can set out a clear process for engaging with all key stakeholders, ensuring their views are accounted for and integrated into the design and long-term operational plan – and Zibi is setting the standard for how this can be done in Canada.

While there are areas that require more detailed attention in the coming years Zibi 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.

Summary of progress

| | |
|--|--|
| | 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 |

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.

| One Planet Principle | Comment | Performance and progress |
|-----------------------------------|--|--------------------------|
| Health and happiness | A One Planet Living Ambassador started in 2018 to support the first residents, and baseline surveys have been undertaken of both resident and construction worker well-being. | Improvement |
| Equity and local economy | While the first two residential buildings contain no affordable units, the third building will be predominantly affordable. Through the construction and operation, e.g. the District Utility company, the project offers both training, employment and long-term investment for the Algonquin Community | Unchanged |
| Culture and community | Zibi continues to implement the Heritage Interpretive Plan while highlighting the traditional ownership of the site. The unique site is a culturally complex and the developer continues to show an unprecedented level of engagement. | Improvement |
| Land and nature | The remediation is underway and ahead of schedule. The public spaces have been designed to meet the requirements of four key stakeholder groups, including the Memengweshii council and the first park will be completed in 2019. | Unchanged |
| Sustainable water | 0 Condominium designed to meet water efficiency and rainwater harvesting targets. Stormwater treatment infrastructure installed, and park redesigned as flood protection | Improvement |
| Local and sustainable food | 0 Condominium providing allotments for 20% of apartments – whether this meets demand will be tracked. Limited progress in development of farm to table programmes and it is recommended that the One Planet Ambassador brings this agenda forward. | Unchanged |

| | | |
|-------------------------------|--|-----------|
| Travel and transport | Work has started on converting the Eddy-Booth corridor from a 4 lane highway to 2 lanes with dedicated pedestrian and cycle connections. The electric vehicle and car parking ratios of O condominium do not meet the targets, but once the cycle connection and light rail is in place then subsequent buildings will be able to be more ambitious. | Unchanged |
| Materials and products | Building and material reuse has been maximised with 50% of buildings reused in some way and 99% of demolition material reused. Key areas to address from now on are minimising the embodied energy of the buildings, most likely by reducing the use of cement where possible and putting in place strategies to encourage a culture of sharing and reuse amongst residents. | Unchanged |
| Zero waste | Construction waste recycling has been consistently above the 90% target. Residential recycling facilities are in place, and the role of the One Planet Ambassador in encouraging recycling will be key to ensuring residents use these | Unchanged |
| Zero carbon energy | The first building has been built to the specified efficiency standards, and the site is provided with renewable electricity by Ottawa Hydro, the heat network is in place and ready to switch to a zero carbon source of waste industrial heat once there is sufficient demand. | Unchanged |

Highlights of 2018

- Work has started on one of the major commuting arteries between Gatineau and Ottawa. This will convert a multi lane corridor that converges onto an aged bridge into a multi-modal route with single lanes in each direction. This will provide a vital new cycle and pedestrian link for the region.
- The site has the infrastructure for the zero-carbon heat network in place and renewable electricity secured from Quebec Hydro. Once there is sufficient demand onsite then the heat network will be connected to a neighbouring Kruger facility and this waste heat used across the site
- A One Planet Ambassador (eco-concierge) is in place to work predominantly with residents – helping to create a culture of sustainability from the outset, with a commitment to fund the post for 5 years.
- Production of the design and construction specifications for contractors laying out the infrastructure performance requirements – particularly relating to energy and water performance, parking standards, air quality and restricted materials.

Key plans for 2019

- A One Planet Living coordinator will start onsite before construction starts on Block 10 to lead on;
 - Engagement with construction workers,
 - Data collection for materials and other site wide construction initiatives.
 - Integrating One Planet Living design and construction specifications into future blocks, including Block 10.
- Complete the transformation of the Booth/Eddy St Corridor to provide safe access for pedestrians and cyclists.

Suggestions from the peer reviewer

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

- It is important to minimise the embodied carbon of construction. The contractor specifications focus on local materials and recycled content. While this will help reduce the embodied carbon, the most impactful strategy is likely to be avoiding the use of cement and steel. It would be helpful to assess 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.
- The redesign of one of the formal parks as a climate resilient public space i.e. to help reduce flooding potentially offers the opportunity to increase both the biodiversity and cultural heritage value of the space – this opportunity should be fully investigated
- Increase engagement with residents over sustainable food, recycling and creating a culture of sharing and reuse
- Put in place contractual obligations for recycling by commercial tenants.

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 |
|-----|---|--|---|---|
| HH1 | Increase happiness for Zibi residents | > 75 % of residents 'happy' with their lives | Ottawa-Gatineau: 8/10 | Survey: 3.75/4 (9/10) |
| HH2 | Create opportunities for community involvement | > 70% of residents feel actively involved in their community | 58% for Ottawa-Gatineau, (O&G) 65% for all of Canada | To be covered in surveys |
| HH3 | Facilitate learning and creative expression opportunities for residents | > 12 events / classes held per year within community spaces | n/a | 3 events |
| HH4 | Support better health outcomes for residents | > 85% of residents indicate overall satisfaction with their health | 63.6% of O&G residents perceive their health as very good; and 72.3% perceive for their mental health. Canadian average is 59.9% and 72.2% respectively | Survey: 94% feel health allows them to meet daily needs |
| HH5 | Support better health outcomes for construction workers | > 85% of workers indicate an overall satisfaction with their health | n/a | Survey: 95% perceive their health to be good or better |
| | | >85% of workers indicate increased satisfaction working at Zibi as compared to other sites | n/a | Not asked |

Key achievements and challenges

The first residents moved in during 2018, and baseline surveys of their health and wellbeing have been undertaken. The site-worker and resident surveys showed that both groups are broadly happy with their health. As part of the welcome and community-building process, a One Planet Ambassador has been brought on board and three events have been held – a simple welcome event and two with local beekeepers about honey production.

The One Planet Ambassador's role will be to manage the community programme and to measure community-derived data. The role will span several One Planet Living principles, including the Health and Happiness principle; the person will be in charge of programming of public spaces, show people how to recycle and get to the nearest bus stop tenant training, as well as farm to table programmes. At the moment, this position will be fully funded for 5 years and it is hoped that a new revenue stream will be identified to allow the position to continue after this period. But this commitment is an excellent start.

All construction workers receive a One Planet Living induction, including a short video, but ongoing engagement with them has proved challenging as most workers have a specific trade and so are onsite to perform a specific short-term task and then move to the next job. This prevents longitudinal studies of the impact of working at Zibi. The recruitment of a One Planet Coordinator onsite in 2019 will help overcome these challenges, and they will begin to provide guidance on healthy eating to construction workers.

Equity and Local Economy

Progress

| | Outcomes | Targets / indicators | Baseline / 2017 | Progress |
|------|---|---|---|--|
| ELE1 | Plan for 7% affordable housing | 7% of total units affordable The 7% target will focus on social housing as opposed to subsidised key worker housing | Frequently zero | First two buildings - zero, next building close to 100% affordable |
| ELE2 | Promote and give precedence to smaller, local and/or ethically run enterprises | 50% of retail space storefronts to? contain small, local, and / or ethical businesses, compared to the total number of storefronts at Zibi | n/a | No leases signed yet |
| ELE3 | Engage Zibi residents in Fair Trade programs and products | Deploy Fair Trade guidelines in retail strategy and have one fair-trade business in place by the time 50% of retail storefronts are occupied | n/a | No leases signed yet |
| ELE4 | Provide opportunities for all community members to democratically participate in governing and managing Zibi | Create a community-wide Residents' Association with documented democratic governance procedures within 1 year of first occupancy | n/a | In progress |
| ELE5 | Create a socially responsible tourist destination | By year 5, have 1000 tourists per year visit Zibi | n/a | 26 events with over 15,000 visitors |
| ELE6 | Develop Zibi beneficially with and for the Algonquin Anishinabe Nation and people - to ensure that Indigenous culture is not only present at Zibi, but that Indigenous people truly live, work and play at Zibi | At least 20 First Nations individuals are supported to move from on-reserve work to off-reserve work experience, throughout the project life cycle Ensure Indigenous workers are employed continuously throughout the construction phase, and/or as other service-providers to the project | n/a 2017: 14 individuals employed for the remediation; 4 retained | 8 individuals bridged from on to off-reserve work |
| | | At least 2 opportunities for long-term investment throughout project lifecycle | n/a Placeholder for 10% ownership of the District Utility company. | Offer made to an Algonquin community |
| | | Offer a preferential residential pricing program for Indigenous purchasers, and include Indigenous members as part of affordable housing strategy | n/a Pricing programme in place | Ongoing |

Key achievements and challenges

The first two buildings to be completed, with a total of 140 units, contain no affordable housing, but the following building of 162 units will be almost entirely affordable. The building will likely be supported by Canada Mortgage and Housing Corporation's Rental Construction Financing and will lean on the program's definition of affordability. Zibi's initial affordable housing strategy had envisaged that the majority of the affordable housing would be delivered in the later phases of the development – so this is excellent progress. This is supplemented by the preferential pricing programme which offers affordable housing to the First Nations population.

Zibi has already started to create a new tourism centre with over 15,000 visitors to events in 2018. There remains an opportunity to engage further with event organizers to maximise the sustainability of the events and look to engage with the visitors about One Planet Living and sustainability.

It is a goal of Zibi to support First Nation workers to gain work outside of their reserves (off-reserve work), which facilitates the opportunity to gain apprenticeship hours. This is ongoing and eight individuals gained off-reserve work experience with Zibi in 2018. Additionally in the formation of the District Utility Company, a 10% placeholder for Algonquin share ownership has been earmarked. A formal proposal to a community was made in 2018 and they are considering the offer.

Culture and Community

Progress

| | Outcomes | Target / indicator | Baseline / 2017 | 2018 |
|-----|--|--|---|---|
| CC1 | Create a cultural identity that reflects the history of the locale throughout the development | A Heritage Plan, endorsed by Municipal Heritage Planners and regional Algonquin communities developed and implemented at Zibi | Heritage Interpretive Plan in place since March 2017 | Ongoing |
| CC2 | Adapt and re-use at least four existing historic industrial buildings | 4 buildings to be preserved | Plans to preserve and repurpose 2 facades and 2 full buildings in phase 1 | More than 50% of buildings reused or re-purposed |
| CC3 | Promote local art and support the local arts community | 50% of art installations on site that are created by local artists | Tender planned for 2018 | No progress |
| CC4 | Create connectivity with the surrounding communities of the National Capital Region | A developed network of connected pedestrian and cycling pathways to and from adjacent communities completed before 40% of the building area is complete | Planned | Plan for works completed – to be undertaken in 2019 |
| CC5 | Engage with Algonquins to ensure First Nations history, presence and culture are reflected throughout the development and ensure that visitors know Zibi is the Algonquin word for River, and OG is within unceded Traditional Algonquin Territory | Mention traditional Algonquin territory in 100% of all media events; 15% of place names will be in Algonquin. | 2-3 public speaking engagements per month on average | Continue to make this clear |
| | | Establish an advisory council of Algonquin Anishinabe to guide on matters related to First Nations culture, history and language, at least two meetings a year | Council established: 6 meetings held in 2017; 8-10 in 2016 | 5 meetings in 2018 (plus one cancelled for weather) |
| | | Minimum of 2 youth engagements per year | Outreach related to employment undertaken | Internship – where? |
| CC6 | Create a sense of belonging within Zibi | >70% of residents that 'know their neighbour | No residents have moved in yet | Survey in 2019 |
| CC7 | Create a culture of sustainability throughout Zibi, from design to operations | 80% of all residents and workers indicate their awareness of sustainability has increased | | Survey not undertaken but One Planet Ambassador is now in place |

Key achievements and challenges

Zibi continues to implement the agreed Heritage Interpretive Plan and 2019 will see the construction of Zibi Plaza, which is the first public realm, as well as the construction of Pangishimo Park.

Zibi is evolving into a cultural centre through the range of events held onsite, which all have a cultural aspect to them such as music or art. The project also 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 which met five times in 2018.

Zibi is working with all the Algonquin Anishinabe communities that express interest in the private-sector redevelopment. 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. This is a great success and is the first of its kind in the region.

Specifically since 2015, 4 communities have signed letters of intent with Zibi, and in 2018, 2 robust Collaborative Benefits Agreements (CBAs) were finalized and executed with the Algonquins of Pikwakanagan First Nation, and the Algonquins of Ontario (which represents 10 communities). These CBAs outline in greater detail what partner Algonquin communities want to get out of the project and what the project can offer and proposes a framework to achieving this collaboratively.

Land and Nature

Progress

| | Outcomes | Targets | Baseline / 2017 | Progress |
|-----|--|--|---|---|
| LN1 | Remediate contaminated land and revitalize the area to maximize the benefit to natural ecosystems within the development | 100% the site area to meets provincial regulations after remediation | Target on-track – 25% of land remediated site wide (35% in Gatineau; 0% in Ontario) | Ahead of schedule |
| LN2 | Reintroduce native vegetation and increase biodiversity of plants and animals | 14% of site to be parks | Phase 1 will exceed the 14% target by early 2019 | As 2017, first park to be completed in 2019 |
| | | 400% increase in biodiversity | Planned, but not yet executed | Park spaces and landscaping planned |
| | | All parks will contain at least 1 plant of significance to First Nations people | Planned, but not yet executed | Planned for Pangishimo Park. |
| LN3 | Design lighting strategies to minimize the effects of light pollution | Meet LEED requirements for exterior lighting areas | Planned, but not yet executed | Ongoing |
| LN4 | Foster a love for nature through education and by increasing opportunities to interact with the natural world | 50% of all residents will increase their time "in nature" comparing their personal baseline prior to Zibi to one year after living at Zibi | No residents have moved in yet | Survey with residents in first year |

Key achievements and challenges

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.

Zibi has used the guidance of the Memengweshii Council to design public spaces that will celebrate the pre-industrial value of the site and honour Algonquin culture while satisfying the requirements of the National Capital Commission (NCC) and both municipalities. This balances the NCC's requirements to keep the look and feel of the industrial period and provide specific park features (e.g. benches) with the desire of the Memengweshii Council to maximise the natural landscaping.

The first park, Pangishimo (Sunset) Park will open in 2019 and meet these requirements. Reassessment of the flood risk of the area has led to one of the proposed parks being redesigned as a climate resilient public space. A more natural space may offer the opportunity to increase the biodiversity and cultural heritage – and this opportunity needs to be fully investigated.

Sustainable Water

Progress

| | Outcomes | Targets | Baseline / 2017 | Progress |
|-----|---|--|---|--|
| SW1 | Reduce residential potable water use to 138 litres per person, per day | 138L Potable water consumed per resident, per day (L) | 163l | All installations to LEED platinum standard |
| SW2 | Reduce potable water use in landscaping by planning use of drought tolerant species and using non-potable means if permanent irrigation is required | 0% of potable water used for permanent irrigation systems | Planned | Ongoing and on track |
| SW3 | Utilize non-potable water for sewage conveyance in buildings where feasible in order to meet water consumption targets | 10% toilet flushing with non-potable water | The first residential building is targeting 20% | O condo: 47kl rainwater tank connected to 50% of toilets |
| SW4 | 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 which will allow the water target to be met, depending on the behaviour of the residents. The presence of the One Planet Ambassador onsite will allow resident engagement over this issue. The building also includes rainwater harvesting that is supplied to about 50% of residential toilets in the building.

Stormwater infrastructure has been installed to ensure clearing of rainwater before discharge into the river. Early 2019 saw unprecedented flooding in the Ottawa River Watershed, water levels reached historically high levels 50 cm above 2017's 1 in 100 year flood and the level remained high for several weeks. In the light of this one of the parks is being redesigned as a climate resilient public space to add further flood protection.

Local and Sustainable Food

Progress

| | Outcomes | Targets | 2017 | Progress |
|------|--|--|----------------------------|---|
| LSF1 | Provide access to modest garden spaces for 90% of households that want it | 1.4 m2 Area of food-growing garden spaces onsite per household (m2) Assume that minimum 1 in 10 households wants food growing space | Planned for first building | 15 1.4 m2 plots provided – for 20% of units |
| LSF2 | Create a community scale food distribution network to improve connections between food and farmers and increase access to local, fairly traded, and organic food | >70% of Zibi residents purchase > 25% of their food (by value) that is organic, or local, or Fair Trade | | Residents just moved in |
| | | 5% in year 1, growing to 25% by year 5 of Zibi residents participating in 'farm-to-table' schemes | | Residents just moved in |
| LSF3 | Engage residents in education program 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 | | Residents just moved in |

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. Meeting this latter target requires an estimate of future demand for garden space to be made – at O Condominium 15 garden spaces for 70 apartments have been provided. Ongoing monitoring will show whether this 20% ratio is sufficient, as a comparison One Brighton offered about rooftop allotments for 16% of apartments, which was not quite sufficient to meet the demand.

To date there has been minimal progress in development of farm to table programmes, and resident engagement has been limited to two events linked to local honey production. It is understood that there are only a small number of residents onsite but successful uptake of the farm to table programmes will require them to be in place early as this is the best opportunity to instigate a new behaviour or habit. Likewise engagement around sustainable diets is likely to be most effective as residents move in and create their new habits.

Travel and Transport

Progress

| | Outcomes | Targets | Baseline / 2017 | Progress |
|-----|---|---|---|---|
| TT1 | 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 > 1.45 per household in O&G | First two buildings designed with 1:1 ratio |
| | | Modify roadway to reduce car lanes from 4 to 2, implement new bus shelters and transit schedule improvements, sidewalks and bike-way in both directions | Planned, but not yet executed | |
| | | Auto Driver: 25%, Auto Passenger: 10%, Transit: 45%, Non-motorized: 20% | n/a | Planned, but not yet executed |
| TT2 | 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) | No data available yet |

Key achievements and challenges

The key development in 2018 has been the commencement of work on the Eddy-Booth corridor which will be completed in 2019. This is a significant development in a car-dominated city with half of a key commuting corridor being given over to cyclists and pedestrians – which will hopefully kick-start a move away from the private car in the city.

O Condominium does not meet the target car parking ratio or electric vehicle charging points; however it was always anticipated that these first residents will be more car dependent while there are few services on site and restricted public transport options. It is currently proposed that all residential buildings in phase 1 will have a 1:1 ratio of car parking spaces per household, but this will decrease to 0.5 ratio in subsequent phases, block 2/3 has no dedicated parking. The 0.7% target has been included in the design requirements for consultants. Percentage of parking spaces with electric car charging stations will be 20% for all other residential buildings.

A series of Transportation Demand Management strategies to achieve the modal split targets are planned but not yet fully implemented. The first residents have not been provided with free transit passes to discourage car use as the light rail connection is not yet complete, therefore the focus has been on driving forward the Eddy-Booth corridor work.

Materials and Products

Progress

| | Outcomes | Targets | Baseline / 2017 | Progress |
|-----|--|--|---------------------------|---|
| PM1 | Retain and repurpose 50% of the existing buildings on-site (excluding the primary mill buildings) | 50% of existing building area retained and repurposed (excluding primary mill buildings) | Exceeded in phase 1 | Target exceeded in phase 1 |
| PM2 | Repurpose or recycle 90% of all demolition materials (excluding hazardous materials), of which a minimum of 5% by volume should be reused | 90% of demolition materials that are recycled or repurposed (by weight) | | Full data not yet available; specified in contracts |
| | | 5% of demolition materials that are reused on site (by weight) | 2.8% reused onsite | Full data not yet available; specified in contracts |
| PM3 | Reduce the embodied carbon of buildings | 20% of materials that contain recycled content | n/a | Included in design and contractor specifications |
| | | 20% of materials that are locally sourced or manufactured | n/a | |
| PM4 | Reduce reliance on unsustainable wood sources. Instead, use wood products with a minimum of 80% FSC certified content, and/or are re-claimed, recycled or from locally managed supply chains | 80% of timber or wood products reclaimed, reused or certified by FSC (by value) | n/a | 68% on O Condominium |
| PM5 | Meet or exceed established best practice standards for indoor air quality | Achieve LEED IEQ V4 Indoor Environmental Quality: Prerequisites 1 and 2, plus credit IEQc3, plus a minimum of 3 points from IEQc1 and/or IEQc3 | Included in O condominium | Delivered in O Condominium |
| PM6 | Embed a culture of reducing and reusing within the development by providing opportunities to share resources | At least on sharing centres and/or related web-based sites established at Zibi | n/a | Online forum set up |

Key achievements and challenges

A detailed study has identified all the buildings on site that can be realistically reused or repurposed and more than 50% of them will be reused or repurposed. Recycling and reuse of demolition material was also successful with 99% of material being recycled or reused (excluding asbestos which was sent for safe disposal).

Requirements for use of recycled, sustainable and local materials have been integrated into the design and construction standards for contractors. While this will ensure these requirements are met, the desired outcome is to reduce the embodied carbon of the construction. Avoiding the use of high embodied carbon materials, such as cement and steel, will be crucial. It is therefore recommended that a simple embodied carbon analysis is made of O Condominium, and potentially also block 10, and that this is used to inform future design and construction. Further reducing the impact of construction is likely to require:

- Incorporating cement replacement materials into concrete – such as Ground Granulated Blastfurnace Slag (GGBS) and fly ash
- Using construction materials that absorb carbon – such as timber and 'hempcrete'
- The use of some lightweight construction techniques.

Sourcing of FSC timber has proved challenging, with O Condominium achieving just over 2/3rds FSC certified. While this is impressive in the Canadian context, at a global level it is low. It is understood that in 2019 Zibi will engage more directly with local sawmills to try to secure sources of timber that may not be certified but are known to come from sustainably managed sources.

The final point, and potentially most impactful issue over the lifecycle of the project, is creating a culture of sharing and reuse within the community. Much like for local and sustainable food these initiatives are most likely to be successful when they are in place early so that residents can adopt these new practices on moving into their new home. This will be an important focus for the One Planet Ambassador in the coming years.

Zero Waste

Progress

| | Outcomes | Targets | Baseline / 2017 | 2018 |
|-----|---|---|---------------------------|--|
| ZW1 | Divert 70% of total annual residential and commercial waste from landfill | > 70% of residential and commercial waste diverted from landfill | n/a | Residents moved in |
| ZW2 | Reduce residential waste | 291 kg/person/year, a 20% reduction compared to municipal average | n/a 365 kg/person/year | Residents moved in |
| ZW3 | Reuse concrete demolition waste | Concrete: 75% re-use on site, 20% re-use off-site, 5% clean fill | 33%, 66%, <1% to landfill | 71% reused on site, 29% trucked offsite, less than 1% to landfill. |
| ZW4 | Divert 90% of construction waste from landfill | 90% construction waste diverted from landfill (by weight) | 98% | 92.4% |

Key achievements and challenges

Construction waste recycling targets have been met for site set -up and construction of the first building – which is an excellent start. The recycling rates to date are over 99% for concrete demolition waste and close to 92.5% for construction waste – which is an excellent start.

On the operational side the municipal service provides collection of mixed recycling and organic waste as well as rubbish so residents are comfortably able to achieve a 70% recycling rate if they fully utilise the facilities. The key issue, therefore, is making recycling easy and resident engagement – in this latter area the work of the One Planet Living ambassador will be critical. To make recycling as easy as possible block 10 will have a tri-shoot (for recyclables, organics and waste) as opposed to the standard approach of a single shoot for waste disposal and a central recycling area that residents are required to bring their recyclables to.

Additionally with the opening of the food hall 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 |
|-----|---|---|-------------------------------|---|
| ZC1 | Ensure 100% of Zibi energy needs, including peak energy, are satisfied on a net zero carbon basis | 100% of total building energy demand met through zero carbon sources | | Energy company set up to supply zero carbon heat when demand allows |
| ZC2 | Decrease building energy demand by 30% | 30% reduction in building energy demand during operations, compared with a code-compliant baseline building | N/A | Building specification for O Condominium should meet this requirement and will be reported on in 2019 |
| ZC3 | Decrease construction emissions by processing excavated rock on site into aggregates for use in the development | 60% (volume) of excavated rock processed on site for re-use as aggregate on site, 40% off site in the city's core | 22% onsite, remainder offsite | 36% reused onsite, 28% stored for late use, and 28% hauled offsite |

Key achievements and challenges

There was exciting progress in the development of the heat network in 2018 with the establishment of the company and the construction of its first phase. While this is currently being powered by natural gas it will be switched over to waste heat from the neighbouring pulping mill as soon as sufficient 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 should be online sooner – potentially 2022. Electricity is all zero carbon electricity sourced from Quebec Hydro.