



2022 ONE PLANET APPENDIX



APPENDIX A: HEALTH AND HAPPINESS

HH1, HH2 and HH4

Table 1: Resident survey results regarding Health & Happiness.

What is your age range?	Does your health allow you to meet your day-to-day needs?	Which aspect(s) of your health could be improved?	Reflecting on your activities and life circumstances, how would you rate your happiness?	Do you feel involved in the Zibi community?
66 - 75	Yes	Would love a pool in one of the buildings that we could belong even for an additional fee	5	Yes
56 - 65	Yes		4	Yes
46 - 55	Yes	Easy close access to fresh food would allow me to eat better and would also help me to use active transportation to get my groceries and/or take-out meals.	3	Yes
26 - 35	Yes	Exercise	5	Yes
26 - 35	Yes	Mental health and physical health (more walking, healthier food)	2	No
26 - 35	Yes	Strength	4	No
56 - 65	Yes	No	1	No
26 - 35	Yes	Exercise and food	5	No
18 - 25	Yes	Mental	3	Yes
26 - 35	Yes	Physical	3	No
26 - 35	Yes	Physical, strength	3	No
26 - 35	Yes	Social	3	No
36 - 45	Yes	Physical	4	Yes
18 - 25	Yes		4	No
18 - 25	Yes		4	No
18 - 25	Yes	Cardiovascular health, mental health	4	No
26 - 35	Yes	All	4	Yes
46 - 55	Yes	Cardio	3	No
26 - 35	Yes	Nutrition	4	Yes
18 - 25	Yes	Fitness	5	Yes

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What is your age range?	Does your health allow you to meet your day-to-day needs?	Which aspect(s) of your health could be improved?	Reflecting on your activities and life circumstances, how would you rate your happiness?	Do you feel involved in the Zibi community?
18 - 25	Yes	Diet	4	Yes
18 - 25	Yes	Eating habits	4	No
18 - 25	Yes	Diet	1	Yes
36 - 45	Yes	Fitness	4	No
46 - 55	Yes	Weight	3	No
66 - 75	Yes		5	Yes
76+	Yes	Clear requirements regarding animals, choosing renters for airbnb block O	4	No
56 - 65	Yes		4	Yes
46 - 55	Yes		4	Yes
36 - 45	Yes	Anxiety management	4	Yes
36 - 45	Yes	Flexibility	4	Yes
56 - 65	Yes	Have more green space on site, benches, picnic tables by the river.	5	Yes
46 - 55	Yes		4	No
46 - 55	Yes	Have more free time	4	Yes
26 - 35	Yes	Stop eating candy	5	Yes
36 - 45	Yes		3	Yes
56 - 65	Yes	More physical activity, more concerts	5	Yes
18 - 25	Yes	Training room	3	Yes

HH5

Table 2: Staff survey results regarding Health & Happiness.

Reflecting on your activities and life circumstances, how would you rate your happiness?	Does your health allow you to meet your day-to-day needs?	Which aspect(s) of your health could be improved?
4	Yes	
5	Yes	Physical fitness
4	Yes	
4	Yes	I should eat healthier and be more active
4	No	Weight, joint pain
4	Yes	Mental Health / Stress
4	Yes	Mental
5	Yes	More daily exercise
5	Yes	More disciplined in what I eat
4	Yes	Mental
5	Yes	Mental health; therapy for depression, anxiety, and PTSD Physical health; drink more water, better sleep habits
5	Yes	
4	Yes	Better eating

HH5

Table 3: Trade worker survey results regarding Health & Happiness.

How would you describe your overall health (mental and physical combined)?	Based on your work experience, do you think that more could be done on construction sites to improve workers' health?	Do you have any suggestions on initiatives or programs that could be done on Zibi's site to improve your health?	Do you notice anything different going on at Zibi, compared to other construction sites? If so, please briefly elaborate.
Good	Yes	More emphasis on dust control	In general a better company to work for
Room for some improvement	Yes	More signage exits blocked no signage	It is more unsafe then the majority of job sites I've been on in 31 years staircase is partially covered tripping pieces of plywood to many trades in same area poor scheduling of trades walk ways are not clear there are no safe stable ways to walk in to the the building There's no dust control being used when sweeping the parking levels P1 through P3 no dust pan on site Poor to no lighting around and inside the building (p1-p3 is lit) there are lose perry post all over
Excellent	Yes	Loosen up on the schedules a bit.	I like how Dream focuses highly to keep a safe and clean environment on their projects.
Average	No opinion	No	
Excellent	No opinion		Not really
Good	Yes	A prevention workshop on mental health would be nice,	I find that this construction site is dirtier than most sites. There is also a lack in security.
Good	Yes	Heating	The construction site is well taken care of.
Good	No	No not really	Not really
Excellent	Yes	Lunches and treats, these little things help all workers from all trades to get along and talk to one another and makes the overall ambiance better on site. Having employees that feel valued hightens their motivation to work at Zibi.	Yes: quantity of recycled material. Site cleanliness. Better surveillance of security on site.

APPENDIX B: EQUITY AND LOCAL ECONOMY

ELE1

Table 1: Number of units at Zibi under the affordable housing program.

Block	Number of Units	Number of Affordable Units	Affordable Units (%)
13 - O Condos	71	0	0
205A - Kanaal Condos	70	0	0
10 - Aalto Suites	162	162	100
TOTAL	303	162	53%

ELE5

Table 2: Events hosted by Zibi in 2022.

Date	Event	Event type	Number of attendees
March 1	Skate at Ruisseau de la Brasserie	Community	6
April 25	Balcony Gardening	Workshop, Community	11
May 18	Urban Biking	Workshop, Public	14
June 11	Yard Sale	Community, Public	30
June 18	Écosphere	Public	200
June 26	Let's Bike Talent Show	Public	30
July 1	Canada Day	Public	2000
July 7	Meet Your Bees	Workshop, Community	8
Jul 20-30	Festibière	Public	8000
August 31	Ice Cream Summer Social	Community	27
September 20	ZCU Happy Hour	Community	60
October 6	Hive to Honey	Workshop, Community	12
October 26	Halloween Mixer	Community (Blk 10)	25
November 29	Makatew Medicine Bag	Workshop, Public	22
December 8	Shoebox Soiree	Community	17
December 22	Holiday Mixer	Community (Blk 10)	30
TOTAL	16		10492

APPENDIX C: CULTURE & COMMUNITY

CC3

Table 1: Art installed at Zibi (new bolded).

Location	Description	Artist	Origin
Lobby, O Condos	Artwork	Frank Polson	Algonquin
Model suite, O Condos	Artwork	Frank Polson	Algonquin
Wasa Zibi Plaza	Bike Rack	Karl Chevrier	Algonquin
Zibi House	Rock benches	Amy Thompson	Local
Model suite, Kanaal	Artwork	Brendan A. de Montigny	Local
Eddy Street	"We are Seeds" mural	Claudia Gutierrez	Ottawa based and Algonquin
Sentier culturel, Ville de Gatineau	Variety of installations	Several	Local
Wasa Zibi Plaza	"Water Woman"	Naomi Blondi	Algonquin
OPL Centre	Artwork	Kiana Meness	Algonquin
Lobby, Aalto	"Sister Water Spirit"	PJ Leroux	Algonquin
Model suite, Aalto	"Centre"	Nalakwsis	Algonquin
Amenity space, Aalto	"Bimitigweyaa: The River Flows Along"	Emily Kewageshig	Algonquin
Zibi office	"Blue Jays and Morning Berries"	Wayne Mckenzie	Algonquin

CC6 and CC7

Table 2: Resident survey results regarding Culture & Community.

How many neighbours do you know?	Would you say that your environmental and sustainability awareness has changed since living at Zibi?*	Are there any subjects you would be interested in learning more about?
4-6	3	My husband loved the tour of the power plant and the bee sessions, anything more like these would be great. unfortunately the wellness pouch making doesn't work this time for us. halloween party a great idea we were away for the week so had to mis it
10 or more	2	
7-9		Construction progress/construction plans - would be great to have a link to be able to get the latest info.
4-6	2	
1-3	2	
1-3	1	Gym use. Parking
0	2	None
4-6	2	No
4-6	3	If Zibi plans to invest in renewable energy systems and install more EV charging stations for tenants.
0	3	
1-3	2	How well our recycling, garbage, organics are disposed of in such a large building. How they keep it sustainable.
0	3	I missed the event regarding how the heating works.
4-6	2	
1-3	2	
1-3	1	
0	3	
1-3	3	Animals
1-3	2	
1-3	2	No
7-9	3	The dam
0		
4-6	2	No
1-3	3	N/A
1-3	3	No
0	2	
4-6	2	

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How many neighbours do you know?	Would you say that your environmental and sustainability awareness has changed since living at Zibi?*	Are there any subjects you would be interested in learning more about?
1-3	2	
4-6	2	
	2	
10 or more	2	Local sourcing (especially food)
7-9	2	Not really
1-3	3	Collecting cans and bringing proceeds to organisations
0	2	
10 or more	3	Nutrition
7-9	3	N/A
10 or more	3	
4-6	3	History of Chaudière and Albert islands
0	2	No

***Rating system:**

1 = I am not concerned by environmental issues

2 = I was already aware of environmental issues and it did not evolve since living at Zibi

3 = My awareness of this issue has developed or has improved since living at Zibi

CC7

Table 3: Staff survey results regarding Culture & Community.

Would you say that your environmental and sustainability awareness has changed since working at Zibi?	Number of responses
My awareness of this issue has developed or has improved since working at Zibi.	10
I was already aware of environmental issues and it did not evolve since working at Zibi.	2
I am not concerned by environmental issues	1

CC7

Table 4: Trade worker survey results regarding Culture & Community.

Before today's session, did you know that you were building Canada's most sustainable community?	Have you heard of the One Planet Living sustainability framework?	How would you describe your awareness of sustainability issues and solutions?
Yes	Yes	Good
No	No	Room for significant improvement
Yes	Yes	Great
No	No	Great
Yes	Yes	Room for some improvement
Yes	Yes	Great
No	No	Good
Yes	No	Good
Yes	Yes	Room for some improvement

APPENDIX D: LAND AND NATURE

LN2

Table 1: Site area dedicated to park space.

Space	Size (sq m)	% of total park space	% of total Zibi space
Zibi	137,593		
Parks (14% target)	19,263		
Pangishimo	2,500	13%	2%
Headstreet Square	1,600	8%	1%
Tesasini	6,100	32%	4.4%
Wasa Zibi Plaza	1963	10%	1.43%

LN2

Table 2: Plant list for public spaces to date (Pangishimo Park (P), Head Street Square (H), Wasa Plaza (W), Streetscapes(S)).

Scientific name	Common name	Culturally or historically significant	Reintroduced (not found in baseline)	Quantity*	Site
<i>Abies balsamea</i>	Balsam fir	✓	✓	7	W
<i>Acer rubrum</i>	Red maple	✓	x	6	W
<i>Acer saccharinum</i>	Silver maple	✓	✓	7	P
<i>Acer saccharum</i>	Sugar maple	✓	✓	13	P,W,S
<i>Agastache Foeniculum</i>	Anice hyssop	✓	✓	49	P,H
<i>Amelanchier canadensis</i>	Serviceberry	✓	✓	19	H,W,S
<i>Aronia melanocarpa</i>	Black chokeberry	x	✓	12	P,H
<i>Artemisia ludoviciana</i>	White sagebrush	✓	✓	66	P
<i>Athyrium filix-femina</i>	Lady fern	x	✓	13	H
<i>Betula papyrifera</i>	Paper birch	✓	✓	15	P
<i>Bouteloua curtipendula</i>	Sideoats grama	x	✓	12	P
<i>Calamagrostis canadensis</i>	Canada bluejoint	x	✓	244	P,H,W,S
<i>Carex muskingumensis</i>	Palm sedge	x	✓	150	P,H
<i>Carex pensylvanica</i>	Oak sedge	x	✓	55	H,W
<i>Carex vulpinoidea</i>	Fox sedge	x	✓	97	P
<i>Celtis occidentalis</i>	Common hackberry	✓	✓	16	H,W,S
<i>Comptonia peregrina</i>	Sweet fern	✓	✓	18	P
<i>Cornus sericea</i>	Red osier dogwood	✓	x	31	P,H
<i>Deschampsia cespitosa</i>	Tufted hairgrass	x	✓	516	P,H,W,S
<i>Diervilla lonicera</i>	Northern bush honeysuckle	x	x	201	P,H,W
<i>Eupatorium maculatum</i>	Spotted joe-pye weed	✓	✓	5	P
<i>Fagus frandifolia</i>	American beech	✓	✓	2	W
<i>Geranium maculatum</i>	Wild geranium	✓	✓	129	P,H
<i>Gillenia trifoliata</i>	Bowman's root	x	✓	15	P
<i>Heliopsis helianthoides</i>	False sunflower	✓	✓	30	P,W
<i>Hierochloe Odorata</i>	Sweet grass	x	✓	139	P
<i>Myrica pensylvanica</i>	Northern bayberry	x	✓	17	P
<i>Osmunda cinnamonea</i>	Cinnamon fern	✓	✓	36	H,S

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Scientific name	Common name	Culturally or historically significant	Reintroduced (not found in baseline)	Quantity*	Site
<i>Ostrya virginiana</i>	Ironwood	✓	✓	3	S
<i>Parthenocissus quinquefolia</i>	Virginia creeper (vine)	x	x	7	S
<i>Penstemon hirsutus</i>	Hairy beardtongue	x	✓	173	H,S
<i>Picea glauca</i>	White spruce	✓	x	2	P
<i>Pinus strobus</i>	Eastern white pine	✓	x	9	P,W
<i>Populus grandidentata</i>	Bigtooth aspen	✓	✓	23	W
<i>Populus tremuloides</i>	Trembling (quaking) aspen	✓	x	24	P,W
<i>Quercus macrocarpa</i>	Burr oak	✓	x	3	W
<i>Quercus palustris</i>	Pin oak	x	✓	5	P
<i>Rhus aromatica</i>	FrAGRANT sumac	x	x	24	H
<i>Ribes aureum</i>	Golden currant	x	✓	2	P
<i>Rudbeckia lacinata</i>	Cutleaf coneflower	x	✓	25	P
<i>Salix lucida</i>	Shining willow	✓	✓	7	S
<i>Sambucus canadensis</i>	American elderberry	✓	✓	2	S
<i>Schizachyrium scoparium</i>	Little bluestem	x	✓	342	P,H,W
<i>Sorghastrum nutans</i>	Indian grass	✓	✓	96	H,S
<i>Spiraea alba</i>	White meadowsweet	✓	✓	4	H
<i>Sporobolus heterolepis</i>	Prairie dropseed	x	✓	452	P,H,W,S
<i>Symphoricarpos albus</i>	Common snowberry	x	✓	3	P
<i>Tilia americana</i>	Basswood	✓	x	7	P
<i>Viburnum cassinoides</i>	Wild raisin/whiterod	✓	x	4	S
TOTAL	49	28	39	3137	

*Quantity specified in designs; survival rate may be lower.

LN4

Table 3: Resident survey results regarding Land & Nature.

Has your time in nature increased since living at Zibi?	Are there any programs or initiatives you would like to see implemented that might increase your time in nature?
Yes	Looking forward to walking by the river when they are finished. would like programs that start a little later 5pm is too early
No	
No	More shuttle buses or other public transportation from Zibi to Gatineau Park
No	Groomed ski trail on QC side of river (similar to SJAM in Ottawa)
No	More greenery around the condos, more pathways to stores to incentivize walking, cleaner roads for my puppy on his walks.
Yes	
No	None
Yes	Green parks on the zibi grounds, not just rock/gravel parks
No	
No	Community garden
No	Guided tours of the area in Gatineau/Ottawa, running groups within the building.
No	
No	Parks
No	Landscaping and gardens/parks
Yes	
Yes	Better access to waterfront
No	
No	Outdoor activities
Yes	Group hikes or walks
Yes	Waiting for the park
No	More information by pamphlet or in person of traditional uses of the various plants and land in general of the area
Yes	Aalto hiking trip
No	Maybe
Yes	A bike share would be nice. And a place to store bikes as it's very difficult to get bikes in and out of the elevator.
Yes	
No	
No	

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Has your time in nature increased since living at Zibi?

Are there any programs or initiatives you would like to see implemented that might increase your time in nature?

No

No

No

Bicycle group, nature hike, etc. in the park

No

Obtaining a partnership with SEPAQ to favour activities in nature in the region and to make this more accessible to our residents.

Yes

Landscaping by the edge of the river.

Yes

Yes

Outdoor summer group activities (jogging, cycling, swimming in lakes or rivers, etc.)

Yes

Pilates classes outside, building a swimming pool for residents, activities during the winter (indoor or outdoor)

Yes

Yes

Historical walks

No

APPENDIX E: SUSTAINABLE WATER

SW1

Table 1: Residential water meter readings and estimated resident daily potable water consumption.

O Condos	Results	Note
Building Consumption	4,306.4 m ³	344 days (Feb 1, '22 to Jan 10, '23)
# of residents	103	
Potable water consumed per resident, per day (estimated)	0.122 m ³	122 L

Kanaal	Results	Note
Building Consumption	4,219.7 m ³	334 days (Feb 10, '22 to Jan 10, '23)
# of residents	98	
Potable water consumed per resident, per day (estimated)	0.129 m ³	129 L

SW3

Table 2: Sewage conveyance (toilets) with non-potable water.

Sample Location	# of toilets	# toilets fed by cistern*
13	98	48
205A	107	0
208	20	0
2/3	18	0
211	80	0
210	8	0
10	229	0
PERCENTAGE OF NON-POTABLE WATER USED FOR SEWAGE CONVEYANCE	8.57%	

SW4

Table 3: Zibi stormwater Total Suspended Solids (TSS) results compared to relevant guidelines and standards.

Sample Location	TSS mg/L	Allowable Limit mg/L*
Outfall fronting Block 13	159	15
Outfall Chaudière East**	390	15

*Allowable Limit = Sewer Use Storm Bylaw, Ottawa. <https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/laws-z/sewer-use-law-no-2003-514>

**Taken from tank prior to filtration (filtration system removes up to 80% of TSS)

APPENDIX F: LOCAL AND SUSTAINABLE FOOD

LSF1

Table 1: Garden spaces.

Block	Food growing area/garden space (m ²)	# of units	Ratio of food-growing spaces to households (1.4 m ² per household)
13 (O Condos)	17.92	70	18%
205A (Kanaal)	0	71	0%
10 (Aalto)	25.64	162	11%
TOTAL	43.56	303	1:9.7

LSF2 and LSF3

Table 2: Resident survey results regarding Local and Sustainable Food.

What percentage of food that you consume is from local sources?	What percentage of food that you consume is from organic or Fairtrade sources?	In the last year, have you been registered in a CSA or farm-to-table program?	What type of diet do you typically follow?
1-25%	51-75%	No	Medium meat eater (i.e. once a day or every other day)
1-25%	1-25%	Yes	Medium meat eater (i.e. once a day or every other day)
26-50%	26-50%	Yes	Medium meat eater (i.e. once a day or every other day)
Don't know	Don't know	No	Vegetarian
0%	1-25%	No	Medium meat eater (i.e. once a day or every other day)
Don't know	1-25%	No	Medium meat eater (i.e. once a day or every other day)
100%	76-99%	No	Vegetarian
1-25%	Don't know	No	Low meat eater (i.e. twice a week or less)
26-50%	26-50%	No	Medium meat eater (i.e. once a day or every other day)

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What percentage of food that you consume is from local sources?	What percentage of food that you consume is from organic or Fairtrade sources?	In the last year, have you been registered in a CSA or farm-to-table program?	What type of diet do you typically follow?
Don't know	Don't know	No	Medium meat eater (i.e. once a day or every other day)
Don't know	1-25%	No	Medium meat eater (i.e. once a day or every other day)
1-25%	Don't know	No	Medium meat eater (i.e. once a day or every other day)
1-25%	1-25%	Yes	Low meat eater (i.e. twice a week or less)
26-50%	26-50%	Yes	Vegetarian
26-50%	0%	No	High meat eater (i.e. almost every meal)
1-25%	1-25%	No	Medium meat eater (i.e. once a day or every other day)
1-25%	51-75%	No	Vegetarian
51-75%	1-25%	No	Medium meat eater (i.e. once a day or every other day)
26-50%	1-25%	No	Medium meat eater (i.e. once a day or every other day)
76-99%	76-99%	No	High meat eater (i.e. almost every meal)
1-25%	26-50%	No	High meat eater (i.e. almost every meal)
1-25%	1-25%	No	Low meat eater (i.e. twice a week or less)
26-50%	1-25%	No	High meat eater (i.e. almost every meal)
Don't know	Don't know	No	Medium meat eater (i.e. once a day or every other day)
1-25%	0%	No	Low meat eater (i.e. twice a week or less)
51-75%	1-25%	No	Low meat eater (i.e. twice a week or less)
1-25%	1-25%	No	Low meat eater (i.e. twice a week or less)
Don't know	26-50%	Yes	Medium meat eater (i.e. once a day or every other day)
26-50%	1-25%	No	Medium meat eater (i.e. once a day or every other day)
26-50%	26-50%	Yes	Medium meat eater (i.e. once a day or every other day)
26-50%	1-25%	No	Vegetarian
1-25%	26-50%	No	Low meat eater (i.e. twice a week or less)
Don't know	Don't know	No	Medium meat eater (i.e. once a day or every other day)
Don't know	Don't know	No	High meat eater (i.e. almost every meal)
26-50%	51-75%	No	Low meat eater (i.e. twice a week or less)
26-50%	26-50%	Yes	Medium meat eater (i.e. once a day or every other day)
1-25%	Don't know	No	Vegan
1-25%	1-25%	No	Medium meat eater (i.e. once a day or every other day)

APPENDIX G: TRAVEL AND TRANSPORT

TT1

Table 1: Permanent parking lots and EV charging capabilities.

Site	Sq. ft.	# Stalls	# Stalls w/ Conduit	# Chargers	# Residential Units
Block 13	52,018	83	n/a	2*	70
Block 211	83,700	150	36**	4	0
Block 205A	35,703	71	71	5*	71
Block 10***	n/a	n/a	n/a	n/a	162
RESULTS	119,403	304	107	11	303

*How many were originally installed; more have been installed by residents but how many is unknown

**Conduit has been placed in central ceiling locations to facilitate future expansion of EV chargers (i.e., not yet at each stall but can be)

***Parking for Blk 10 will be shared with Blk 11 and is currently under construction, they have a temporary grade-level parking lot for now.

TT2

Table 2: Resident survey responses for Travel and Transport (4=most often, 3=often, 2=sometimes, 1=rarely, 0=never/blank).

On average, how many kilometres do you travel per week overall? (up to x kms)	How often do you work from home?	What type of motorized vehicle do you have?	Rate how often you use [Personal Vehicle]	Rate how often you use [Public Transit]	Rate how often you use [Bike]	Rate how often you use [Walk/Run]	Rate how often you use [Carpool]
1-25 kms	Rarely	Gas or diesel vehicle	4	2	1	3	1
1-25 kms	Often	None	0	4	0	4	2
1-25 kms	Sometimes	None	1	4	4	3	0
1-25 kms	Often	Gas or diesel vehicle	4	1	3	3	1
1-25 kms	Always	Gas or diesel vehicle	4	1	0	2	0
1-25 kms	Always	Gas or diesel vehicle	2	0	2	4	0

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On average, how many kilometres do you travel per week overall? (up to x kms)	How often do you work from home?	What type of motorized vehicle do you have?	Rate how often you use [Personal Vehicle]	Rate how often you use [Public Transit]	Rate how often you use [Bike]	Rate how often you use [Walk/Run]	Rate how often you use [Carpool]
1-25 kms	Never	Gas or diesel vehicle	1	2	3	4	0
1-25 kms	Always	Gas or diesel vehicle	4	1	2	3	0
1-25 kms	Rarely	Gas or diesel vehicle	2	3	4	4	0
1-25 kms	Sometimes	None	0	4	0	3	2
26-50 kms	Always	None	0	2	2	3	0
26-50 kms	Sometimes	Gas or diesel vehicle	4	1	1	2	2
26-50 kms	Always	Gas or diesel vehicle	4	1	1	3	3
26-50 kms	Sometimes	None	0	4	1	3	1
26-50 kms	Sometimes	Gas or diesel vehicle	2	2	0	3	2
26-50 kms	Never	Gas or diesel vehicle	2	0	4	2	2
26-50 kms	Often	Gas or diesel vehicle	3	0	0	2	2
51-100 kms	Often	Gas or diesel vehicle	4	1	3	3	1
51-100 kms	Always	Gas or diesel vehicle	4	0	2	2	0
51-100 kms	Often	Gas or diesel vehicle	4	2	0	2	1
51-100 kms	Never	None	0	4	0	2	0
51-100 kms	Never	Gas or diesel vehicle	2	1	4	2	0
51-100 kms	Often	Gas or diesel vehicle	4	0	0	2	0
51-100 kms	Never	None	0	2	4	4	1
51-100 kms	Never	Gas or diesel vehicle	2	0	1	3	0
51-100 kms	Never	None	0	4	0	4	1
51-100 kms	Never	Gas or diesel vehicle	3	2	3	3	3
101-150 kms	Often	Gas or diesel vehicle	2	2	1	4	1
101-150 kms	Always	Hybrid vehicle	3	2	3	3	2
101-150 kms	Always	Gas or diesel vehicle	2	2	3	3	1
151-200 kms	Never	Gas or diesel vehicle	4	1	1	2	3
151-200 kms	Always	Gas or diesel vehicle	4	1	0	3	0
151-200 kms	Often	Gas or diesel vehicle	3	2	2	4	0
151-200 kms	Always	Gas or diesel vehicle	3	1	2	2	2
201-300 kms	Sometimes	Hybrid vehicle	4	0	0	4	0
201-300 kms	Never	Gas or diesel vehicle	4	2	0	1	1
401+ kms	Sometimes	Gas or diesel vehicle	4	1	1	2	1
401+ kms	Rarely	Gas or diesel vehicle	4	1	0	0	0

APPENDIX H: MATERIALS AND PRODUCTS

PM3

Table 1: Products & materials used in block 10 - tracking for FSC, recycled content, locally sourced materials and VOC compliance (not exhaustive).

Company	Product/Material	FSC Certified	Recycled Content	Locally Sourced	VOC Limits
Bell Lumber Mill	Various types of lumber, wood siding and flooring, decking, and fencing	x	x	✓	n/a
Bytown Lumber	Lumber, floor joists, LSL, LVL, PSL, FJ, roof trusses, decking and fencing	x	x	✓	n/a
Carson Lake Lumber LTD	Lumber (pine)	x	x	✓	n/a
Duhamel Sawmill	residential, commercial, and industrial lumber	✓	x	✓	n/a
Goodfellow Inc.	Lumber, plywood, hardwood and softwood	✓	x	✓	n/a
Haliburton Forest	Lumber (hardwood)	✓	x	✓	n/a
Lavern Heideman & Sons Limited	Lumber (pine, hardwood and softwood)	✓	x	✓	n/a
McRae Lumber	Lumber (hardwood, softwood)	✓	x	✓	n/a
Murray Bros Lumber Company Limited	Various types of lumber, siding, flooring	✓	x	✓	n/a
Ostroskie and Sons	Lumber (pine, hardwood, cedar)	x	x	✓	n/a
Perth Planing Mill Supply	Drywall/gypsum, roofing, interior finishing, engineered wood products	✓	x	✓	n/a
Popkie Lumber & Sawmill	Lumber, siding, flooring	✓	x	✓	n/a
Resolute Forest Products	Construction grade lumber	✓	x	✓	n/a
Shaw Lumber	Lumber, poles, shavings and clips	✓	x	✓	n/a
Weston Forest	Plywood, hardwood, softwood	✓	x	✓	n/a
KOTT Group	Softwood and framing lumber	✓	x	✓	n/a
Uniboard	Particleboard	✓	✓	✓	n/a
The WoodSource	Cedar; residential and Industrial wood products, siding and paneling, decks and railings	✓	x	✓	n/a
Portes Baillargeon par Masonite Architectural	Doors	✓	x	✓	n/a
Heatlok-Soya TDS	Heatlok Soya is an insulation spray applied rigid polyurethane foam, green in color.	n/a	x	✓	✓

▼ Chart continued on next page

Company	Product/Material	FSC Certified	Recycled Content	Locally Sourced	VOC Limits
WALLTITE CM01	Purple, closed cell, medium density, low Global Warming Potential, spray applied polyurethane foam insulation and air barrier.	n/a	x	✓	✓
MONO Acoustical Sealant	Caulking Compound	n/a	x	✓	✓
3M Fire Barrier Sealant FD 150+	Sealant	n/a	x	x	✓
Titebond II Premium Wood Glue	Industrial use wood glue	n/a	x	x	✓
NU Green Particleboard	Particleboard (cabinetry)	✓	x	✓	✓
NU Green 2 Nauf Particleboard	Particleboard (cabinetry)	✓	x	✓	✓
LIQUI-HARD	Concrete densifier and chemical hardener	n/a	x	✓	x
Planchers Lauzon	Plancher de bois franc - construction contrecollée Expert. Bois d'œuvre, lames de bois franc, adhésif et finis. Érable, chêne rouge et hêtre.	✓	x	✓	n/a
1867 Floors	Flooring, wall covering, ceramic	x	x	✓	✓
Kemian Wood Industry (Kunshan) Co., Ltd.	Hardwood Flooring	x	x	x	✓
AllSteel Walls	Mobile wall products	✓	x	x	✓
CGC Securock Brand	Gypsum-fiber roof board, floors, tile and showers, walls, ceilings, building envelope	n/a	x	✓	x
Matt Solar Reflective Slabs	Precast Concrete	n/a	x	✓	x

APPENDIX I: ZERO WASTE

ZW1

Table 1: Averages from weekly visual waste audits for Kanaal Condos, with estimated weight conversions*.

Date	Garbage (yd ³)	Garbage (kg)	Fiber (yd ³)	Fiber (kg)**	Containers (yd ³)	Containers (kg)	Organics (yd ³)	Organics (kg)	Total (kg)	Diverstion Rate
Jan.	5	245	4.25	229.5	1.5	69	0.208	37.648	581.148	57.84%
Feb.	4	196	4	216	1.25	57.5	0.233	42.173	511.673	61.69%
Mar.	4.25	208.25	3.75	202.5	1.25	57.5	0.17	30.77	499.02	58.27%
April	4.67	228.83	2.5	135	1.67	76.82	0.23	41.63	482.28	52.55%
May	4.33	212.17	3.33	179.82	1.11	51.06	0.207	37.467	480.517	55.85%
June	3.5	171.5	2.5	135	1.5	69	0.142	25.702	401.202	57.25%
July	4	196	3.33	179.82	1.44	66.24	0.129	23.349	465.409	57.89%
Aug.	3	147	2.55	137.7	1.33	61.18	0.129	23.349	369.229	60.19%
Oct.	5	245	4	216	1.33	61.18	0.233	42.173	564.353	56.59%
Nov.	5	245	4	216	1	46	0.155	28.055	535.055	54.21%
AVERAGES	4.28	209.48	3.42	184.73	1.34	61.55	0.18	33.23	488.99	57.23%

*Conversions provided by waste consultant: Paper = 150kg/m³ (114kg/yd³); Cardboard = 45kg/m³ (34kg/yd³); Containers = 60kg/m³ (46kg/yd³); Organics = 238kg/m³ (181kg/yd³); Garbage = 65kg/m³ (49kg/yd³)

**Estimating that 75% of the fiber bin volume is cardboard and 25% is paper gives 54kg/yd³ per the conversion rates

ZW1

Table 2: Averages from weekly visual waste audits for O Condos, with estimated weight conversions*.

Date	Garbage (yd ³)	Garbage (kg)	Mixed Recycling (yd ³)	Mixed Recycling (kg)**	Organics (yd ³)	Organics (kg)	Total (kg)	Diverstion Rate
Jan.	7	343	4.31	237.05	0.33	59.73	639.78	46.39%
Feb.	6	294	3.76	206.8	0.16	28.96	529.76	44.50%
Mar.	4.33	212.17	3.29	180.95	0.39	70.59	463.71	54.25%
April	4	196	2	110	0.08	14.48	320.48	38.84%
July	3.33	163.17	5	275	0.12	21.72	459.89	64.52%
Aug.	5	245	4	220	0	0	465	47.31%
Nov.	4	196	4	220	0.24	43.44	459.44	57.34%
AVERAGES	4.81	235.62	3.77	207.11	0.19	34.13	476.87	50.45%

*Conversions provided by waste consultant: Paper = 150kg/m³ (114kg/yd³); Cardboard = 45kg/m³ (34kg/yd³); Containers = 60kg/m³ (46kg/yd³); Organics = 238kg/m³ (181kg/yd³); Garbage = 65kg/m³ (49kg/yd³)

**Estimating that 20% of the recycle bin volume is paper, 40% is cardboard and 40% is containers gives 55kg/yd³ per the conversion rates

ZW1

Table 3: Commercial spaces waste audits.

Date	Block	Garbage (kg)	Organics (kg)	Mixed Recycling (kg)	Cardboard (kg)	Fiber (kg)	Containers (kg)	Total (kg)	Diverstion Rate
Jan.	210A	220	376	160				756	70.90%
	2/3	170		20	80			270	37.04%
Feb.	210A	200	188	160				548	63.50%
	2/3	100						100	0.00%
Mar.	210A	250	470	200				920	72.83%
	2/3	380		80				460	17.39%
	208	10			80			90	88.89%
April	210A	140	376	160				676	79.29%
	2/3	380		80				460	17.39%
	208	120						120	0.00%

▼ Chart continued on next page

Date	Block	Garbage (kg)	Organics (kg)	Mixed Recycling (kg)	Cardboard (kg)	Fiber (kg)	Containers (kg)	Total (kg)	Diverstion Rate
May	210A	180	658	120				958	81.21%
	2/3	520		60				580	10.34%
	208	180			80	100	20	380	52.63%
	211	480						480	0.00%
June	210A	240	282	160				682	64.81%
	2/3	690		80				770	10.39%
	208	80			80			160	50.00%
	211				80			80	100.00%
July	210A	170	376	60				606	71.95%
	2/3	360						360	0.00%
	208	120			80	200		400	70.00%
	211							0	
Aug.	210A	250	376	140				766	67.36%
	2/3	240						240	0.00%
	208	90						90	0.00%
	211	290			80			370	21.62%
Sept.	210A	690	376	100				1166	40.82%
	2/3	380						380	0.00%
	208	110			160			270	59.26%
	211	200						200	0.00%
Oct.	210A	110	564	20				694	84.15%
	2/3	190						190	0.00%
	208	130			160	100	40	430	69.77%
	211	840				100	40	980	14.29%
Nov.	210A	230	470	100				800	71.25%
	2/3	260						260	0.00%
	208	80						80	0.00%
	211	410						410	0.00%
Dec.	210A	150	282					432	65.28%
	2/3	40						40	0.00%
	208	180						180	0.00%
	211	530						530	0.00%
TOTAL		10390	4794	1700	880	500	100	18364	43.42%

ZW1

Table 4: Resident survey results regarding Zero Waste.

Do you recycle?	Do you compost?	Are you confident about your knowledge on waste sorting?	What do you find challenging about waste diversion? Please include details.
Yes	Yes	Yes	Having enough containers to sort easily
Yes	Yes	Yes	
Yes	Yes	Yes	Mixed-material packaging (e.g bread in a paper bag with a plastic window, envelopes with plastic windows)
Yes	Yes	Yes	I operate on the "when in doubt, recycle it" principle. The sorting facility can deal with it.
Yes	Yes	No	The smells and bacteria from composting.
Yes	No	No	
Yes	Yes	Yes	None
Yes	Yes	No	A lot requires special recycling and there isn't an easy list to check, nor is it easy to get to these centres because I don't own a car.
Yes	No	Yes	
Yes	Sometimes	No	Figuring out exactly which items are or not recyclable
Yes	Yes	Yes	Organic material, the dtritus app is very helpful though.
Yes	Yes	Yes	Electronic waste
Yes	Yes	Yes	
Yes	Yes	Yes	
Sometimes	No	No	
Yes	Yes	No	Not knowing which types of plastics can be recycled vs discarded in the garbage.
Yes	Yes	Yes	
Yes	Yes	No	Would be great to have some useful tips
Yes	No	Yes	Lack of access
Yes	Yes	Yes	There's no challenge you just have to separate from the trash bag
Yes	No	Yes	Nothing
Yes	Sometimes	Yes	The compost usually attracts fruit flies. I would love some recommendations to keep them away!
Yes	Yes	Yes	Nothing
Yes	Yes	Yes	Lack of nearby bottle return options is pretty challenging.
Yes	No	Yes	
Yes	Yes	Yes	
Yes	No	Yes	

▼ Chart continued on next page

Do you recycle?	Do you compost?	Are you confident about your knowledge on waste sorting?	What do you find challenging about waste diversion? Please include details.
Yes	Yes	Yes	
Yes	Yes	Yes	That the other residents are not aware of responsible waste disposal practices.
Yes	Yes	Yes	To see that our neighbors do not manage their waste (waste, discarded recycling in garbage, etc.)
Yes	Yes	Yes	To keep me an appropriate and non-cumbersome space in my unit for this purpose.
Yes	Sometimes	Yes	Product choices.
Yes	Yes	Yes	
Yes	Yes	Yes	Places where they do not accept all types of recognized composting bags (for example refusal of recyclable and/or compostable plastic bags versus recyclable paper bags with recyclable plastic interior, etc.)
Yes	Yes	Yes	N/A
Yes	Yes	Yes	Clean recycling containers
Yes	Yes	Yes	Nothing
Yes	Yes	Yes	

ZW4

Table 5: Quebec construction waste audit reports.

MT Diverted by Marterial

Date	Wood	Metal	Cardboard	Gypsum	Insulation	Aggregate	Plastic	Total Diverted	Residual	Total	Diversion Rate
Jan.	6.26	1.35	5.48	4.72	4.37	1.44	4.61	28.23	0.122	28.352	99.57%
Feb.	3.71	0.44	3.6	4.14	2.28	0.12	2.61	16.9	0	16.9	100.00%
Mar.	6.82	1.85	2.67	1.65	1.96	1.09	2.42	18.46	0	18.46	100.00%
April	2.3	0.611	1.38	1.08	1.08	0.92	1.08	8.451	0	8.451	100.00%
May	11.58	4.33	3.11	0.91	3.11	16.46	3.99	43.49	0	43.49	100.00%
June	19.17	2.62	2.63	2.63	2.63	2.63	3.04	35.35	0	35.35	100.00%
July	7.33	3.27	3.8	2.2	2.87	9.38	3.14	31.99	0	31.99	100.00%
Aug.	8.95	2.87	3.09	2.36	2.36	2.3	9	30.93	0	30.93	100.00%
Sept.	3.4	1.92	1.55	1.48	1.28	1.45	1.73	12.81	0	12.81	100.00%
Oct.	5.66	0.84	1.83	0.76	0.95	23.92	1.44	35.4	0	35.4	100.00%
Nov.	5.75	2.29	3.19	2.67	2.43	22.97	2.43	41.73	0	41.73	100.00%
Dec.	5.02	0	5.05	5.05	5.05	33.69	5.06	58.92	0	58.92	100.00%
TOTAL	85.95	22.391	37.38	29.65	30.37	116.37	40.55	362.661	0.122	362.783	99.96%

ZW4

Table 6: Ontario construction waste audit reports.

Date	MT Diverted by Marterial					Total Diverted	Residual	Total	Diversion Rate
	Fibre	Drywall	Metal	Aggrigate	Wood				
Jan.	3.8	2.1	1.08	3.82	4.03	14.83	4.69	19.52	75.97%
Feb.	4.78	4.15	0.69	0	1.92	11.54	5.58	17.12	67.41%
Mar.	3.36	2.66	0.55	0	1.64	8.21	3.04	11.25	72.98%
April	0.58	0.3	0.15	0.56	3.97	5.56	1.5	7.06	78.75%
May	0	0	0	0	2.54	2.54	0.45	2.99	84.95%
June	2.22	0.85	62.09	2.84	11.79	19.4	3.07	22.47	86.34%
July	1.66	0.49	1.6	6.71	23.19	35.65	6.26	41.91	85.06%
Aug.	3.25	0	2.52	5.39	35.89	47.05	7.22	54.27	86.70%
Sept.	4.36	0	1.85	16.47	49.46	72.14	14.54	86.68	83.23%
Oct.	6.71	1.64	3.46	5.76	40.94	58.51	8.07	66.58	87.88%
Nov.	5.25	0.92	2.29	6.4	43.07	57.93	11.63	69.56	83.28%
Dec.	5.13	1.71	2.39	12.98	16.46	38.67	7.71	46.38	83.38%
TOTAL	41.1	14.82	78.67	60.93	234.9	372.03	73.76	445.79	83.45%

APPENDIX J: ZERO CARBON ENERGY

ZC1

Table 1: Energy inputs and carbon accounting for district thermal energy system operations (totals from monthly invoices).

Input	Source	Consumption	Emission factors	Emissions (kg CO ₂)
A	Hydro Quebec	1,127,765.23 kWh	1.5 g of CO ₂ e/kWh	1,692
B	Gazifere (Natural Gas)	109,811 m ³	1926 g of CO ₂ e/m ³	211,496
C	Hydro Ottawa	359,564 kWh	25 g of CO ₂ e/kWh	8,989
D	Enbridge (Natural Gas)	100,464 m ³	1921 g of CO ₂ e/m ³	192,991
TOTAL				415,168

ZC1

Table 2: Energy demand per output by block, respective carbon accounting, and BAU comparisons.

Block	Connected to ZCU				Location	Business as usual comparison		
	Heating (kWh)	Cooling (kWh)	DHW (kWh)	Energy Model Improvement		Heating (kWh)	Cooling (kWh)	DHW (kWh)
Block 2-3	140263.33	430146	0	0%	QC	140,263	430,146	0
Block 10	295700.9	36739.8	277734	24%	QC	366,669	45,557	344390.16
Block 13	190405.67	257079	0	34%	QC	255,144	344,486	0
Zibi House	14543.89	29053.24	0		QC	14,544	29,053	0
Block 205	549756	269971	219443	11%	ON	610,229	299,668	243581.73
Block 208	190204	61764	0	18%	ON	224,441	72,882	0
Block 211	1029739	922039	40392	13%	ON	1,163,605	1,041,904	45642.96
Block 301	59037	0	0	0%	ON	59,037	0	0
TOTAL	2,469,650	2,006,792	537,569			2,833,932	2,263,696	633,615
Ratio of demand formula*	(54% of B) + (heating ratio * A) + (81% of D)+ (heating ratio * 90% of C)	(cooling ratio * A) + (cooling ratio * 90% of C)	(46% of B) + (19% of D) + (10% of C)					
Net carbon production (kgCO2e)	275,927	4,385	134,855			524,695	10,612.79	136,085
Intensity (g CO2/kWh)	111.73	2.19	250.86			185.15	4.69	214.78
TOTAL EMISSIONS (kg CO2e)		415,168					671,393	

*Cooling ratio (0.448) is the portion of energy draw to produce cooling energy; heating ratio (0.552) is the portion of energy draw to produce heating energy

ZC2

Table 3: Building energy demand statistics.

Block	Floor area (m ²)	Reference annual energy consumption (kWh/m ²)	Modeled annual energy consumption (kWh/m ²)	Savings comparison (reference v.s. modeled)
10	15,048	167	128	24%
13	7,815	150	99	34%
205A	9,401	192	170	11%
211	21,100	135	112	18%
208	3,086	191	167	13%



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