



TECHNICAL MEMORANDUM

ISSUED FOR USE

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| To: | Veronica Jarvis, Slate Asset Management Karine Ying Martin, Gensler Canada | Date: | September 25 th , 2024 |
| c: | | Memo No.: | 04 |
| From: | David Walmsley, Walmsley Environmental | File: | WE2024-09 |

Subject: Solid Waste Management Requirements for the Clarkson Development Initiative.

Introduction

This technical memorandum is submitted to provide an outline of the key elements in managing the solid waste materials generated by residential and retail uses in redevelopment of the Clarkson site in Mississauga, Region of Peel. This information has been compiled in response to a request from the Gensler Architectural team to the project. It is not a waste management plan (WMP) but rather, specific input to elements of a plan to assist in the project.

The Region is directly responsible for the collection and processing of solid waste from all residential land uses as well as certain commercial developments in Business Improvement Areas (BIAs). Collection of solid waste from all other commercial and industrial land uses is undertaken via contracts with private service providers. The management of these wastes is subject to the Region's requirements and will be subject to acceptance by Peel solid waste staff.

WE consultant services has been asked to provide Gensler staff with the following information:

- The number of containers that will be required to manage (i.e., store, stage and collect) the 3 streams of waste (i.e., recyclables, food waste and garbage) from the retail space identified on the current set of redevelopment plans. Gensler has asked that we assume that the future use of the retail space will be exclusively for Food and Beverage (F&B) uses.
- The number of front-end collection bins needed to manage 2 streams of residential waste from the towers. The 2 streams collected by Peel are recyclables and mixed waste. We will provide the bin counts based on Peel's Standards and will include the counts for compacted mixed waste.
- Review the sizing for the commercial and residential waste storage rooms on the ground floor of each building and mark up a CAD drawing to depict additional space if needed.
- The markups will also provide labelling of the required length for the straight line approach to the internal collection point, the size and composition of the staging and collection pad, the required height of 7.5 m at the collection point as well as vertical clearances for the approach and storage areas, the location of the 10m² area for the storage of bulky items, a description of how these areas will be made accessible to residents, the location of the 2 chutes together with the recyclables and garbage bins including a compactor to ensure that sufficient space is provided and the identification of the signage and mirrors required to ensure safe access and egress by the collection vehicle.
- Describe how the retail waste will be transferred to a dedicated storage room and outline how these materials would be staged and collected using the residential collection facility on a day when the residential waste is not being collected.

Following is our input in response to the above noted information requests.

Requirements for Management of Waste from Retail Uses

Based on input from Gensler, we have assumed that all the Retail uses will provide F&B services. The management program will be described based on the following components:

There is 417 m² of space for retail uses identified in Tower 1, 252 m² in Tower 2 and 276 m² in Tower 3 for a total of 945 m² of space dedicated to these uses. The Region will require that waste from these uses be separated into 3 streams at source. They are, organics (food wastes), recyclables (packaging materials) and residual mixed waste (garbage).

The quantity of waste generated by retail uses can be accomplished by multiplying this total floor area by a generally accepted reference number = 0.05 kg/m² per day. The resulting number can be multiplied by 6 as a reasonable estimate of the typical work week for the commercial uses. Since we have been directed to assume that all the commercial space will be dedicated to food & beverage (F&B) uses, the following composition of the waste is as follows:

- 40% food waste
- 40% recyclables
- 20% garbage

The weekly quantity of waste generated from the retail space in each Tower is as follows:

- Tower 1 (Phase1): 417 m² of commercial space
 - Food Waste: $417 \times .05 \text{ kg/m}^2/\text{day} \times 6 \times 0.4 = (62 \text{ kg/week of food waste}) / 500 \text{ kg/m}^3 \times 1000 \text{ L} = 100 \text{ L per week.}$
 - Recyclables: $417 \times .05 \times 6 \times 0.4 = 62/70 \times 1000 = 714 \text{ L per week.}$
 - Mixed Waste: $417 \times .05 \times 6 \times 0.2 = 31/130 \times 1000 = 192 \text{ L per week.}$
- Tower 2 (Phase 1): 252 m² of retail space
 - Food Waste: $252 \times .05 \times 6 \times 0.4 = 24/500 \times 1000 = 60 \text{ L of food waste per week.}$
 - Recyclables: $252 \times .05 \times 6 \times 0.4 = 24/70 \times 1000 = 432 \text{ L of recyclables per week.}$
 - Mixed Waste: $252 \times .05 \times 6 \times 0.2 = 12/130 \times 1000 = 116 \text{ L of mixed waste per week.}$
- Tower 3 (Phase 2): 276 m² of retail space
 - Food Waste: $276 \times .05 \times 6 \times 0.4 = 40/500 \times 1000 = 66 \text{ L per week.}$
 - Recyclables: $276 \times .05 \times 6 \times 0.4 = 40/70 \times 1000 = 473 \text{ L per week.}$
 - Mixed Waste: $276 \times .05 \times 6 \times 0.2 = 20/130 \times 1000 = 127 \text{ L per week.}$
- Tower 4 (Phase 2) no retail space proposed.

These waste quantities have been divided by a density factor, in kg/m³, for each waste stream to determine the daily volume of each stream generated and then multiplied by 1000 to generate the volume in liters (L). The number of carts required to manage the total material generated from the three towers is as follows:

- Total Food Waste from retail sources per week = 226 L = 3, 100 L green carts.
- Total Recyclables from retail sources per week = 1,619 L = 5, 360 L carts.
- Total Mixed Waste from retail sources per week = 435 L = 2, 360 L carts.

Management of the materials would be undertaken by the building maintenance staff. Waste would be transferred daily to a designated storage room. This room would have to be ventilated. Staging and collection of the materials could use the facilities built to manage the residential waste from the complex with collection occurring on either a day or days during the week when residential wastes are not collected by the Region. We have identified 3 separate materials storage rooms

associated with the residential waste staging and collection facilities. We recommend, however, that these materials could be transferred to one dedicated and ventilated room at the collection facility for Tower 1. This room would be sized to be able to receive the retail waste from the commercial uses at the other 2 towers as these uses come online.

Requirements for Management of Residential Waste

This reporting memorandum must be read together with the 2 accompanying drawings titled “Storage Plan, Blue Box Recyclables and Mixed Waste – Ground Floor” and “Collection Plan, Blue Box Recyclables, Ground Floor”

The number of front-end loading bins was determined by referencing the tables in the Region’s Standards document. Be advised that we have recommended that the mixed waste or garbage be compacted to ensure that there is sufficient room in each of the facilities.

We assumed that 4 yd bins would be used to manage the residential waste and that transfer of the material from each residential floor would be accommodated by either a bi-sorter or a twin chute system. We have also identified the area to be dedicated for the storage of bulky items. These materials would be collected on an “as required” basis on the second weekly mixed waste collection day.

Following are the requirements which the Region and Town will require be included on the drawings and /or the solid waste management plan technical memorandum.

Requirements for Solid Waste Storage

1. All front-end bins that have been determined to be used to service the development have been identified on the Storage Plan drawing.
2. The Plan offers the collection of retail waste via a private contract as the preferred option for the development.

Requirements for Solid waste Staging & Collection

1. A clear height of 4.4 metres has been identified from the top of the access road along the Collection Vehicle access and egress routes identified on the Collection Plan drawing that accompanies this technical memorandum.
2. All internal roadways will have a minimum width 6 metres and will be constructed of a hard surface such as asphalt or concrete and will be designed to support a minimum of 35 tonnes.
3. The maximum grade permitted along the access route is 8%.
4. A flashing warning light system and parabolic mirror will be provided at the access laneway for the facility at the West Block.
5. The reversing distance has been identified on the Collection Plan drawing for the staging and collection facilities.
6. A minimum 18 metre straight head-on approach to the collection point at the ground floor facilities is labelled on the Collection Plan drawing.
7. A minimum 7.5 vertical metres is provided at the concrete pad at the collection point for each of the facilities on the ground floor.
8. The collection point at each staging & collection facility will consist of a solid, level concrete pad which will extend a minimum of 1.5 metres outside of the coaction point to accommodate the front wheels of the collection vehicle.
9. The staging and collection facility shows a 10 m² for the set out of bulky items.
10. To accommodate the likely need to jockey the bins during waste collection, reliance on property management staff to facilitate collection subject to the requirements outlined in the Region’s Standards document.

In Closing

I trust this report meets your present requirements.

Respectfully submitted,
Walmsley Environmental



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