Waste Management Design Report

Prepared for:

Black Tusk Group
128 Lakeshore E
Mississauga, ON

Prepared by:

PragmaTech Waste Solutions

Black Tusk Group
Toronto, ON

Attention: Aaron Vick & Thaine Carter – Principles November 21, 2021

RE: Waste Management Guidance for 128 Lakeshore E., Mississauga, ON

Dear Gentlemen,

Thank you for the opportunity to prepare a report and provide guidance on the waste management design of Black Tusk Group's newest multi-residential building project, located at 128 Lakeshore E. in Mississauga, Ontario.

The PragmaTech team has completed a waste stream analysis for the multi-residential building based on the documents and architectural drawings provided. Using this information, the PragmaTech team has developed a comprehensive report that includes findings from our analysis with respect to service frequencies, room sizing and equipment considerations for all agreed upon waste storage and retrieval areas, with careful consideration for the perspectives of primary stakeholders, including tenants, operations staff and Service Providers.

The analysis, guidance and recommendations provided in this report are based on an optimized source-separated waste management program for multi-residential buildings and have been developed within the legislative context of the province of Ontario and the Regional Municipality of Peel ("Peel Region").

PragmaTech is a full-service environmental sustainability consulting firm with over 30 years of experience in the waste management industry. Our team of Environmental Performance Consultants, Process and Project Managers, Certified Waste Auditors, Technicians and Analysts are well equipped to support the next stages of this waste management program and provide guidance for the implementation of well-executed waste management decisions throughout the course of the project. Subsequent sections of the Scope of Work will be delivered over the next three weeks.

We would be happy to provide additional information or participate in further discussion on how PragmaTech can continue to be of service during this project.

Best Regards,

Ron Billings, Certified Waste Auditor
Senior Waste Management Consultant
519.575.8446

Table of Contents

1.0 Introduction

PragmaTech Waste Solutions ("PragmaTech") was retained by Black Tusk Group Investments to prepare a waste management design report and provide recommendations on the creation of an optimal waste management program pertaining to waste generation, equipment, space, optimal bin maneuvering, and regulations. Project direction, architectural drawings, and information regarding the proposed multi-residential development and waste management plans were provided by Aaron Yick Principle at Black Tusk Group. The analysis and recommendations provided in this report are based on an optimized source-separated waste management program and have been developed within the legislative context of Peel Region and the province of Ontario.

Disclaimer: During the preparation of this report, PragmaTech Waste Solutions has developed recommendations for appropriately sized equipment to adequately reach the goals of an optimal waste management program. Although recommendations have been provided with respect to specific pieces of equipment, these are simply suggestions to provide context to the report. Please note that PragmaTech holds no bias towards specific manufacturers *or* their equipment. Further, waste generation volumes may vary (e.g. increase) depending on building occupancy rates (number of tenants in each dwelling).

2.0 Waste Management Regulations

128 Lakeshore E., Mississauga, Ontario is located in Peel Region and must abide by the regional and provincial regulations for a multi-residential complex containing more than six dwellings.

2.1 By-Law 35-2015 Regional Municipality of Peel

By-law 35-2015 regulates the collection of waste in Peel Region. The following link describes the materials that are accepted into the source separated recycling programs in this region.
https://www.peelregion.ca/waste/recycling/#recycling-acceptable
www.peelregion.ca/council/bylaws/carchive.asp

Recyclable Materials allowed in the Region's Recycling Program

The following items shall be emptied, rinsed and separated from Waste to be collected as Recyclable Materials as stipulated by *O. Reg. 101/94*, as amended:
(i) aluminum foil trays and pie plates (flattened and folded in quarters);
(ii) boxboard, including cereal, cookie, frozen food (liners removed), tissue boxes, shoe boxes, egg cartons, detergent boxes (emptied and flattened);
(iii) cardboard (flattened and placed in the Recycling Receptacle with the lid closed);
(iv) empty paint and aerosol cans (paint lids removed and placed in Recycling Receptacle; aerosol can caps removed and placed in the Garbage);
(v) glass bottles and jars (lids removed and placed in the Garbage);
(vi) metal food and beverage cans;
(vii) milk and juice cartons and boxes;
(viii) paper, including newspapers, catalogues, magazines, telephone and paperback books, household paper, junk mail, envelopes, non-metallic gift wrap and cards;
(ix) polyethylene plastic bags (i.e. grocery bags tied in one plastic bag), plastic film and overwrap;
(x) plastic bottles, jugs, jars and containers (caps and lids removed and placed in the Garbage); and
(xi) polystyrene foam blocks, egg cartons and take-out food containers;
(xii) spiral wound containers; and
(xiii) mixed rigid plastic containers including clamshell packaging used for fruits, vegetables and bakery products; large clear plastic tubs, lids and trays used for salads, cakes, delicatessen and cooked chicken; clear plastic egg cartons; take-out containers and microwavable trays; garden nursery pots, cells, trays and flats; plastic vitamin and prescription bottles.

Recyclable Materials <u>do not</u> include:
(i) automotive parts;
(ii) window blinds;
(iii) dishes and cookware including pots and pans, plastic cups, drinking glasses, ceramics, plastic and metal utensils, food wrapping and reusable containers;
(iv) foam / "popcorn" packaging;
(v) hard plastic toys, large plastic pails, plastic and metal coat hangers, compact and DVD discs and, cassette and VHS tapes;
(vi) lamps;
(vii) Municipal Hazardous and Special Waste, including propane tanks or fireworks (active, used or duds);
(viii) Home Health Care Waste;
(ix) household electronics and small appliances;
(x) paper and plastic take-out beverage cups, lids and stir sticks;
(xi) take-out containers, cookie and chip bags and crinkly bags;
(xii) pool covers or liners or inflatable pools;
(xiii) shoes and textiles;
(xiv) shredded paper;
(xv) sporting equipment;
(xvi) storage containers or laundry baskets;
(xvii) tarps;
(xviii) window glass and mirrors; and
(xix) wood.

2.2 Waste Legislation Changes in Ontario

Ontario is shifting to a circular economy with a new waste management approach, where waste is treated as a resource that can be recovered, reused and reintegrated into the economy and production stream. Ontario's new waste management framework includes updated legislation and a strategy to guide progress that will protect the environment, drive innovation, enhance performance and competitiveness, and stimulate economic growth and development.

Bill 151, the Waste-Free Ontario Act, 2016 was passed on June 1, 2016, and enacts the Resource Recovery and Circular Economy Act 2016 and the Waste Diversion Transition Act 2016. Once fully implemented, the Bill, along with the Resource Recovery and Circular Economy Act will replace the existing waste diversion program requirements operating under the Waste Diversion Act (2002).

The Strategy for a Waste-Free Ontario: Building the Circular Economy will serve as the roadmap to divert more waste from landfills, create jobs, reduce greenhouse gas emissions responsible for climate change, save scarce resources and create a system where all resources, organic or non-organic materials are recovered, reused and integrated back into the economy. This is meant to ensure that nothing is wasted, and valuable materials destined for landfill create economic value without having negative effects on the environment.

The Food and Organic Waste Framework, released on April 30th, 2018 outlines actions for the province and municipalities to take and provides direction to the waste management industry and the IC&I sector to prevent and reduce food waste, rescue surplus food, recover food and organic waste from disposal, and support beneficial uses of end products such as compost, digestate and biogas.

Disposal bans for specific materials are currently being reviewed by the province and are included in public consultations. The primary materials considered for disposal bans include:

- food waste
- materials designated under existing waste diversion programs
- beverage containers

- corrugated cardboard and some paper materials
- fluorescent bulbs and tubes

The proposed Food and Organic Waste Framework, Strategy for a Waste-Free Ontario, and the 5-year Climate Change Action Plan were developed to work together to help fight climate change by reducing greenhouse gas emissions from landfilled materials that could otherwise be reduced, reused, recycled, composted and reintegrated into the economy.

2.3 5 Year Implementation Plan – Strategy for a Waste-Free Ontario

2018 – Implementation of the Food and Organic Waste Action Plan: begin implementing the first policy statement; beginning with designating new materials under the producer responsibility regulations (e.g. batteries, fluorescent bulbs and tubes, additional materials); develop and consult on disposal bans (e.g. good waste, materials under existing waste diversion program); and develop and consult on amendments to the 3R's regulations.

2019 – Begin implementing the amended 3R's regulations.

2020 – Interim goal of 30% diversion achieved. Complete the transition of existing waste diversion programs (except Blue Box) and designate additional materials under producer responsibility regulations (e.g. mattresses, carpets, furniture).

2021 – Begin implementing disposal bans on material under existing waste diversion programs.

2022 – Implement a possible food waste disposal ban and release a progress report on the Waste-Free Ontario Strategy.

2.4 IC&I Source Separation Programs– Ontario Regulation 103/94

According to *O. Reg. 103/94*, a source separation program must be implemented within designated multi-residential buildings and include procedures and activities to separate recyclables from other waste at the source (point of generation). These procedures and activities must include the provision of facilities for the collection, handling and storage of recyclables, including suitable containers for tenants to deposit their recyclables. These containers must be conveniently located, properly sized, and adequately able to contain the recyclable materials. Reasonable effort must be made to ensure that full use of the program is made. The program must be communicated to all employees and tenants to ensure that source separation procedures, responsibilities and equipment use are properly understood and followed.
For more information, please visit: https://www.ontario.ca/page/waste-management

2.5 Ontario Regulation 102/94 – Part IV – Large Construction Projects

The following section outlines the requirements governing large construction projects with respect to Waste Audits and Waste Reduction Work Plans under *O. Reg. 102/94*. The 128 Lakeshore E. project is subject to the following section from https://www.ontario.ca/laws/regulation/940101. ***Please review this section carefully*.**

PragmaTech specializes in conducting Waste Audits and preparing Waste Reduction Work Plans in accordance with Ontario legislation, and would be happy to provide this service to ensure the project meets its provincial compliance obligations.

PART IV
LARGE CONSTRUCTION PROJECTS

19. (1) This Part applies to a person who undertakes, on their own behalf or on behalf of another person, a construction project consisting of the construction of one or more buildings with a total floor area of at least 2,000 square meters.
(2) In this Part,
"builder" means a person described in subsection (1). O. Reg. 102/94, s. 19.

20. (1) The builder shall conduct a waste audit covering the waste that will be generated in the construction project. The audit shall also address the extent to which materials or products used consist of recycled or reused materials or products.

(2) After conducting the waste audit, the builder shall prepare a written report of the audit. O. Reg. 102/94, s. 20.
21. The builder shall prepare a written waste reduction work plan, based on the waste audit, to reduce, reuse and recycle waste generated in the construction project. O. Reg. 102/94, s. 21.
22. The builder shall implement the waste reduction work plan. O. Reg. 102/94, s. 22.
23. The waste reduction work plan shall include measures for communicating the plan to the workers at the construction site and, as a minimum, those measures shall require,

(a) that the plan or a summary be posted at the construction site in a place where most of the workers will see it; and
(b) if a summary is posted, that any worker who requests to look at the plan be allowed to do so. O. Reg. 102/94, s. 23.

24. (1) The report of the waste audit and the waste reduction work plan required under this Part shall be prepared before construction work begins at the site.
(2) If construction work has begun at the site before this Regulation comes into force, the following transitional rules apply with respect to the waste audit, the report and the plan:

1. The report and plan shall be prepared within six months after this Regulation comes into force.
2. The report and plan need not be prepared if all work is finished within six months after this Regulation comes into force.
3. The waste audit need not cover any waste generated within six months after this Regulation comes into force.
4. The plan need not address any waste generated within six months after this Regulation comes into force. O. Reg. 102/94, s. 24.

3.0 Environmental Sustainability & Circular Economy Framework

Effective resource management practices that consider the full life-cycle of materials are critical to environmental sustainability. The movement towards a circular economy is putting resource recovery and waste reduction at the forefront of effective waste management practices.

We recommend that you regularly review and revise your Waste Management and Procurement Policies and Practices to ensure that every effort is made to create integrated systems where nothing is wasted and waste (destined for landfill or incineration) is treated as a valuable resource for recovery and reuse and is put back into the economy without having negative effects on the environment.

In addition to environmental and social responsibility, companies have a legal obligation to demonstrate due diligence for waste management and resource recovery. To ensure compliance with these obligations, we recommend using continuous quality improvement and employee/tenant engagement best practices to develop innovative waste management programs and practices. We also recommend that you partake in regular monitoring and reporting of program performance indicators. For programs using contractors with policies and practices, we recommend continuous monitoring to ensure that transparency and integrity are maintained in their sustainable waste management practices.

Waste reduction and resource recovery should be the first consideration in product, processing and packaging design. Strive to purchase materials and equipment that can be recovered or recycled at their end of life, as well as those produced using recycled and/or recyclable materials. Ensure that items such as paper, paper towel, paper cups, and office equipment are addressed in the procurement policy. Encourage company employees, management responsible for product and/or space design and procurement personnel to source and purchase products containing recycled content and/or are recyclable after use.

Reduce, Reuse and Recycle
Continue to explore innovative ways to reduce or eliminate waste. There is a common misconception that recycling is the easiest, most cost-effective and most convenient form of waste diversion. In fact, REDUCTION is the most efficient waste management and environmental stewardship practice. Reducing waste production can lead to conserving natural

resources, decreasing toxicity of wastes, and reducing the cost impact on communities, businesses, and consumers. Most waste reduction strategies fail because of using the 3Rs (REDUCE, REUSE and RECYCLE) in the reverse order.

Some of the costs associated with recycling could be reduced or eliminated by reducing the types and/or volume of materials generated. Some potential cost savings may be associated with material handling, equipment costs, disposal and contamination fees, floor space and storage areas, employee training, recycling program promotion and sourcing available end-markets.

Disposal

Environmental Sustainability and Stewardship legislation changes continue to target specific materials for reduction/removal from landfill disposal. In addition, landfill costs are increasing due to the shrinking availability of space. These costs and conditions are key drivers for companies to develop innovative solutions and alternatives to dispose of their waste.

In Canada, incineration or "waste to energy" is considered a *disposal alternative*, NOT a method of *waste diversion*. Incineration does not promote the 3Rs. An important distinction is that burning waste destroys resources; it does not reduce waste. In addition, burying or burning waste may discharge toxins or pollutants into land, water or air that could prove to have negative human and/or environmental consequences. It is therefore important to consider both the human and environmental impacts associated with all waste disposal methods.

4.0 Waste Generation Analysis

The following waste generation data were determined by calculating the volume of all waste materials generated on a weekly and annual basis. The analysis was conducted to determine the anticipated generation values for the following waste streams:

- Non-Recyclable Waste (Garbage)
- Co-mingled Containers/Cans/Bottles/Jars/Jugs
- Cardboard/Mixed Fibres
- Other Recycling (E-waste, batteries, scrap metals and light bulbs etc.)
- Organics/Compost

Tables 1 and 2 below provide estimates of the waste generated per waste stream on a weekly and yearly basis, along with the total anticipated waste generation for each waste stream. Using these estimates, PragmaTech can determine the appropriate equipment needs and space requirements to maximize efficient handling and disposal of each waste stream program. Sample data using waste generation volumes for similar projects, along with multi-residential waste audits for properties of a similar type and relative size were used by PragmaTech to perform calculations and determine the following estimates.

Table 1: Residential Estimated Weekly Generation Volumes (based on forty units)

KG/Week/Unit	KG
Cans/Bottles/Glass Jars	48.79
Glass Bottles	2.83
Mixed Fibres	61.48
Organic/Compost	94.99
e-waste, Light Bulbs, Scrap Metal, Batteries	0.39
Non-recyclable Waste	53.13
Weekly Total Generation	261.60

Table 2. Residential Estimated Yearly Generation Volumes (based on forty units)

KG/Year/Unit	KG
Cans/Bottles/Glass Jars	2537.00
Glass Bottles	146.91
Mixed Fibres	3196.75
Organic/Compost	4939.32
e-waste, Light Bulbs, Scrap Metal, Batteries	20.40
Non-recyclable Waste	2762.81
Yearly Total Generation	13603.20

Table 3: Commercial Estimated Weekly Generation Volumes (151 Sq M or 1625 Sq Ft)

KG/Week/Sq Ft	KG
Cardboard	27.98
Cans/Bottles/Glass Jars	6.66
Mixed Fibres	8.00
Organic/Compost	5.33
e-waste, Light Bulbs, Scrap Metal, Batteries	0.67
Non-recyclable Waste	17.99

Table 4: Commercial Estimated Yearly Generation Volumes (151 Sq M or 1625 Sq Ft)

KG/Year/Sq Ft	KG
Cardboard	1455.09
Cans/Bottles/Glass Jars	346.45
Mixed Fibres	415.74
Organic/Compost	277.16
e-waste, Light Bulbs, Scrap Metal, Batteries	34.65
Non-recyclable waste	935.42

Please Note: The information presented in this report is based on optimal recycling practices by the residents. All calculations are based on typical occupancy per unit and may change depending on number of occupants per unit. Further, these calculations do not take into consideration initial, one-time tenant move-in waste generation volumes or bulk pickups (large items).

5.0 Equipment Recommendations

The following section contains our professional recommendations on the equipment to house each waste stream, considerations for space, and power requirements. These guidelines have been developed based on our extensive industry experience. It is believed that implementing these suggestions will greatly enhance the efficiency and success of the waste management plan on behalf of the operational team.

Number of bins required Residential

Waste Stream	Generation	kg per	Number Units	Containers
Cans/Bottles/Plastic	60.99	15	4.1	95 Gallon Tote
Glass Jars & Bottles	3.53	35	0.10	95 Gallon Tote
Mixed Fibres (mixed paper, boxboard, cardboard)	76.85	25	3.07	95 Gallon Tote
Organic/Compost	118.73	50	2.37	32 Gallon Tote
E-waste, Light Bulbs, Scrap Metal, Batteries	0.49	25	0.02	95 Gallon Tote
Non-recyclable waste	66.41	50	0.44	3-yard bin

Bins Footprint Residential

Streams	Equipment	Length (m)	Width (m)	Number of Containers	M2
Mixed Containers	95 gallon/360 L Totes	0.89	0.69	4	2.4564
Mixed Paper	95 gallon/360 L Totes	0.89	0.69	4	2.4564
Glass	95 gallon/360 L Totes	0.89	0.69	1	0.6141
Organics	64 gallon/240 L Totes	0.64	0.51	3	0.9792
Waste	3-yard Container	2.03	1.07	1	2.1721
				TOTAL m2	8.6782

Number of bins required Commercial

Waste Stream	Generation	kg per	Number Units	Containers
Cardboard	27.98	15	1.9	95 Gallon Tote
Cans/Bottles/Plastic	6.66	15	0.4	95 Gallon Tote
Mixed Fibres (mixed paper, boxboard)	8.00	25	0.32	95 Gallon Tote
Organic/Compost	5.33	50	0.11	32 Gallon Tote
E-waste, Light Bulbs, Scrap Metal, Batteries	0.67	25	0.03	95 Gallon Tote
Non-recyclable waste	17.99	50	0.12	3-yard bin

Bins Footprint Commercial

Streams	Equipment	Length (m)	Width (m)	Number of Containers	M2
Mixed Containers	95 gallon/360 L Totes	0.89	0.69	1	0.6141
Mixed Paper	95 gallon/360 L Totes	0.89	0.69	1	0.6141
Organics	64 gallon/240 L Totes	0.64	0.51	1	0.3264
Cardboard	95 gallon/360 L Totes	0.89	0.69	2	1.2282
Waste	3-yard Container	2.03	1.07	1	2.1721
				TOTAL m2	4.9549

5.1 Recycling Equipment Specifications

Peel Region has agreed to supply recycling containers if city pick-up is requested. If Black Tusk Group Investments decides to employ a private service, the Service Provider(s) will be required to supply recycling containers/totes.

5.2 Organics Specifications

Peel Region does have service for Source Separated Organics (SSO), Ontario is creating a policy to ban organics from landfill and to make the recycling of organic material mandatory across the province. I would highly recommend that an organics/compost program be set up from the beginning. Doing so will assist with implementing the program right from the start and reduce the amount of organic/compostable waste sent to landfill. Further, diverting these materials will reduce odour issues in the garbage containers. Organic are collected weekly by Peel Region

Lots of items besides food go in your green bin. These items are examples of what to put in your green bin:

- paper napkins, paper towels
- loose shredded paper
- cotton balls
- greasy pizza boxes
- microwave popcorn bags
- corn stalks
- house plants (soil removed)
- food scraps
- fruit and vegetable peels
- bones, meat and fish
- coffee grounds and filters

Organic 100 Litre cart

Kitchen Catcher

Organics collection:

1.) The tenants are responsible for dropping off their organics/compost at the designated collection point in the garbage room.
2.) A climate-controlled organics room should be considered as part of the design. This room would house full totes of organics until pickup. The climate control will reduce smell, insects and rodent issues that may be present in waste rooms that are susceptible to temperature variation. There is the option to have the garbage room be completely climate-controlled or have a separate climate-controlled section of the garbage room to house organic waste. The pictures above provide examples of the types of receptacles that are typically used for organics.

6.0 Design Recommendations from Peel Region

Peel Region has requirements for new developments that must be considered if the development will require city pick up. The developer must demonstrate compliance with the requirements set out in this section in the site plan submission. The design of a development must include features that allow materials to be set out for recycling as conveniently for all occupants as it is to set out garbage.

The Regional Municipality of Peel's Waste Collection Design Standards Manual is to be followed if the dwelling will be utilizing the Region's Waste Management services. The manual is attached at the end of this report in Appendix A. The dwelling must provide the front-end garbage bins and Peel Region will provide the recycling carts or front-end bins.

Please note that the link located in Appendix A includes all subsequent Appendices mentioned throughout this report.

6.1 Waste Collection Service Design Standards – Peel Region

Element	Waste Collection Service Design Standards
Convenience	The design of developments must include features that make the set-out of recyclable materials as convenient to each occupant as thar of garbage
Drawings	The collection point and storage area, including the number and size of front-end bins to be used for garbage and the number, the size and type of recycling receptacles (front end or carts) the compactor and chute systems are to be clearly shown and labeled on drawings (e.g. site plan, ground floor plan, waste collection plan) The drawings must also show the waste collection vehicles route through the development and radius of every turn must be labeled
Supply of waste receptacles	Multi residential complexes and stacked townhouses must supply front end bins for garbage collection Recycling cart or front-end bins for recyclable materials will be provided by the Region
Approach	A minimum of 18 m straight head-on approach to the collection point. This approach is to be level (maximum 2% slope), solid (able to support a 35-tonne collection vehicle) and the same width as the collection point
Overhead clearance	A minimum clearance height of 7.5 m from the concrete pad must be provided at the collection point and must be free of obstructions (e.g., sprinkler systems, ducts, balconies, wires and trees. Outside the collection point, a clearance height of 4.4 m from the top of the access road must be provided along the waste collection vehicle access and egress route and must be free of obstructions (e.g., sprinkler systems, ducts, balconies, wires and trees.
Accessibility	The maximum walking distance from a dwelling unit to the closest concealed collection point or storage room mut be less than 100 m.
Owner notification	Developers will be required to inform prospective owners of the location of thr concealed collection point in: • Agreements of purchase and sale, a written contract between a seller and a buyer for the purchase and sale of particular property; and

	• The condominium declaration and description, also sometimes known as Master Deed, is a fundamental document that establishes the existence of and further governs the use and maintenance of a condominium property.

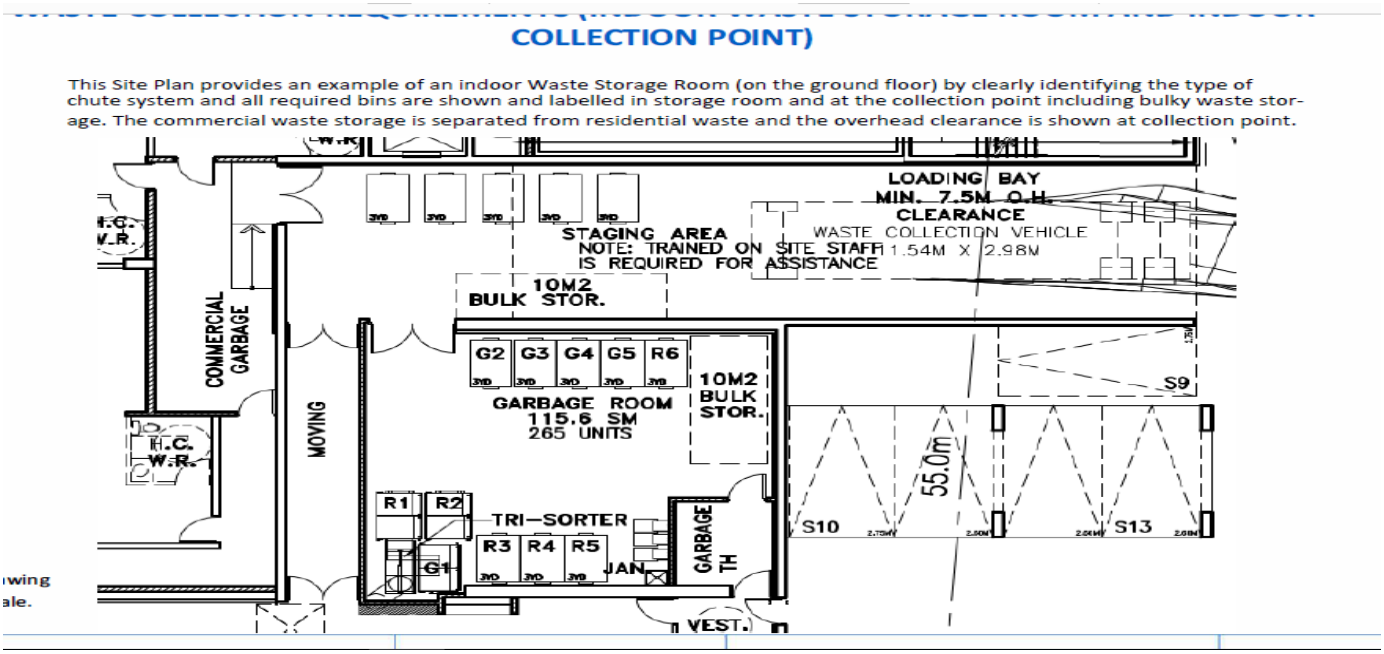
6.2 Concealed Collection Point Requirements (exterior)

The concealed collection point must be of enough area to accommodate the number of front-end bins and carts (if applicable) required for the development and to accommodate the set-out and storage of bulky items. It must be accessible to occupants and the waste collection vehicle. The design requirements for the concealed collection points include:

- A permanent three-sided structure without a roof
- A concealed collection point for a single front-end bin requires 3-metre opening
- A concealed collection point for two front-end bins with two gates requires a 6-metre opening
- A concealed collection point for two front-end bins with four gates requires an 8-metre opening
- A concealed collection point requires a lockable gate. Hinged gates on a concealed collection point must swing open to a minimum 135 degrees. Sliding gates are also permitted. Gates must be capable of being secured in an open position.
- A concealed collection point requires a minimum of 10 square meters for the set-out of **bulky items**. The concealed collection point for bulky items can be separated from the concealed collection point for front-end.
- A solid, level (maximum of 2% slope) and reinforced concrete pad must be provided. The concrete pad must be of sufficient strength to prevent differential settlement and/or cracking that would affect waste collection.
- Bollards or a concrete curb must also be installed at the rear of the concealed collection point to protect the structural wall from damage when front-end bins are picked up or returned in place by waste collection vehicles.

6.3 Waste Storage Room Requirements

A waste storage room must be of sufficient size to accommodate the required number of front-end bins and/or carts required for the development. In addition, a minimum of 10 square meters must be provided for the storage of bulky items. Please refer to Appendix A Design Manual - Appendix 14. Example below from Region



7.0 Space Requirements for Equipment

Room consideration should be made to house a tractor/bin tugger (optional) that could be used to move the garbage and recycling containers from the indoor storage area to the outdoor collection area for pickup.

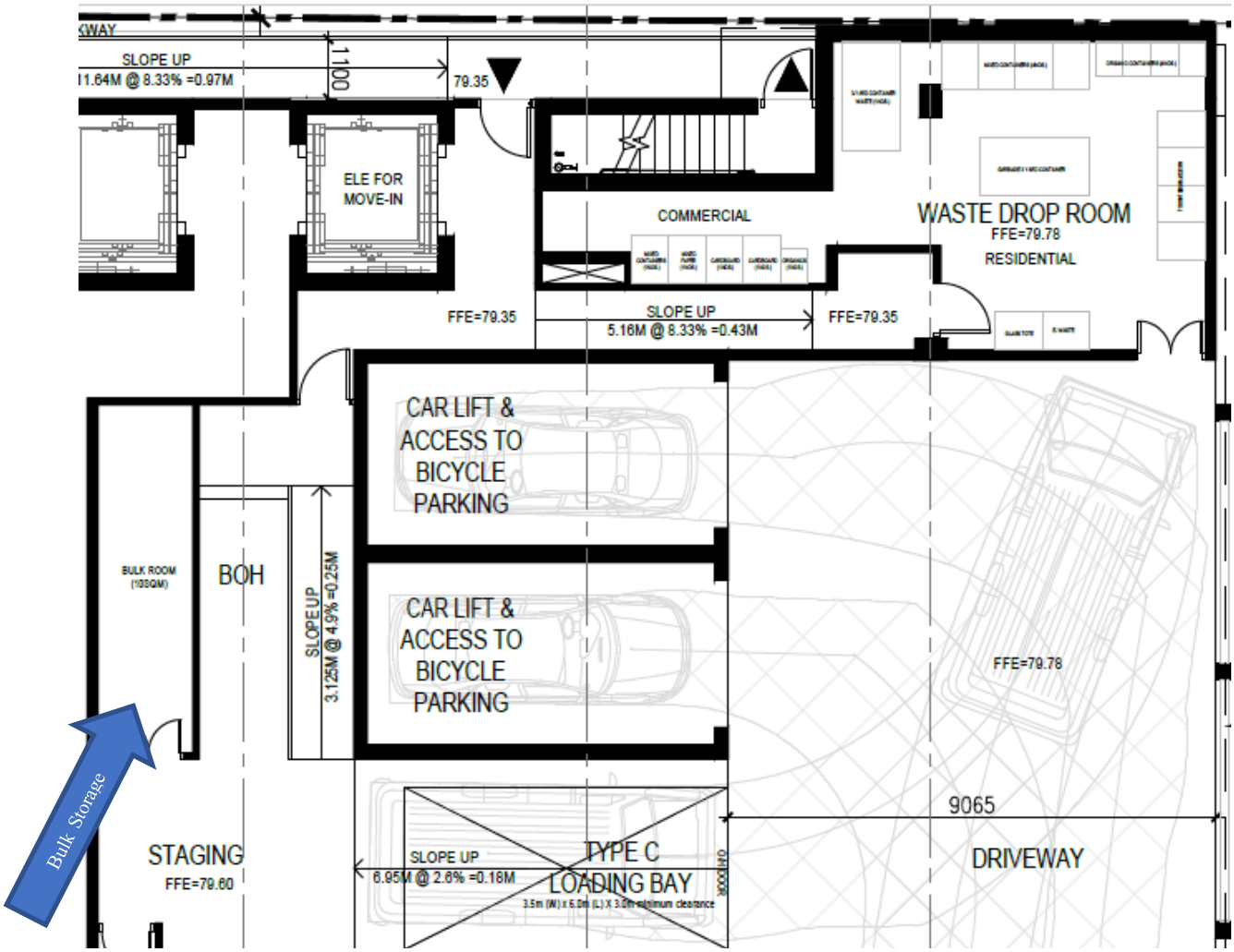
Bin Mover

Tractor

- 4 x 32-gallon organic totes (12) 640 mm depth x 510 mm width
- 1 x 64-gallon tote E-waste 890 mm depth x 690 mm width
- 4 x 95-gallon tote for mixed recycling (plastic, cans, containers) 890 mm depth x 690 mm width
- 4 x 95-gallon tote for mixed fibres (paper, boxboard, cardboard) 890 mm depth x 690 mm width
- 2 x 3 yd waste bins 1070 mm depth x 2030 mm width

Figure 3: Room layout for Residential and Commercial equipment

- 32-gallon organic totes (5) 640 mm depth x 510 mm width
- 95-gallon mixed containers totes (5) 890 mm depth x 690 mm width
- 95-gallon mixed fibres totes (5) 890 mm depth x 690 mm width
- 3-yard bin garbage (2) 2030 mm depth x1070 mm width
- 64-gallon tote for e-waste 640 mm depth x 510 mm width
- Double door minimum width is 1200 mm to move containers in/out
- Bulk Storage requires 10 square meters



8.0 Room Considerations

In any garbage room, waste will start to decompose. The decomposition rate will increase as the temperature of the room increases. Therefore, a room that is equipped with climate control will slow the decomposition process considerably, reducing smells and potential pests. This type of room can house full organic totes in a cool environment until pickup day.

This room should have proper lighting that is bright enough for all tenants to use safely.

Signage that includes pictures and instructions on proper disposal and "what goes where" information should be strategically placed on the walls of this drop off room. Signage with pictures and directions will help to alleviate contamination rates and common communication issues, such as language barriers.

9.0 Welcome Package for Tenants

Each tenant should be provided with a welcome package at move in. The welcome package should include the recycling bag provided by Peel Region and a kitchen catcher that can be purchased in bulk by the manager. The package should also include the recycling guide that indicates how materials should be sorted, as well as tips for recycling and the most up-do-date by-law. The more information that is provided, the easier it is for tenants to get on board with recycling and organics recycling; therefore, reducing non-recyclable waste generation.

Once the tenants move in, a welcome brief on recycling best practices can be completed in the lobby during peak times (usually between 4 pm to 7 pm). These meetings can include draws that people can enter to win various prizes, which is a great way to encourage people to pop by, listen to the information, and ask questions.

10.0 Signage Considerations

Developing signage for all waste stream equipment and receptacles that clearly identifies which materials can be deposited into the designated equipment and container(s) can greatly assist with reducing contamination and increasing diversion rates. Signage should depict both images and words explaining the specific materials to be deposited into the equipment and receptacles so that all users are able to clearly understand program requirements. Use common terms that are easily recognizable to the public. Colour-coding is a fantastic way to help people easily identify an item example green is for organics and compost, blue is for cans and bottles, brown for cardboard etc.

PragmaTech has demonstrated experience in designing and creating a broad array of signage options for our clients. As part of our continued involvement in this project, the PragmaTech team can create all necessary signage on behalf of our clients. PragmaTech can create signage for all waste streams, and signage content and design will meet the needs of the client(s).

Appendix A: Regional Municipality of Peel Waste Collection Design Manual

Please Note: The following link includes the Peel Region Waste Collection Design Manual, along with all the aforementioned Appendices. Document has been added as an attachment with the report.

https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf