



Technical Memorandum #1

Date: August 22, 2022 **Project No.:** 300053263.1000

Project Name: 60 Dundas Street East Waste Management Planning Services

Client Name: ACLP – Dundas Street E

Submitted To: c/o Mr. Michael Bissett, MCIP, RPP, Bousfields Inc.

Submitted By: Christian Jordan, B.Sc.

Reviewed By: James R. Hollingsworth, P.Eng.

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by ACLP – Dundas Street E to provide solid waste management planning services for the 60 Dundas Street East mixed-use development located in the City of Mississauga. Developments in the Region of Peel are subject to the Region's waste management requirements (not the City's).

The recommendations and requirements provided in this Technical Memorandum, which can be shared with your entire team, are based upon the Chamberlain Architect Services Limited 'Rezoning Sub' drawings dated February 25, 2022. The below recommendations are focussed on the waste management design for your development. Operational procedures will be detailed within the Waste Management Plan, which will be prepared following revision of the architect's drawings.

2.0 Design Requirements

Peel Region will only collect residential waste. Retail waste must be collected by a private waste management firm/contractor. Peel Region therefore requires separate storage of residential and retail waste. Waste collection bins should be clearly marked:

- Residential Waste Only; or
- Retail Waste Only.

The items below describe the requirements further.

2.1 Residential Waste Storage Rooms and Equipment

1. Residential garbage must be compacted per Region of Peel requirements. The compactor is a safety concern for those not trained in its operation. Therefore, the Waste Storage Room must be locked to prevent unauthorized access.
 - The current design combines the Loading Areas with the Waste Storage Rooms. These must be separate areas to prevent unauthorized access. See also Items 14 and 15.
2. A chute system feeding into the Waste Storage Rooms must be accessible on all floors containing residential units. The Region's minimum requirements call for a single chute system, leading to a bi-sorter (splitting garbage and recyclables) in the Waste Storage Room. The location of these sorters must be confirmed by the architect to ensure the chute location can accommodate the infrastructure.
 - During recent discussions with another municipality, it was recommended to Burnside that buildings of this size (number of storeys) utilize a dedicated chute for each waste stream (we recommend a three-chute system – see Item 21). Bi-sorter (or tri-sorter) maintenance issues are significant due to the velocity of the waste dropping from significant height. This frequently leads to considerable maintenance and additional staffing costs. Additionally, residents often leave waste at the chute door (on each level) or incorrectly dispose of the waste (i.e., garbage in the recycling) when the controls are unavailable (i.e., in use by residents on other floors) or the bi/tri-sorter is inoperable, adding further costs.
3. Provided below, Table 1 and Table 2 summarize the residential container needs for once weekly collection of recyclables and twice weekly collection of garbage. Peel Region provides no minimum area requirement for the waste room, though it must be large enough to store and maneuver the required number of waste containers, a garbage compactor, and bi-sorter unit. Additional equipment that may be stored (and used) in the Waste Storage Room¹ includes:
 - a. A bin-puller (requires 1 m x 2 m space).
 - b. Cart tipper (requires 1.5 m x 2 m space).
 - c. Two additional front lift waste bins; one for recycling and one for garbage, to be used below the bi-sorter during collection (other bins in Loading Area).
 - d. Tower A does not have sufficient room to store an additional recycling front lift bin for this purpose. For planning purposes, this has been incorporated within Towers B and C, and will be transferred as necessary.
4. Bi-sorters will require space to allow for a compactor for garbage alongside front-lift garbage and recycling bins. Existing locations (particularly the chutes within Tower B and C's waste storage room) appear tight/unfeasible for the required infrastructure and

¹ Currently assumed to be stored in Towers B & C's room.

will need to be confirmed for sufficient space by the architect. These areas should not be impeded by any pillars or structures and allow for the movement of bins out and around the bi-sorter unit.

5. Bulky Waste Storage requires a contiguous 10 m² space. This may be incorporated into the Waste Storage Rooms or as standalone rooms for Tower A and (one shared room) for Towers B and C. The bulky waste storage space should be clearly marked on the Site Plan.

Table 1: Waste Storage Room Equipment Requirements – Tower A (Phase 1)

| Quantity | Item | Use | Collection Frequency |
|----------|--|---|----------------------|
| 7 | 4 yd ³ front-lift waste bin | Recycling (uncompacted) | Weekly |
| 8 | 3 yd ³ front-lift waste bin (compaction type bin) | Garbage (compacted) | Twice Weekly |
| 1 | Bi-Sorter | Directs recyclables and garbage to correct bin | N/A |
| 1 | Waste Compactor | Compacts garbage into the 3 yd ³ front load bins | N/A |

Table 2: Waste Storage Room Equipment Requirements – Towers B and C (Phase 2)

| Quantity | Item | Use | Collection Frequency |
|----------|--|---|----------------------|
| 14 | 4 yd ³ front-lift waste bin | Recycling (uncompacted) | Weekly |
| 15 | 3 yd ³ front-lift waste bin (compaction type bin) | Garbage (compacted) | Twice Weekly |
| 1 | Bi-Sorter | Directs recyclables and garbage to correct bin | N/A |
| 1 | Waste Compactor | Compacts garbage into the 3 yd ³ front load bins | N/A |
| 2 | Through-the-Wall Chutes | Waste disposal for ground floor residents | N/A |
| 2 | 360 L semi-automated carts | Accept waste via through-the-wall chutes | N/A |
| 1 | Cart Tipper | Empties carts into bins | N/A |

6. Double doors (minimum 2.2 m width) must be provided to access the Waste Storage Rooms and Bulky Waste Storage Rooms (if separate). If required, double doors on the Bulky Waste Storage Rooms should open outwards as to not impede on the available floor space of the room.

7. The ground floor level suites in the shared podium of Towers B and C will not have access to the waste chutes (available only on Level 2 and above). We propose through-the-wall chutes that lead into waste carts within the Waste Storage Room. For these ground-level suites, we recommend the following:
 - a. Carts (expected to be 360 L [95 gallon] capacity) will be used on the receiving side of the through-the-wall chutes to collect waste as it is deposited.
 - b. For the recycling waste stream, the cart will need to be dumped into the front-lift bin regularly – a cart tipper² is required to assist maintenance staff with this task. Cart tippers typically require a 120v outlet for charging or for direct power.
 - c. For the garbage waste stream, the front-lift garbage bin will need to be ‘pre-loaded’ – tipping the garbage carts into an empty garbage bin before it is loaded onto the compactor – using the cart tipper. This is expected to occur every time a new front-lift bin is loaded onto the compactor.
 - d. A third through-the-wall chute, or space for its installation, should be considered to allow future organic waste collection (see Item 21).
8. The maximum walking distance from a dwelling unit to their respective chute system must be less than 100 m.
9. Waste Storage Rooms must have a hose bib and floor drain for washing and cleaning of the room and waste containers.
10. The air exchange rate for Waste Storage Rooms should be a minimum of one-cubic foot per minute of air per square foot of floor space (1 CFM/ft²)³.

2.2 Retail Waste Storage Rooms

11. Retail wastes must be stored separate from residential wastes. Peel Region does not collect retail wastes. Due to the sizing of the retail areas in Tower A, it is assumed that these wastes may be temporarily stored within each retail unit on the ground level, possibly in a small closet using 360 L carts for each waste stream before disposal into a centralized ‘Retail Waste Storage Room’. There is currently no available space to repurpose a portion of the existing residential Waste Storage Room for this purpose. This will need to be studied by the architect to determine where the retail Waste Storage

² A cart tipper such as one from Vestil Manufacturing Corp. – Model: TCD-M-60. Available in AC (plug-in) or DC (battery operated). <https://www.vestil.com/product.php?FID=227> (accessed August 2022).

³ Per American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62.

Room may be included. The retail waste storage room should provide enough space for at least two, 2 yd³ bins.

2.3 Collection Points

12. The minimum required 'straight head-on' approach for the collection truck to the collection point is 18 m. This must be unobstructed to enable the waste collection vehicle to wholly enter the collection point.
13. Collection vehicle turns must have a minimum of a 13-m turning radius for waste collection vehicles. These radii must be labelled on the Site Plan. The waste collection vehicle is not permitted to reverse more than 15 m or turn while reversing.
14. Peel Region requires a minimum 6.0-m wide collection point in front of the straight head on approach. This collection point must provide 3 m by 3 m of space for each front-lift bin, alongside 10 m² of space for bulky waste and a 1.5-m deep extension of the concrete apron to accommodate the front wheels of the waste collection vehicle. Appendix 4 of the Region's requirements has been included with this memo to better illustrate this concept.

As such, the dimensions of the collection points are required to be:

- a. Tower A Collection Point: 21.2 m by 6 m or 14.7 m by 9 m in size.
- b. Towers B and C Collection Point: 42.2 m by 6 m or 23.7 m by 9 m in size.

As this area is unlikely to be met based upon the current design, Burnside recommends seeking the Commissioner's approval to use property management staff to facilitate Waste Collection. This request must be noted on the drawings.

15. Although the Waste Storage Room for Tower A has sufficient space to store the required bins, collection will not work even with staff assistance. There is not enough space to move full and empty bins around during collection periods (see Figure 1).
16. A minimum 7.5 m overhead clearance height must be provided from the concrete pad. It must be clearly noted on the Site Plan, being free of obstructions (i.e., sprinkler heads, wires, etc.).
17. The grade of the collection point must not be more than +/- 2%. This must be noted on your drawings.
18. Bollards or a concrete curb is required at the rear of the Collection Point to protect the structural wall from damage when Front-End Bins are picked up or returned in place by the Waste Collection Vehicle.

19. Any path travelled by the waste collection vehicle must be able to support a minimum of 35 tonnes (the weight of a loaded collection truck). A letter certifying the load capacity must be provided by your (Structural) Engineer.

3.0 Design Recommendations

20. The attached Floor Plan Layout and Collection Point Sketches show the proposed container counts and layout within the Waste Storage Rooms under the current design. An additional bin for each waste stream has been included for each tower such that the chutes can remain active during collection. As the Waste Storage Room for Tower A does not have enough room to incorporate an additional recycling bin, this has been included in Tower B and C's room. This may be transferred to Tower A as necessary.

The Waste Room for Tower A is enclosed as Figure 1, and the Waste Room and collection point layout of Towers B and C is enclosed as Figure 2.

21. Although not currently collected separately, it is expected that Peel Region will transition to mandatory organics separation and collection at some point in the future; organics diversion is a Provincial policy objective and has been implemented by most of the other Greater Toronto Area municipalities.

Burnside recommends that the development plans for this transition. Ideally, the design should allow space for a tri-sorter, garbage compactor and three bins under the chute, plus the associated waste chute controls on each residential floor, alongside space for a third (organics) through-the-wall chute for ground floor units in Buildings B and C. The overall number of bins may increase slightly, perhaps by one or two bins, to accommodate source separated organics (organics are already being collected within the garbage stream).

If there is no ability to add a tri-sorter, etc., then organics (or garbage) drop-off carts could be conveniently located on each floor. These would then be replaced daily (or more frequently) by maintenance staff, taking full carts to the Waste Storage Room and emptying them into the appropriate bins.

22. An additional set of through-the-wall chutes should be considered for the Waste Storage Room of Towers B and C, closer to the Tower B footprint, for convenience of these units.
23. Burnside recommends cabinet space be provided in all residential kitchen units for the segregated collection of recyclables and garbage. Per Item 21, space for organics separation may soon be required.
24. Space in the Waste Storage Room is recommended to be allocated for collection of Hazardous and Special Products (HSP) and electronic waste by appointment. Roughly a 2 m by 1 m area featuring shelving is expected to be sufficient.

25. For ease, maintenance staff may elect to use a bin-puller⁴ to move the bins to the collection point. Note that this equipment may need be stored within the Waste Storage Room. Bin-pullers generally require a standard 120v outlet for charging, close to their storage location.

4.0 Conclusion

Burnside anticipates this memo will provide your architect with the details required to modify their site plan and floor plans. We intend to develop our Solid Waste Management Plan (report) upon the basis of the resulting updated floor plans.

R.J. Burnside & Associates Limited



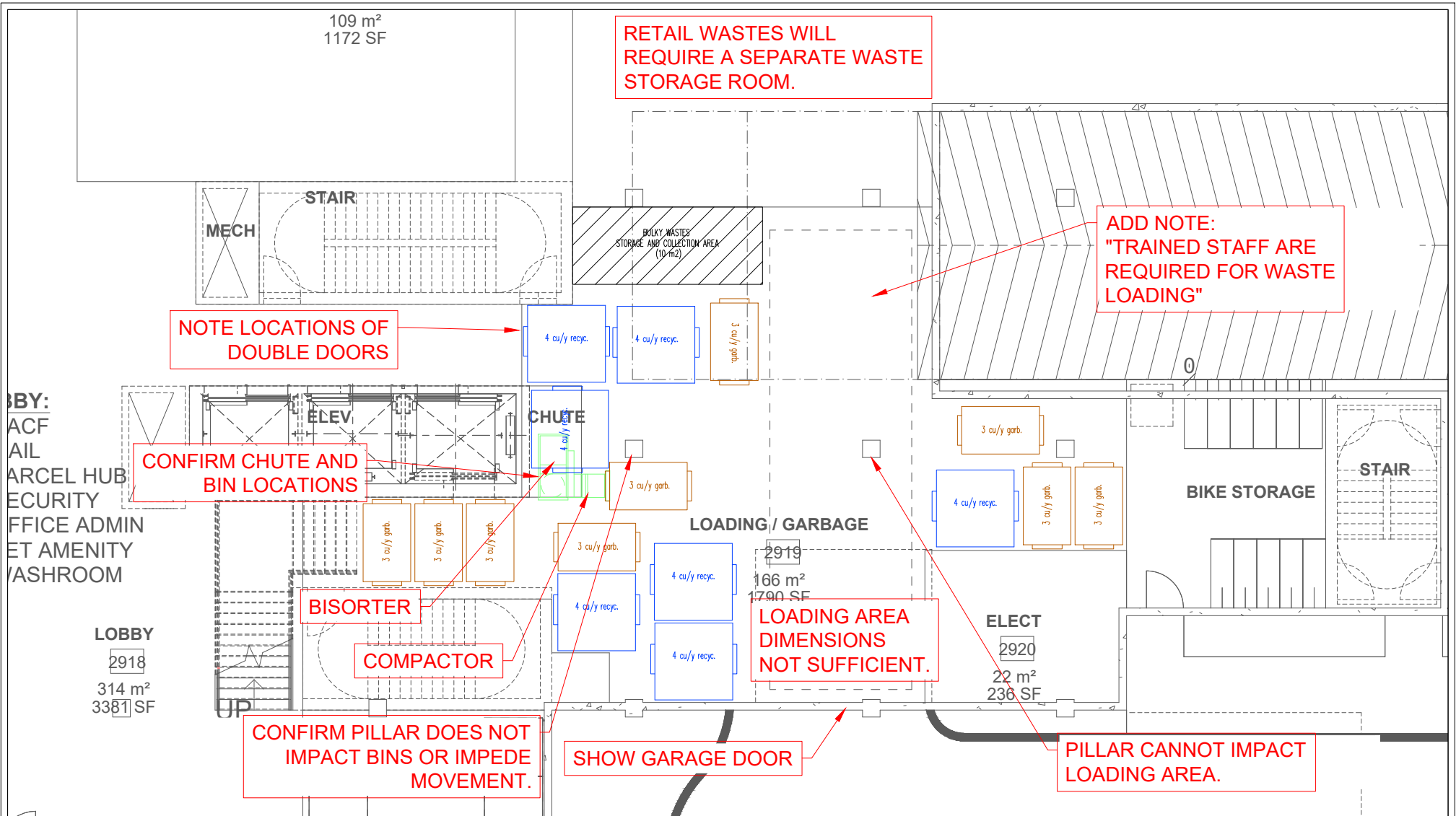
Christian Jordan, B.Sc.
Project Manager
CJ/JH:bs

Enclosure(s) Tower A Waste Room and Collection Point Layout (Figure 1)
Towers B & C Waste Room and Collection Point Layout (Figure 2)
Peel Region Waste Collection Design Standards (Appendix 4)

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⁴ More information can be found at <https://www.djproducts.com/product/video-wastecaddy-efficient-trash-bin-mover/> for the Waste Caddy, and <https://www.djproducts.com/product/wastecaddy-ride-on-dumpster-mover/> for the ride-on dumpster mover (accessed August 2022).



NOTES:

- BASED UPON THE CHAMBERLAIN ARCHITECT SERVICES LIMITED 'GROUND FLOOR' DRAWING (NO. A102), DATED FEBRUARY 25, 2022.
- BIN DIMENSIONS BASED UPON REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS MANUAL, APPENDIX 6.



Figure Title

TOWER A

60 DUNDAS STREET EAST

WASTE MANAGEMENT PLANNING SERVICES

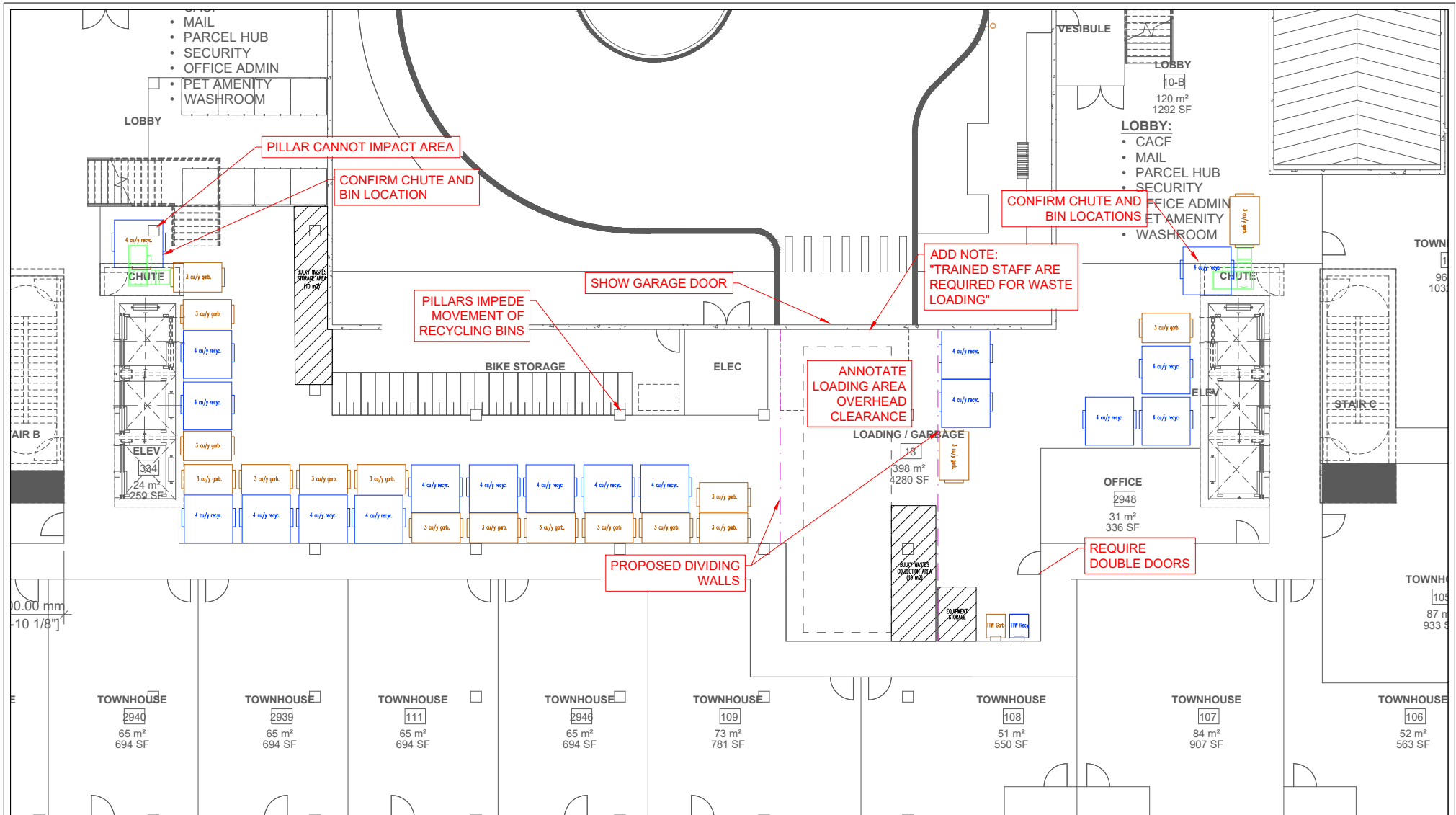
Client

ACLP - 60 DUNDAS STREET E

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| Drawn | Checked | Date |
| CJ | JH | AUGUST 2022 |
| Scale | Project No. | |
| N.T.S. | 300053263.1000 | |

Figure No.

1



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- BASED UPON THE CHAMBERLAIN ARCHITECT SERVICES LIMITED 'GROUND FLOOR' DRAWING (NO. A102), DATED FEBRUARY 25, 2022.
- BIN DIMENSIONS BASED UPON REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS MANUAL, APPENDIX 6.



Client

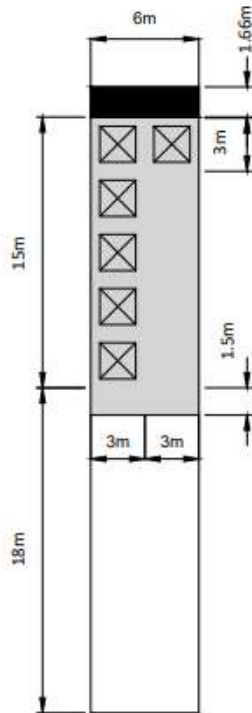
ACLP - 60 DUNDAS STREET E

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|--|----------------|-------------|------------|
| <p>Figure Title</p> <p style="font-size: 1.2em;">TOWERS B & C</p> <p>60 DUNDAS STREET EAST WASTE MANAGEMENT PLANNING SERVICES</p> | | | |
| Drawn | Checked | Date | Figure No. |
| CJ | JH | AUGUST 2022 | 2 |
| Scale | Project No. | | |
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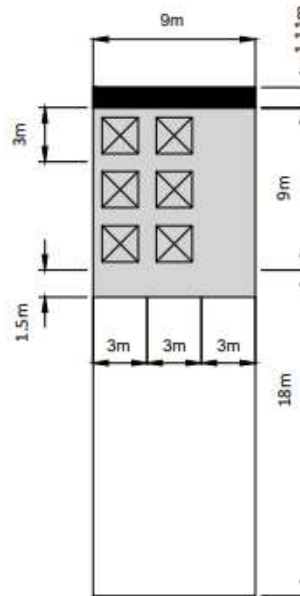
APPENDIX 4: INDOOR WASTE COLLECTION POINT SPECIFICATIONS

Minimum Requirement for Region Waste Collection Vehicles

OPTION 1: 6-METRE WIDE COLLECTION POINT



OPTION 2: 9-METRE WIDE COLLECTION POINT



NOTES

-  Concrete Pad
-  Front-End Bin
-  Bulky Set Out Area

- The concrete apron must extend a minimum of 1.5 meters in length outside of the Concealed Waste Collection Point to accommodate the front wheels of the Waste Collection Vehicle.
- 18 meter head on approach is required for the Waste Collection Vehicle to wholly enter the Indoor Collection Point.

Note:
Drawing not to scale.