

# Waste Management Plan

NEXTDC S5, Sydney

269 Lane Cove Road, Macquarie Park, NSW

Rev\_1

Project No. 23-1481

Client: NEXTDC Limited

21 March 2024





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# 1 Development details

This Waste Management Plan (WMP) has been prepared for the following project:

<b>Project name / address</b>	<b>NEXTDC S5, Sydney</b> <b>269 Lane Cove Road, Macquarie Park, NSW, 2113</b> The site is Lot 3 in Deposited Plan (DP) 1129811
<b>Client</b>	NEXTDC
<b>Architect</b>	Stephen Nelson, HDR
<b>Project manager</b>	Brendan Scicluna, Area3
<b>Client main contact</b>	Angus Barron, NEXTDC
<b>Planning status</b>	State Significant Development Application (SSDA) Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-63168959)
<b>Sustainability objectives</b>	Target goal of at least 90% diversion of operational solid waste from its operation, with ongoing commitment to prevention, elimination or reduction of wasteful practices, and recycling in all facilities.
<b>Overview of development</b>	<p>New development of the NEXTDC S5 site consisting of two adjacent NEXTDC buildings, each with their own loading bay. The 2 buildings consist of 3 main uses as detailed below.</p> <p>The MCX section, attached to Building A, consists of 9 levels of office space, with a ground floor that includes retail tenancies, including a small food and beverage tenancy. The MCX section primarily consists of office space with an auditorium, training and meeting rooms.</p> <p>The retail and food and beverage tenancy will be developed by NEXTDC, however will be run by an outside operator, without access to the NEXTDC bin stores.</p> <p>Building A and B each consist of 1 back-of-house level, 7 levels of data halls and rooftop services and plant. Building 1 has a car parking basement. Access to the loading docks and carparks are via the proposed new Road 13.</p> <p>The site has existing buildings which will require demolition before construction begins.</p>
<b>Architectural plans / area schedule / development information</b>	<p>Architectural plans and area schedule, received from HDR on 28 January 2024.</p> <p>Swept path and bin store drawings, received from HDR on 29 February and 6 March 2024</p>
<b>Local Government Authority</b>	City of Ryde

## 1.1 Purpose

This Waste Management Plan (WMP) has been prepared on behalf of NEXTDC Limited in support of a State Significant Development Application SSD-63168959 (SSDA) submitted to the Department of Planning, Housing and Infrastructure (DPHI) under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act 1979).

The SSDA relates to a proposal at the site known as 269 Lane Cove Road, Macquarie Park, New South Wales (previously known as 34 Waterloo Road) and is legally described as Lot 3 in Deposited Plan (DP) 1129811. The site is approximately 22,381 m<sup>2</sup> in size and rectangular shaped as shown in Figure 1.

The proposed development relates to the construction and operation of a new multi storey data centre facility, shown in Figure 2, which will operate 24 hours a day, 7 days a week.



**Figure 1: Aerial photograph of proposed development site**



**Figure 2: Data centre site plan for proposed development**

## 1.2 Requirements, guidelines and discussions

The following requirements, guidelines and discussions have been used in the development of this report:

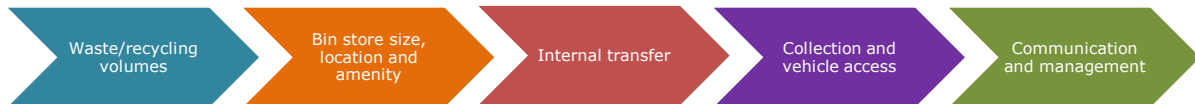
- Secretary’s Environmental Assessment Requirements (SEARs) issued by DPHI on 8 November 2023 (SSD-63168959), as shown below. An outline of the SEARs relevant to this waste management assessment, and how they have been responded to, are summarised in Table 1 below.
- Aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041
- City of Ryde requirements for waste management and liaison, including:
  - City of Ryde Development Control Plan 2014. Part: 7.2 Waste Minimisation and Management
  - City of Ryde Waste Management Strategy 2019-2024
  - Better Practice Guide for Waste Management in Multi-Unit Dwellings, NSW DECC 2008
  - Conversations with Sanju Reddy, Acting Manager - Building & Development Advisory Services, City of Ryde regarding council waste management requirements, 14 December 2023 and 29 January 2024

**Table 1: SEARs relevant to the waste management assessment**

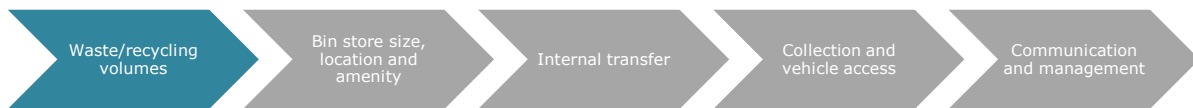
Issue and Assessment Requirements	Response
Details of the quantities and classification of all waste streams to be generated on site during the development	Details of quantities and classification of all waste streams to be generated on site during the development are addressed in Section 2 of this report
Details of waste storage, handling and disposal during the development	Details of waste handling storage and disposal from the development are addressed in Sections 2, 3 and 5 of this report
Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041.	Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041 are addressed in Sections 2 and 6 of this report

### 1.3 Key components of the Waste Management Plan

This Waste Management Plan (WMP) consists of five core components. It presents detailed information on each of the following components.



## 2 Waste and recycling generation



Management of waste and recycling has been considered for the following phases:

1. Demolition and construction works
2. Operational buildings

### 2.1 Demolition and construction works

Demolition of the existing buildings on the site is required and includes the removal of a two-storey office furniture store with associated warehouse (Work Arena) at the northern end of the site, offices and studios associated with Foxtel in the southern portion of the site and a 2 storey carpark in the centre of the site.

The construction methods for the data centre building(s) consists of reinforced concrete frame/columns and post tensioned reinforced concrete slabs, external walls of pre-cast concrete panels, aluminium louvre panels and aluminium framed windows, and structural steel frame and ventilation louvres to the roof plant enclosure. The proposed MCX/Office consist of reinforced concrete frame/columns and post tensioned reinforced concrete slabs and aluminium frame double glazed curtain wall panelised façade.

Managing contractor, Multiplex Constructions, will engage a licensed waste contractor to service the site and manage all waste streams for the demolition and construction stages. Data from waste service provider, Bingo, for the construction of another data centre demonstrated a 93% recovery rate. It is expected that a similar recovery rate will be achieved as the same approach will apply. The approach is that all demolition and construction waste is placed into skips, which are sorted at a resource recovery facility. This waste management approach when implemented will exceed the 80% target within the NSW Waste and Sustainable Materials Strategy 2041.

The appropriate types of receptacles for waste/recyclables will be leased from the waste contractor by Multiplex as needed throughout the demolition and construction stages.

Multiplex will develop a detailed project specific construction waste management plan (CWMP) for the construction stage prior to commencement of construction. The plan will incorporate details of waste disposal and storage areas, strategies for waste avoidance / reduction / reuse / recycling, personnel inductions, and guidance to contractors for reducing packaging. Broad guidelines for waste disposal and storage areas include the provision of strategically located bins in places that do not affect the community and are not close to any surrounding premises. Separation of waste for recycling will be investigated and where practicable implemented onsite.

This project does not yet have cost estimates or a quantity surveyor engaged. Estimates of waste generation and recovery rate have been calculated based on Multiplex and Bingo's previous data centre experience in Australia.

Table 2 shows the estimated volume, tonnes and destination of waste anticipated to be generated from the demolition phase of the project.

Table 3 shows the estimated volume, tonnes and destination of waste anticipated to be generated from the construction phase of the project.

**Table 2: Estimated volume (m<sup>3</sup>) and destination of materials from the demolition phase**

Material type	Estimated volume (m <sup>3</sup> )	Estimated Tonnage (t)	Recycling (off-site) (m <sup>3</sup> )	Waste disposal (m <sup>3</sup> )
Hard material	6630	7960	6630	0
Timber	4970	1490	4970	0
Plastics	3110	400	3110	0
Cement sheet	1860	930	1860	0
Plasterboard	1240	250	1240	0
Metals	1240	1120	1240	0
Paper / cardboard	830	80	830	0
Vegetation	620	90	620	0
Soil	210	330	210	20
General waste	60	20	0	20
<b>TOTAL</b>	<b>20770</b>	<b>12670</b>	<b>20710</b>	<b>0</b>

**Table 3: Estimated volume (m<sup>3</sup>) and destination of materials from the construction phase**

Material type	Estimated volume (m <sup>3</sup> )	Estimated Tonnage (t)	Recycling (off-site) (m <sup>3</sup> )	Waste disposal (m <sup>3</sup> )
Hard material	1940	2330	1940	0
Timber	1460	440	1460	0
Plastics	910	120	910	0
Cement sheet	550	270	550	0
Plasterboard	360	70	360	0
Metals	360	330	360	0
Paper / cardboard	240	20	240	0
Vegetation	180	30	180	0
Soil	60	100	60	0
General waste	20	10	0	20
<b>TOTAL</b>	<b>6080</b>	<b>3720</b>	<b>6060</b>	<b>20</b>

## 2.2 Operational waste and recycling

### 2.2.1 Project parameters

The development when operational will consist of the following waste generating areas:

- Building A (Stage 1) - consisting of the individual areas indicated below:
  - NEXTDC Building A:
    - NEXTDC office areas over 9 floors, including MCX, innovation and auditorium spaces (9,381 m<sup>2</sup>)
    - Technical building areas over 8 floors with 7 floors of data halls and associated office areas (9,818 m<sup>2</sup>)
  - External operators:
    - Ground floor cafe (104 m<sup>2</sup>)
    - Ground floor retail (126 m<sup>2</sup>)
- Building B (Stage 2) - consisting of the individual areas indicated below:
  - Data halls over 7 floors (9,492 m<sup>2</sup>)
  - Associated office areas (138 m<sup>2</sup>)

Areas occupied by plant / equipment, corridors, storage areas and water closets and void spaces are non-waste generating areas and have been excluded from the waste calculations.

### 2.2.2 Waste generation rates

There are no standard generation rates for data centres. The City of Ryde<sup>1</sup> waste generation rates have been considered for office areas, retail and cafe, while for the data halls, estimated waste generation has been based on operational data from similar sized data centres provided by NEXTDC, and also Encycle experience of other data centres operating in Australia.

Specifically, the generation rates used are presented below. The rates do not include a breakdown of material streams included in the 'recycling' stream. The final column presents Encycle Consulting's in-house estimate of the material streams present in the recycling stream based on our working experience of operational buildings within Australia.

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<sup>1</sup> City of Ryde Development Control Plan 2014. Part: 7.2 Waste Minimisation and Management  
Page 7

<b>Premises type</b>	<b>Waste generation rate</b>	<b>Recycling generation rate</b>	<b>Percentage breakdown of recycling stream by material</b>
<b>Offices</b> (Building A 9,381 m <sup>2</sup> ) (Building B 9,492 m <sup>2</sup> )	10 L / 100m <sup>2</sup> / day	10 L / 100m <sup>2</sup> / day	7% commingled 93% paper and cardboard 10% soft plastics (additional) 20% of waste is organics
<b>Café</b> (104 m <sup>2</sup> )	10 L / 1.5m <sup>2</sup> / day	2 L / 1.5m <sup>2</sup> / day	40% commingled 50% cardboard 10% soft plastics 40% of waste is organics
<b>Retail shop &gt;100m<sup>2</sup></b> (126 m <sup>2</sup> )	0.5 L / 1m <sup>2</sup> / day	0.5 L / 1m <sup>2</sup> / day	25% commingled 50% cardboard 25% soft plastics

The majority of the waste at data centres is derived from unpacking servers and equipment in the unpacking and staging rooms adjacent to the loading dock. Waste generation from the process of unpacking and installing servers is determined by the rate and quantity of servers being installed. This fluctuates day to day, week to week and month to month. The bin systems proposed have the capacity to accommodate higher waste generation through increasing the collection frequencies on an as-needs basis.

### 2.2.3 Number of bin stores required

Four bin stores are required to service the individual buildings separately:

- i) Building A – NEXTDC Office and Data Hall (Bin store 1) (refer section 2.2.4)
- ii) Building A – External operated food and beverage tenancy (Bin store 2) (refer section 2.2.5)
- iii) Building A – External operated retail tenancies (Bin store 3) (refer section 2.2.6)
- iv) Building B - NEXTDC Data Hall (Bin store 4) (refer section 2.2.7)

Space and bin allowances for additional recycling systems are included in this Waste Management Plan in order to futureproof the building and increase resource recovery as opportunities arise, aligning with the NSW Waste and Sustainable Materials Strategy 2041.

The number of bins to be stored in the bin stores are set out in Table 4 to Table 7 below.

## 2.2.4 Number of bins required – Building A – NEXTDC bin store

The total number of bins to be stored in the Building A bin store are set out in Table 4.

**Table 4: Number of bins to be stored in the Building A – NEXTDC bin store 1**

Waste stream	Bin size (L)	Number of bins	Collection frequency
General waste (excluding food waste)	660	8	Weekly
Commingled recycling	660	2	Weekly
Cardboard recycling	660	3	Weekly
CDS recycling	240	1	As required
Soft plastics recycling (plastic pallet wrapping film)	660	1	As required
Organic waste (food)	120	2	Weekly
Expanded Polyethylene	660	1	As required
Electronic waste (e-waste)	660	1	As required
<b>Bulk general waste Including timber/metal</b>	Space has been provided for the temporary storage of separated bulk waste streams for recycling		

## 2.2.5 Number of bins required – Building A – Café bin store

The number of bins to be stored in the bin store for the cafe are set out in Table 5.

**Table 5: Number of bins to be stored in the Building A cafe bin store**

Waste stream	Bin size (L)	Number of bins	Collection frequency
General waste (excluding food waste)	240	5	2 x weekly
Commingled recycling	240	2	Weekly
Cardboard recycling	660	1	Weekly
CDS recycling	240	2	As required
Soft plastics recycling (plastic pallet wrapping film)	240	1	As required
Organic waste (food)	120	7	2 x weekly
<b>Bulky waste and <i>ad hoc</i> recyclables and reusable items</b>	Space has been provided for the temporary storage of bulky waste and returnable items provided by suppliers		

## 2.2.6 Number of bins required – Building A – Retail bin store

The number of bins to be stored in the retail bin store are set out in Table 6.

**Table 6: Number of bins to be stored in the Building A retail bin store**

Waste stream	Bin size (L)	Number of bins	Collection frequency
General waste (excluding food waste)	240	2	Weekly
Commingled recycling	240	1	Fortnightly
Cardboard recycling	660	1	Monthly or as required
Soft plastics recycling (plastic pallet wrapping film)	240	1	As required
Bulky waste and <i>ad hoc</i> recyclables and reusable items	Space has been provided for the temporary storage of bulky waste and returnable items provided by suppliers		

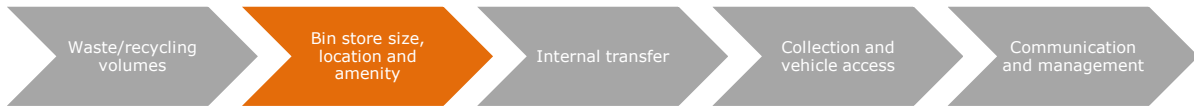
## 2.2.7 Number of bins required – Building B – NEXTDC bin store

The total number of bins to be stored in the Building B bin store are set out in Table 7.

**Table 7: Number of bins to be stored in the Building B bin store 4**

Waste stream	Bin size (L)	Number of bins	Collection frequency
General waste (excluding food waste)	660	2	Weekly
Commingled recycling	660	1	Weekly
Cardboard recycling	660	2	Weekly
CDS recycling	240	1	As required
Soft plastics recycling (plastic pallet wrapping film)	660	1	As required
Organic waste (food)	120	1	Weekly
Expanded Polyethylene	660	1	As required
Electronic waste (e-waste)	660	1	As required
Bulk general waste Including timber/metal	Space has been provided for the temporary storage of separated bulk waste streams for recycling		

### 3 Bin store size, location and amenity

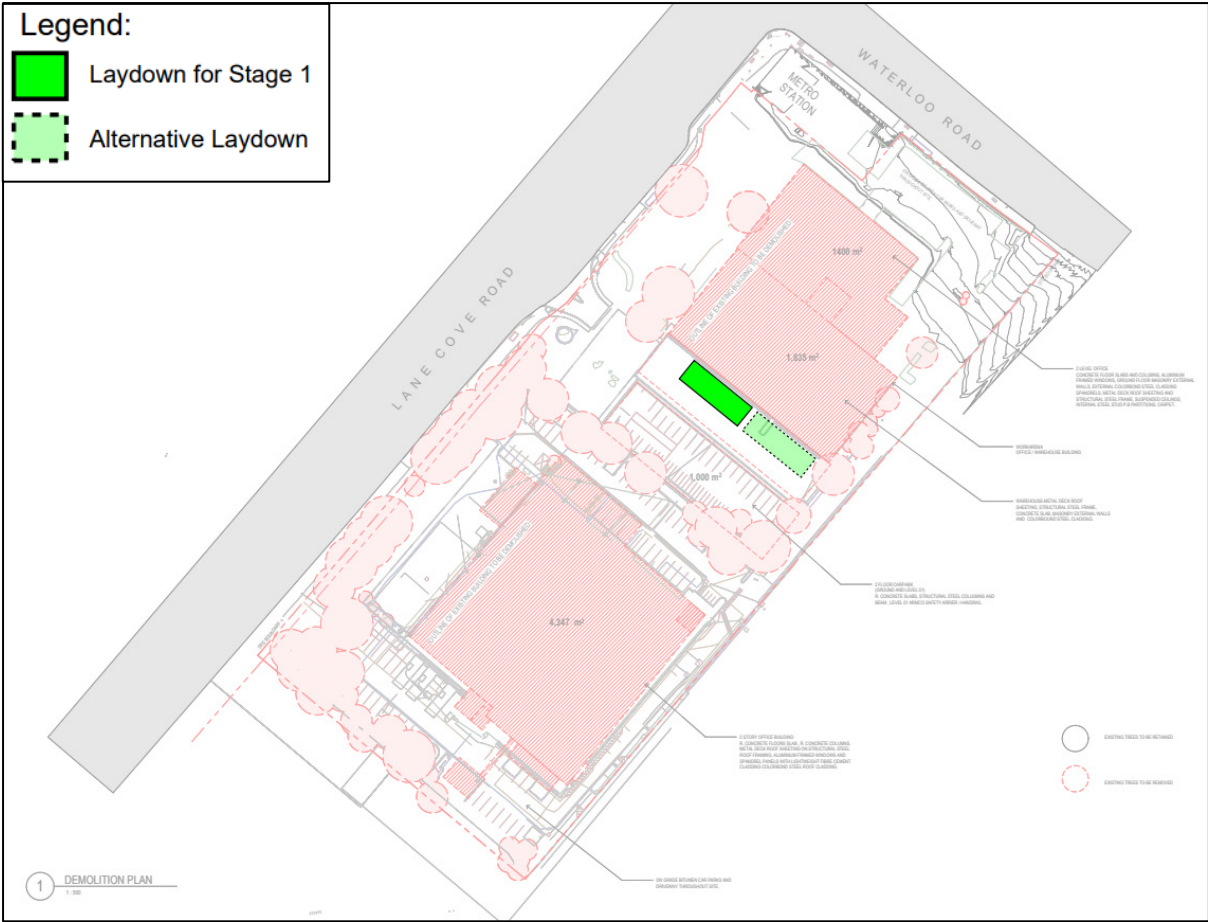


#### 3.1 Demolition and construction waste and recycling

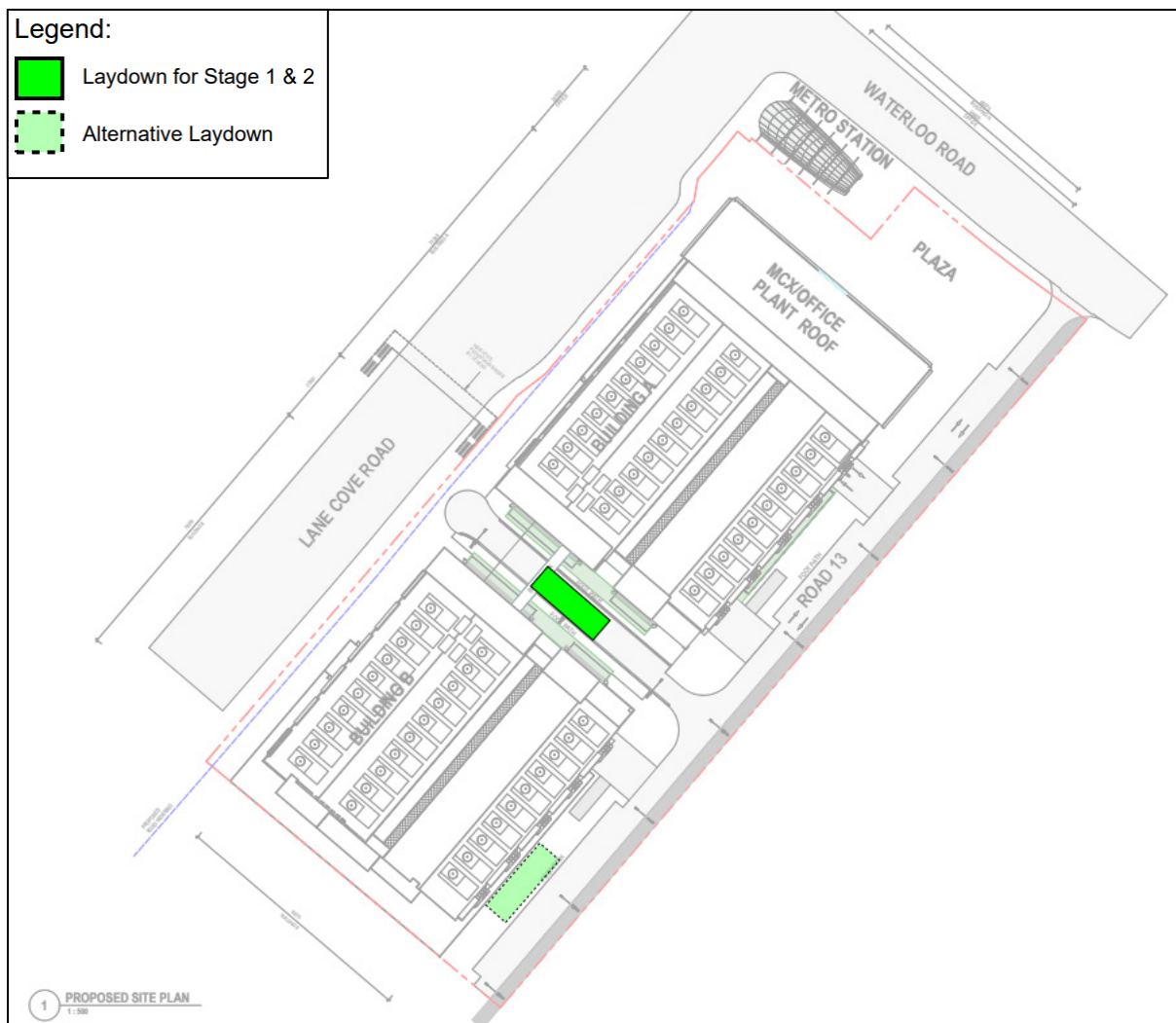
Bins, skips and other site receptacles and storage areas will be planned and located around the site according to the demolition and construction stage and the material types and quantities being generated. Waste storage areas will be located at the development site as required as shown in Figure 3 for the demolition stage and Figure 4 for the construction stages.

Areas designated for waste, in accordance with good practice waste management, will:

- Allow unimpeded access by site personnel and waste disposal contractors
- Take into account environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow sufficient space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety and accessibility in their selection
- Not present hazards to human health or the environment



**Figure 3: Site plan showing waste laydown areas for the demolition stages**



**Figure 4: Site plan showing waste laydown areas for the construction stages**

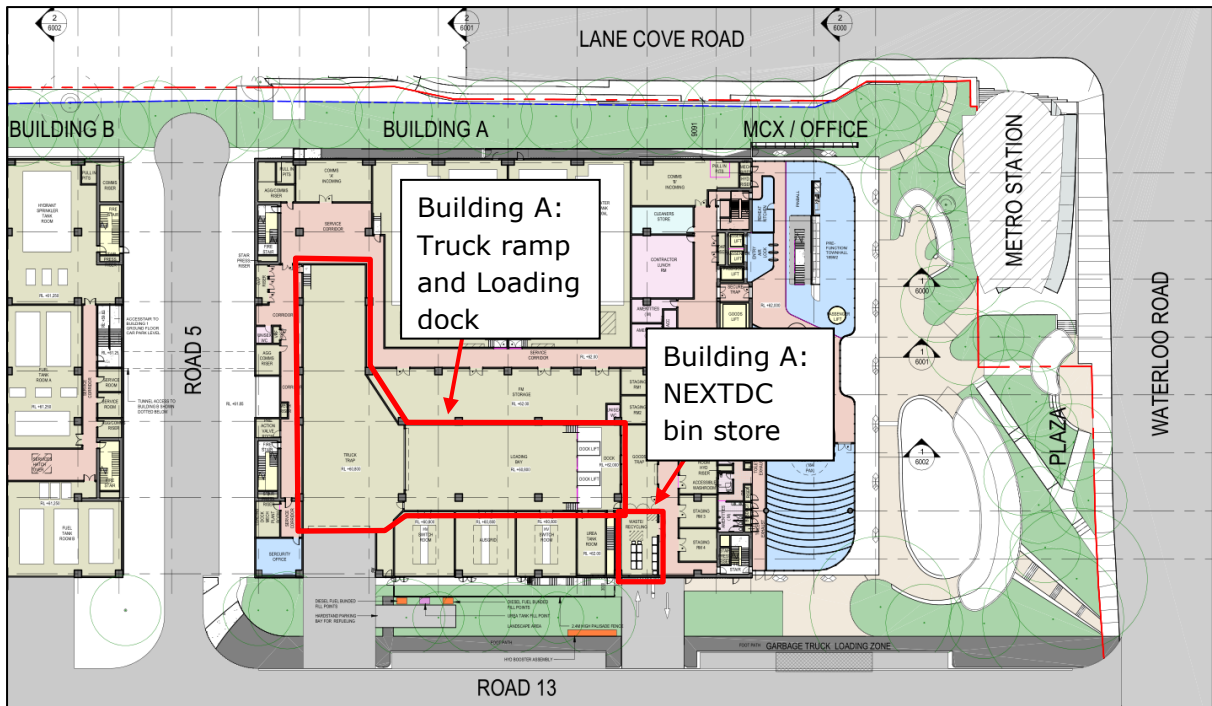
## 3.2 Operational waste and recycling

### 3.2.1 Bin store locations

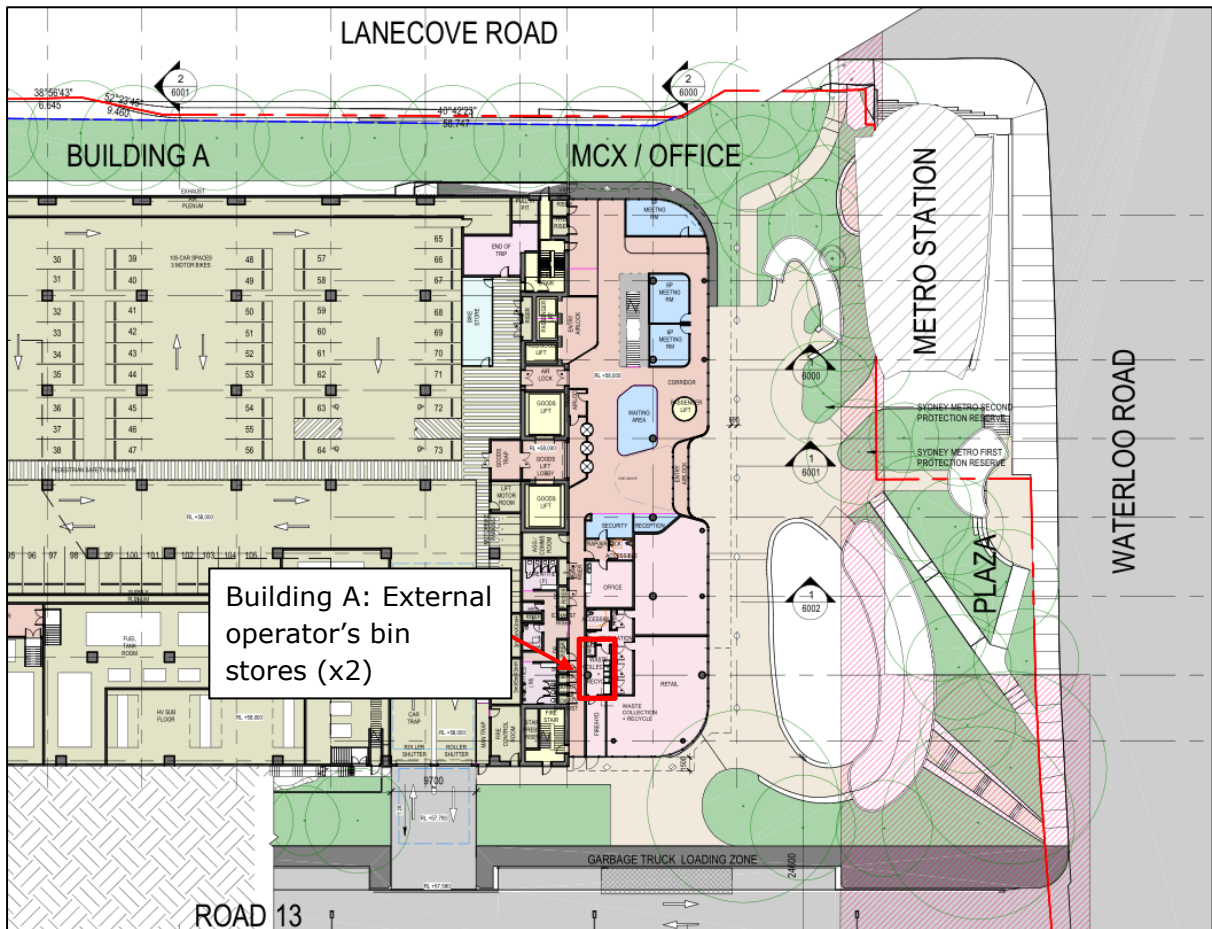
The location of the four (4) bin stores that will service the two buildings are shown in Figure 5, Figure 6 and Figure 7.

There is a bin store in each building (A and B) which is located adjacent to the loading bay and allows easy internal access for facility staff from the lifts, the main staging and waste generating areas, as well as the waste service providers collecting waste from the bin stores. The layouts of these bin stores are shown in Figure 8 and Figure 10.

The café and retail bin stores within Building A are situated next to the collection point, which facilitates convenient internal access for café and retail staff and waste service providers collecting waste. The bin stores are segregated to accommodate external operators while restricting access to the secured data centre. The layout of these two bin stores are shown in Figure 9.

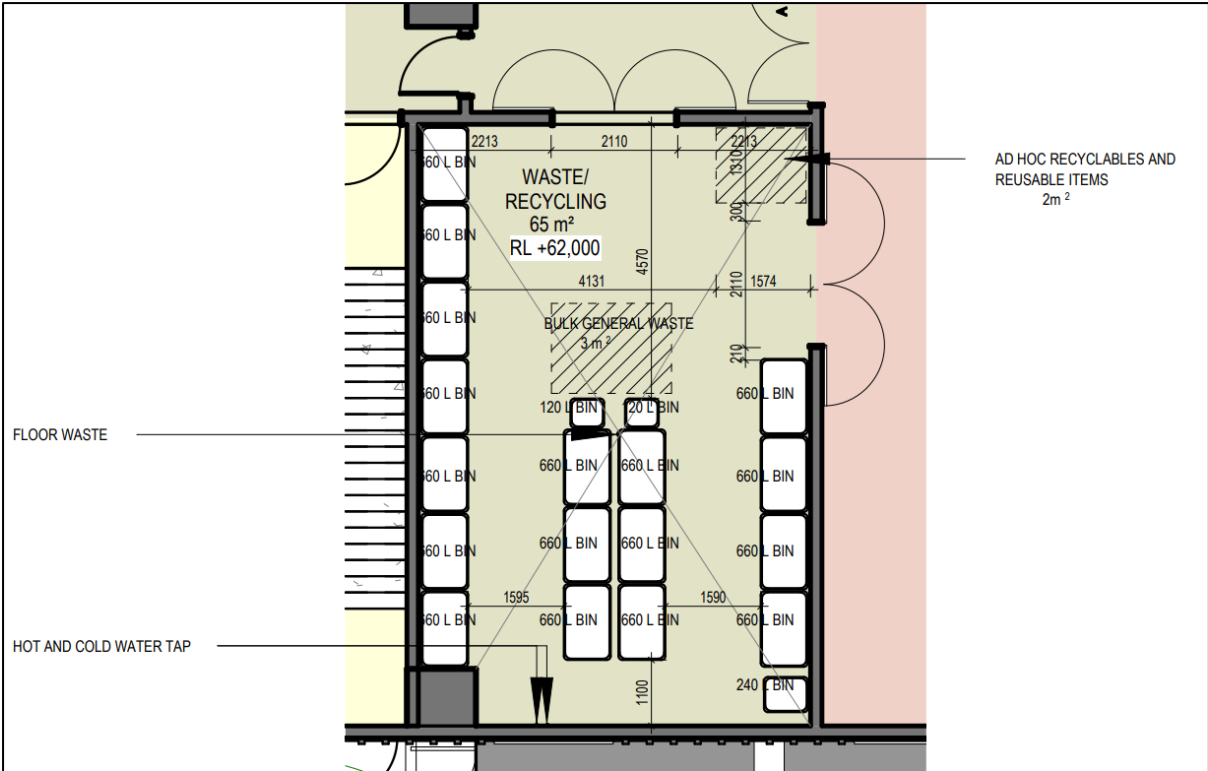


**Figure 5: Building A Level 1 floor plan showing the NEXTDC bin store location and loading dock**

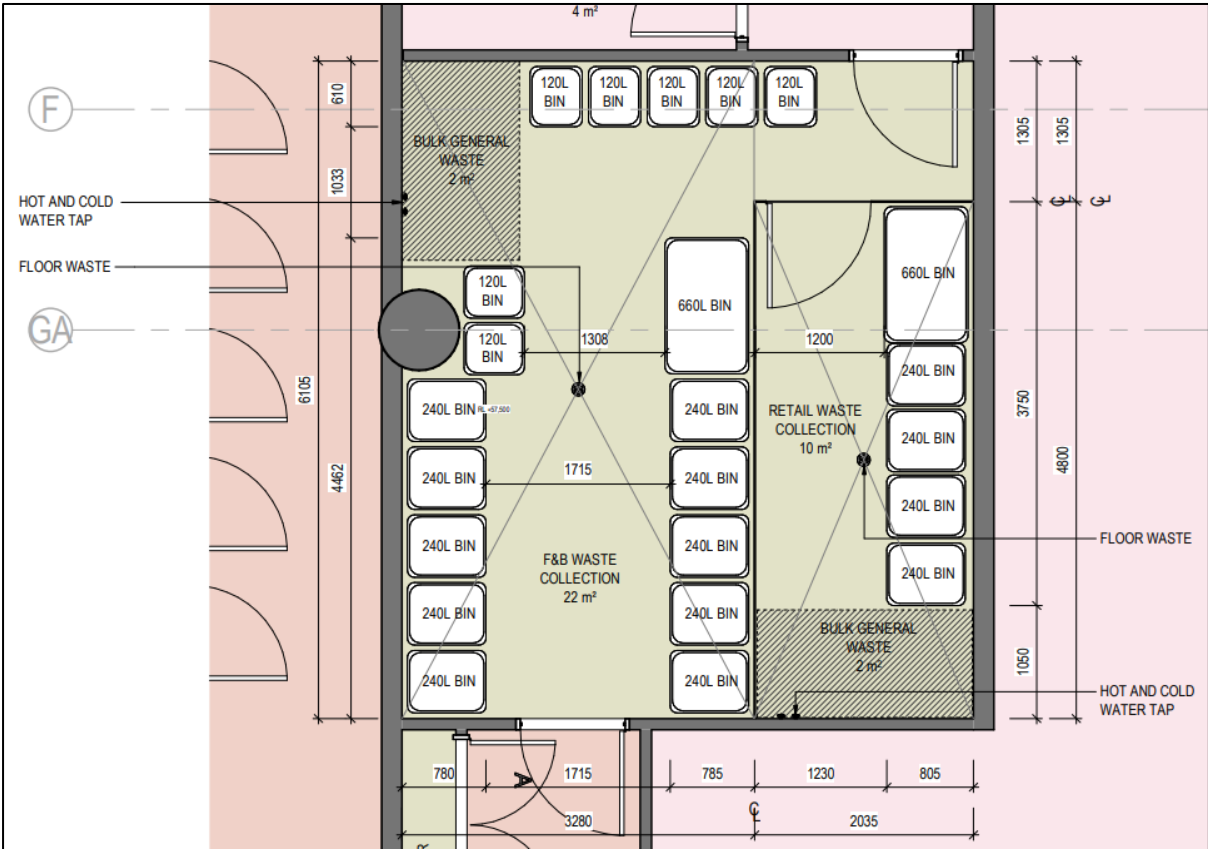


**Figure 6: Building A Ground floor plan showing the external operators bin stores location**

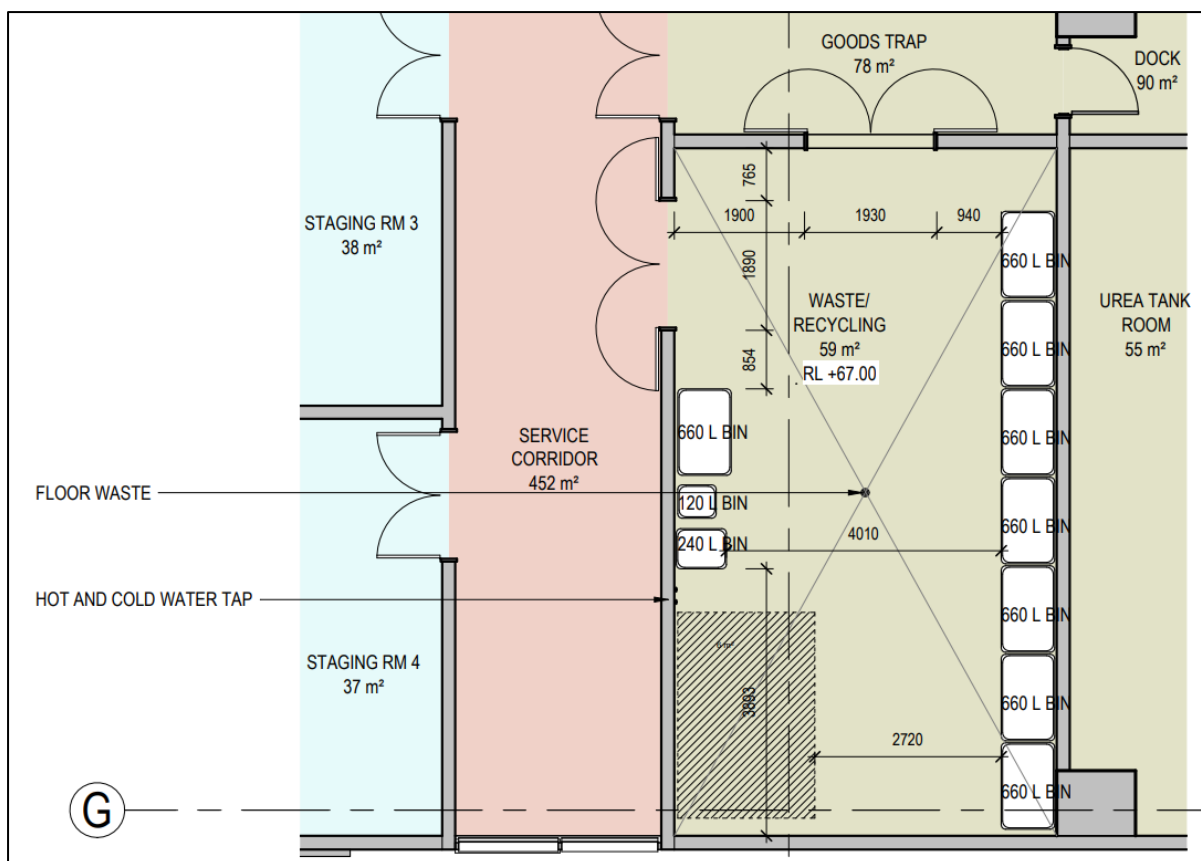




**Figure 8: Building A NEXTRC bin store layout**



**Figure 9: Building A Retail and Cafe bin store layouts**



**Figure 10: Building B NEXTDC bin store layout**

### 3.2.2 Operational waste - bin store amenity

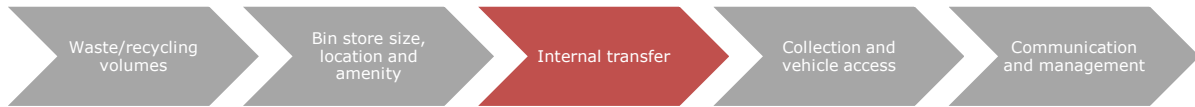
The bin stores have been designed to include the requirements as shown in Table 8.

**Table 8: Bin store amenity requirements**

Aesthetics	The bin stores are consistent with the overall aesthetics of the development.
Fully enclosed	The bin stores are fully enclosed and weatherproof, and only accessible by authorised tenants/clients, cleaners, facility management and waste service providers.
Spatial requirements	The bin stores allow sufficient space to accommodate, manoeuvre and wash the bins and equipment specified.  Bins are stored in single rows (bins will not be double stacked against the wall).  Space for personnel access is included.
Bin wash	The bin stores have impermeable walls and floors grading to an industrial floor waste (including a charged 'water-trap' connected to sewer/an approved septic system), with a hose cock to enable bins

	and/or the enclosures to be washed out. A 100 mm floor waste gully to waste outlet is included. Both hot and cold water is available.
Contingency	Additional areas within the loading bays and the temporary store rooms have been identified to accommodate additional bins resulting from missed collections (e.g. on some public holidays).
Doors	<p>Ventilated doors are specified both internally and externally.</p> <p>Self-closing doors are installed to the bin stores to eliminate access to vermin.</p> <p>Bin store door is openable from inside the bin store into the loading bay without the use of a key.</p> <p>Doors are designed be locked open for servicing and to fit the largest bin, enabling bins to be easily wheeled into and out of the bin stores.</p>
Security	Security measures are designed to limit access to the bin stores, e.g. PIN code that can be easily changed and reduces loss of key cards etc.
Walls and ceilings	Internal bin store walls are cement rendered (solid and impervious) to enable easy cleaning. Ceilings are finished with a smooth faced, non-absorbent material that can be easily cleaned. Walls and ceilings are finished or painted in a light colour.
Floors	<p>Floors are constructed in concrete in accordance with AS 2870.</p> <p>Floors are evenly graded to an approved liquid refuse disposal system.</p> <p>Slab thickness is a minimum of 100 mm, impervious and with a brush finish treatment.</p>
Ventilation and odour	<p>The design of the bin stores provide for adequate separate ventilation with a system that complies with Australian Standard 1668 (AS1668).</p> <p>The ventilation outlet is not in the vicinity of windows or intake vents associated with other ventilation systems.</p>
Lighting	<p>Bin stores are provided with artificial lighting, with sensor or switch controls both internal/external to the rooms.</p> <p>Artificial lighting in loading bays and access walkways to bin stores will ensure staff safety.</p>
Noise	Noise is minimised through considering the location of the bin stores and collection point and the timing of collections to prevent disruption to occupants or neighbours.
Signage	Visual aids and signage will be provided when the bin stores are operational to ensure that the area works as intended.

## 4 Internal transfer



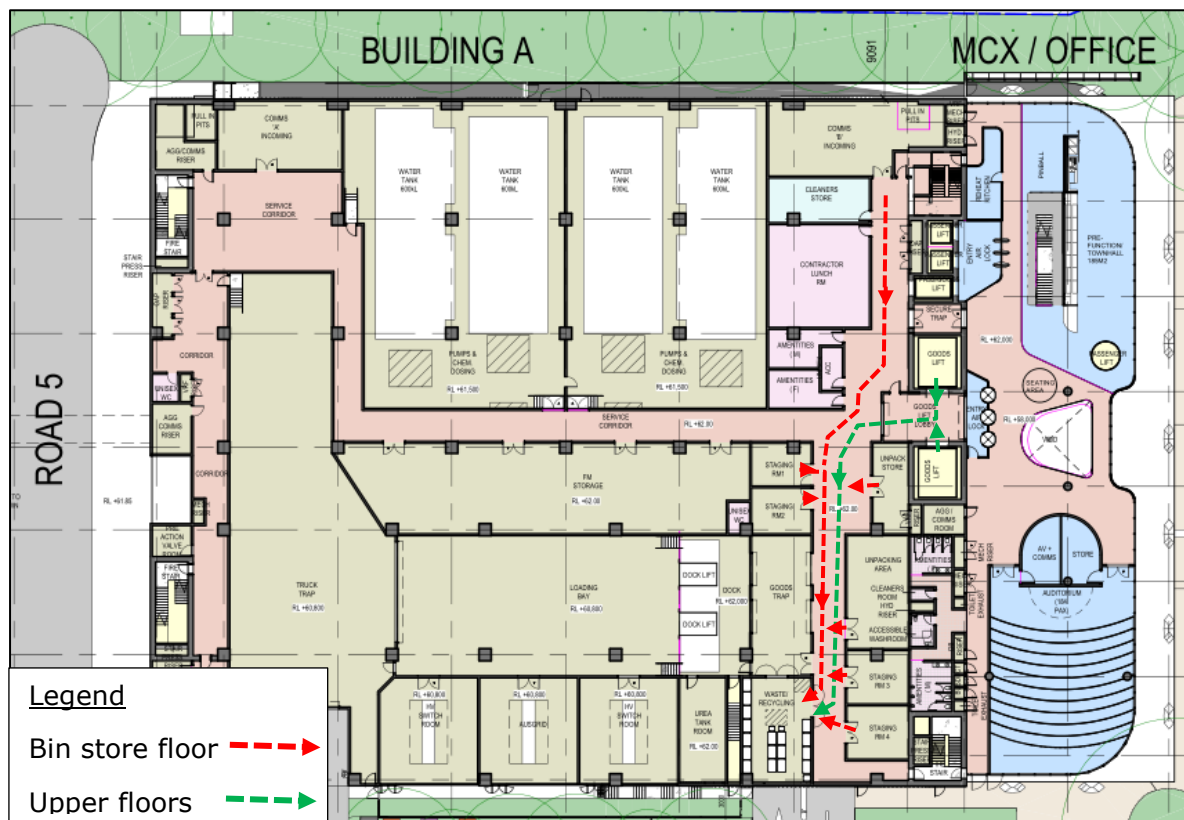
### 4.1 Transfer of waste to bin stores

The facilities management team will be responsible for transferring full internal bins from within each building to the bins in the relevant bin store via the pathways as shown in Figure 11 and Figure 12. The majority of waste and recycling generated will be with the unpacking/staging rooms which will be transferred a short distance to the bin stores within the loading dock. Waste and recycling from other levels will be transferred by the cleaners via cleaning trolleys down to the bin stores. The bins will be taken via internal service corridors and the lift (upper floors) to the bin stores and decanted or swapped out for empty bins.

Organic food waste from the internal kitchenettes will be collected in small caddies and emptied on a daily basis into a larger 120 L bin in the relevant bin store by cleaners.

The retail and café operators will be responsible for transferring full internal bins to the retail and café bin stores, respectively, as shown in Figure 13.

Clear, safe access between internal waste generating areas and the bin stores is provided.



**Figure 11: Building A – NEXTDC - Internal transfer of waste and recycling**



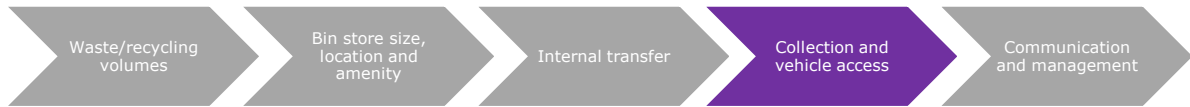
## 4.2 Bin transfer requirements

All bin transfer routes have been designed to include the following requirements in Table 9.

**Table 9: Bin transfer requirements**

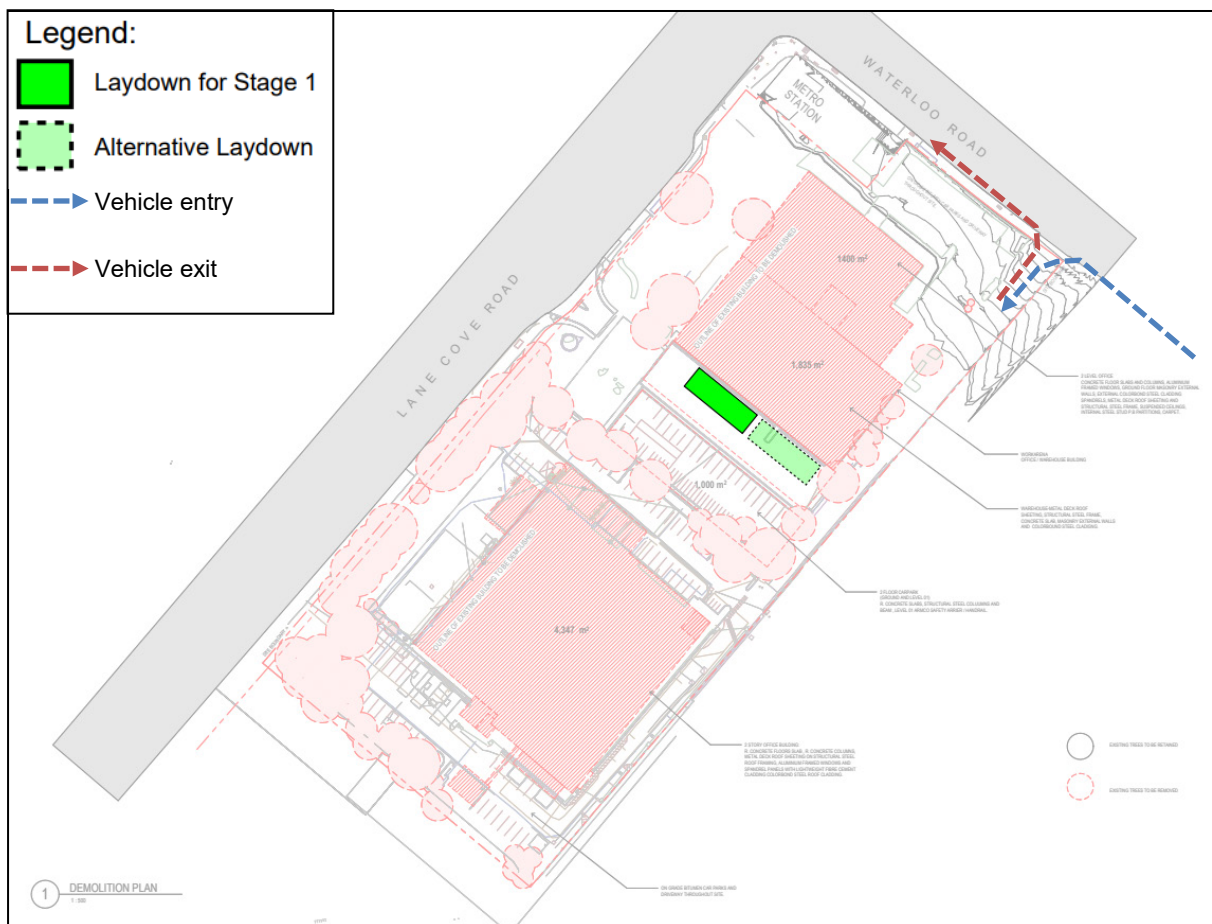
<b>Bin transfer requirements</b>	
User access route	Waste transfer routes avoid stairs/steps and steep ramps (grade of slope <1:14) and other potential hazards between points of waste generation, storage and collection.  Waste transfer routes are designed to ensure that bins (particularly when full) are not moved over any significant distances.
Manual handling	Manual handling of waste in garbage bags is excluded from the waste management systems wherever possible.
Transfer route width	All doors, corridors and lifts on the transfer route are designed to fit the largest bin.
Walkways	Safe access to waste collection vehicles have been provided to reduce the risk of accidents.

## 5 Collection and vehicle access



### 5.1 Demolition waste and recycling vehicle access

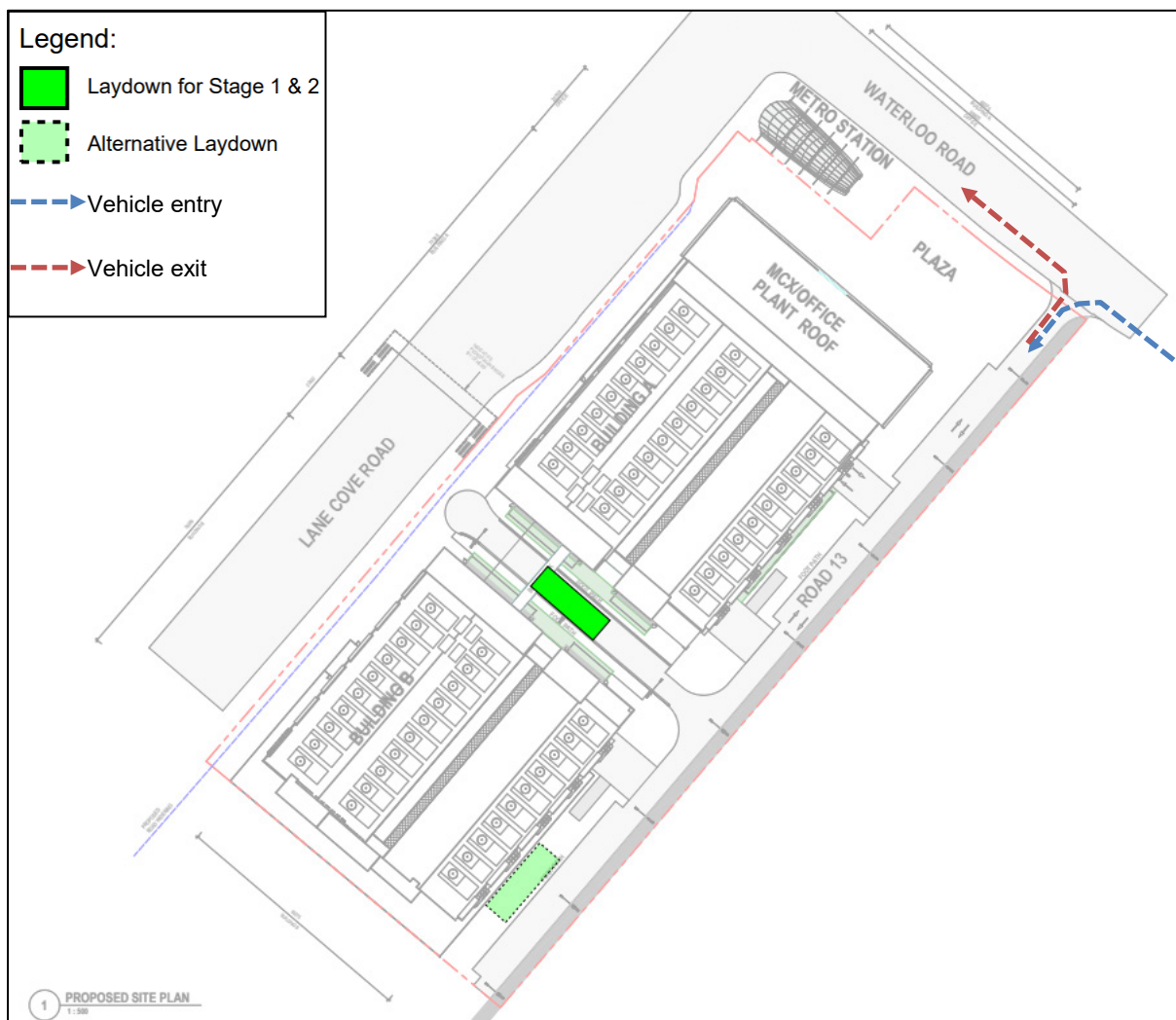
Vehicle entry and exit for the demolition stage will be off Waterloo Road, in one direction only, providing access for vehicles the size of a Heavy Rigid Vehicle (HRV). The waste storage areas throughout the demolition stage correspond with existing car parking areas as shown in Figure 14.



**Figure 14: Site plan showing vehicle access, waste storage and collection areas for the demolition stage**

## 5.2 Construction waste and recycling vehicle access

Vehicle entry and exit for the construction stage will be off Waterloo Road, in one direction only, providing access for vehicles the size of a Heavy Rigid Vehicle (HRV). The waste storage areas throughout the construction stage correspond with a new internal road between Building A and B and kerbside areas as shown in Figure 15. The swept paths for waste collection vehicles to access the site are detailed in Section 5.3.



**Figure 15: Site plan showing vehicle access, waste storage and collection areas for the construction stage**

## 5.3 Operational waste and recycling vehicle access

There will be three collection points for waste and recycling vehicles:

1. Building A: Within the building via the loading dock at street/ground level
2. Building A: Externally operated tenancies via kerbside from Road 13
3. Building B: Within the building via the loading dock at street/ground level

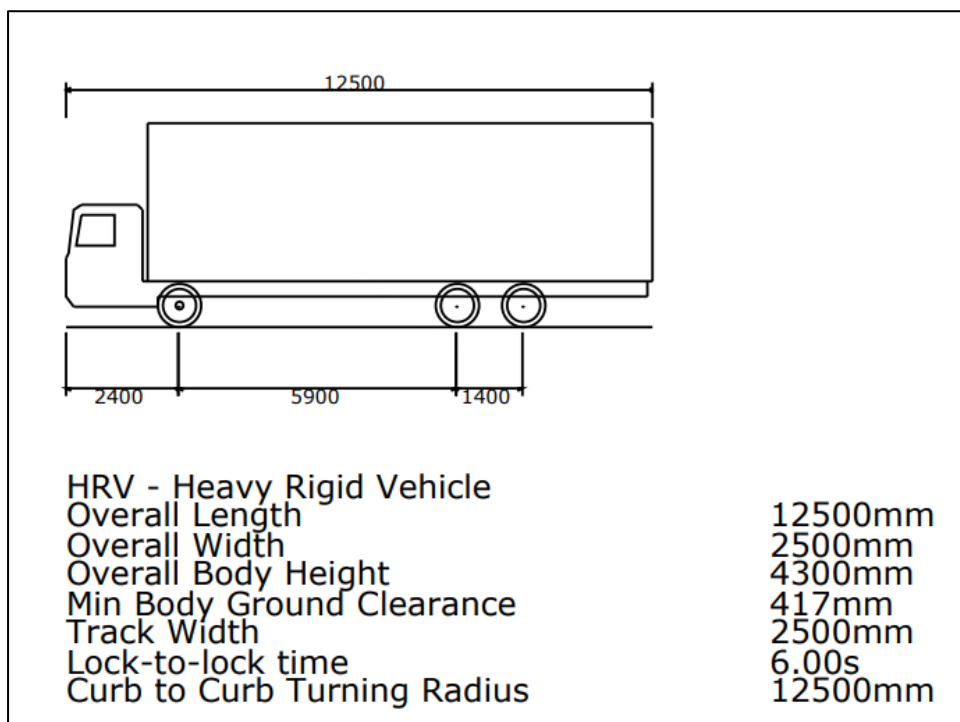
Private service providers will undertake the waste, recycling and organic waste collections at the data centres when the centre becomes operational.

Collections for a number of waste streams may be more frequent during peak periods, as and when required. The collection frequencies for several recycling streams will be on an as needs basis and will be coordinated between facilities management and the waste service provider.

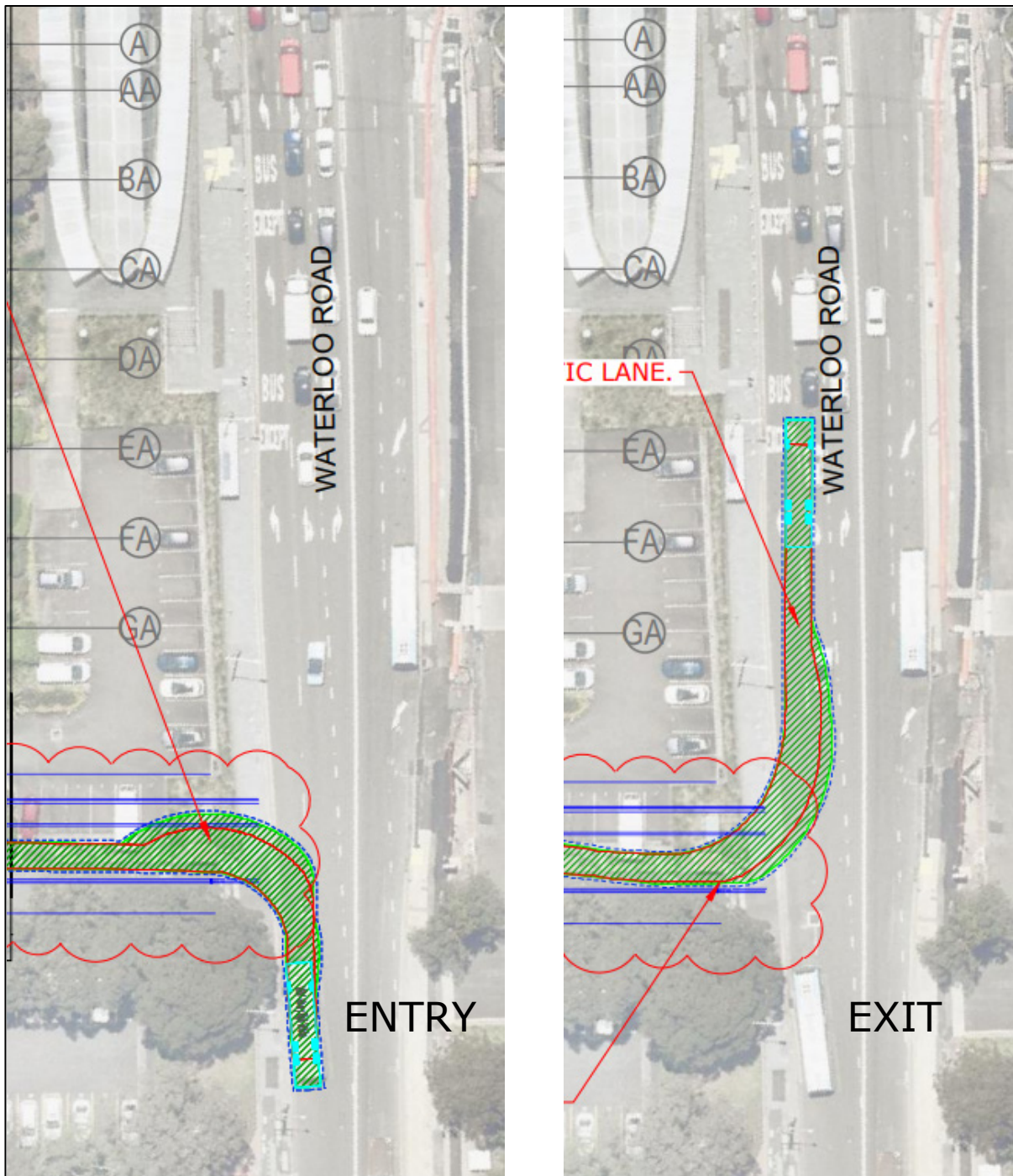
The collection point for waste and recycling vehicles to service the bins in the NEXTDC bin stores will be the loading bays. Rear-lift vehicles will enter and exit the development via Road 13 (see Figure 17) and drive to each building for servicing. The vehicles will drive in a forwards motion and reverse into each loading bay on ground level (see Figure 18, Figure 19, Figure 21 and Figure 22). The facility manager will transfer bins down to the loading dock via the dock lift for servicing and return to bin store. The vehicles will exit each loading bay in a forwards motion. Access to the site and individual buildings will be facilitated by permanent security staff.

The externally operated tenancies located on the ground floor of Building A will not have access to the NEXTDC loading bays. On collection days waste and recycling vehicles, will stop on Road 13 and service the bins from the ground level bin store via a wheel-in and wheel-out service where operatives will park in a designated loading/service bay on Road 13, as shown in Figure 20 and enter the bin store to retrieve and service the bins, then return the empty bins to the bin store.

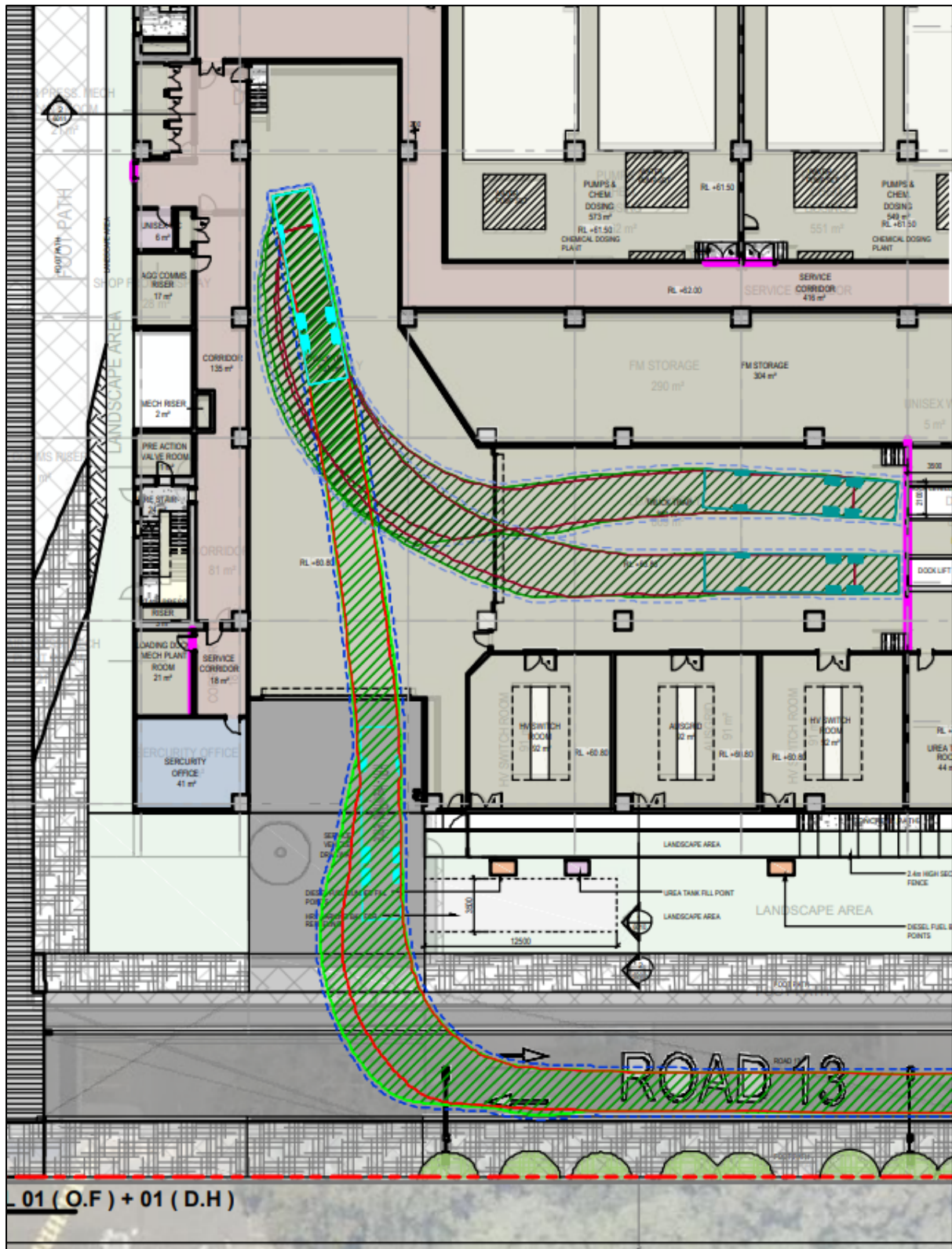
Swept path analysis for vehicle ingress and egress has been completed by The Transport Planning Partnership (TTPP) taking into consideration the specifications of a HRV as shown in Figure 16. The loading bays have a 4.5 m head clearance, with no access issues anticipated for commonly used waste service vehicles.



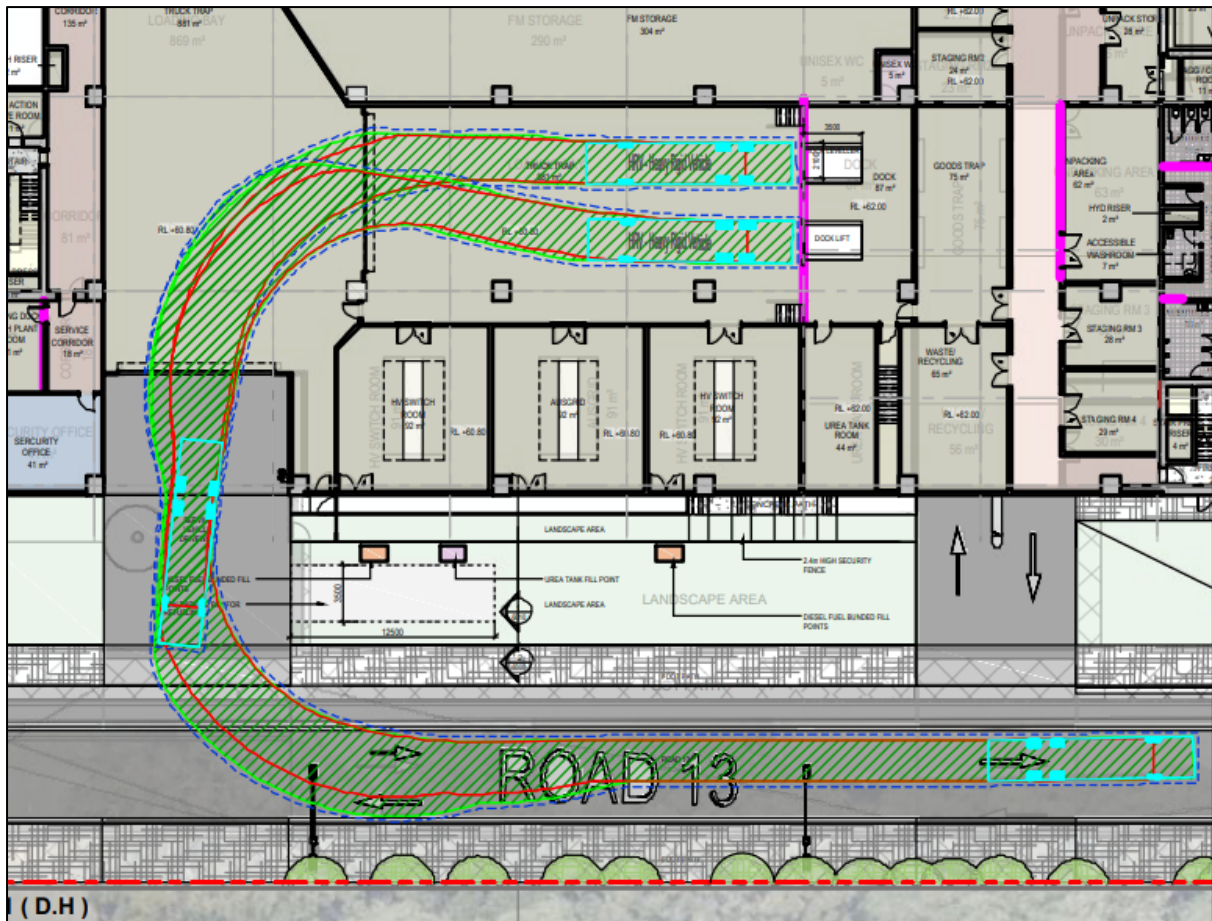
**Figure 16: HRV - Heavy rigid vehicle specifications**



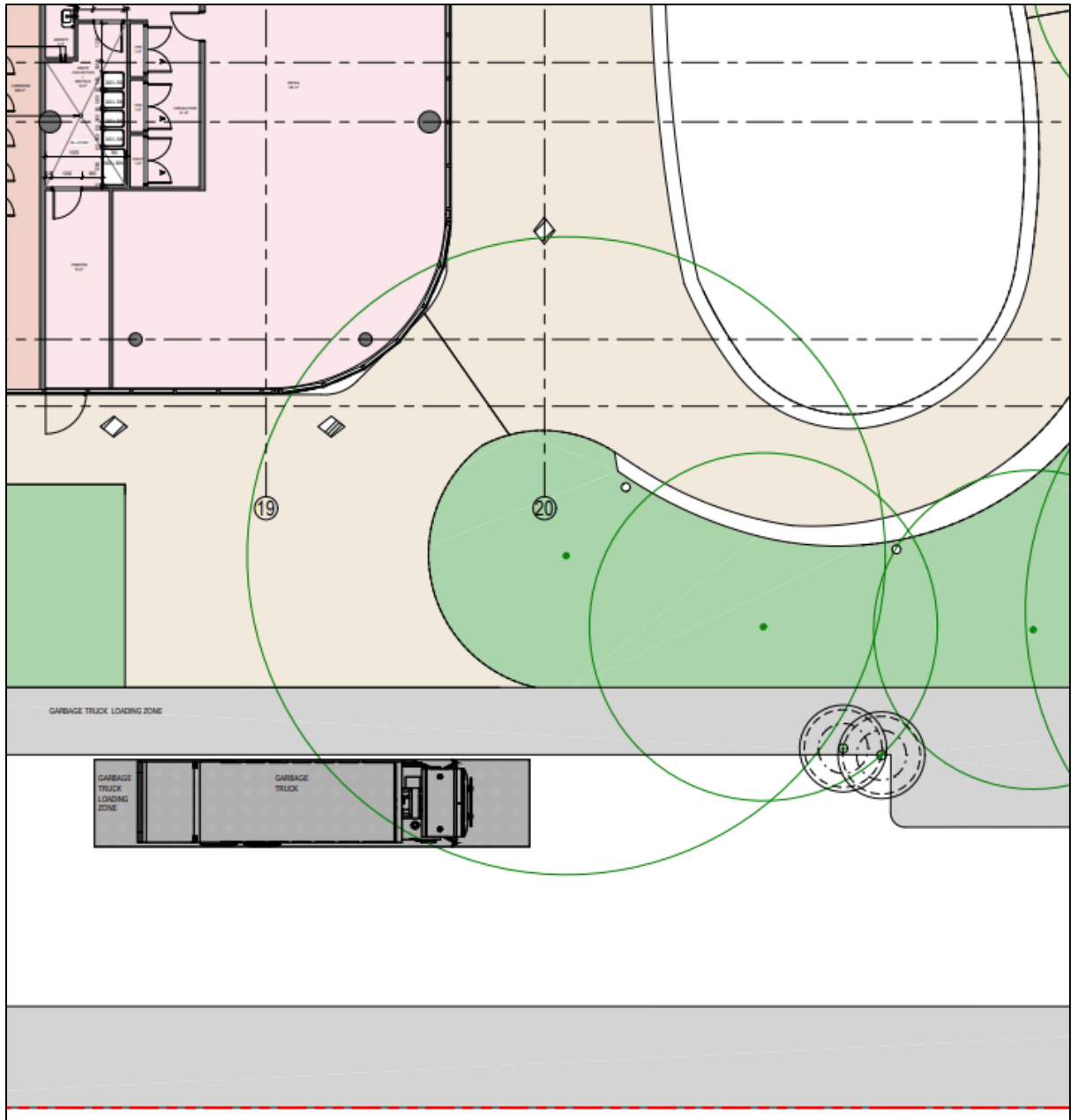
**Figure 17: Swept path analysis showing access for waste collection vehicles entry and exit of site**



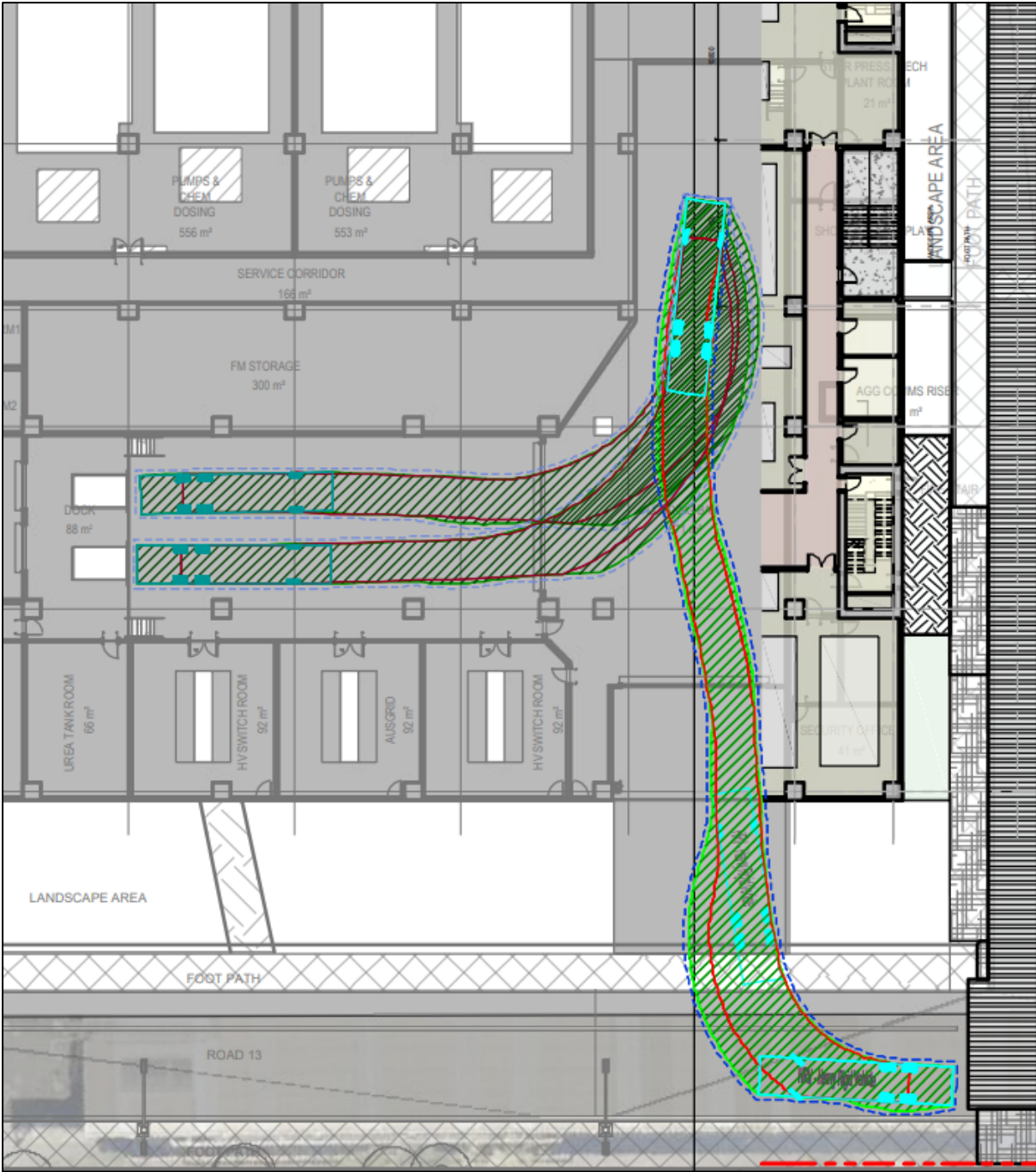
**Figure 18: Building A - Swept path analysis showing loading dock entry for waste collection vehicles**



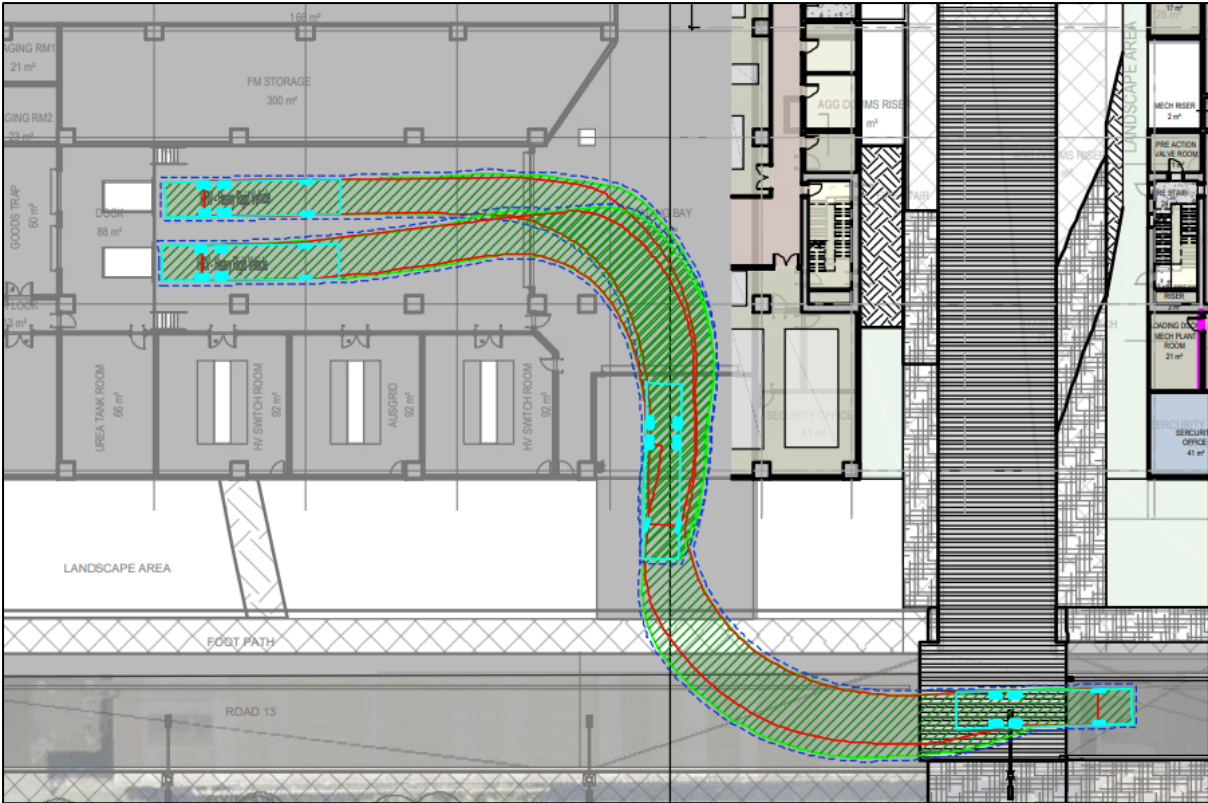
**Figure 19: Building A - Swept path analysis showing loading dock exit for waste collection vehicles**



**Figure 20: Building A retail and café servicing location for waste collection vehicles**

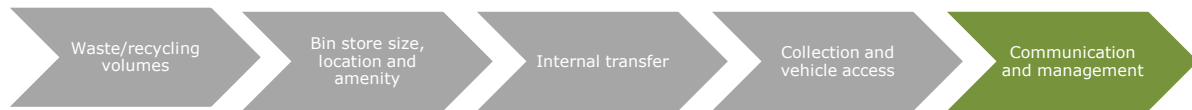


**Figure 21: Building B - Swept path analysis showing loading dock entry for waste collection vehicles**



**Figure 22: Building B - Swept path analysis showing loading dock exit for waste collection vehicles**

## 6 Ongoing communication and management



### 6.1 Management of demolition and construction site waste

Multiplex will be responsible for managing the waste throughout the demolition and construction stages. They will be responsible for establishing appropriate waste storage areas, making sure waste and recycling is removed from site, and taken to an appropriate licensed processor/disposal site.

Multiplex will develop a detailed project specific construction waste management plan (CWMP) for the construction stage prior to commencement of construction. The CWMP will include:

- Set out the specific NEXTDC and NSW requirements and diversion from landfill targets that must be satisfied
- Describes the waste management responsibilities for each party (i.e. Main Contractor, Contractors, Waste Contractor and Developer). Including:
  - A requirement that all waste be delivered to an appropriately licensed facility for recovery or disposal. Waste suppliers will be selected on their ability for post-sorting materials and capabilities for diversion from landfill
  - The communication strategies that should be adopted including training and awareness of the waste management systems in line with the waste management plan.
- Provides a description and quantities of the likely material types (waste streams) to be generated during the demolition of the existing buildings and the construction of the new buildings
  - Management in line with the waste hierarchy which may include where possible, specifying materials are delivered using re-usable containers, pallets and racking from supply yards
  - How waste stream will be stored and managed onsite including:
    - Waste stream customisation for different areas of the site such as offices spaces, canteen and construction areas
    - Segregated and containment to avoid mixing and contamination
    - Labelled
    - Stored to minimise the risk of erosion, leaks, and spills
    - Isolated from overland flow paths and stormwater drains
    - Outline procedures for temporary waste storage and stockpiling
- Outlines the broad approach for waste servicing arrangements for the site
- Describes the measures to be implemented to manage, monitor, track, reuse, recycle and safely dispose of the various materials, initiatives may include:

- Waste contractors requirement to report on the quantity of waste collected and evidence provided as to end destinations (i.e. landfill, recycling facility or point of reuse) so that the resource recovery rate can be determined
- A review of the waste-to-destination by the lead contractor or builder

## **6.2 Management of operational data centre waste**

The Facilities Manager will be responsible for overseeing the waste management systems. The Facilities Manager will be trained and informed about their responsibility to work closely with the private service providers regarding the schedule for collection and presentation of bins in the bin stores. The Facilities Manager will be responsible for maintaining the bin stores in a clean and tidy condition at all times and ensuring bins are washed regularly.

All relevant staff and clients will be made aware through a building users guide (or equivalent) of the waste and recycling systems and how they should be used. An Operational Waste Management Plan (OWMP) suitable for presenting to building users will be developed and implemented and will include information relevant to both the initial occupation and ongoing management of the building and also the strategy for communicating the plan to relevant staff and stakeholders. This document will include waste objectives/targets, behaviour change principles, monitoring and evaluation so as to align with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041.

Specifically the OWMP will:

- Include clear objectives and expectations such as a recovery, recycling and waste diversion targets based on the aim to divert at least 90 percent of operational waste
- Identify the site boundary, the waste streams relevant to the development, and the individual roles responsible for implementing the OWMP
- Summarise the approach for handling waste, recycling and food organics from point of generation to storage and ultimately collection including safe vehicle access and loading point
- Include provisions for the adequate storage and collection of waste, as detailed in section 3.2, to minimise onsite storage to avoid potential issues associated with odour, visual amenity, and attracting vermin and pests
- Set diversion from landfill targets and/or targets for reducing total materials generation (general waste materials and recyclable/reusable materials), as well as monitoring and measurement procedures for waste and recycling streams by weight
- Outline methods for encouraging the separation of waste streams, such as bins, storage areas, or recycling facilities in public areas as required
- Include provision for source separation systems for recyclable materials, as detailed in sections 2.2 and 3.2
- Identify clear roles and responsibilities for managing waste from point of generation to transfer and ultimately removal from the building including provision and analysis of relevant data for recording and reporting performance against targets

- Detail staff and client awareness, educational programs, inductions and training on on-site waste management practices
- Identify storage areas for all waste streams and summarise best practice safety and access requirements for their collection
- Identify safe methods of vehicle access and transfer of waste
- Ensure that materials removed from the data centre will be directed to a licensed resource recovery, recycling, or waste management facility for recovery or disposal
- Incorporate an audit, monitoring and review process to assess the success of the OWMP and make improvements, based on operational experience, reviewing performance and identifying any additional materials that could be recovered.

## 7 Appendix A: Glossary of terms and acronyms

Bulky waste storage	An area designed to store any unwanted bulky waste items from residential, retail, commercial or industrial developments.
Collection point	The permitted area on a footpath, roadway or private property (where applicable) that waste, recyclables and bulky waste are loaded into collection vehicles.
Commingled recycling	Common recyclables, mostly packaging; such as glass, plastics, aluminium, steel, liquid paper board (milk cartons). Commingled recycling may include paper but often, and particularly in offices, paper and cardboard are collected separately.
Container Deposit Scheme (CDS)	Where 'eligible containers' (usually for soft and alcoholic drinks) have a 10 cent deposit which can be refunded when the container is redeemed at a refund facility.
Demolition and construction waste	Materials excavated from or on the site, such as: <ul style="list-style-type: none"> <li>• rock and soil</li> <li>• waste asphalt, bricks, concrete, plasterboard, timber and</li> <li>• vegetation</li> <li>• asbestos containing material, hazardous materials and</li> <li>• contaminated soil.</li> </ul>
E-waste	Discarded electronic appliances such as mobile phones, computers, and televisions.
Food organics	Waste food in commercial kitchen/food service settings, generated from preparation (peelings etc.), storage (out of date) or service (leftovers) that can be separated from the general waste stream for a more beneficial use.
General waste	Material that is intended for disposal to landfill (or in some States, incineration), normally what remains after the recyclables have been collected separately.
Organic waste	Waste derived from material that was once living (excluding petroleum-based materials).
Recyclable	Material that can be collected separately from the general waste and sent for recycling. The precise definition will vary, depending upon location (i.e. systems exist for the recycling of some materials in some areas and not in others).
Recycling	Where a material or product undergoes a form of processing to produce a feedstock suitable for the manufacture of new products.
Reuse	Replacing a 'disposable' or single-use item with one which can be used again (without needing to be processed or dismantled – i.e. 'recycled') e.g. using a washable ceramic coffee mug or travel cup in place of disposable cups.