

10th August 2020

RE: 625 Hunter Street Newcastle West – Waste Management

1 Introduction

This report has been prepared by MRA Consulting Group (MRA) on behalf of 11 Church Street Pty Ltd to accompany the existing Waste Management Plan (WMP) prepared for the proposed mixed-use residential and commercial development at 625 Hunter Street, Newcastle West. This response addresses comments provided by the Newcastle City Council (Council) in relation to the site Waste Minimisation and Management.

Advice presented in this response is used to inform the building design, deliver best practice waste management for the site and promote sustainable outcomes. This report relies on the following reference documents:

- *Newcastle Local Environmental Plan (NLEP) 2012; and*
- *Newcastle Development Control Plan (NDCP) 2012.*

Consideration has also been given to the following supplementary documents in the preparation of this WMP:

- *Better Practice Guidelines for Resource Recovery in Residential Developments (NSW EPA, 2019).*

This report forms part of the mixed-use development documentation and assumes:

- Drawings and information that have been used in waste management planning are the current design set for the development plan from the project architect, BKA Architecture (7th August, 2020);
- Expected waste generation volumes for the site are based waste generation rates outlined in the NDCP and NSW EPA *Better practice guidelines* in relation to proposed residential and commercial uses. Waste management equipment and infrastructure recommendations have been made according to estimated waste generation and NDCP waste guideline requirements; and
- The WMP and supplementary references are living documents and therefore, waste management equipment and systems described in this report are subject to change based on future operations and available technology.

2 Ongoing Waste Management

2.1 Overview

Ongoing waste management requirements for the site will result from the daily operation of a café and 38 residential units. Waste management strategies related to site operations have been established according to the Newcastle Development Control Plan 2012 and NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019).

Waste generation for the operational phase of the development will be addressed in applying waste generation rates outlined in Section 2.3.1 for the cafe and Section 2.2.1 for residential units. Waste storage and recycling areas (WSRA) were determined with reference to waste generation rates and have been addressed separately in Section 2.4.

All waste storage and management areas at the site are to be located in the designated waste room on the basement level, to minimise potential impacts on active street frontages and site users.

The following space calculations are based off the bin dimensions sourced from the *Better Practice Guide* (Table 1).

Table 1: Dimensions and footprint of different capacity MGBs

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m ²)
120	940	560	485	0.27
240	1,080	735	580	0.43
660	1,250	850	1,370	1.16
1,100	1,470	1,245	1,370	1.71

Source: *Better practice guide for resource recovery in residential developments* (2019).

2.2 Residential Apartments

2.2.1 Waste Generation

The Better Practice Guide (2019) outlines estimated domestic and recycling rates per week for residential apartments of 1 bedroom or studio, at the following rates:

- General Waste: 80L per unit per week;
- Recycling: 80L per unit per week; and
- Organics: 25L per unit per week.

The development includes 12 mezzanine studios and 26 studio apartments, for a total of 38 units. Therefore, the following waste will be generated per week:

Table 2: Residential waste generation

Waste Stream	Per Week (L)
General Waste	3,040
Co-mingled Recycling	3,040
Organics	950

2.2.2 Temporary Waste Storage

Each dwelling must have sufficient space provisioned for the storage of two days' waste generated. This includes separate receptacles for general waste, paper and cardboard, and commingled recycling.

Bagged general waste, commingled recycling and paper and cardboard recycling will be carried down to basement level garbage room by residents and disposed of to the specific bins. A paper/cardboard recycling-only MGBs might be provided to separate recycling waste.

2.3 Cafe Waste Management

2.3.1 Waste Generation

The Section 7.08 Waste Management on the *Newcastle DCP* does not specify a typical volume of waste for mixed use developments. The *Better Practice Guide* (2019) outlines the following waste generation rates and will be applied in this instance:

- General Waste: 100L per 100m² floor space per day; and
- Recycling: 120L per 100m² floor space per day.

The *Better Practice Guide* does not provide a figure for paper and cardboard generation; however, it is expected to compose up to 50% of recycling waste generated at the restaurant. The *Guide* also does not specify an expected figure for food organic waste – a rate of 35% food waste in general waste was identified in the 2010 National Waste Report and will be applied in this instance.

The retail onsite is proposed to occupy a floor space of approximately 100m². Therefore, the following waste will be generated as a result of typical restaurant activity (operating 7 days per week):

Table 3: Retail waste generation

Waste Stream	Per Day (L)	Per Week (L)
General Waste (Food Waste)	100	700 (245)
Co-mingled Recycling (Paper and Cardboard)	120	840 (420)

2.3.2 Temporary Waste Storage

A minimum of one-days' storage space should be available for the temporary storage of waste and recycling generated by the proposed café. To increase source separation, several types of bins should be provided. At minimum, general waste, food waste, commingled recycling, and paper and cardboard recycling bins are to be provided.

Retail staff or cleaners are to transfer the waste from under bench bin storage to the café waste room on the basement level, at minimum once per day.

2.4 Waste Storage and Recycling Areas

The basement level waste storage and recycling area (WSRA) includes a café waste room of 8.5m² and a residential waste room of 28.5m². They are allocated adjacent to the lift with an accessible route to Hunter Street. The waste management and storage areas proposed for the site fulfil waste management requirements, facilitating safe access and manoeuvring of all bins and equipment. The site waste management areas will be enclosed and concealed from general view to maintain site amenity while also reducing the risk of windblown litter, vandalism and illegal dumping.

2.4.1 Residential WSRA

The following equipment will be retained in the residential site WSRA:

Table 4: Residential Waste Room Space Requirements

Equipment	Quantity	Footprint (m ²) (includes space to manoeuvre)	Total minimum area with handling space
General Waste Bin (1,100L)	3	7.7m ²	26.5m ²
Co-mingled Recycling (1,100L)	3	7.7m ²	
Green Bins (240)*	8*	5.2m ²	
Bulky Waste Storage Area	-	6m ²	

**Personal garden space is limited for residents of the proposed development and therefore, garden waste is unlikely to be generated in large quantities which will require less bins to be retained at the site. Alternatively, building management may elect to engage a separate food and garden waste collection service for residents if this is determine to be a viable option.*

A private waste service provider (WSP) or the council contracted WSP will serve this development, and the following collection schedule is recommended:

- General Waste collection once per week;
- Commingled Recycling collection once per week; and
- Green waste collection once fortnightly.

Bulky Waste

The section 7.08.03 Operational waste for residential development on the *Newcastle* DCP outlines that multi-storey developments that include 10 or more dwellings, a dedicated room or caged area is provided for the temporary storage of discarded bulky items which are awaiting removal. The storage area is readily accessible to all residents and must be located close to the main waste storage room or area. The amount of minimum space is not specified, however an area of approximately 6m² will be sufficient for this purpose.

Bulky waste should be collected on a regular schedule so that the storage area does not become overfull and residents know when to place items there for collection. Councils may arrange for a more frequent collection of bulky waste from RFBs than is provided from other residences. Alternatively, tenants or

building managers may need to make arrangements for extra collections and dispose of bulky waste outside the council-provided collections themselves.

2.4.2 Retail WSRA

The 660L and 1,100L bin sizes have been selected as the most appropriate application for the proposed development due to space availability, manoeuvring requirements and waste generation rates. The following equipment will be retained in the site WSRA (see Table 5):

Table 5: Retail Waste Room Space Requirements

Equipment	Quantity	Footprint (m ²) (includes space to manoeuvre)	Total minimum area with handling space
General Waste Bin (660L)	1	1.7m ²	4.3m ²
Co-mingled Recycling (1,100L)	1	2.6m ²	

A private waste contractor will service this development, and the following collection schedule is recommended:

- General Waste collection once per week; and
- Commingled Recycling collection once per week.

Building management can observe bin fullness levels upon full occupancy and adjust the number of collections and services accordingly.

Additional waste management services such as separate paper/cardboard or food waste collection may be suitable for implementation should these waste streams represent a high proportion of waste generated at the site. Building management will be responsible for monitoring bins and ensuring the retail waste storage arrangement suitably caters for the waste being generated by this use.

3 Waste Management Systems

3.1 Collection method and loading areas

The collection point for residential waste will be at the kerbside on Hunter Street. The site waste caretaker will be responsible for transfer of bins to the kerbside prior to collection and return of bins to the bin storage room shortly afterwards.

Table 6 outlines relevant requirements and specifications.

Table 6: Collection points and loading areas requirements and specifications

Component	Requirement	Specification
Collection point	Allow safe waste collection and loading operations	- Adequate clearance and manoeuvring space; and - Sufficient clearance for the safe handling of materials and equipment.
Vehicle manoeuvring and loading space	Truck space for adequate lift clearance, manoeuvring and operation for a contractor collection vehicle	- Collection at street level in an uncovered area does not limit collection vehicle clearances; - Adequate loading zone dimensions do not impede rear lift clearance; and - The provision of space clear of vehicle parking spaces.
Operating times	Appropriate collection times to limit noise and traffic disturbance	Collection times will be arranged to ensure minimal disturbance to residents, pedestrians and visitors.

The route between the garbage room and the kerbside collection point needs to be suitable for safe and efficient handling. The maximum distance between the site bin room and the loading zone is approximately 25m (Appendix A).

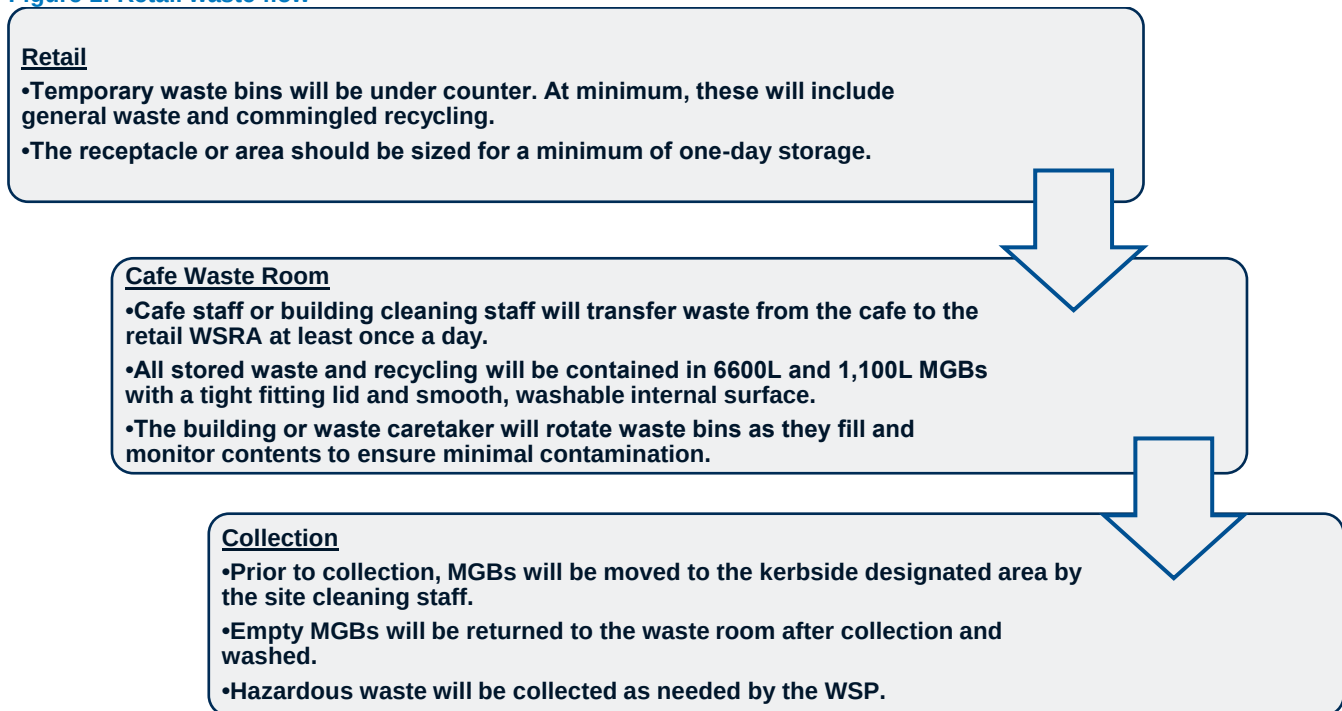
3.2 Waste Disposal and Recycling Method

3.2.1 Retail

Waste generated as a result of retail activities onsite will be temporarily stored in under counter waste storage containers. Waste is then transferred to the basement WSRA where it will remain until scheduled collection from the contracted waste service provider. The building manager will engage with commercial contractors and agree on a suitable waste servicing solution for the site, taking into account waste storage requirements and accessibility.

Figure 1 below outlines the flow of waste from Retail to collection.

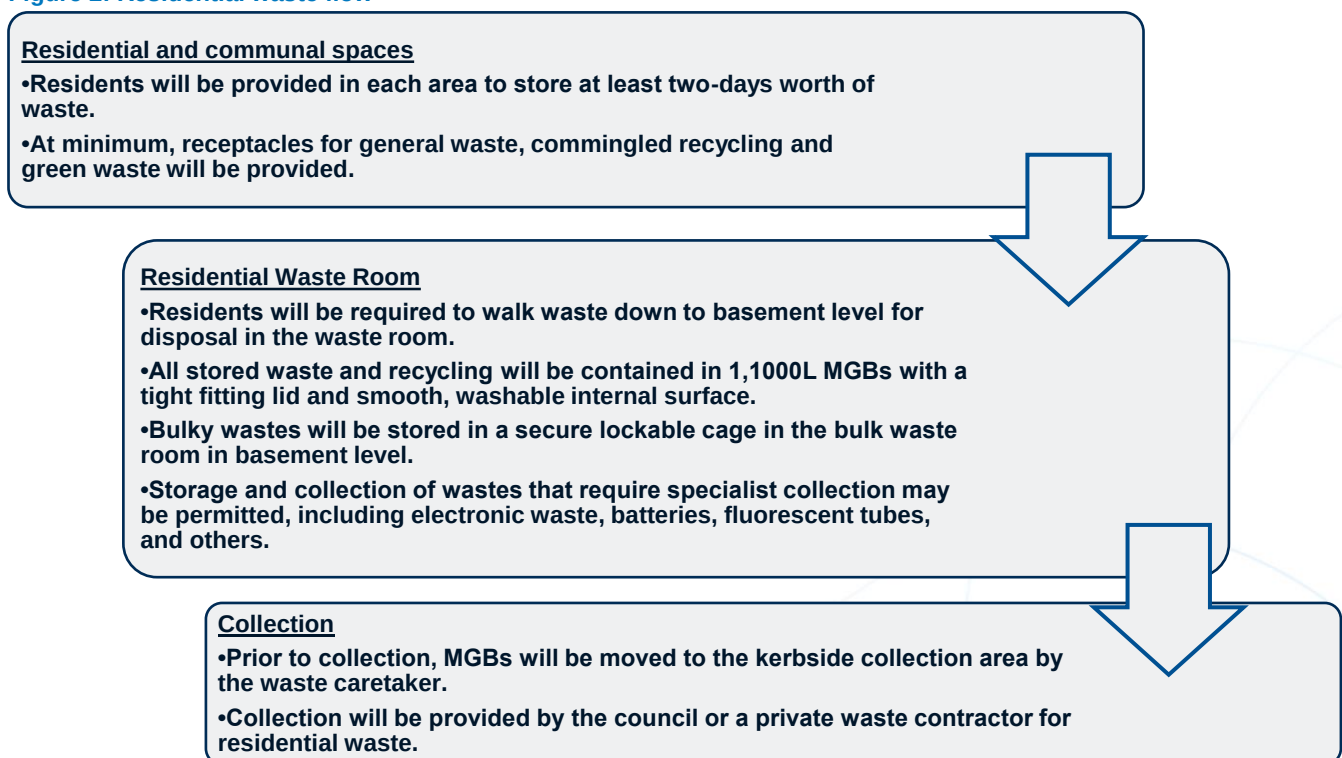
Figure 1: Retail waste flow



3.2.2 Residential

Residential unit waste management systems provide accessible and convenient disposal and recycling methods for residents. The flow chart below outlines the movement of waste from generation to collection for residential waste (Figure 2).

Figure 2: Residential waste flow



3.3 Building Waste Management System

The building management will engage a waste caretaker to enact and monitor day to day waste management operations. Should there be any issues that impact on the operational efficiency, safety and suitability of waste management, the waste caretaker will inform management. Operation of the waste management system is the responsibility of building management and the waste caretaker.

Building management is responsible for:

- Using this WMP to inform waste management operations, design and infrastructure;
- Providing educational materials and information to tenants and residents on sorting methods for recycled waste, awareness of waste management procedures for minimisation and recovery;
- Displaying appropriate signage in waste service and all waste management areas;
- Using contracts to define the allocation of responsibilities with cleaners, building managers and tenants;
- Holding a valid and current contract with licensed collector(s) for waste and recycling collection and disposal;
- Encouraging waste avoidance and achievement of resource recovery targets;
- Organising waste, recycling and bulky pick-ups by elected contractor for the site;
- Organising, maintaining and cleaning the WSRAs and service areas;
- Arranging access to WSRAs and bins on collection days and to liaise with the WSP for operational issues;
- Cleaning and exchanging all bins; and
- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry.

3.4 Waste Bin Storage Room

The waste storage areas at the site will provide centralised storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. The room will be constructed to improve amenity, minimise odour, protect surrounding areas and promote user safety. Specifications are as follows:

- Signage for safety and waste bin identification;
- Safety precautions, staff training and signage for plant;
- Noise attenuation for waste management and the waste room that limits effects to residents from the bin transfer;
- Floors constructed of concrete or other approved solid, impervious material that can be cleaned easily;
- Grading and draining to an approved drainage fitting located in the room;
- Smooth, even surface covered with vertical wall and plinth faces;
- Doorway ramp (if not level);
- Light colour finish for all room surfaces;
- Adequate supply of water with hose cock as close as practicable to the doorway;
- Close fitting and self-closing door;
- Suitable construction including limited entry paths to prevent vermin;

- Ventilation through permanent unobstructed ventilation (5% of floor area) or mechanical exhaust ventilation system (5L/s per m² of floor area); and
- Security and lighting.

3.5 Signage

Signage that promotes resource recovery, waste minimisation, safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia, 1994).

Signage will be designed to take into account language and non-English speaking backgrounds, vision impairment and accessibility. Illustrative graphics must form a minimum 50% of the area of the signage. Signage is to be prominently posted in each WSRA and waste access area indicating:

- Details regarding acceptable recyclables;
- Recyclables are to be decanted loose (not bagged);
- No standing and danger warnings apply to the area surrounding the WSRA;
- Contact details for arranging the disposal of bulky items; and
- The area is to be kept tidy.

Standard signage requirements and guidance for application apply (see Appendix B).

3.6 Prevention of pollution and litter reduction

To minimise dispersion of litter and prevent pollution (to water and land via contamination of runoff, dust and hazardous materials), building management and the waste caretaker will also be responsible for:

- Maintenance of open and common site areas;
- Ensuring WSRA's are well maintained and kept clean;
- Securing the waste storage area from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);
- Taking action to prevent dumping and unauthorised use of waste areas; and
- Requiring contractors to clean up any spillage that may occur during waste servicing or other work.

4 Council Comments Review

4.1 Comments Review

Table 7 outlines the relevant sections in this report that respond to Council's comments.

Table 7: Council Comments related to response section

Council Comments	Response
Waste from residential and business sources should be kept separate to ensure bins and waste is able to be managed separately and effectively.	The proposal provides a separated waste room for residential and business purposes. See Appendix A, Site Plans Figure 3. Section 2 describes the ongoing waste for the café and the residential apartments separately.
Potentially, the site could consider the following (I have assumed that each residence is separately residentially rated, that there are 38 x 1 bedroom residences and I have estimated the Café to be 100m² and 7 days per week utilisation. I have used the EPA average waste generation rates for the calculations if this is not correct please let me know and I can revise the figures): Residential • General Waste: 5 x 660 litre bin collected weekly, OR 3 x 1,100 litre bins collected weekly, • Comingled Recycling: 5 x 660 litre bin collected weekly, OR 3 x 1,100 litre bins collected weekly, • Green Waste: 8 x 240 litre bin collected fortnightly (these may not be required by the site, but the waste room should be provisioned for them). Commercial / Business • General Waste: 3 x 240 litre bins collected weekly, OR 1 x 660 litre bin collected weekly, • Comingled Recycling: 3 x 360 litre bin collected weekly, these would be supplied under a commercial arrangement, as they are not part of a rateable entitlement, unless the café is to be separately rated.	The WMP has assumed waste generated rates present by Council, as derived from the NSW EPA (2019) <i>Better Practice Guidelines for Resource Recovery in Residential Developments</i>. Section 2.3.1 shows waste generation for the café and section 2.2.1 for the 38 units of 1 bedroom or studio included in the development.
There would need to be adequate contingency in bin room size to allow for such things as future-proofing the site, bin manoeuvring and access, as well as storage in the eventuality of an operational issue or excessive waste generation by the residents and / or business operators. Bin room/s would need to be designed to accommodate their estimated waste requirement, plus their preferred bin configuration as outlined in their detailed final WMP. The bin room would need to allow for a 200mm space between bins and a gap of 1800mm between rows of bins within which to manoeuvre the larger bins in the bin storage room. Doorways and pathways of 1,800mm would be recommended to allow for safe and adequate movement of the larger bins, with no obstructions and no requirement for bins to	Minimal specifications as outlined by Councils were considered for the design of the residential and retail waste rooms. See Appendix A, Site Plans Figure 3.

be carried over any steps, landscape edging or gutters / kerbs, etc. There needs to be adequate provision for a heavy rigid collection vehicle to safely and legally park adjacent to the property, in close proximity to the bin presentation / collection point, allowing for larger bins to be wheeled safely to the rear of the collection vehicle.	
Where Council collectors (or our contractors) are required to enter a site for the purpose of waste collection services, an Agreement will be required to be entered into with Council. This Agreement is to be entered into with Council giving power and authority to Council to enter the site and for the purpose of waste services. Council is also to be provided with indemnity against any future claims for damage and loss (we have a standard document for this Agreement).	Council collectors (or its contractors) are not required to enter the site for waste collection services. Building management or a designated waste caretaker will transfer MGBs from the waste rooms to the kerbside collection area. See section 3.2 for a detailed description of the waste disposal and recycling method.
The following calculation be used to calculate a minimum bulky goods storage room: Bulky Goods Area (m²) = [38 units x 4] / 26 = 6m. A room of a minimum size of 6m² should be allowed for. This allows for each unit to use their yearly entitlement of 2 x 2m³, which is a floor space of 1m high x 2m wide x 1m long, each (allowing to stack bulky material only 1m high helps provide a lower-risk strategy). If the site doesn't wish to allow for this size, they can arrange to utilise the self-haul vouchers only (this should be noted in the WMP and the DA conditions, although it is one or the other, not both options).	Section 2.4.1 specifies Waste storage and recycling area for the bulky waste of 6m² in the basement level. See Appendix A, Site Plans Figure 3 for the site design of waste storage rooms.
I have also attached some specification sheets for the various sized bins, which the developer should use as a reference point to ensure bin storage rooms and presentation points are of an adequate size.	Sized bins specification provided were used to calculate the quantity, footprint and minimal waste room storage area. See section 2.4 for the café and 2.4.1 for residential apartments.
Noting all of the above, the developer needs to detail all of this information into a comprehensive and detailed Waste Management Plan, including resident access, bin sized proposed, service frequencies, bin haulage routes, collection points, etc.	This report serves to address Council's comments in a comprehensive WMP format and presents detailed information of resident access, bin haulage routes and collection points in Appendix A, Site Plans Figure 3 and Figure 4. Information regarding bin sizes proposed and service frequencies are shown in section 2.4 for the café and 2.4.1 for residential apartments.
"Servicing for the site is limited and the increased waste from the proposed development is not sufficiently addressed within the application. The plans show a total of 24 waste collection bins with the Traffic Report indicating that these are to be serviced from Hunter Street. The frontage of this site is 10.345m wide and is insufficient to cater for 24 waste collection bins. If the development is considered for approval the servicing arrangements for waste and deliveries will need to be addressed."	Collection of retail waste will be scheduled on alternate days as residential collections to avoid having excessive numbers of bins presented at the kerbside at any one time. Bin sizes and frequencies proposed serves for the available frontage site width. Information regarding bin sizes proposed and service frequencies are

	shown in section 2.4 for the café and 2.4.1 for residential apartments.
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5 References

Environment Protection and Heritage Council (2018) National Waste Policy: Less Waste, More Resources.

Newcastle City Council (2012) Newcastle Development Control Plan.

Newcastle City Council (2012) Newcastle Local Environmental Plan.

NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities, Australian Standards and Statutory Requirements.

NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

NSW EPA (2016) Recycling Signs, Posters and Symbols. Available at:
<http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>.

NSW EPA (2017) Business Recycling Directory. Available at:
<http://www.epa.nsw.gov.au/managewaste/bus-recycle-dir.htm>

NSW EPA (2019) NSW Better Practice Guide for Resource Recovery in Residential Developments, Australian Standards and Statutory Requirements.

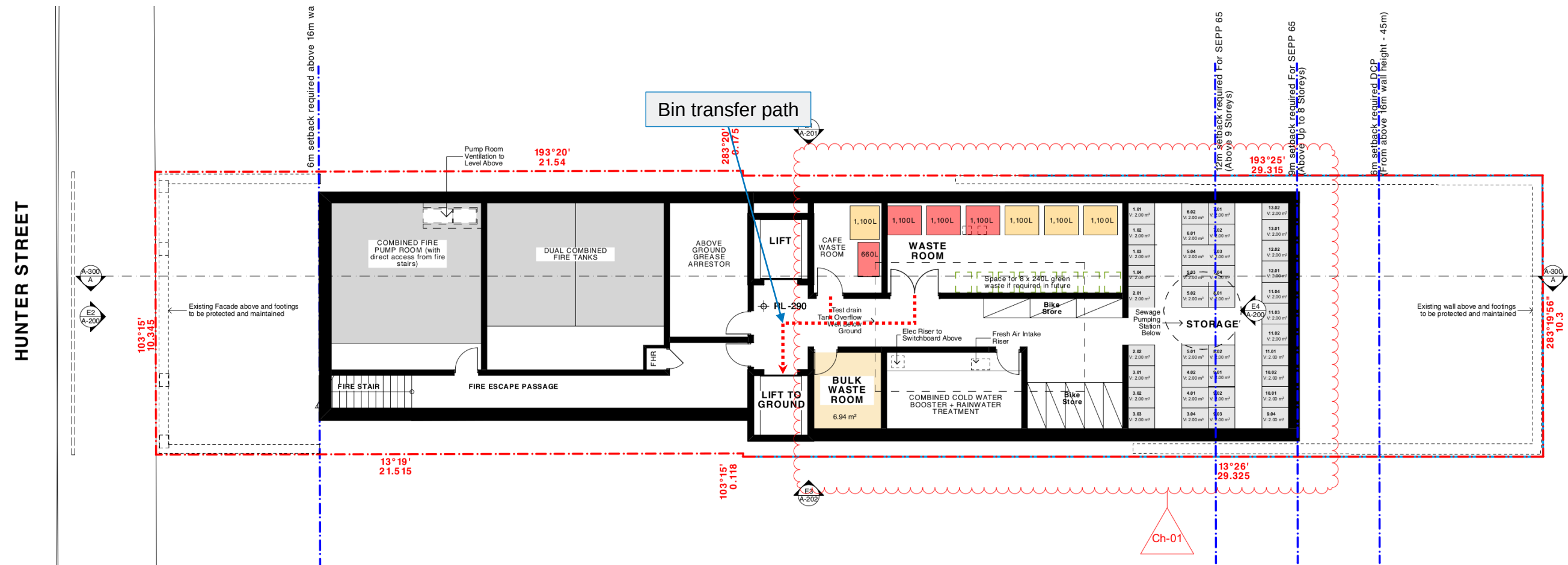
Standards Australia (1994) *AS 1319: Safety signs for the occupational environment*, Homebush, NSW: Standards Australia.

Standards Australia (2008) AS 4123 Mobile waste containers.

WorkCover (2011) Managing Work Environment Facilities Code of Practice.

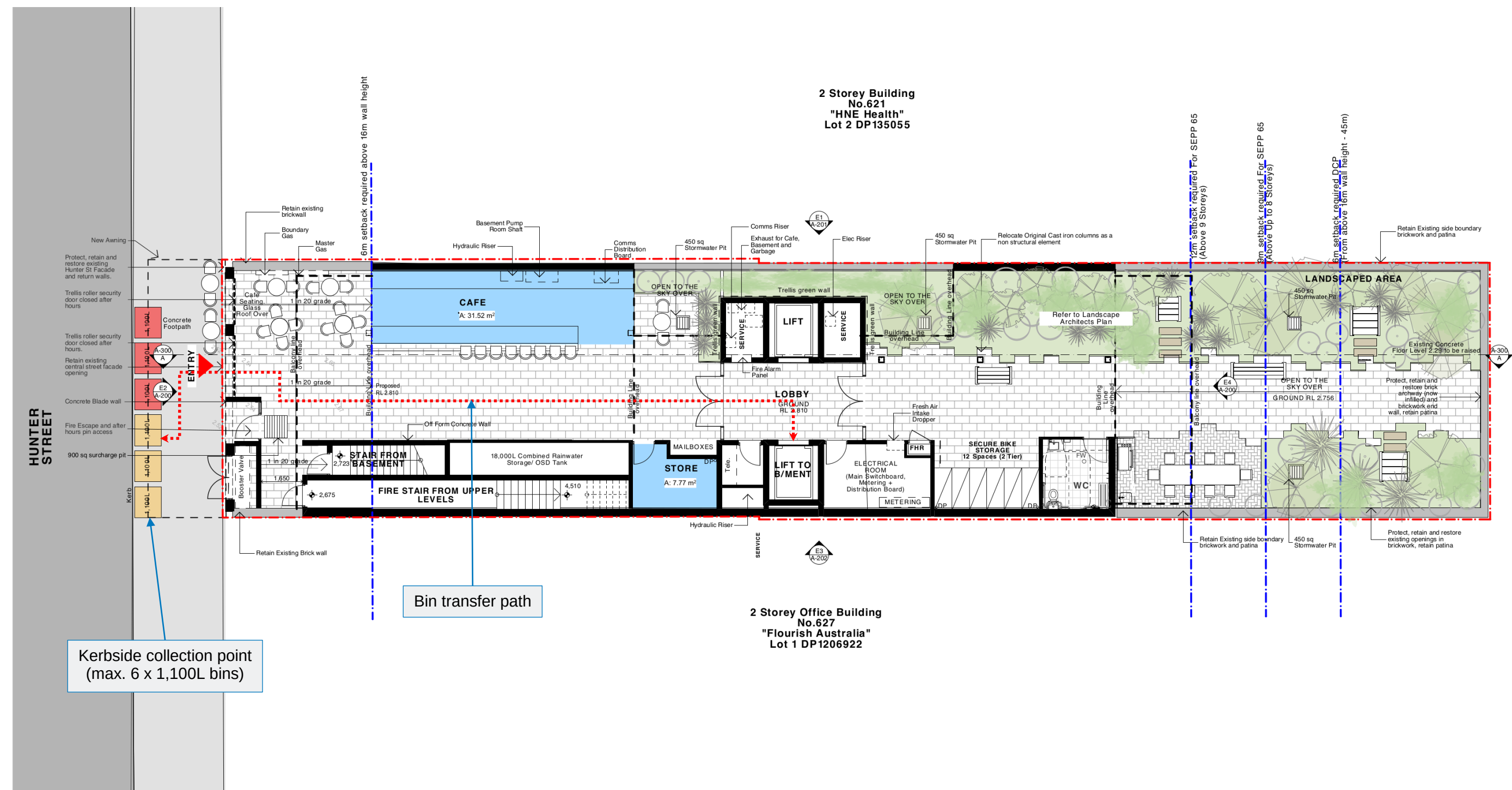
Appendix A Site Plans

Figure 3: Site Waste Room Plan



General Notes DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION. All dimensions are in millimetres unless stated otherwise. All architectural drawings are to be read in conjunction with the relevant consultant documents. All dimensions and levels are to be checked and verified on site prior to the commencement of work, shop drawings or fabrication of any components. Refer all discrepancies to the Architect for determination. Drawings are not to be scaled, use only figured dimensions. This drawing is copyright and must not be retained, copied or used without the permission of BKA Architecture. This document has been prepared for and on behalf of the clients noted on the drawing. BKA Architecture's responsibility is to these clients only and not to any third party who may rely on these documents.	PLANNER WILIANA URBAN (P) 02 9332 2299 wiliana@wiliana.com.au	QUANTITY SURVEYOR DCWC (NEW) RICHARD COHEN (P) 02 9231 2430, (M) 0412 486 04 richard.cohen@dcwc.com.au	FIRE SERVICES MARLINE (P) 02 4925 9300, (M) 0409 047 633 jallen@marline.com.au	Rev A 27.03.2020 UDCG submission	Client 11 Church Street, Pty Ltd	Architect BKA Architecture SYDNEY Suite 104, 77 Dunning Ave., Rosedale, NSW 2018 T: +61 2 933 9 9200 E: bka@bka.com.au W: www.bka.com.au NEWCASTLE 19 Bolton St, Newcastle NSW 2300 T: +61 2 4926 5563 BYRON BAY Unit 1, 10 Station St, Bangalow NSW 2479 T: +61 2 4926 5563	Drawn RM Checked JB	North Status Not for Construction	Project Address 625 Hunter Street, Newcastle West Scale at A3 1:150 Date 7/08/2020	Drawing Basement Floor Plan Project No. 20010 Revision E Drawing No. A-090
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	BASIC DMITRI HARIKIDIS (P) 02 9994 8906 info@arrec.com.au	HERITAGE MARK FENWICK (M) 0400 381 575 mark.fenwick@placemart.net.au	PLACEMARK (M) 0400 381 575 mark.fenwick@placemart.net.au	E 10.06.2020 DA Submission						

Figure 4: Waste room location and bin travel path to kerbside



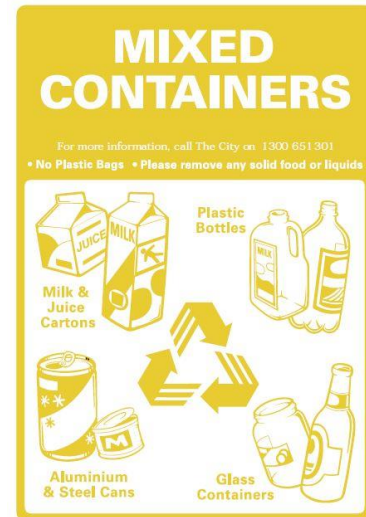
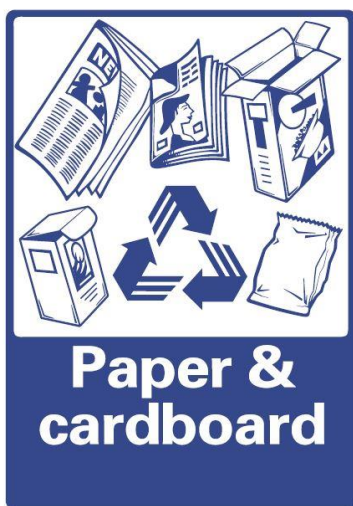
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Appendix B Standard Signage

Waste Signage

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the NSW Office of Environment and Heritage (NSW OEH 2008b) and as stated in the DCP.

Standard symbols for use in signage, bin facade and educational materials are promoted through the NSW Environment Protection Authority. They are available for download from the NSW EPA website (NSW EPA 2016b), in black and white and colour versions. The Australian Standard series AS 4123 (Part 7) details colours for mobile waste containers (Standards Australia 2008).



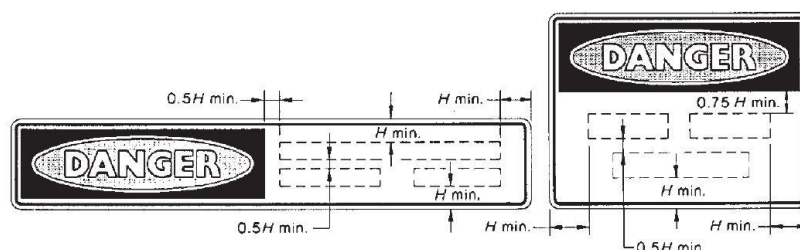
Safety Signs

The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Clear and easy to read 'NO STANDING' and 'DANGER' warning signs must be fixed to the external face of each waste and recycling room where appropriate.



(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



Appendix 9

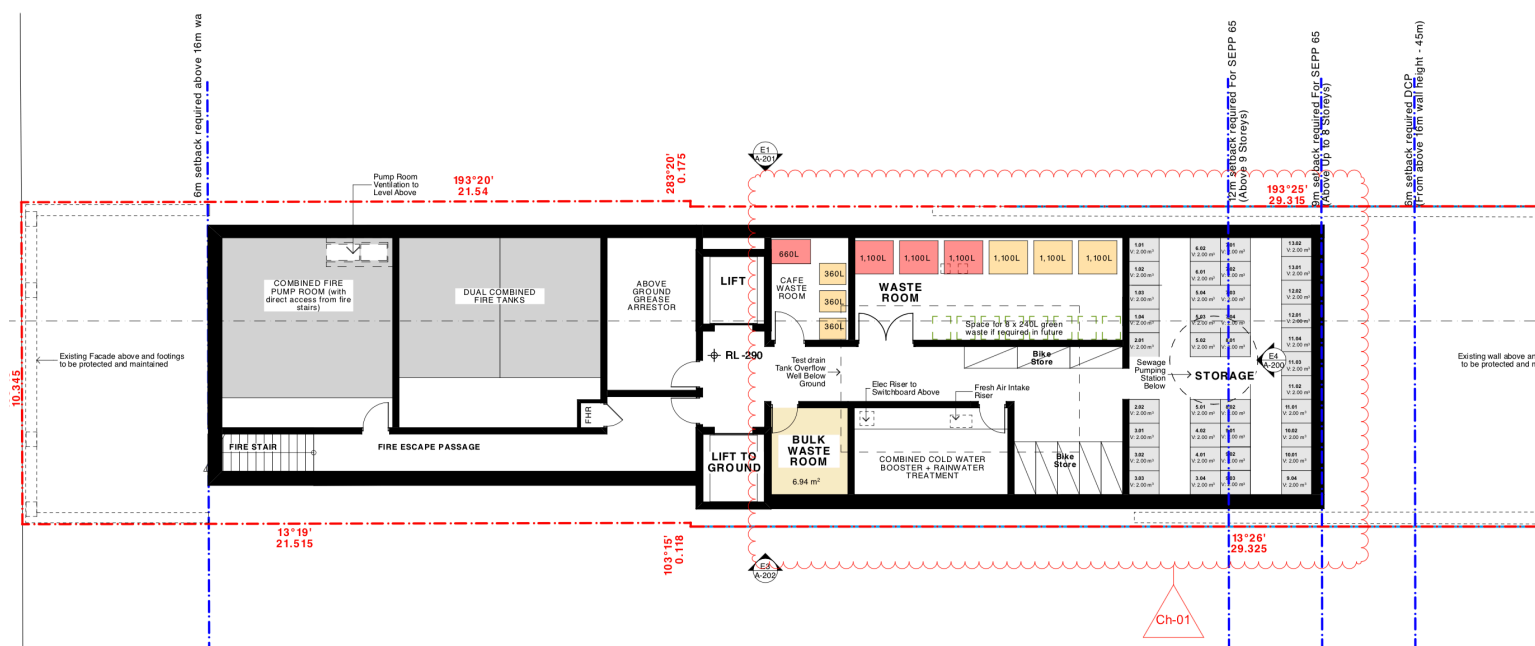


Diagram 7- Revised Basement Floorplan