Appendices

Appendix 1 – Engineering Specifications

Appendix 2 – Waste Requirements

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Appendix 1 Engineering Specifications

1: On-Site Stormwater Detention (OSD) Checklist

For Dual Occupancy and Single Dwelling including Additions and Alterations

This form is to be used to determine if OSD will be required for residential developments and must be completed before the submission of any Application. Please read the reverse side of this form carefully for its applications and definitions.

Part A. Address and type of proposed development

Lot 5 DP 808180
No 151 Street Belmore Road, North
Suburb Riverwood

Type of development (tick relevant boxes):

- □ Dual Occupancy
- □ Single Dwelling
- □ Extensions
- □ Garage, outbuildings and others (specify) Food Bank - Change of Use

N/A - No Demolition or Constructed being completed on-site

Part B. Exemption for flood affected areas

Is the subject site located within an established 100 year floodplain and the site also floods in 20 and 50 year storm events (tick one only):

- □ Yes
- □ No

If yes, **OSD is not required**. If no, go to Part C.

Part C. Exemption for minimum allowable size of site impervious area

Refer to the back of this page for definitions and explanations.

(a) Site area =…… (m^2)
(b1) Total existing impervious area =……..... (m^2)
(b2) Total remaining existing impervious area =……(m2)
(C) Proposed impervious area:
(C1) roofed areas =…… (m^2)
(C2) paved areas =…… (m^2)
(C3) supplementary areas =…… (m^2)
(d) Total post-development impervious area (b2) + (C1 + C2 + C3) =…… (m^2)
(e) Total proposed impervious area (C1 + C2 + C3) x 100 / (a) =…… (%)
(f) Existing impervious area percentage (b1) x 100 / (a) =…… (%)
(g) Post-development impervious area percentage (d) x 100 / (a) =…… (%)

OSD will not be required if either of the following is satisfied:

N/A - No Demolition or Constructed being completed on-site

- □ (g) is less than 70%
- □ (f) is greater than 70% and (e) is less than or equal to 5%

Notes:

Developments covered by this form are for dual occupancy, single dwelling including alterations and additions and works that involve driveways, garage, outbuildings and hardstand areas. Commercial and multiple occupancy developments are not exempt from OSD.

Definitions:

Site Area (a): This is the total area of the site for which the development is proposed for residential development, the total site area is taken to be the area as shown on the Deposited Plan (DP).

Existing impervious Area (b1): This refers to all of the impervious areas, within the site of the development. prior to any proposed works. This includes, calculated in plan view, all of the existing roofed areas, paved surfaces, hardstand areas, garages, outbuildings, etc.

Remaining existing impervious Area (b2): This refers to the existing impervious areas of the site which will not be removed or demolished as part of the proposed works, but will remain after the proposed works have been carried out. If a building is to be altered internally, that is, works involving only the removal/demolition of internal non-structural members/walls within the footprint of the building, then the remaining impervious areas shall be calculated as the total area of the building. Existing Dwelling

Proposed impervious Area (C): This includes all new impervious areas created as part of the proposed development, such as; all proposed roofed, paved, supplementary (i.e. In-ground swimming pools), garages, outbuildings and hardstand areas.

Post-development impervious Area (d): This includes **ALL** of the impervious areas within the site that are to remain after the development is completed, that is, the finished works and includes all of the remaining existing and proposed impervious areas.

2: Rainfall Intensities in Canterbury (mm/h)

Refer to the Australian Rainfall and Runoff national guideline document for the estimation of rainfall intensities (published by Engineers Australia).

3: Runoff coefficients for Canterbury

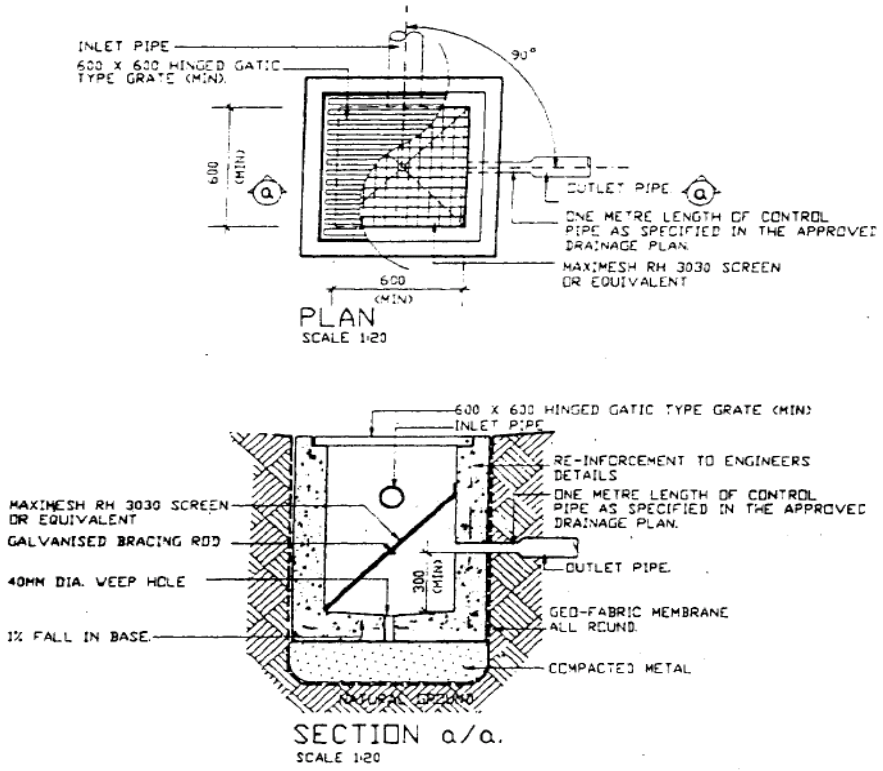
ARI years	Fraction Impervious										
	0	0.1	0.2	0.	0.4	0.5	0.6	0.7	0.8	0.9	1
1	0.41	0.44	0.47	0.50	0.53	0.57	0.60	0.63	0.66	0.69	0.72
2	0.44	0.47	0.50	0.53	0.57	0.60	0.63	0.67	0.70	0.73	0.77
5	0.49	0.52	0.56	0.60	0.61	0.67	0.71	0.74	0.78	0.82	0.86
10	0.51	0.55	0.59	0.63	0.67	0.71	0.75	0.78	0.82	0.86	0.90
20	0.54	0.58	0.62	0.66	0.70	0.74	0.78	0.82	0.86	0.90	0.95
50	0.59	0.63	0.68	0.72	0.77	0.81	0.86	0.90	0.95	0.99	1.04
100	0.62	0.66	0.71	0.76	0.80	0.85	0.89	0.94	0.99	1.03	1.08

Table ES.1: Runoff coefficients for Canterbury

Notes: Coefficients provided from the Australian Rainfall and Runoff national guideline document (published by Engineers Australia).

A minimum runoff coefficient of 0.7 should be adopted for design purposes.

4: Silt Arrestor Pits Details



SILT ARRESTOR PIT DETAILS

NOTES:

GENERAL

1. PITS TO BE CONSTRUCTED IN THE FOLLOWING MANNER
   - 1.1 PRECAST
   - 1.2 BRICKS WITH CEMENT RENDER
2. OUTLET PIPES TO BE PLACED AT 90 DEGREES TO THE INLET PIPELINE (AS SHOWN IN THE PLAN)
3. INLET TO BE ABOVE THE SCREEN AND THE OUTLET TO BE BELOW THE SCREEN
4. ALL WORK TO BE TO THE SATISFACTION OF THE DIRECTOR OF TECHNICAL SERVICES
5. ORIFICE PLATES ARE NOT TO BE USED
6. FOR CONNECTION TO COUNCIL'S DRAINAGE SYSTEM
   - 6.1. CONNECTION TO BE MADE INTO TOP ONE THIRD OF COUNCIL'S PIPE AT 45 DEGREES TO FLOW
   - 6.2. ON PIPE PROTRUSAION ALLOWED INTO COUNCIL'S PIPELINE
   - 6.3. INSPECTION TO BE MADE BY COUNCIL'S ENGINEER PRIOR TO THE SEALING OF THE JOINT

5: Absorption Design Calculation

Site Details

Address

Site Area (m^2)

Impervious Area (m^2)

Nominal Absorption Rate (AR_N)

Reduction Factor (F_R)

Design Details

Design Impervious Area (DA)	area ……..m^2 x 1.2 = ……..m^2 (DA)
Design Absorption Rate (ARN)	AR_N …. l/m^2/sec x F_R ….. = ….. l/m^2/sec (ARD)
Base Area of Absorption Pit (BA)	Width …. m x Length …. m = … m^2 (BA)

Required Absorption System Volume Calculation for 50 Year ARI Storm

Time T min	**Rainfall Intensity I mm/hr**	**Runoff R =I x DA/3600 l/s**	**Runoff Volume RV = R x T x 60/1000 m^3**	**Infiltration Vol IV = BA x ARD x T x 60/1000 m^3**	**Required Absorption Volume RV – IV m^3**
5	233				
6	219				
7	208				
8	198				
9	190				
10	183				
11	175				
12	170				
13	165				
14	160				
15	155				
20	137				
25	123				
30	113				
45	92				
60	80				
90	62				
120	51				

Maximum required Absorption System Volume **m^3**

6: Flood Management and Flood Proofing

Construction standards for development in flood liable areas

Electrical and Mechanical Materials

(a)	Main Power Supply	Subject to the approval of Energy Australia the incoming main commercial service equipment, including all metering equipment should be located above the DFL. The dwelling must be able to be easily disconnected from the main power supply.
(b)	Wiring	All wiring, power outlets, switches, etc., should, to the maximum extent possible, be located above the DFL. All electrical wiring installed below the DFL should be suitable for continuous submergence in water and should contain no fibrous components. Only submersible-type splices should be used below the DFL. All conduits located below the DFL should be installed so that they will be self-draining if subject to flooding.
(c)	Equipment	All equipment installed below or partially below the DFL should be capable of disconnection by a single plug and socket assembly.
(d)	Heating & Air Conditioning	Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the DFL. When this is not feasible every precaution should be taken to minimise the damage caused by submersion according to the following guidelines.
	Fuel	Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off.
	Installation	The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All

storage tanks should be vented to an elevation of 600 millimetres above the DFL.

Ducting — All ductwork located below the DFL should be provided with openings for drainage and cleaning. Self draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the DFL the ductwork should be protected by a closure assembly operated from above DFL

Construction Materials

Construction materials are graded into the following four classes according to resistance to flood waters:

Most Suitable	The materials or products which are relatively unaffected by submersion and unmitigated flood exposure and are the best available for the particular application.
Minor Effects	Where the "most suitable" materials or products are unavailable or economic considerations prohibit their use, these materials or products are considered the next best choice to minimise the damage caused by flooding.
Marked Effects	As for "2nd preference" but considered to be more liable to damage under flood conditions.
To Be Avoided	The materials or products listed here are seriously affected by floodwaters and in general have to be replaced if submerged.

Buildings should be constructed using the "most suitable" materials. See Table ES.1 attached to this Plan. Second and third preference materials will only be considered where circumstances warrant it.

Component	Order Of Preference			
	Most Suitable	**Second Preference**	**Third Preference**	**To Be Avoided**
Flooring and sub-floor structure.	• Concrete slab-on-ground monolithic construction. Note: Clay filling is not permitted beneath slab-on-ground construction, which could	• Timber floor (T&G boarding, marine plywood) full epoxy sealed, on joints.	• Timber floor (T&G boarding, marine plywood with ends only epoxy sealed on joints and provision of side clearance for board	• Timber floor close to ground with surrounding base. • Timber flooring with ceilings or soffit linings. • Timber flooring with seal on top only.

Component	Order Of Preference			
	Most Suitable	**Second Preference**	**Third Preference**	**To Be Avoided**
	be inundated. • Suspension reinforced concrete slab.		swelling.	
Floor covering.	• Clay tile. • Concrete, precast or in situ. • Concrete tiles. • Epoxy, formed-in-place. • Mastic flooring formed-in-place. • Rubber sheets with chemical-set adhesives. • Silicone floors formed-in-place. • Vinyl sheets with chemical-set adhesive.	• Cement/bituminous formed-in-place. • Cement/latex formed-in place. • Rubber tiles, with chemical-set adhesive. • Terrazzo. • Vinyl tiles with chemical-set adhesive. • Vinyl tiles, asphaltic adhesives. • Loose rugs. • Ceramic tiles with acid and alkali-resistant grout.	• Asphalt tiles with asphaltic adhesive. • Loose fit nylon or acrylic carpet with closed cell rubber underlay.	• Asphalt tiles (A). • Carpeting, glue-down type or fixed with smooth-edge or jute felts. Ceramic tiles (A). Chipboard (particle board). • Cork, Linoleum, PVA emulsion cement, rubber sheets or tiles (A), vinyl sheets or tiles (A). • Vinyl sheets or tiles coated on cork or wood backings fibre matting (sea-grass matting).
Wall Structure (up to the DFL).	• Solid brickwork, blockwork, reinforced, concrete or mass concrete.	• Two skins of brickwork or blockwork with inspection openings.	• Brick or blockwork veneer construction with inspection openings.	• Inaccessible cavities. • Large window openings.
Roofing structure (for situations where DFL is above the ceiling).	• Reinforced concrete construction. • Galvanised metal construction.	• Timber trusses with galvanised fittings.	• Traditional timber roof construction.	• Inaccessible flat roof construction. • Ungalvanised steelwork eg lintels, arch bay tie rods, beams etc. • Unsecured roof tiles.

Component	Order Of Preference			
	Most Suitable	**Second Preference**	**Third Preference**	**To Be Avoided**
Doors.	• Solid panel with water proof adhesives. • Flush door with marine ply filled with closed cell foam. • Painted metal construction. • Aluminium or galvanised steel frame.	• Flush panel or single panel with marine ply wood and water proof adhesive. • T&G lined door, framed ledged and braced. • Painted steel. • Timber frame fully epoxy sealed before assembly.	• Fly-wire doors. • Standard timber frame.	• Hollow core ply with PVA adhesive and honeycomb paper core.
Wall and ceiling linings.	• Compressed cement or plaster board. • Brick, face or glazed in waterproof mortar. • Concrete. • Concrete block. • Steel with waterproof applications. • Stone, natural solid or veneer, waterproof grout. • Glass blocks. • Glass. • Plastic sheeting or wall with waterproof adhesive.	• Brick, common. • Plastic wall tiles. • Metals, non ferrous. • Rubber mouldings & trim. • Wood, solid or exterior grade plywood fully sealed.	• Chipboard exterior grade. • Hardboard exterior grade. • Wood, solid (boards or trim) with allowance for swelling. • Wood, plywood exterior grade. • Fibrous plaster board.	• Chipboard. • Fibreboard panels. • Minerar fibreboard. • Paperboard. • Plaster-board, gypsum plaster. • Wall coverings (paper, burlap cloth types). • Wood, standard plywood strawboard.
Insulation.	• Foam or closed cell types.	• Reflective insulation.	• Bat or blanket types.	• Open cell fibre types.
Windows.	• Aluminium frame with stainless steel or brass rollers.	• Epoxy sealed timber waterproof glues with stainless steel or brass fittings. • Galvanised or painted steel.		• Timber with PVA glues mild steel fittings.

Component	Order Of Preference			
	Most Suitable	**Second Preference**	**Third Preference**	**To Be Avoided**
Nails, bolts, hinges and fittings.	• Brass, nylon or stainless steel. • Removable pin hinges.		• Mild steel.	

Table ES.2: Construction Materials

Definitions

Flood	Relatively high stream flow that overtops the natural or artificial banks in any part of a stream or river.
Flood Standard	The flood selected for planning purposes based on flood behaviour and associated flood risk taking into account social, economic and ecological considerations.
Floodway	The area where the main flood waters pass when floods occur often resulting in hazardous situations because of the depth and speed of the floodwater.
Flood Storage	Those parts of the flood plain that are important for the temporary storage of floodwaters.
Flood Fringe	Land outside the flood ways which may be flooded infrequently and where development will normally be approved subject to flood proofing measures.
AHD	Australian Height Datum – a common national plane of level corresponding approximately to mean sea level.
Survey Plan	A plan prepared by a surveyor registered with the *Surveyors Act 1929*, showing the boundaries and location of a property, plus any existing or proposed building or other improvements together with existing levels to AHD.
Designated Floor Level	(DFL) The minimum floor level acceptable to Council when giving consent to an application for development. It will normally be 0.5m above the Standard Flood Level for habitable rooms.
Habitable Room	Means a room, compartment or enclosed area that is designed, constructed, capable of being used or adapted for activities normally associated with domestic living, such as a bedroom, living room, lounge room, television room, kitchen, dining room, study, playroom and the like.

Freeboard	The height of the Designated Floor Level above the Flood Standard to allow for wave action and local hydraulic effects.
Flood Liable Land	Land that would be inundated as a result of the Standard Flood.

7: Drainage Requirement Checklist

Type of development	Property falls to	OSD required	Charged line	Absorption system	Pump system	Comments
Dwelling houses	Street	Yes (1)	N/A	N/A	N/A	(1) OSD must be provided if post-developed impervious area is greater than or equal to 70% of the site area (2) Drain site by gravity pipe using stormwater easement via downstream property, pump system may be considered where easement is rejected **AND** all supporting (documents*) are provided accordingly. For single dwellings only, a pump system is permissible where alternative methods (charged and absorption) are not viable (3) Proposed development that does not increase existing impervious area shall be connected to existing drainage system **however**; OSD must be provided where the existing impervious area is equal to 70% or more and the proposed additions / alterations are more than 5% of the site area
Dwelling houses	Rear away from street	Yes (1)	Yes (6)	Yes (6)	No (2)	
Alteration and additions to dwelling houses/ Outbuilding	Street/rear	Yes (1),(3)	Yes (6)	Yes (6)	No (2)	
Dual occupancies	Street	Yes (1)	No	No	No	
Dual occupancies	Rear	Yes (1)	No	No	No (2)	
Multi dwelling housing	Street	Yes	No	No	No (5)	
Multi dwelling housing	Rear (4)	Yes	No	No	No (5)	
Residential flat building	Street	Yes	No	No	No (5)	
Residential flat building	Rear (4)	Yes	No	No	No	
Commercial premises/Industry	Street	Yes	No	No	No	
Commercial premises/Industry	Rear (4)	Yes	No	No	No	

						(4) Gravity pipe system using a stormwater easement via downstream property is the only method accepted (5) For basement driveway only with maximum area of 50m^2, can drain into a pump system, pump wet well to have a capacity for 2 hour storm (that is, 50m^2 will require a pit with 3000 litres capacity) (6) Both charged and absorption system are permissible providing they comply with the DCP.

Table ES.3: Drainage Requirement Checklist

Appendix 2 Waste Requirements

1: Waste Management Plans

A waste management plan must be provided with development applications for all new developments that will generate construction, demolition or ongoing waste. Applicants will need to complete the three forms included in this Appendix.

Applicants should also make reference to the following documents that may provide additional guidance for ensuring that the development achieves the objective of best practice for waste and recycling management.

- NSW EPA, Better Practice Guide for Waste Management in Multi-Unit Dwellings, 2009
- NSW EPA, Better Practice Guidelines for Waste Management and Recycling in Commercial Buildings, 2013

Both publications are available at the NSW Environmental Protection Authority website www.epa.nsw.gov.au.

Demolition and construction phase

Describe the wastes that will be generated in the demolition and construction phases, and the subsequent separation, storage and disposal of those materials.

Prior to the demolition, alterations and additions or renovation work to any building constructed before 1987, the person responsible for such work must ensure that the building is assessed for hazardous materials, especially asbestos. This assessment should be prepared by a suitably qualified person, such as a contractor licensed by WorkCover, or an occupational hygienist / asbestos consultant that is a member of a relevant industry or professional association. The Waste Management Plan for a building constructed before 1987 must verify the type and amount of asbestos present and the work method proposed for its removal and disposal.

Potential for Waste Minimisation

Some examples of avoidance and recycling potential of resources and materials are provided in the following table to assist in preparation of the waste management statement.

Materials On-Site	Waste Avoidance	Reuse and Recycling Potential
Significant trees	Design into new development	Relocated on-site or sold for use off-site
Soil	Avoid excess excavations	Power screened for topsoil
Vegetation from site clearance	Incorporate existing trees/shrubs into the landscape strategy/plan	Mulching, composting, for landscaping/fertiliser
Concrete	Retain existing driveways, paths, footings, slabs in design	Filling, levelling materials, road base
Bricks	Retain existing walls, buildings and fences	Cleaned and/or rendered, crushed.
Roof-tiles	Retain existing roof, colour treatments/ cleaning	Crushed, as landscaping, and driveways
Hardwood beams	Re-use or recycle on site	Fencing, furniture, construction.

Materials On-Site	Waste Avoidance	Reuse and Recycling Potential
Other timber	As above	Formwork, bridging, blocking, propping, construction
Doors, windows, fittings	Design as an architectural feature of the new development	Second-hand building materials
Glass	As above	Sandblasting, aggregate for concrete production
Synthetic and recycled rubber (e.g. under carpets	Protect/cover and re-use	Safety barriers, speed humps, sports surfaces

Table W.1: Potential for Waste Minimisation

Note: Separated wastes attract reduced or zero disposal fees at licensed disposal facilities

Waste Management Plan - Part One (Demolition Phase)

Site Address:	151 Belmore Road North RIVERWOOD NSW 2210

Section 1: Asbestos Declaration

Does Demolition Contain Asbestos? Yes No ☐ ☐

All asbestos waste is to be managed in accordance with provisions of the NSW *Work Health and Safety Regulation* 2011

Is the asbestos friable	☐ Yes (go to section 2)	☐ No
Is the asbestos non friable and over 10m^2	☐ Yes (go to section 2)	☐ No
Is the asbestos non-friable and under 10m^2	☐ Yes (go to section 3)	☐ No

Section 2: Asbestos Removal Details

WorkCover Licence No. and Class:	NA
Demolition Contractor Details:	NA
Licensed Landfill:	NA

Section 3: General Demolition Waste

		How will you manage this waste?		
Type of Material	**Estimated Amount (m^3)**	**Re-use On-site**	**Recycle Offsite**	**Landfill**
Bricks		☐	☐	☐
Concrete		☐	☐	☐
Tiles		☐	☐	☐
Timber (clean)		☐	☐	☐
Timber (treated)		☐	☐	☐
Plasterboard		☐	☐	☐
Metals		☐	☐	☐
Green Waste		☐	☐	☐
Other		☐	☐	☐
Principal Off-Site Recycler		**Principal Licensed Landfill Site**		
_____		_____		
_____		_____		
_____		_____		
_____		_____		

Waste Management Plan - Part Two (Construction Phase)

Site Address: 151 Belmore Road North RIVERWOOD NSW 2210	
Section 1: Estimated Amount of Excavation Material (m^3): No excavation being completed on site	☐ Re-use on-site ☐ Re-use off site (go to section 2) ☐ Landfill Disposal (go to section 3)
Section 2: Address if re-used off site: No excavation being completed on site	
Section 3: Name and Address of licensed landfill: No excavation being completed on site	
Section 4: Estimated Construction Material Waste	

Type of Material:	**Estimated Amount (m^3):**	**How will you manage this waste?**		
		Re-use on-site	**Recycle Offsite**	**Landfill**
Bricks		☐	☐	☐
Concrete		☐	☐	☐
Tiles		☐	☐	☐
Timber (clean) Timber (treated)		☐ ☐	☐ ☐	☐ ☐
Plasterboard		☐	☐	☐
Green Waste		☐	☐	☐
Other		☐	☐	☐

Off-Site Recycling Facilities	**Licensed Landfill Site/s**
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Waste Management Plan - Part Three (Ongoing Use)

Site Address: 151 Belmore Road North RIVERWOOD NSW 2210	
☐ Residential Flat Building ☐ Boarding House ☐ Multi Dwelling Houses ☐ Other _____ *Please complete Sections 1-3*	☐ Shop Top Housing ☐ Non Residential Development *Please complete Sections 1-4*

Section 1: Generation of Waste

RESIDENTIAL Number of dwellings	Rubbish generation/week (120L/dwelling)	Allocated rubbish bin size (140L or 240L)	TOTAL number of rubbish bins allocated	Recycling generation/week (80L/dwelling)	Allocated recycling bin size (240L)	TOTAL number of recycling bins allocated
COMMERCIAL *(if applicable)* Premises Type	Rubbish generation/week *(Based on type of premises and m², see Appendix 3)*	Size and number of rubbish bins	Collection frequency per week	Recycling generation/week *(Based on type of premises and m², see Appendix 3)*	Size and number of recycling bins	Collection frequency per week
Food Bank	Food Bank	1	1	80L	1	1

Section 2: Storage of Waste Bins

1.	Is there sufficient space allocated within each dwelling for one day's waste and recycling?	Yes ☒ No ☐
2.	Is there a waste bin storage room/area provided?	Yes ☒ No ☐
	2a - What is the total area of bin storage provided?	2sqm
	2b - Is there sufficient space provided for the allocated rubbish and recycling bins plus handling? *(see clause 6.9.4.1 and 6.9.4.2 for requirements)*	Yes ☒ No ☐
	2c - Has a minimum 4m² bulky waste storage area been allocated?	Yes ☐ No ☒
	2d - Have you submitted a detailed plan of the waste bin storage room/area, together with the nominated collection point and access pathway marked?	Yes ☐ No ☒

3.	Are you using a compactor in the bin storage room? If *NO*, proceed to question 4	Yes ☐ No ☒
	3a – Please detail the type of system (carousel, lineal, optic sensors, number of bins, automatic bin exchange, size etc.)	

	3b – What is the proposed compactor diameter?	
	3c – What is the ceiling height of the waste bin storage room room?	
	3d – What is the proposed compaction ratio? (Must NOT exceed 2:1)	
4.	Is there a garbage chute system installed? If *NO*, proceed to Section 3	Yes ☐ No ☒
	4a – Is there a service room provided on each storey?	Yes ☐ No ☐
	4b – Is there sufficient space allocated for 2x 240L recycling bins in the service room(s)?	Yes ☐ No ☐
	4c – How many storeys will the chute service?	

Section 3: Collection of Waste

1.	Is there a caretaker on-site responsible for managing waste?	Yes ☒ No ☐
	1a - Designate which body is responsible for cleaning of waste storage areas	COUNCIL
	1b - Designate which body is responsible for transfer of waste and recycling bins to and from the collection point (if applicable)	N/A
2.	Are you proposing to use a waste bin presentation area for collection of waste?	Yes ☐ No ☒
3.	What is the maximum distance from the waste bin storage room/area to the street kerb?	N/A
4.	Are you proposing for Council's collection contractor to enter the site to collect the bins? (see clause 6.9.4.3)	Yes ☐ No ☒

Section 4: Shop Top Housing and Non-Residential Development

1.	Has a separate waste bin storage room/area been provided for commercial/retail tenancies?	Yes ☐ No ☐
	1a - Does the waste bin storage room/area have sufficient space allocated for storage of estimated bins? (as per Section 1)	Yes ☐ No ☐
	1b - Is the waste bin storage room/area size and layout flexible to allow for future changes in use?	Yes ☐ No ☐
	1c - Have you provided the necessary requirements for storage and collection of specific wastes types (i.e food, medical, hazardous etc.)	Yes ☐ No ☐

2.	Has sufficient space close to retail/commercial premises been allocated for storage of re-usable commercial items such as crates, pallets, kegs etc?	Yes ☐ No ☐

2: Waste Generation Rates

Guide Only

Type of Premises	Waste Generation	Recycling Generation
Backpackers accommodation	40Litres(L)/Occupant/week	20L/occupant/week
Boarding house, Guest house	60L/Occupant/week	20L/occupant/week
Food Premises:		
Butcher	80L/100m^2 floor area/day	Discretionary
Delicatessen	80L/100m^2 floor area/day	Discretionary
Fish Shop	80L/100m^2 floor area/day	Discretionary
Greengrocer	240L/100m^2 floor area/day	120L/100m^2 floor area/day
Hairdresser	60L/100m^2 floor area/day	Discretionary
Restaurants	10L/1.5m^2 floor area/day	2L/1.5m^2 floor area/day dining
Supermarket	660L/100m^2 floor area/day	240L/100m^2 floor area/day
Takeaway	80L/100m^2 floor area/day	Discretionary
Hotel	5L/bed/day 50L/100m^2 bar area/day 10L/1.5m^2 of dining area/day	50L/100m^2 of bar and dining areas/day
Licensed Club	5L/100m^2 bar area/day 10L/1.5m^2 of dining area/day	
Motel (without public restaurant)	5L/bed/day 10L/1.5m^2 of dining area/day	1L/bed/day
Offices	10L/100m^2/day	10L/100m^2/day
Retail (other than food sales):		
Shop less than 100m^2 floor area	50L/100m^2 floor area/day	25L/100m^2 floor area/day
Shop over 100m^2 floor area	50L/100m^2 floor area/day	50L/100m^2 floor area/day
Showrooms	40L/100m^2 floor area/day	10L/100m^2 floor area/day

Table W.2: Waste Generation Rates

Source: Better Practice Guide for Waste Management in Multi-Unit Dwellings, DECC, 2008

3: Guidelines for Garbage Chutes, Service Rooms and Compactors

Garbage Chutes

Garbage chutes are only suitable to transfer garbage, and not suitable to transfer recyclables for a range of safety reasons, including potential fire hazard. Garbage chutes must be designed and constructed in accordance with the following requirements:

1. The chute must be cylindrical in shape with a diameter of at least 500mm;

2. The chute must be constructed of non-corrosive metal or other suitable smooth impervious material;

3. The chute must be vertical with no bends, off-sets or restrictions and all internal joints and seams finished to a smooth even surface to allow the free flow of garbage through the chute;

4. Chutes should not open onto any habitable or public space. The service openings for depositing garbage into the chute must be located in a dedicated service room (refer to Service Room guidelines below);

5. The service openings must be fitted with a charging device between one (1) metre and one and a half (1.5) metres above floor level and have a cross-sectional area not more than half that of the garbage chute;

6. The charging devices must be self-closing and designed to permit free flow of garbage into the chute;

7. The chute branches from the charging devices must not exceed one (1) metre in length and must be angled to allow the free flow of garbage into the chute;

8. The chute must terminate in a waste bin storage room and discharge the garbage directly into a waste container in such a way that no spillage occurs. This room must not be accessible by residents;

9. A suitable waste bin carousel (or lineal) system is to be fitted in the waste bin storage room which may be used in addition to a waste compactor (refer to Compactors guidelines below);

10. A suitable cut-off device must be provided at or near the base of the chute to effectively close off the chute while the waste containers are being serviced or the compaction equipment is being maintained;

11. The chute, charging devices and service openings must be capable of being easily cleaned;

12. The chute must be ventilated so that air does not flow from the chute through any service opening and the flow of air through the chute does not impede the downward movement of garbage; and

13. The vent at the top of the chute must extend above the roof level and be fitted a weather-proof cowl and wire mesh screen to prevent the entry of rainwater and birds.

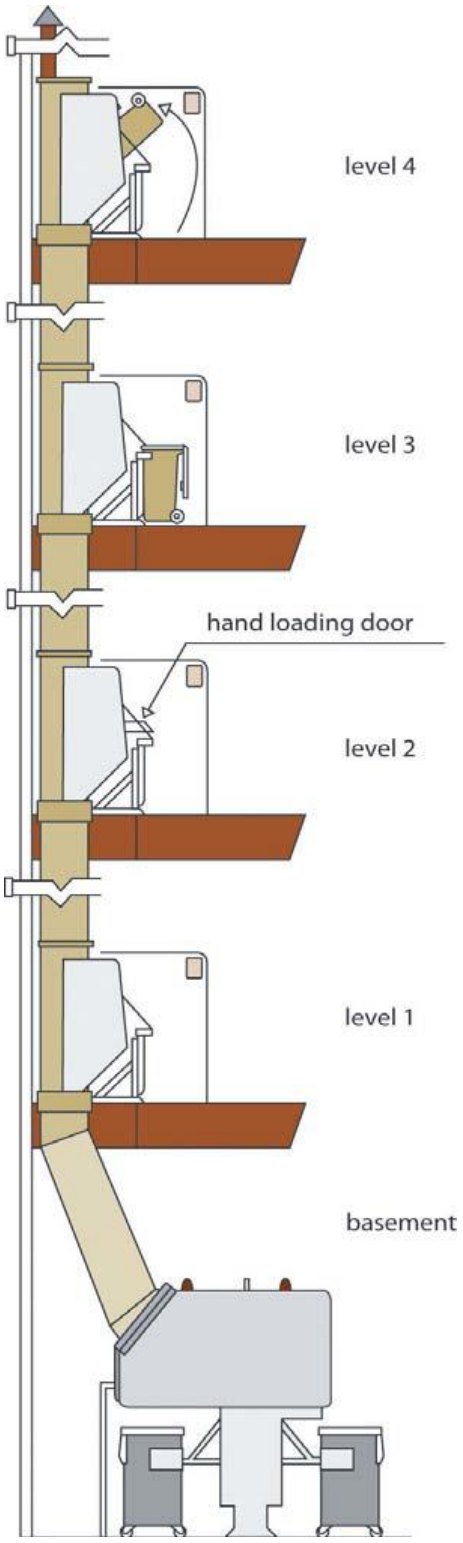

Figure W.1: Garbage Chute

Service Rooms

Service rooms are to be located on each floor of a building to allow access to the garbage chute. Service rooms must be designed and constructed in accordance with the following requirements:

1. Each service room must be located for convenient access by users and must be well ventilated and well lit.

2. Each service room must include space for two 240 litre bins for the reception of recyclable materials.

3. The floors, walls and ceilings of the service rooms must be finished with smooth impervious materials that are capable of being easily cleaned.

4. The service rooms must contain clear signage that describes the types of wastes that can be deposited into the garbage chute and the types of wastes which should be deposited into the recycling bins.

Compactors

Compactors are used to compress the waste into smaller collection containers. The compaction ratio must be set at 2:1. Higher ratios must not be used as they may result in heavier bins, causing WH&S problems, as well as damage to the bins. Best practice compaction systems compact directly into a 240 litre MGB, reducing the requirement of manually loading the compacted waste into bins.

Compactors should only ever be used for the garbage waste, not for recycling as they can damage the material.

Compactors require regular maintenance. In particular, systems fed from a chute can be prone to blockages or failure of the “electronic eye”, which can result in garbage overflowing or backing up the chute. To ensure this does not happen, a full-time caretaker should be employed to maintain the bin rooms and the garbage chute system.