Waste Management Plan

SHiPSEYBARRY

ORCHARD GATE SHD

Former warehousing units 64 & 65, Cherry Orchard
Industrial Estate Ballyfermot, Dublin 10.

Commissioned by AAI PALMERSTOWN LTD

00 PTRI-2018-007-001 A

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contents

1. INTRODUCTION

The proposed development site is located at the former warehousing units 64 & 65, Cherry Orchard Industrial Estate Ballyfermot, Dublin 10.

The proposal is set out with around 4 buildings enclosing a high quality landscaped courtyard amenity space. Buildings are generally at storeys with setbacks/step downs at scale transition points to nearby built environments. The parking element, at 44% is contained on surface with landscaped residents amenity podium over.

Both residential and ancillary waste will be generated by the scheme. All required bins and associated equipment will be stored in designated and segregated areas local to each building. Each refuse room is accessible to upper apartment by central stair and lift cores. The four refuse rooms are located at ground level and have direct access through the podium basement to the refuse truck collection points.

Adequate provisions have been made to facilitate the disposal of dry mixed recyclables, residual waste, organic waste, glass and waste electrical and electronic equipment (WEEE). A standard 60" vertical baler is also provided on site for general use.

Figure 1: Orchard Gate SHD | Extract from Site Plan | NTS

2. PLANNING AND POLICY

Orchard Gate SHD adheres to Section 2.9: Provisions affecting Multi-user Buildings, Apartment Blocks, etc. of the South Dublin County Council Household & Commercial Waste Bye-Law. The development management company is proposed to exercise control and supervision of residential and commercial activities, included all role associated with waste management.

Storage and collection of waste will be undertaken on site in accordance with the Dublin South County Council Development Plan 2016-2022 and the standard BS 5906:2005 Waste Code of Practice.

This proposal acknowledges that policies and objectives in relation to waste management in South Dublin are reflective of overarching EU, National and Regional policy and legislation. This Waste Management Plan is assembled in accordance with the amended Planning and Development Act 2000 and Section 22(10A) of the Waste Management Acts 1996-2008 as the objectives for waste recovery and disposal facilities within the development are outlined.

The proposal aligns with the actions set out by the South Dublin County Council Development Plan 2016-2022 which states to 'promote an increase in the amount of waste re-used and recycled consistent with the Regional Waste Management Plan and Waste Hierarchy and facilitate recycling of waste through adequate provision of facilities and good design in new developments.'[1]

In accordance with the National Strategy on Biodegradable Waste (2006), the proposal support and facilitates the separation of waste at source into organic and non-organic streams or other waste management systems that divert waste from landfill and maximise the potential for each waste type to be re-used and recycled or composted.

It is the policy of SDCC Plan to implement European Union, National and Regional waste and environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

[1] Extract of SDCC Development Plan 2016-2022 | Source: sdcc.ie
[2] Ibid.
[3] Extract of National Development Plan 2018-2027 | Source: gov.ie

The proposal realises IES Objective 8 of the Plan, under Infrastructure and Environmental Quality (IE) which aims 'to secure appropriate provision for the sustainable management of waste within developments, including the provision of facilities for the storage, separation and collection of such waste.'[2] On Waste Management and Resource Efficiency, the National Development Plan 2018-2027 states 'that investment in waste management infrastructure is critical to our environmental and economic well-being for a growing population and to achieving circular economy and climate objectives.'[3] The proposal supports the sustainable aims set out by the Plan and all associated policy for the well-being of the public and the environment.

In illustration of the above statements, all waste that is reasonable assumed to be produced by the scheme is calculated in Section 3. All provisions for the safe disposal of waste within the scheme is outlined Section 4. Waste is ensured to be safely and efficiently collected from the premises in Section 5.

3. WASTE CALCULATION

ASSUMPTIONS

- Occupancy rates are assumed to be 1 person per studio apartment, 2 persons per one bed apartments, 4 persons per 2 bed apartment and 6 persons per 3 bed apartment.

- Household waste will be source separated into recyclables, residual, and organic wastes. Wheeled bins will be available in waste storage rooms also for WEEE and waste glass.

- It is assumed that approximately 60% of waste generated will be dry mixed recyclables. This is in line with the goals for 2030 as outlined in Chapter 5 of the Eastern-Midlands Region Waste Management Plan 2015-2021. 30% of waste generated will be residual waste, and 10% of waste generated will be organic waste. The waste management system will be flexible to allow for increases in the proportion of source segregated recyclables and reduction of residual wastes in the future. This includes the European Commission's 70% target for re-use and recycling of waste by 2030.

- Once weekly waste collection per waste type of residential & other waste is assumed for the purpose of these calculations.

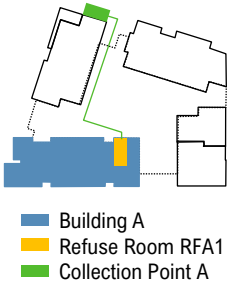
- It is assumed that all waste will be delivered by householders to basement level communal waste stores. Communal waste rooms will be located in each podium basement for each building block, representing one communal waste room per two blocks.

- The EPA reported a household waste generation rate per capita of 321kg per annum for 2017, the most recent year for which published data is available.

- Density of 0.21 tonnes/m3 or 0.21 tonnes/1000 litres for waste calculations.

CHECK***

Waste Type	Residential	Refuse Room No.	RFA1	Waste Estimation (Recycling, Residual, Organic)	4,884ltr.
Building	A	Refuse Room Area	38.6m²	Waste Provision (Recycling, Residual, Organic)	5,980ltr.
No. Apartments	59	1100ltr. Bins Provided	6	Additional Provisions (Glass, WEEE)	1,820ltr.
Collection Point	A	240ltr. Bins Provided	5	Total Provisions	7,800ltr.



ESTIMATION CALCULATIONS

apt type	population/ type	no. of apts.	cumulative pop	waste generation(kg)/ annum *	waste generation(tonnes)/annum *	m^3 waste/annum**	m^3 waste/week	no. of $1.1m^3$ (1100ltr) bins required
1 BED	2	35	70	22,470	22.47	107.00	2.06	1.87
2 BED	4	24	96	30,816	30.82	146.74	2.82	2.57
TOTAL		59	166	53,286	53.29	253.74	4.88	4.44

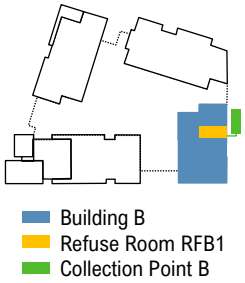
PROVISION CALCULATIONS

Waste Category Split	%	4.44 x 1100 litre requirement split	MINIMUM PROVISION		ADDITIONAL TO MINIMUM PROVISION	
			actual 1100 litre provision	actual 240 litre provision	glass bin provision (240 litre)	WEEE 1100 Litre bin provision
Dry mixed recylables	60%	2.66	3		3	1
Residual Waste	30%	1.33	2			
Organic Waste	10%	0.44		2		
Total			5	2	3	1

**321 kg/person/annum*

***210 kg/m³ =waste density*

Waste Type	Residential	Refuse Room No.	RFB1	Waste Estimation (Recycling, Residual, Organic)	1,584ltr.
Building	B	Refuse Room Area	39.5m²	Waste Provision (Recycling, Residual, Organic)	2,440ltr.
No. Apartments	17	1100ltr. Bins Provided	3	Additional Provisions (Glass, WEEE)	1,820ltr.
Collection Point	B	240ltr. Bins Provided	4	Total Provisions	4,260ltr.



ESTIMATION CALCULATIONS

apt type	population/ type	no. of apts.	cumulative pop	waste generation(kg)/ annum *	waste generation(tonnes)/annum *	m^3 waste/annum**	m^3 waste/week	no. of $1.1m^3$ (1100ltr) bins required
1 BED	2	7	14	4,494	4.49	21.40	0.41	0.37
2 BED	4	10	40	12,840	12.84	61.14	1.18	1.07
TOTAL		17	54	17,334	17.33	82.54	1.59	1.44

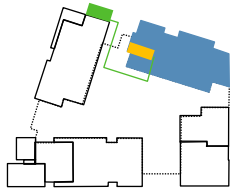
PROVISION CALCULATIONS

Waste Category Split	%	1.44 x 1100 litre requirement split	MINIMUM PROVISION		ADDITIONAL TO MINIMUM PROVISION	
			actual 1100 litre provision	actual 240 litre provision	glass bin provision (240 litre)	WEEE 1100 Litre bin provision
Dry mixed recylables	60%	0.87	1		3	1
Residual Waste	30%	0.43	1			
Organic Waste	10%	0.14		1		
Total			2	1	3	1

**321 kg/person/annum*

***210 kg/m³ =waste density*

Waste Type	Residential	Refuse Room No.	RFC1	Waste Estimation (Recycling, Residual, Organic)	3,179ltr.
Building	C	Refuse Room Area	35.2m²	Waste Provision (Recycling, Residual, Organic)	3,780ltr.
No. Apartments	35	1100ltr. Bins Provided	4	Additional Provisions (Glass, WEEE)	1,820ltr.
Collection Point	A	240ltr. Bins Provided	5	Total Provisions	5,600ltr.



ESTIMATION CALCULATIONS

apt type	population/ type	no. of apts.	cumulative pop	waste generation(kg)/ annum *	waste generation(tonnes)/annum *	m^3 waste/annum**	m^3 waste/week	no. of $1.1m^3$ (1100ltr) bins required
1 BED	2	16	32	10,272	10.27	48.91	0.94	0.86
2 BED	4	19	76	24,396	24.40	116.17	2.23	2.03
TOTAL		35	108	34,668	34.67	165.09	3.17	2.89

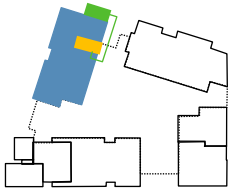
PROVISION CALCULATIONS

Waste Category Split	%	2.89 x 1100 litre requirement split	MINIMUM PROVISION		ADDITIONAL TO MINIMUM PROVISION	
			actual 1100 litre provision	actual 240 litre provision	glass bin provision (240 litre)	WEEE 1100 Litre bin provision
Dry mixed recylables	60%	1.73	2		3	1
Residual Waste	30%	0.87	1			
Organic Waste	10%	0.29		2		
Total			3	2	3	1

**321 kg/person/annum*

***210 kg/m³ =waste density*

Waste Type	Residential	Refuse Room No.	RFD1	Waste Estimation (Recycling, Residual, Organic)	3,058ltr.
Building	D	Refuse Room Area	32.3m²	Waste Provision (Recycling, Residual, Organic)	3,780ltr.
No. Apartments	33	1100ltr. Bins Provided	4	Additional Provisions (Glass, WEEE)	1,820ltr.
Collection Point	A	240ltr. Bins Provided	5	Total Provisions	5,600ltr.



ESTIMATION CALCULATIONS

apt type	population/ type	no. of apts.	cumulative pop	waste generation(kg)/ annum *	waste generation(tonnes)/annum *	m^3 waste/annum**	m^3 waste/week	no. of $1.1m^3$ (1100ltr) bins required
1 BED	2	14	28	8,988	8.99	42.80	0.82	0.75
2 BED	4	19	76	24,396	24.40	116.17	2.23	2.03
TOTAL		33	104	33,384	33.38	158.97	3.06	2.78

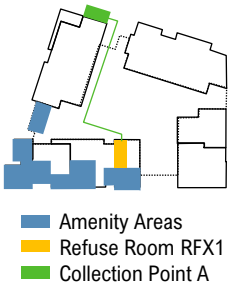
PROVISION CALCULATIONS

Waste Category Split	%	2.78 x 1100 litre requirement split	MINIMUM PROVISION		ADDITIONAL TO MINIMUM PROVISION	
			actual 1100 litre provision	actual 240 litre provision	glass bin provision (240 litre)	WEEE 1100 Litre bin provision
Dry mixed recylables	60%	1.67	2		3	1
Residual Waste	30%	0.83	1			
Organic Waste	10%	0.28		2		
Total			3	2	3	1

**321 kg/person/annum*

***210 kg/m³ =waste density*

Waste Type	Ancillary	Refuse Room No.	RFA1	Waste Estimation (Recycling, Residual, Organic)	1,377ltr.
Building	A	Refuse Room Area	38.6m²	Waste Provision (Recycling, Residual, Organic)	1,820ltr.
Total Area	547.5m²	1100ltr. Bins Provided	2	Additional Provisions (Glass, WEEE)	1,340ltr.
Collection Point	A	240ltr. Bins Provided	4	Total Provisions	3,160ltr.



CALCULATIONS

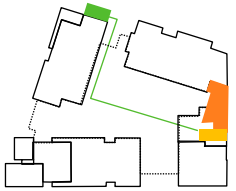
Use	Day output (ltr/100m2/day)	Area (sqm)	Operation days	Output (ltrs/week)	Dry mixed recyclables 60%	Residual Waste 30%	Organic Waste 10%	Glass waste	WEEE waste
TENANT AMENITIES	27	439.4	7	830.466	498.2796	249.1398	83.0466		
GYM	71	108.1	7	537.257	322.3542	161.1771	53.7257		
		total output		1376.72	820.6338	410.3169	136.7723		
		1100 ltr bin allocation		2200	1				1
		240 ltr bin allocation		960		2	1	1	

210 kg / 1000 ltr = waste density

Figure 2: Extract from Ground Floor Plan: Communal Areas | NTS

1 *Activity Area* 68.4m²
2 *Lobby* 59m²
3 *Lounge 1* 100.9m²
4 *Lounge 2* 65.5m²
5 *Meeting Room* 37.1m²
6 *Lounge 4* 54.5m²
7 *Lounge 5* 54m²
8 *Gym* 108.1m²

Waste Type	Ancillary	Refuse Room No.	RFD1	Waste Estimation (Recycling, Residual, Organic)	**908ltr.**
Building	A	Refuse Room Area	32.3m²	Waste Provision (Recycling, Residual, Organic)	**1,820ltr.**
Total Area	220m²	1100ltr. Bins Provided	2	Additional Provisions (Glass, WEEE)	**1,340ltr.**
Collection Point	A	240ltr. Bins Provided	4	Total Provisions	**1,360ltr.**



CALCULATIONS

Use	Day output (ltr/100m2/day)	Area (sqm)	Operation days	Output (ltrs/week)	Dry mixed recyclables 60%	Residual Waste 30%	Organic Waste 10%	Glass waste	WEEE waste
COMMERCIAL/RETAIL	100	129.7	7	907.9	544.74	272.37	90.79		
		total output		907.9	544.74	272.37	90.79		
		1100 ltr bin allocation		2200	1				1
		240 ltr bin allocation		960		2	1	1	

210 kg / 1000 ltr = waste density

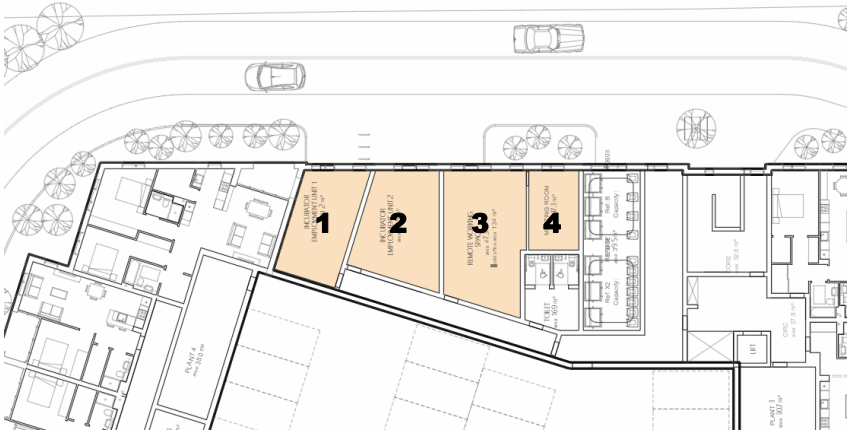


Figure 3: Extract from Ground Floor Plan highlighting Local Employment Areas | NTS

1 *Incubator Employment Unit 1* 31.2m²
2 *Incubator Employment Unit 2* 37.5m²
3 *Remote Working Space 47.3*m²
4 *Meeting Room 2 13.7*m²

4. WASTE DISPOSAL WITHIN DEVELOPMENT

Figure 4: Ground Floor Plan highlighting Refuse Rooms + Access | NTS

REFUSE ROOM

CORE LIFT & STAIR ACCESS

RESIDENTIAL

As it is assumed that all waste will be delivered by householders to basement level communal waste stores, design measures have been taken to ensure the ease and safety of this delivery.

Figure 4 illustrates the most direct path from each residential stair and lift core to the buildings designated refuse room in the podium basement.

4. WASTE DISPOSAL WITHIN DEVELOPMENT

Figure 5: Ground Floor Plan highlighting Ancillaries + Associated Refuse Rooms | NTS

REFUSE ROOM
PUBLIC AMENITY AREAS
LOCAL EMPLOYMENT AREAS

ANCILLARY

Refuse Room RFA1 serves all Public Amenity Areas as well as the residents of Building A. Similarly, RFB1 serves all Commercial uses as well as the residents of Building B (see Section 5 for layouts).

As shown in *Figure 5*, each Ancillary space has efficient access to the Refuse Rooms provided. Through the podium basement in the case of Building A, and on buffered street in the case of Building B. Refuse Room RFB1 also provides a standard 60" Baler for the communal use of all residents and staff.

4. WASTE DISPOSAL WITHIN DEVELOPMENT

Figure 6: Ground Floor Plan highlighting all Refuse Rooms + Collection Points| NTS

COLLECTION POINTS

The bin collection point for Buildings A, C and D is located to the north of the site as shown in *Figure 6*. This designated area is at the entrance to the podium basement, providing ease of access for each of these Refuse Rooms accessible through the car park. This is also adjacent to the location of the refuse truck turning zone (see Section 4), which will help to prevent traffic congestion during weekly and fortnightly collections. Building B collection point is located to the east of the site, reducing the distance travelled by residents and staff.

4. WASTE COLLECTION

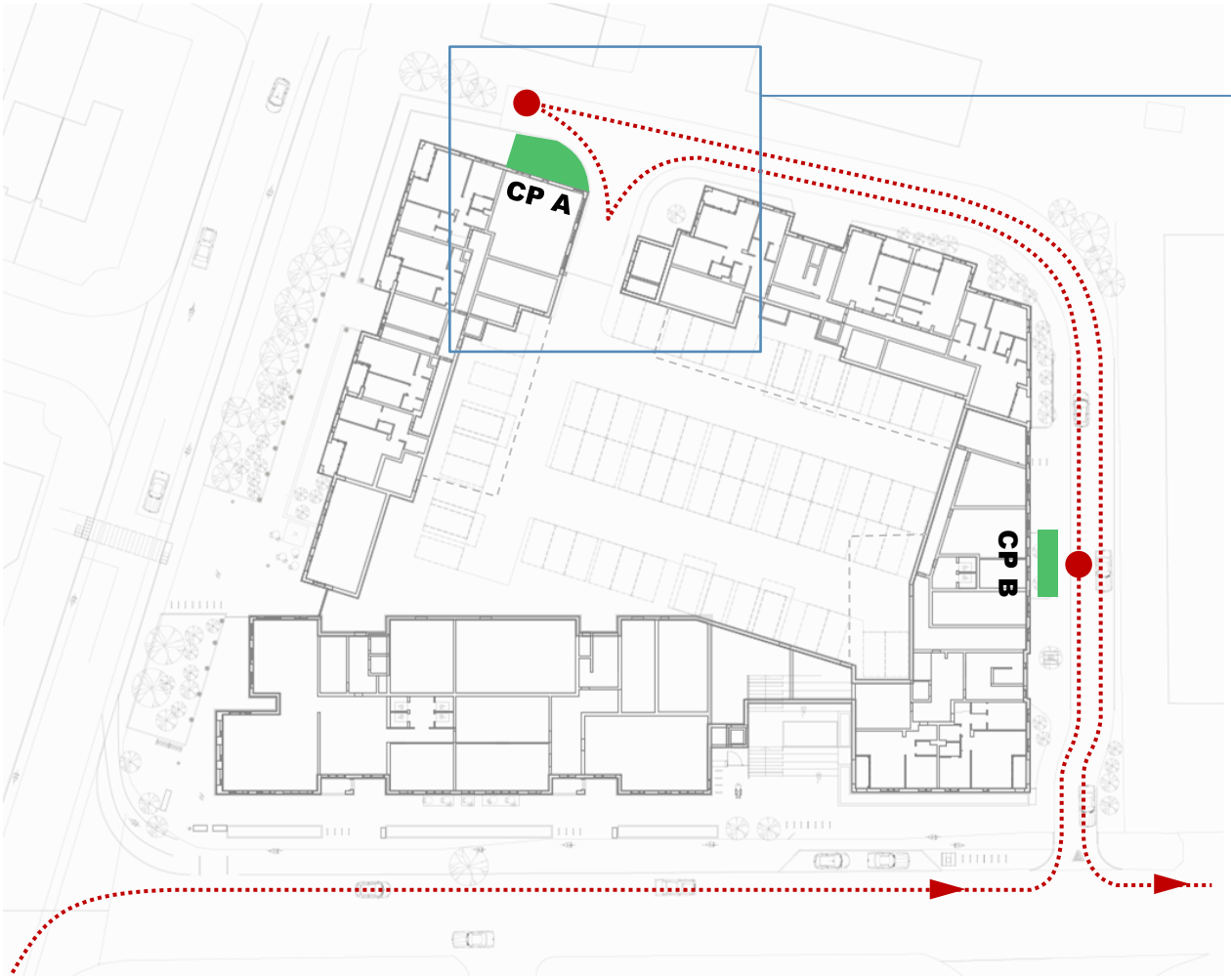


Figure 7: Ground Floor Plan highlighting Collection Points + Refuse Pick-up Locations | NTS

REFUSE TRUCK ROUTE

REFUSE TRUCK STOPS

COLLECTION POINTS

VEHICLE MOVEMENT

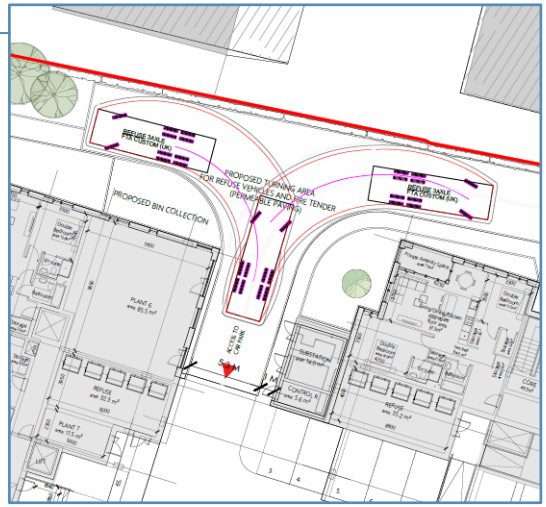
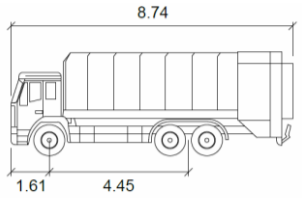


Figure 7: Extract of GF displaying Refuse 3 Axle Turning Radius | NTS



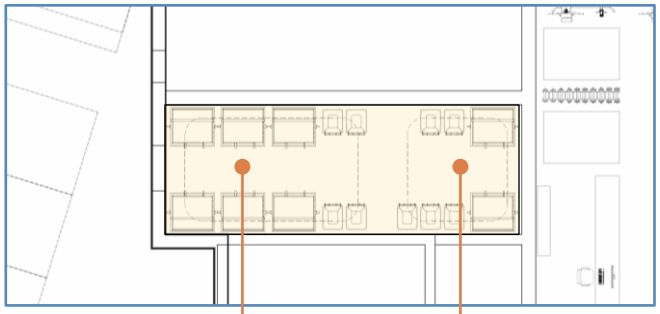
REFUSE 3AXLE

	Meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0 s
Steering Angle	: 35.3 deg

5. REFUSE ROOMS AND INVENTORY

1 Refuse Room RFA1

area: 38.6m²

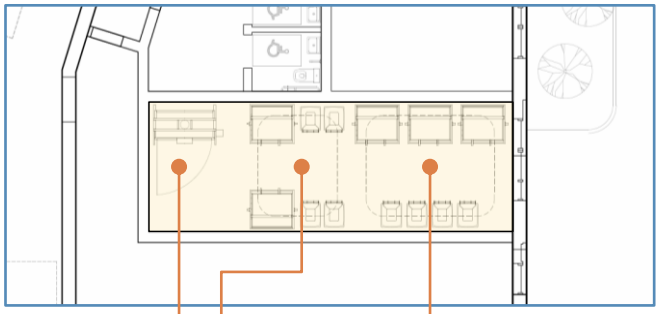


For Residents:
6 x 1100 litre bins
4 x 240 litre bins
Capacity: 7,560m²

For Ancillaries:
2 x 1100 litre bins
5 x 240 litre bins
Capacity: 3,400m²

2 Refuse Room RFB1

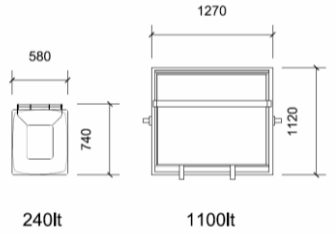
area: 39.5m²



For General Use:
60" Standard
Vertical Baler

For Ancillaries:
2 x 1100 litre bins
4 x 240 litre bins
Capacity: 3,160m²

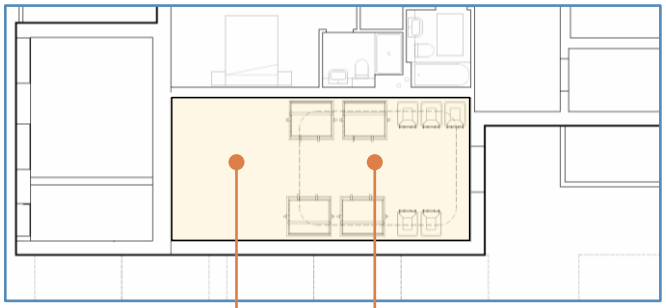
For Residents:
3 x 1100 litre bins
4 x 240 litre bins
Capacity: 4,260m²



240lt 1100lt

3 Refuse Room RFC1

area: 35.2m²

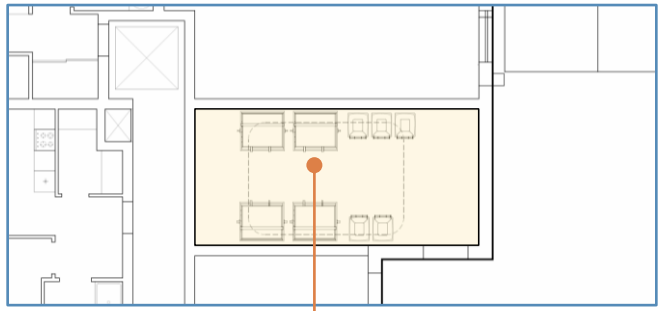


Surplus area provided
to cater for potential
expansion requirements

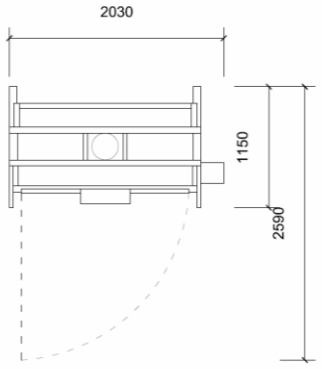
For Residents:
4 x 1100 litre bins
5 x 240 litre bins
Capacity: 5,600m²

4 Refuse Room RFD1

area: 32.3m²



For Residents:
4 x 1100 litre bins
5 x 240 litre bins
Capacity: 5,600m²



60" Vertical Baler

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