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Operational Waste Management Plan

Stapolin Village

CLIENT

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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Team, has prepared this Operational Waste Management Plan (RWMP) on behalf of The Land Development Agency (LDA) (the Applicant). The proposed development will consist of the alteration of permitted development of Block A, Block D and Stapolin Square, as permitted under ABP Reg. Ref. ABP-310418-21 (and as amended under LRD/0015/S3 & LRD/0073/S3E). No amendments are proposed to any other permitted blocks. The permitted Block A and Block D are located to the south and north of Stapolin Square and include for 528 units (277 in Block A1, A2 & A3 and 251 in Block D1, D2 & D3) and include residential tenant amenity, retail/café/restaurant, pharmacy, medical centre, crèche, gym, car and bicycle parking and public realm. The proposed alterations only relate to Block A, Block D and Stapolin Square, of the permitted development and for the most part are contained within the footprint and massing of the permitted development and relate to internal reconfiguration.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the Proposed Development is undertaken in accordance with the current legal and industry standards including, the Waste Management Act 1996 as amended and associated Regulations ¹, Environmental Protection Agency Act 1992 as amended ², Litter Pollution Act 1997 as amended ³, *the* National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPE) (2024) ⁴ and Fingal County Council (FCC) Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws' 2020 ⁵. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at Site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the Proposed Development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific national guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998 entitled 'Changing Our Ways'⁶, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, Changing Our Ways stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document, 'Preventing and Recycling Waste – Delivering Change' was published in 2002⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled 'Making Ireland's Development Sustainable – Review, Assessment and Future Action'⁸. This document also stressed the need to decouple economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document Changing Our Ways, a review document was published in April 2004 entitled 'Taking Stock and *Moving Forward*'⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan '*A Waste Action Plan for a Circular Economy*'¹⁰ (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan "*A Resource Opportunity*" (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less'* (2021)⁸ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years. However, at the date of authoring of this report there has been no update released.

The Circular Economy and Miscellaneous Provisions Act 2022¹² was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible

and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Department of Housing, Local Government and Heritage authored Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024) ¹³, suggests the below thresholds at which the need for the supplemental information such as the OWMP should be considered.

- ▶ 30 or more residential units;
- ▶ 1,000 sq. meters of mixed-use development

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed Circular Economy and Waste Statistics Highlight Reports ¹⁴ detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2025 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2025) reported the following key statistics for 2023:

- ▶ *Ireland generated 3.13 million tonnes of municipal waste in 2023, relatively unchanged compared to the 3.19 million tonnes generated in 2022.*
- ▶ *Between 2016 and 2023, municipal waste increased from 2.7 million tonnes to 3.13 million tonnes.*
- ▶ *Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2023, resulting in a recycling rate of 42%. This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035.*
- ▶ *Of the municipal waste recycled in 2023, over 814,000 tonnes went for material recycling (approximately the same as 2022) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2022 but up 37% on 2020).*
- ▶ *A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2023. This tonnage is 43% of municipal waste managed.*
- ▶ *Ireland's landfill rate for municipal waste managed was 14% in 2023. This is a 1% decrease from 2022's rate of 15%.*
- ▶ *There has been a steep decline in Ireland's landfill rate for municipal waste from over 80% in 2001. Ireland must reduce the share of municipal waste landfilled to 10% or less by 2035, which includes waste landfilled at each step along the waste treatment process in Ireland and abroad.*
- ▶ *An estimated 42% (1.2 million tonnes) of all municipal waste managed was exported abroad in 2023, an increase from the 39% in 2022. Of the waste exported, most went for recycling (49%) or energy recovery (36%) while 11% went for composting or anaerobic digestion.*

2.2 Regional Level

The Proposed Development is located in the Local Authority administrative area of Fingal County Council (FCC).

The Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021, which previously governed waste management policy in the FCC area, has been superseded as of March 2024 by the National Waste Management Plan for a Circular Economy (NWMPCE) 2024 – 2030, the national waste management plan for Ireland.

The NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

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National Targets

- 1A. (Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030
- 2A. (Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin
- 2B. (Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030)
- 3A. (Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015*¹⁵. The *Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁶ will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills.

The *Fingal Development Plan 2023 – 2029*¹⁷ sets out a number of objectives for the Fingal region in line with the objectives of the regional waste management plan, including the following:

- ▶ **Objective IU034 – Waste Management in New Developments -**
Require the provision of appropriate, well designed, accessible space to support the storage, separation and collection of as many waste and recycling streams as possible in all new commercial and residential developments within the County.
- ▶ **Objective DMSO234 – Provision of Public Bring Banks -** *Ensure the provision of public bring banks in all large retail developments, unless there are existing facilities within a 1 km radius. Bring bank facilities will generally be required at appropriate locations in the following development types:*
 - *In conjunction with significant new commercial developments, or extensions to existing developments.*
 - *In conjunction with new waste infrastructure facilities, proposals should include bring facilities for the acceptance of non-hazardous and hazardous wastes from members of the public and small businesses.*

- *In conjunction with medium and large scale residential and mixed-use developments providing in excess of 10 residential units, proposals should provide recycling and bring bank facilities to serve residents and in some appropriate locations, the wider community.*
 - *In conjunction with all large retail developments provide space for reverse vending machines to promote the circular economy.*
- ▶ **Objective DMSO235 – Communal Refuse Storage Provision** - *In the case of communal refuse storage provision, the collection point for refuse should be accessible both to the external collector and to the resident and be secured against illegal dumping by non-residents. In the case of individual houses, the applicant shall clearly show within a planning application the proposed location and design of bin storage to serve each dwelling and having regard to the number of individual bins required to serve each dwelling at the time of the application and any possible future requirements for refuse storage/collection. The following criteria will be considered in the assessment of the design and siting of waste facilities and bring facilities:*
- *The location and design of any refuse storage or recycling facility should ensure that it is easily accessible both for residents and/or public and for bin collection, be insect and vermin proofed, will not present an odour problem, and will not significantly detract from the residential amenities of adjacent property or future occupants.*
 - *Provision for the storage and collection of waste materials shall be in accordance with the guidelines for waste storage facilities in the relevant Regional Waste Management Plan and the design considerations contained in Section 4.8 and 4.9 of the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities, DHLGH (2020).*
 - *Refuse storage for houses should be externally located, concealed / covered and adequate to cater for the size and number of bins normally allocated to a household. For terraced houses, the most appropriate area for bins to be stored is to the front of the house, which should be located in well-designed enclosures that do not detract from visual amenity.*
 - *All applications shall clearly identify the waste storage and collection points and detail the anticipated waste collection schedule having regard to the impact on road users both within the development and the surrounding area.*
 - *Access to private waste storage in residential schemes should be restricted to residents only.*
- ▶ **Objective DMSO236 – Segregation and Collection of Waste** - *Ensure all new large-scale residential and mixed-use developments include appropriate facilities for source segregation and collection of waste.*
- ▶ **Objective DMSO237 – Distance from Front Door to Communal Bin Area** - *Ensure all new residential schemes include appropriate design measures for refuse storage areas, details of which should be clearly shown at pre-planning and planning application stage. Ensure refuse storage areas are not situated immediately adjacent to the front door or ground floor window, unless adequate screened alcoves or other such mitigation measures are provided.*
- ▶ **Objective DMSO239 – Refuse storage areas** - *Ensure all new residential schemes include appropriate design measures for refuse storage areas, details of which should be clearly shown at pre-planning and planning application stage. Ensure refuse storage areas are not situated immediately adjacent to the front door or ground floor window, unless adequate screened or other such mitigation measures are provided.*
- ▶ **Objective DMSO240 – Distance to Communal Bin Areas** - *Ensure the maximum distance between the front door to a communal bin area does not exceed 50 metres.*

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the Proposed Development are:

- ▶ *Waste Management Act 1996 as amended;*
- ▶ *Environmental Protection Agency Act 1992 as amended;*
- ▶ *Litter Pollution Act 1997 as amended;*
- ▶ *Planning and Development Act 2000 as amended* ¹⁸;
- ▶ *Circular Economy and Miscellaneous Provisions Act 2022.*

These Acts and subordinate Regulations transpose the relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 as amended and subsequent Irish legislation, is the principle of "Duty of Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is, therefore, imperative that the residents, gym, retail and crèche tenant, along with the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and that the facilities management company employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007, as amended, or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and / or disposed of at the specified site.

2.3.1 Fingal County Council Waste Management Bye-Laws

The FCC "*Segregation, Storage and Presentation of Household and Commercial Waste Bye-Laws 2020*" came into effect in March 2020. The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the FCC functional area. Key requirements under these *Waste Bye-Laws* are:

- ▶ *Kerbside waste presented for collection shall not be presented for collection earlier than 6:00pm on the day immediately preceding the designated waste collection day;*
- ▶ *All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 9:00am on the day following the designated waste collection day;*
- ▶ *Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated; and*
- ▶ *A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:*
 - *Separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste;*
 - *Additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste;*

- *The receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection;*
- *Any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,*
- *Written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection;*
- *An authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by Fingal County Council;*
- *Receptacles for kerbside waste are presented for collection on the designated waste collection day; and*
- *Adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the Waste Bye-Laws is available from the FCC website.

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential sector in the FCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and all are operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second in Poolbeg in Dublin.

There is Estuary Recycling Centre at Greenfields, Swords, Dublin, located c. 6.8 km to the northwest of the Development Site, which can be utilised by the residents of the Proposed Development for other household waste streams while a bottle and clothing bank can be found c. 2.0km to the south west at Trinity Sports and Leisure Club, Donaghmede, Dublin, D13XH72.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste Licenses issued are available from the EPA.

3. DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The proposed development will consist of the alteration of permitted development of Block A, Block D and Stapolin Square, as permitted under ABP Reg. Ref. ABP-310418-21 (and as amended under LRD/0015/S3 & LRD/0073/S3E). No amendments are proposed to any other permitted blocks. The permitted Block A and Block D are located to the south and north of Stapolin Square and include for 528 units (277 in Block A1, A2 & A3 and 251 in Block D1, D2 & D3) and include residential tenant amenity, retail/café/restaurant, pharmacy, medical centre, crèche, gym, car and bicycle parking and public realm. The proposed alterations only relate to Block A, Block D and Stapolin Square, of the permitted development and for the most part are contained within the footprint and massing of the permitted development and relate to internal reconfiguration.

The proposed alterations result in an overall increase of 68 no. units in Block A and Block D, bringing the total units in Block A and Block D to 596, the total units permitted under ABP Reg. Ref. ABP-310418-21 (as amended) to 893 (760 apartments and 133 houses).

The proposed altered residential development of Block A and Block D will consist of a total of 596 no residential apartments, as follows:

- ▶ Alteration of Blocks A1, A2 & A3 from permitted 4 to 7-storey buildings providing for 288 no. apartment units to a 4 to 7 storey building providing for 312 no. apartments.
- ▶ Alteration of Blocks D1, D2 & D3 from permitted 5 to 10-storey buildings providing for 251 no. apartment units to a 5 to 10 storey building providing for 284 no apartments.
- ▶ The reconfiguration of internal layouts of each of the blocks has resulted in the reduction of the blocks overall width and therefore increased width and area to the courtyards and increased distance between individual blocks.
- ▶ Alteration of the permitted uses and facade at ground floor level and removal of permitted Residential Tenant Amenity Facilities located in Blocks A3 and D3 to provide for a ground floor level that includes in Blocks A1-A3, retail/restaurant/café/gym units and a creche including outdoor play space and in Blocks D1-D3, retail/restaurant/cafe units and residential units.
- ▶ A revised central civic plaza at Stapolin Square centrally located between blocks A1-A3 and D1-D3, redesigned to address Condition 2 (a) of ABP-310418-21 which requires the removal of the two previously proposed public lifts. Stapolin Square is now designed to accommodate a gently sloped landscaped route from Longfield Road to Clongriffin Train Station.
- ▶ Alterations to the permitted below podium areas under Block A, Stapolin Square & Block D to include for alterations to permitted layouts of car parking, cycle parking, plant, waste stores and substation locations. This includes the reduction in car parking as required under Condition 2 (b) of ABP-310418-21 which requires omission of car parking under the permitted ramped access road to the Train Station to the north of Block D. An increase in bicycle parking is proposed.

No amendments are proposed to the constructed Blocks within B3, B4, C4, C5, C6 or the permitted The Haggard Park which remains as permitted, or all other elements including surface water attenuation wetlands and associated upstream surface water network, demolition of existing temporary lift and stair enclosure and associated infrastructure to Clongriffin Train Station, road infrastructure (except where within the application boundary and requiring to be locally altered for proposed alterations), and utilities infrastructure (except where within the application boundary and requiring to be locally altered for proposed alterations), all of which remain as per permitted.

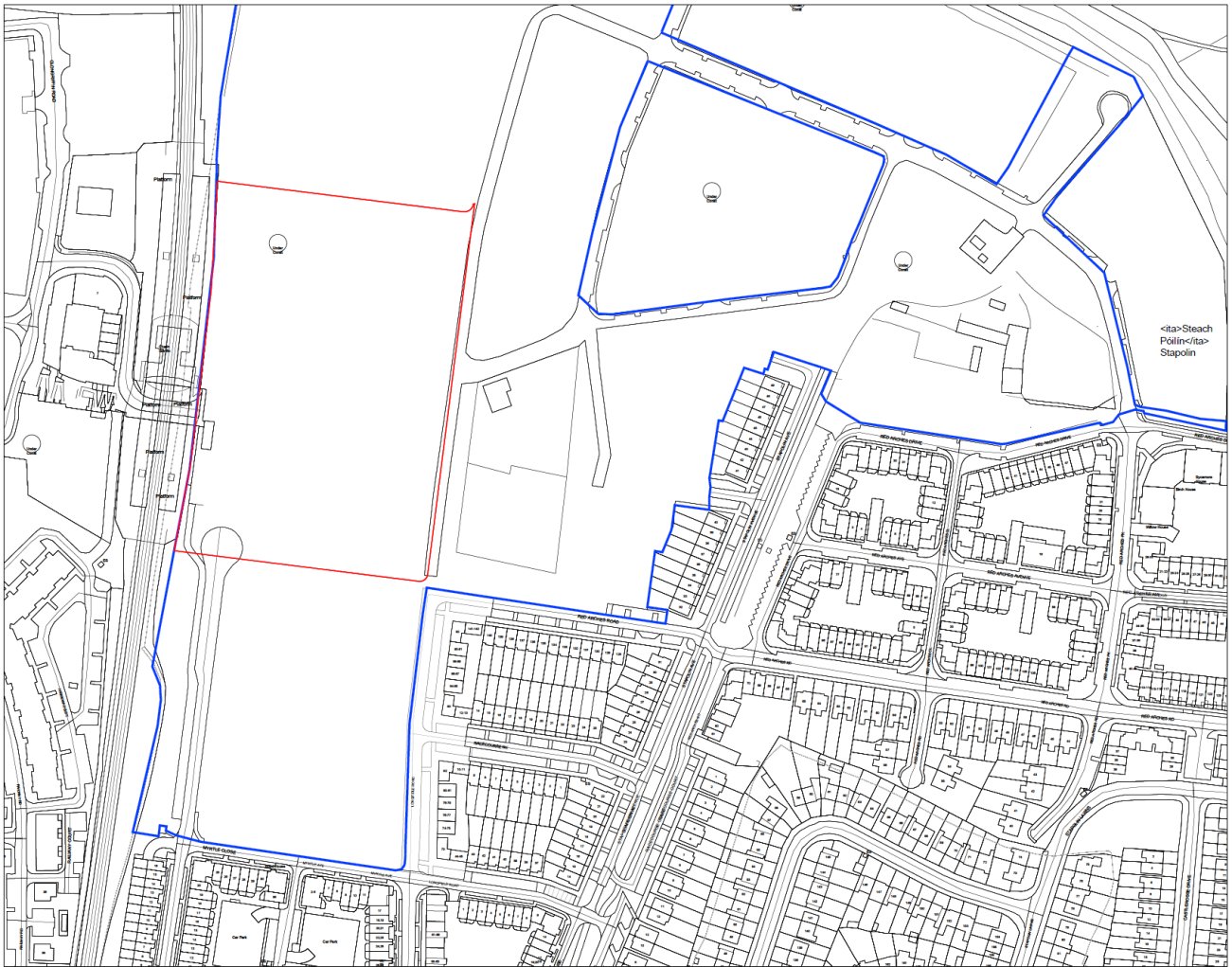


Figure 3.1 Proposed Development Site Location (HJL ref STAP-HJL-A-XX-DR-A-0001)



Figure 3.2 Proposed Development Layout (HJL ref STAP-HJL-A-XX-DR-A-0004)

3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the Proposed Development will include the following:

- ▶ Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- ▶ Organic waste – food waste and green waste generated from internal plants / flowers;
- ▶ Glass; and
- ▶ Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- ▶ Drink Cans and Bottles (Deposit Return Scheme)
- ▶ Green / garden waste may be generated from external landscaping;
- ▶ Batteries (both hazardous and non-hazardous);
- ▶ Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- ▶ Printer cartridges / toners;
- ▶ Chemicals (paints, adhesives, resins, detergents, etc.);
- ▶ Light bulbs;
- ▶ Textiles;
- ▶ Waste cooking oil (if any generated by the residents and/or creche tenant);
- ▶ Furniture (and, from time to time, other bulky wastes); and
- ▶ Abandoned bicycles.

Wastes will be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 List of Waste Codes

In 1994, the *European Waste Catalogue*¹⁸ and *Hazardous Waste List*¹⁹ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*²⁰, which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*²⁰ 2018. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code for typical waste materials expected to be generated during the operation of the Proposed Development are provided in Table 3.1 below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW Code
Paper and Cardboard	20 01 01
Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky Wastes	20 03 07

** Individual waste type may contain hazardous materials*

4. ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the Proposed Development. The WGM incorporates building area and use and combines these with other data, including Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the residential units has been determined based on the predicted occupancy of the units. The residential waste figures include the waste generated in communal areas. While the floor area usage (m²) has been used to estimate the waste arising from the crèche, retail and gym units (Commercial Units).

The estimated waste generation for the Proposed Development for the main waste types is presented in Tables 4.1 – 4.4. These have been separated out to correspond to the waste storage area allocations.

Table 4.1 Estimated Waste Generation for Residential Units

Waste Type	Waste Volume (m ³ / week)			
	Residential Block A1 (North)	Residential Block A1 (South)	Residential Block A2 (North)	Residential Block A2 (South)
Organic Waste	0.75	0.61	0.77	0.81
Mixed Dry Recyclables	5.32	4.34	5.44	5.74
Glass	0.15	0.12	0.15	0.16
Mixed Municipal Waste	2.80	2.28	2.86	3.02
Total	9.02	7.36	9.22	9.73

Table 4.2 Estimated Waste Generation for Residential Units

Waste Type	Waste Volume (m ³ / week)			
	Residential Block A3 (North)	Residential Block A3 (South)	Residential Block D1 (North)	Residential Block D1 (South)
Organic Waste	0.77	0.75	0.84	0.78
Mixed Dry Recyclables	5.44	5.31	5.98	5.51
Glass	0.15	0.15	0.16	0.15
Mixed Municipal Waste	2.86	2.79	3.14	2.90
Total	9.22	9.00	10.13	9.34

Table 4.3 Estimated Waste Generation for Residential Units

Waste Type	Waste Volume (m ³ / week)			
	Residential Block D2 (North)	Residential Block D2 (South)	Residential Block D3 (North)	Residential Block D3 (South)
Organic Waste	0.47	0.68	0.74	0.55
Mixed Dry Recyclables	3.30	4.83	5.24	3.93
Glass	0.09	0.13	0.14	0.11
Mixed Municipal Waste	1.74	2.54	2.75	2.06

Total	5.59	8.18	8.87	6.65
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Table 4.4 Estimated Waste Generation for Crèche, Retail and Gym/Retail Units

Waste Type	Waste Volume (m³ / week)			
	Crèche Block A (Individual)	Retail & Gym/ Retail Units 01 - 04 Block A (Shared)	Retail Units 01 - 04 Block D (Shared)	
Organic Waste	0.07	0.33	0.17	
Mixed Dry Recyclables	2.59	6.43	3.32	
Glass	0.01	0.18	1.38	
Mixed Municipal Waste	1.42	2.68	0.09	
Total	4.09	9.62	4.96	

*BS5906:2005 Waste Management in Buildings – Code of Practice*²¹ has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the Proposed Development.

5. WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the site will be stored and collected. This has been prepared with due consideration of the proposed Site layout as well as best practice standards, local and national waste management requirements, including those of FCC. In particular, consideration has been given to the following documents:

- ▶ BS 5906:2005 Waste Management in Buildings – Code of Practice,
- ▶ The NWMPCE (2024);
- ▶ FCC Fingal County Council Development Plan 2023-2029 (2023);
- ▶ FCC Segregation, Storage and Presentation of Household and Commercial Waste Bye-Laws (2020); and
- ▶ DoHLGH, Design Standards for Apartments, Guidelines for Planning Authorities (2025).

Waste Storage Areas

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover and appendix A of this report.

Shared Waste Storage areas

Apartment Blocks A & D

Twelve (12 no.) shared communal WSAs have been allocated within the development design for residential apartment Blocks A & D. These have been strategically located internally at ground floor level near to their relevant cores.

Commercial Waste Storage areas

Crèche

One (1 no.) WSA has been allocated within the development design for the crèche unit in Block A. This has been strategically located at ground floor level, adjacent to the rear of the creche unit.

Retail and Gym/Retail Units

Two (2 no.) WSAs have been allocated within the development design for the retail and retail/gym units in Block A & D. These has been strategically located at ground floor level, within close proximity of the units.

The temporary staging areas are such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2019) ²³.

Using the estimated waste generation volumes in Tables 4.1 – 4.5, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSA's. It is envisaged all waste will be collected on a weekly basis.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the Proposed Development are detailed in Table 5.1, below.

Table 5.1 Waste storage requirements for the Proposed Development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Residential Block A1 (North)	3 x 1100L	5 x 1100L	1 x 240L	4 x 240L
Residential Block A1 (South)	2 x 1100L	4 x 1100L	1 x 240L	3 x 240L
Residential Block A2 (North)	3 x 1100L	5 x 1100L	1 x 240L	4 x 240L
Residential Block A2 (South)	3 x 1100L	6 x 1100L	1 x 240L	4 x 240L
Residential Block A3 (North)	3 x 1100L	5 x 1100L	1 x 240L	4 x 240L
Residential Block A3 (South)	3 x 1100L	5 x 1100L	1 x 240L	3 x 240L
Residential Block D1 (North)	3 x 1100L	6 x 1100L	1 x 240L	4 x 240L
Residential Block D1 (South)	3 x 1100L	5 x 1100L	1 x 240L	4 x 240L
Residential Block D2 (North)	2 x 1100L	3 x 1100L	1 x 240L	2 x 240L
Residential Block D2 (South)	3 x 1100L	5 x 1100L	1 x 240L	3 x 240L
Residential Block D3 (North)	3 x 1100L	5 x 1100L	1 x 240L	3 x 240L
Residential Block D3 (South)	3 x 1100L	5 x 1100L	1 x 240L	3 x 240L
Crèche Unit Block A	1 x 1100L 2 x 240L	2 x 1100L 2 x 240L	1 x 120L	1 x 120L
Retail & Gym Retail Block A (Shared)	3 x 1100L	6 x 1100L	1 x 240L	2 x 240L
Retail Block D (Shared)	2 x 1100L	3 x 1100L	1 x 120L	1 x 240L

Note: ¹ = Mixed Non-Recyclables

² = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the facilities management company in the WSA's.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSA's are shown in Figure 5.1. All waste receptacles used will comply with the SIST EN 840-1:2020 and SIST EN 840-2:2020 as the standards for performance requirements of mobile waste containers, where appropriate.



Figure 5-1 Typical waste receptacles of varying size (240L and 1100L)

Receptacles for organic, mixed dry recyclable, glass and mixed non-recyclable waste will be provided in the WSAs prior to first occupation of the development i.e. prior to the first residential unit or commercial units being occupied.

Bins for the residential unit's and commercial unit's WSAs will be supplied by the facilities management company.

This Plan will be provided to each resident and commercial tenant from first occupation of the development i.e. once the first residential unit or commercial unit is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

5.1 Operational Phase Waste Storage – Residential Units

Residents will be required to segregate waste into the following main waste streams:

- ▶ DMR;
- ▶ MNR;
- ▶ Glass; and
- ▶ Organic waste.

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover and in Appendix A of this OWMP.

Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at source. An example of a potential 3 bin storage system is provided in Figure 5.2 below.



Figure 5-2 Example three bin storage system to be provided within the unit design

Graphical signage will be erected by facilities management in shared bin stores, above or on the bins to show exactly which wastes can be put in each. Bins/containers will also be colour coded to avoid cross contamination of the different waste streams.

Access to the shared WSA's will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as drink cans, textiles, batteries, printer toner/cartridges, cooking oil and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.4.

5.2 Waste Storage – Crèche, Retail & Gym/Retail Units

The commercial tenants tenants will be required to segregate waste within their own unit into the following main waste types:

- ▶ DMR;
- ▶ MNR;
- ▶ Glass; and
- ▶ Organic waste.

The tenants will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSAs are illustrated in the drawings submitted with the planning application under separate cover and in appendix A of this report.

Suppliers for the tenants will be requested by the tenant to make deliveries in reusable containers, minimize packaging or remove any packaging after delivery, where possible, to reduce waste generated by the Proposed Development.

If a kitchen is allocated in any of the units this will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

If a kitchen is required it is anticipated that waste will be generated the kitchen throughout the day, primarily at the following locations:

- ▶ Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- ▶ Meat Preparation Area;
- ▶ Vegetable Preparation Area;
- ▶ Cooking Area;
- ▶ Dish-wash Area;

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the appropriate waste store within their unit.

All bins / containers in the tenants' areas and WSAs will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which wastes can be put in each.

Other waste materials such as drink cans, textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. The tenant will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.4.

5.3 Waste Collection

There are numerous private contractors that provide waste collection services in the FCC area. All waste contractors servicing the development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered / permitted / licensed facilities only.

Bins from the shared WSA's will be brought their allocated temporary staging / collection areas on the North and South sides of the development by the waste contractor or facilities management, depending on agreement, prior to collection. Bins will be returned to the shared WSA's immediately following collection in line with the FCC waste byelaws. A road sweep analysis of the development can be found in appendix B of this report.

Suitable access and egress have been provided to enable the bins to be moved easily from the temporary staging area's to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles will be clearly identified as required by waste legislation and the requirements of the FCC *Waste Bye-Laws*. Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

It is recommended that bin collection times are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on-Site. This will be determined during the process of appointment of a waste contractor.

5.4 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

Deposit Return Scheme

Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminium or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

- ▶ Using a Reverse Vending Machine (RVM)
- ▶ Manually in the shop

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

Green Waste

Green waste may be generated from gardens, external landscaping and internal plants / flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants / flowers can be placed in the organic waste bins.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the S.I. No. 283/2014 - European Union (Batteries and Accumulators) Regulations 2014, as amended. In accordance with these regulations, consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

The commercial tenants cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling / recovery of their waste batteries by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive (Directive 2002/96/EC) and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition, consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

As noted above, the commercial tenants cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back / collection service provided by retailers or arrange for recycling / recovery of their WEEE by a suitably permitted / licenced contractor. Facilities management may arrange collection, depending on the agreement.

Printer Cartridge / Toners

It is recommended that a printer cartridge / toner bin is provided in the commercial tenants, where appropriate. The commercial tenants will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste printer cartridge / toners generated by residents can usually be returned to the supplier free of charge or can be brought to a civic amenity centre.

Chemicals

Chemicals (such as solvents, paints, adhesives, resins, detergents, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery / recycling / disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial tenants that are classed as hazardous (if they arise) will be appropriately stored within the commercial tenants' own space. Facilities management may arrange collection, depending on the agreement.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the commercial tenants. It is anticipated that commercial tenants will be responsible for the off-site removal and appropriate recovery / disposal of these wastes. Facilities management may arrange collection, depending on the agreement.

Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery / disposal.

Textiles

Where possible, waste textiles will be recycled or donated to a charity organisation for reuse. Commercial tenants and residents will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the commercial tenants use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organized as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the commercial tenants. The collection of bulky waste will be arranged, as required by the commercial tenants. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles, and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise or Facilities management will may arrange collection by a licensed waste contractor.

5.5 Waste Storage Area Design

The shared residential and commercial tenants WSAs will be designed and fitted-out to meet the requirements of relevant design Standards, including:

- ▶ Be fitted with a non-slip floor surface;

- ▶ Provide ventilation to reduce the potential for generation of odours with a recommended 6-10 air changes per hour for a mechanical system for internal WSAs;
- ▶ Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- ▶ Be easily accessible for people with limited mobility;
- ▶ Be restricted to access by nominated personnel only;
- ▶ Be supplied with hot or cold water for disinfection and washing of bins;
- ▶ Be fitted with suitable power supply for power washers;
- ▶ Have a sloped floor to a central foul drain for bins washing run-off;
- ▶ Have appropriate signage placed above and on bins indicating correct use;
- ▶ Have access for potential control of vermin, if required; and
- ▶ Be fitted with CCTV for monitoring.

The facilities management company, crèche tenant, community space and residents will be required to maintain the resident bins and storage areas in good condition as required by the FCC Waste Bye-Laws.

5.6 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all domestic waste generated by residents & commercial tenants is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities Management will provide the following items:

- ▶ Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all residential units and the commercial tenants, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- ▶ Provision and maintenance of appropriate graphical signage to inform residents of their obligation to reduce waste, segregate waste and in the correct bin;
- ▶ Preparation of an annual waste management report for all residential units the commercial tenants;
- ▶ Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons;
- ▶ Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- ▶ Frequent inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- ▶ Maintenance of a register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.7 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of this development. All waste generated within the development will be stored in closed waste receptacles both within units and within the WSAs. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

All WSAs will have access for potential control of vermin, if required, be supplied with hot or cold water, drainage point and will be regularly inspected by facilities management to deter pests.

6. SUMMARY AND CONCLUSION

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the Proposed Development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus contributing to the targets set out in *the NWMPCE*.

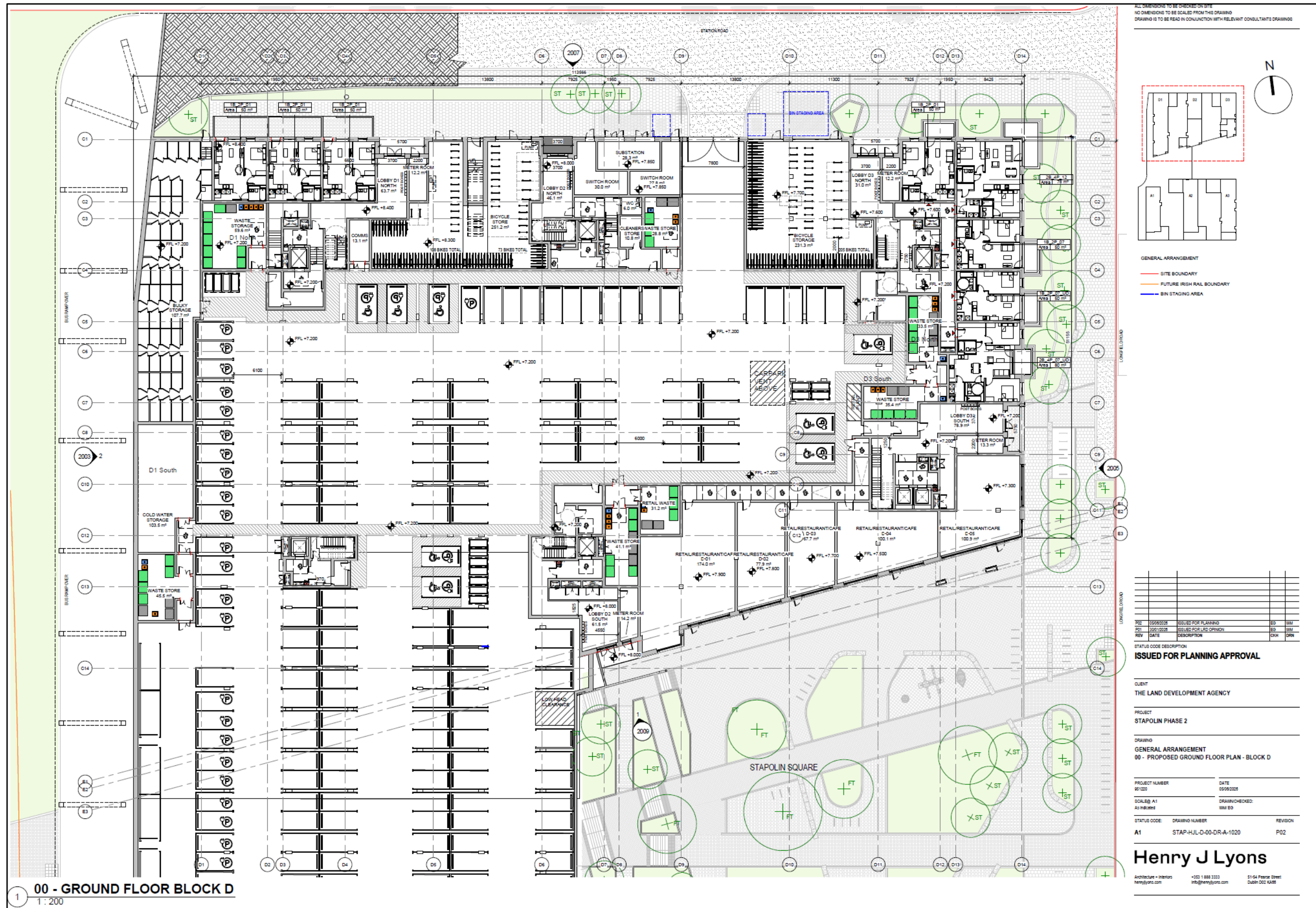
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *FCC Waste Bye-Laws*.

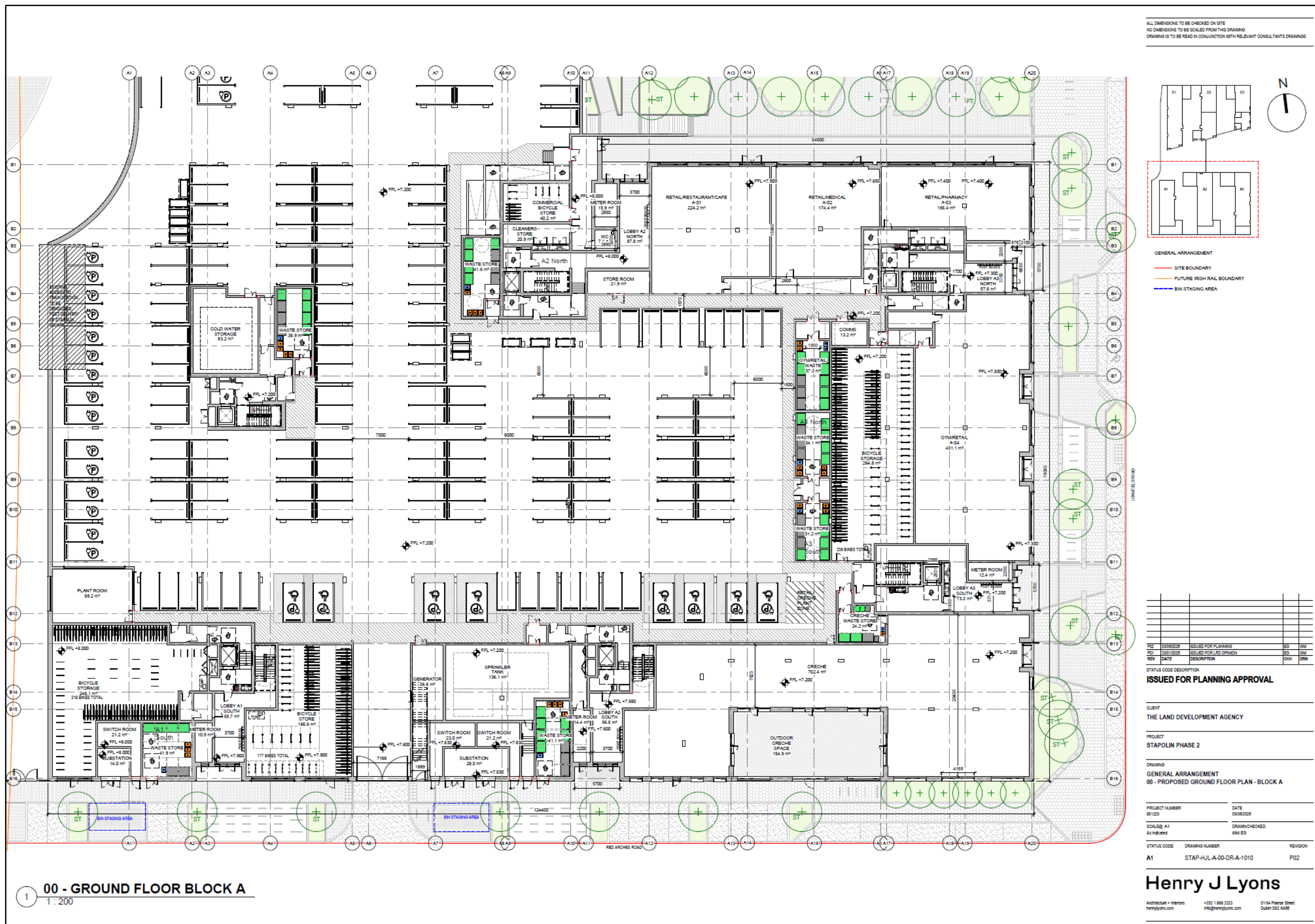
The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7. REFERENCES

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APPENDIX A. WASTE STORAGE AREA LOCATIONS





APPENDIX B. ROAD SWEEP

