



Leopardstown Road

Proposed Residential Development

Leopardstown Road, Dublin 18

Planning Submission –
Building Lifecycle Report
February 2025

Contents

INTRODUCTION.....	3
PROPOSED DEVELOPMENT.....	4
SECTION 01	5
1.1. Property Management of the Common Areas of the Development	5
1.2. Services Charge Budget.....	5
SECTION 02	7
2.1. Energy and Carbon Emissions	7
2.2. Materials	12
2.3. Landscape	14
2.4. Waste Management	15
2.5. Health and Wellbeing	20
2.6. Management.....	21
2.7. Transport	22
2.8. Building Services Lifecycle.....	24
APPENDIX A	

Project Team:

Applicant	Dún Laoghaire-Rathdown County Council
Architect	Reddy Architecture + Urbanism
Planning Consultant	Hughes Planning & Development Consultants
Engineer (Civil and Traffic)	TENT Engineering
Engineer (Mechanical and Electrical)	Fallon Design M&E Engineering
Landscape Architects	Rónán MacDiarmada & Associates Ltd.
LVIA & Daylighting and Sunlight	3D Design Bureau
Waste Consultant	AWN
Arboricultural Consultant	CMK Horticulture + Arboriculture Ltd
Fire Safety Consultant	Jensen Hughes
Ecological Consultant	Altemar Limited

INTRODUCTION

The Sustainable Urban Housing: Design Standards for New Apartments 2023 – Guidelines for Planning Authorities, document under Section 28 of the Planning and Development Act 2000 (as amended), hereafter referred to as the Apartment Guidelines, requires planning applications to include details on the management and maintenance of apartment schemes. This is set out in Section 6.10 to 6.14 – “Operation & Management of Apartment Developments”, and specifically Section 6.12.

Section 6.12 of the Apartment Guidelines requires that apartment applications shall:

“include a building lifecycle report which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.”

This Building Life Cycle Report document sets out to address the requirements of Section 6.12 of the Apartment Guidelines. The report is broken into two sections as follows:

Section 01:

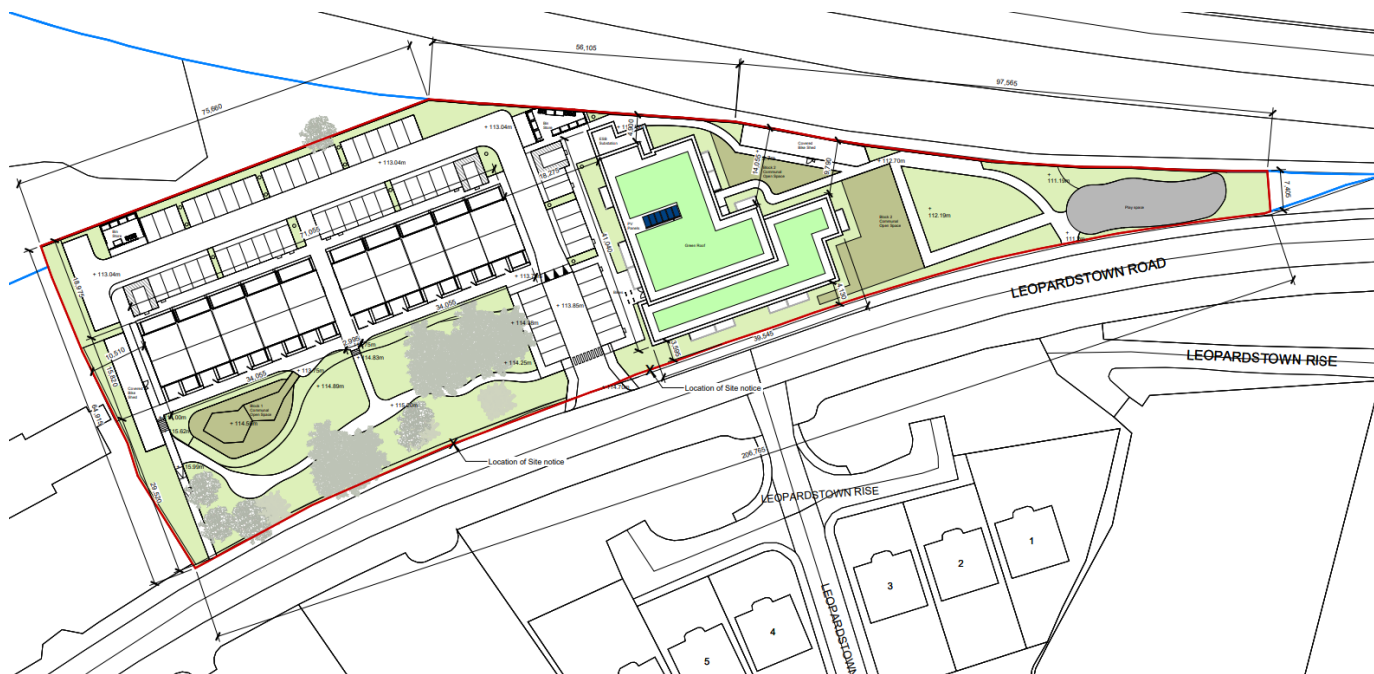
An assessment of long-term running and maintenance costs as they would apply on a “per residential unit” basis at the time of application.

Section 02:

Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of the residents.

PROPOSED DEVELOPMENT

The proposed development will consist of 80 no. residential units together with associated infrastructure including open space and car/cycle parking and is a mixture of duplexes and apartments in 2 no. blocks ranging in height from three to six stories



Proposed Site Plan

SECTION 01

An assessment of long-term running and maintenance costs as they would apply on a “per residential unit” basis at the time of application

1.1. Property Management of the Common Areas of the development

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development are kept within the agreed Annual operational budget. Should it be proposed to sell residential units, the client will comply with the relevant legislation and will establish an Owners’ Management Company (OMC) where necessary.

The property management company will enter a contract directly with the Owners’ Management Company (OMC) for the ongoing management of the built development. This contract will be for a maximum period of 15 years and in the form prescribed by the Property Services Regulatory Authority (PSRA). For leased units, a third-party Property Management Company may be engaged. The Property Management Company has the following responsibilities for the apartment development once constructed:

Timely formation of an Owners’ Management Company (OMC) – which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members of this OMC.

- Preparation of annual service charge budget for the development common areas.
- Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (MUD Act).
- Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act - including completion of Developer OMC Agreement and transfer of common areas.
- Transfer of documentation in line with Schedule 3 of the MUD Act.
- Estate Management.
- Third Party Contractors Procurement and management.
- OMC Reporting.
- Accounting Services.
- Corporate Services.
- Insurance Management.
- After Hours Services.
- Staff Administration.

1.2. Service Charge Budget

The service charge budget covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/electrical lifts/life safety systems, security, property management fee, etc., to the development common areas in accordance with the provisions of the Multi Unit Developments Act 2011 (“MUD” Act), where applicable to the development. This may vary based on the chosen tenure and split between units to be sold or leased.

The service charge budget also includes an allowance for a Sinking Fund and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared for the OMC. The BIF report will identify those works which are necessary to maintain, repair, and enhance the premises over the 30-year life cycle period, as required by the Multi Unit Development Act 2011. In line with the requirements of the MUD Act, the members of the OMC will determine and agree each year at a General Meeting of the members, the contribution to be made to the Sinking Fund, having regard to the BIF report produced.

The detail associated with each element heading i.e., specification and estimate of the costs to maintain / repair or replace, can only be determined after detailed design and the procurement/ construction of the development and therefore has not been included in this document.

SECTION 02

Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents

2.1. Energy Performance and Carbon Emissions

A Building Energy Rating (BER) certificate will be provided for each apartment which will provide detail of the energy performance and carbon emissions associated with each of the dwellings. It is proposed to target a BER Rating for each apartment of A2/A3. This will equate to the following emissions:

A2 – 25-50 kWh/m²/yr. with CO₂ emissions approx. 10 kgCO₂/m²/yr.

A3 – 51-75 kWh/m²/yr. with CO₂ emissions approx. 10 kgCO₂/m²/yr.

The following table outlines the proposed passive and active, energy and carbon emission reduction measures which will directly benefit occupants in terms of reducing operational costs.

Measure	Description	Benefit																																			
Building Fabric Efficiency	<p>The U-Value of a building element is a measure of the amount of heat energy that will pass through the constituent element of the building envelope. Increasing the insulation levels in each element will reduce the heat lost during the heating season. It is possible to exceed the requirements of the current building regulations. The current target U-Values are identified below:</p> <table border="1"> <thead> <tr> <th rowspan="2">Fabric Element</th> <th colspan="2">U value (W/m².K)</th> </tr> <tr> <th>TGD Part L (2022)</th> <th>Targeted</th> </tr> </thead> <tbody> <tr> <td>Ground Floor</td> <td>0.18</td> <td>0.18</td> </tr> <tr> <td>Exposed Floor</td> <td>0.18</td> <td>0.18</td> </tr> <tr> <td>Wall (External)</td> <td>0.18</td> <td>0.18</td> </tr> <tr> <td>Roof (Pitched)</td> <td>0.16</td> <td>0.16</td> </tr> <tr> <td>Flat Roof</td> <td>0.2</td> <td>0.2</td> </tr> <tr> <td>Windows and glazed doors</td> <td>1.4</td> <td>Total system u-value: 1.10W/m²K for windows, and 1.40W.m²k for sliding doors</td> </tr> <tr> <td>Opaque doors U-Value</td> <td>1.4</td> <td>1.4</td> </tr> <tr> <td>Thermal bridging factor</td> <td>0.08 W/m²k</td> <td>0.08 W/m²k</td> </tr> <tr> <td>Internal Heat Capacity</td> <td>NA</td> <td>Medium Light</td> </tr> <tr> <td>Air permeability</td> <td>5m³/(hr.m²) @50pa</td> <td>3m³/(hr.m²) @50pa or 0.15 ach</td> </tr> </tbody> </table>	Fabric Element	U value (W/m ² .K)		TGD Part L (2022)	Targeted	Ground Floor	0.18	0.18	Exposed Floor	0.18	0.18	Wall (External)	0.18	0.18	Roof (Pitched)	0.16	0.16	Flat Roof	0.2	0.2	Windows and glazed doors	1.4	Total system u-value: 1.10W/m ² K for windows, and 1.40W.m ² k for sliding doors	Opaque doors U-Value	1.4	1.4	Thermal bridging factor	0.08 W/m ² k	0.08 W/m ² k	Internal Heat Capacity	NA	Medium Light	Air permeability	5m ³ /(hr.m ²) @50pa	3m ³ /(hr.m ²) @50pa or 0.15 ach	Reduction in the consumption of fuel and the associated carbon emissions and operating costs.
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<p>To limit heat loss through the façade, careful consideration will be shown when designing the external envelope. The specification of the insulation utilised, and the continuity of insulation are crucial. Insulation slows the rate at which heat is lost to the outdoors. Heat flows in three ways: by conduction, convection, and radiation.</p>																																					
<p>One major contributing factor to unnecessary heat loss is infiltration. Infiltration is the air leakage of external air into a building due to the pressure difference associated with internal and external temperatures.</p>																																					
<p>Under the Part L 2022 (Domestic) the minimum air permeability performance of not greater than 5 m³/hr/m² @ 50 Pa. It is intended that the residential development will target an air permeability rate of 3 m³/hr/m² @ 50 Pa.</p>																																					

	<p>By reducing the number of infiltration/ external air changes per hour, the buildings energy demand and carbon emissions will reduce as the buildings ability to retain conditioned thermal energy has increased i.e., the space heating system will not be required as often.</p> <p>With good design and strict on-site control of building techniques, infiltration losses can be significantly reduced.</p> <p>To ensure that a sufficient level of air tightness is achieved, air permeability testing will be specified, with the responsibility being placed on the main contractor to carry out testing and achieve the targets identified in the tender documents.</p> <p>Thermal bridges occur where the insulation layer is penetrated by a material with a relatively high thermal conductivity and at interfaces between building elements where there is a discontinuity in the insulation. It is intended to target a Thermal Bridging Factor of 0.08 W/m2k as per TGD Part L 2022 Accredited Construction details.</p> <p>Air testing specification will require testing to be carried out in accordance with: BS EN 13829:2001 'Determination of air permeability of buildings, fan pressurisation method' CIBSE TM23: 2000 'Testing buildings for air leakage'.</p>	
<p>Lighting Efficiency</p>	<p>The Lighting design intent is to introduce artificial lighting in all applicable areas. Energy efficient light fittings will be installed throughout. They will be controlled by PIR and will be designed to reduce energy consumption.</p> <p>For the lighting to the public open space the distance to lighting columns and maintaining coverage has been considered in the design. Sufficient light coverage in opens spaces accounts for security, visibility and access for maintenance.</p> <p>The external lighting design also takes into account the requirements for biodiversity such as the lux levels suitable for wildlife.</p>	<p>Reduction in the consumption of electricity and the associated carbon emissions and operating costs.</p>
<p>Sanitary ware</p>	<p>Showers are proposed with a max flow rate at 3 Bar to be no greater than 6 litres per minute. Bath volume to be no greater than 150 litres.</p>	<p>Reduction in the consumption of potable water and energy associated with domestic hot water heating.</p>

The following Low Energy / Carbon & Renewable Energy Solutions that are being considered for the development.

Measure	Description	Benefit
<p>Photovoltaic (PV) Panels</p>	<p>Photovoltaic (PV) are proposed for areas that require an additional renewable energy contribution to meet TGD Part L.</p> <p>The required quantity of PV will be located on the roof of each block. PV panels convert the solar radiation into electricity, which can be connected to the mains supply of a dwelling. Panels are typically arranged in arrays on a building roof, with the produced electricity fed directly into the building.</p> <p>The sun's solar radiation, which strikes the PV cells as sunlight, is the basis for how the PV system functions. This solar radiation hits the PV cells, converting the solar energy into DC electricity. DC electricity passes through an inverter which converts the electricity to AC making it ready to use. The current is then fed through a meter before passing through the consumer unit. The dwelling will automatically use the PVs energy to power appliances, any electricity that is not used can be exported back to the national grid.</p>	<p>Reduction in the consumption of electricity and the associated carbon emissions and operating costs.</p>

<p>Continuous Mechanical Extract Ventilation</p>	<p>Centralized contentions mechanical ventilation (CMEV) will provide ventilation to each apartment.</p> <p>CMEV provides continuous trickle ventilation to occupied spaces and extract ventilation from wet rooms and utility stores. .</p> <p>Fresh air supplied to each habitual space withing each unit vis ducted air brick in the façade and a disk valve on the ceiling for commissioning.</p>	<p>Constant fresh air ventilation within each unit promotes better indoor air quality and prevents mould growth.</p>
<p>ECAR Charging Points</p>	<p>It is intended to provide up to 10% of all public parking spaces with electric vehicle charging facilities. Ducting infrastructure (electrical conduits) are intended to be provide to all public car parking spaces, where:</p> <ul style="list-style-type: none"> i. the car park is located inside the building; or ii. the car park is physically adjacent to the building. 	<p>Providing the option for E-Car charging points will futureproof the development.</p>

2.1.1. CIBSE Life Expectancy Analysis

MECHANICAL		
	EQUIPMENT ITEM	INDICATIVE LIFE (YEARS)
	Exhaust Air Heat Pump (EAHP / LTHW)	20
	Dosing Pots	15
	Water Expansion Vessel	20
	Base Mounted Pumps	20
	Expansion Vessel (unvented hot water)	15
	Heating Pressurisation Unit	20
	Mains Cold Water Booster	15
	Sprinkler Booster	20
	Condensate Pipework System	12
	Steel Pipework (closed)	25
	Copper Pipework (open)	30
	Water Treatment Plant	15
	Steel Radiators	20
	Computer Rooms Air Conditioning	15
	Axial Fans	15
	Galvanised Ductwork (rectangular and circular)	40
	Plastic Ductwork	15
	Ductwork Ancillaries: External Louvres (steel painted)	20
	Leak Detection: Gas	10
	Above Ground Drainage (plastic)	25
	Sanitary Ware	25
	Water Meter	20
	Dry Risers	25
	Sprinklers : Wet	25
	Sprinkler Heads	30
	Heat Pumps	15

ELECTRICAL		
	Mains Cables	35
	Switchgear	30
	Transformer	30
	Protective Installation: Earth Bonding (major)	30
	Protective Installation: Earth Bonding (domestic)	25
	Consumer Units	25
	Distribution Boards	20
	Feeder Pillar	20
	Final Circuits and Outlets	20
	Inverter	20
	Lighting Installations (external)	15
	Lighting Installations (internal)	20
	Miniature Circuit Breakers (MCB)	20
	Moulded Case Circuit Breaker (MCCB)	25
	Power Distribution Unit (PDU)	20
	Residual Current Breaker (RCB)	20
	Switched Socket Outler (SSO)	15
	Emergency Lighting	25
	Switches	10
	Electricity Meters	20
	Access Control	15
	Call Points (BGU's)	15
	CCTV : Internal	20
	CCTV : External	15
	Fire Alarms (battery support & electrical)	20
	Heat Detectors	20
	Smoke Ventilation Systems	30
	Clock Systems	15
	CCTV & Video System	10
	Communication System (voice & data)	20
	Electric Heaters	12
	Lighting Control and Management Systems	15
	Lightning Protection	15
	Television and Satellite Systems	15
	Uninterruptable Power Supply Systems (UPS)	20

2.2. Materials

The practical implementation of the Design and Material principles has informed design of building facades, internal layouts and detailing of the proposed apartment buildings.

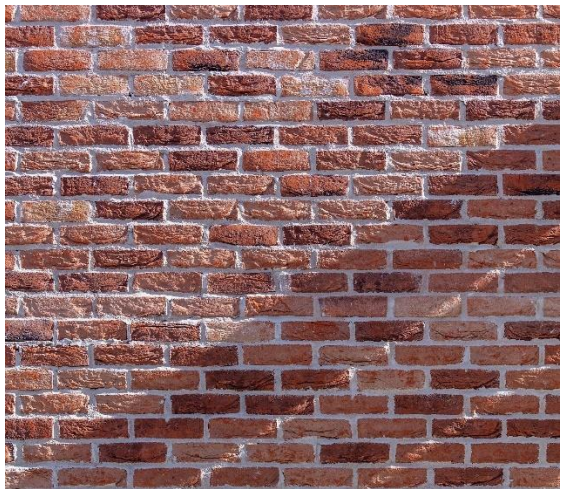
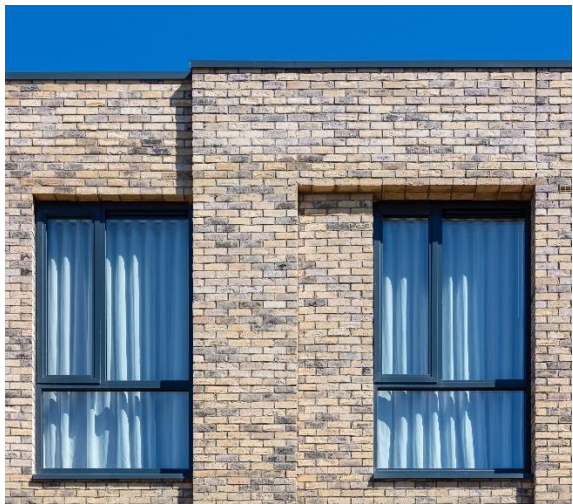
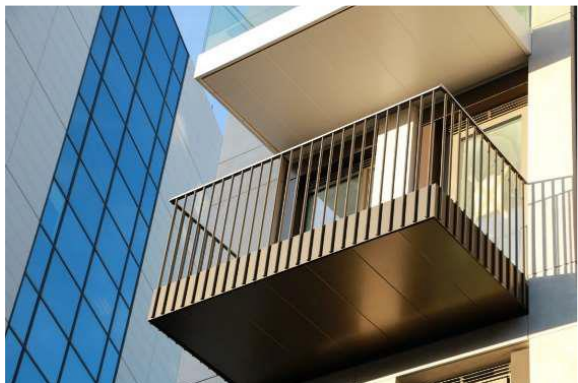
2.2.1. Buildings

The buildings are designed in accordance with the Building Regulations, in particular Part D ‘Materials and Workmanship’, which includes all elements of the construction. The Design Principles and Specification are applied to both the apartment units, commercial spaces and the common parts of the building and specific measures taken include:


Measure Description	Benefit
Daylighting to circulation areas where possible	Avoids the requirement for continuous artificial lighting
Natural/Passive ventilation system to circulation areas where possible	Avoids costly mechanical ventilation systems and associated maintenance and future replacement.
External paved and landscaped areas	All of these require low/minimal maintenance

2.2.2. Material Specification

Measure Description	Benefit
<p>Consideration is given to the requirements of the Building Regulations and includes reference to BS 7543:2015, ‘Guide to Durability of Buildings and Building elements, Products and Components’, which provides guidance on the durability, design life and predicted service life of buildings and their parts.</p> <p>All common parts of the proposed Apartment buildings and, the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015. (Please see Appendix A for this figure). The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543: 2015 including:</p> <ul style="list-style-type: none"> • Annex A Climatic Agents affecting Durability • Annex B Guidance on materials and durability • Annex C Examples of UK material or component failures • Annex D Design Life Data sheets 	<p>Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.</p>

<p>Use of brickwork to envelope</p> 	<p>Requires minimal on-going maintenance.</p>
<p>Use of factory finished aluminium windows and external doors. Along with Aluminium cappings to roof parapets</p> 	<p>Requires minimal on-going maintenance.</p>
<p>Use of Galvanised Steel balconies and handrails with PPC finish on exposed visual surfaces. Composite self-finished board for deck of the balcony.</p> 	<p>Requires minimal on-going maintenance.</p>

2.3 Landscape

Measure	Description	Benefit
Site Layout & Landscape design	<p>Generous and high-quality landscaping that responds to the existing heritage of the site.</p> <p>The proposed landscape design will aim to retain as many healthy mature existing trees on site as possible whilst creating a strong green framework through the proposed development providing high quality, historic core of public open space that is linked for pedestrians and cyclists alike.</p> <p>Proposed tree, shrub and groundcover planting is found throughout the streetscape, historic core, communal courtyards and public civic spaces. Planting is chosen for its robust nature and yearlong interest.</p> <p>The overriding design intention is to create an inclusive and coherent new community based on best practice urban planning principles, giving residents a sense of place, ownership and identity.</p>	Natural attenuation, reduced surface water runoff from site and increased biodiversity.
Green Roofs	<p>Use of green roofs and traditional roof coverings with robust and proven detailing to landscape roof elements.</p> 	Attenuation reduces the need to construct large attenuation systems on site. The proposed Green Roofs will also aid biodiversity on the site
Paving materials	Use of robust, high-quality and high slip-resistance materials throughout the development.	Required ongoing maintenance significantly reduced through use of robust materials installed with proven details.
Materials	Sustainable, robust materials with high slip-resistance to be used for paving. Durable and robust street furniture and play equipment to be used throughout	Robust materials and elements installed with proven details reduces the frequency of required repair and maintenance.
Sustainable drainage systems	<ol style="list-style-type: none"> 1. Use of green roofs across the development. Interception trays incorporated into the build-ups. 2. Use of bio-retention areas and filter drains across the development to treat and intercept rainwater at source. 	SuDS measures treat and reduce rainwater runoff from the site protecting surrounding watercourses. They have additional amenity and biodiversity benefits.
Planting details	Planting and landscape works will be carried out in accordance with BS4428. Trees will be advanced/semi-mature rootballed stock, in accordance with BS 8545. Low level, low maintenance shrub and groundcover planting will be used in planting beds containerised with a minimum size of 2 litre pots, with a 75mm well composted fine bark mulch. Proposed meadows will follow the guidelines set out by the DLR biodiversity guidance and All-Ireland pollinator plan with the aim to increase Biodiversity on site. Please refer to the outline softworks specification, planting schedule, accompanying landscape details and plans which will be submitted as part of the application.	Correctly installed planting will develop into well established and robust soft landscaping, reducing future maintenance and replacement of failures.

2.4 Waste Management

The following measures describe the intentions for the management of Waste.

Measure	Description	Benefit	Discipline
Operational Waste Management Plan	This application will be accompanied by an Operational Waste Management Plan prepared by AWN Consulting Ltd.	The report demonstrates how the scheme has been designed to comply with local, regional, and national waste legislation along with best practice	AWN
Storage of Non-Recyclable Waste and Recyclable Household Waste	Inclusion of centralised waste storage areas for the residential blocks, with enough space to accommodate weekly storage of bins for dry mixed recyclable, organic waste and mixed non-recyclable waste. Glass will also be provided for in shared WSAs.	Easily accessible by all residents, minimises potential littering of the scheme, reduce potential waste charges and not limit waste contractor selection	AWN
	Domestic waste management strategy will consist of: dry mixed recyclable, glass, mixed non-recyclable waste and organic waste segregation.	Helps reduce potential waste charges and not limit waste contractor selection	
	Security restricted waste storage rooms.	Reduce potential for fly tipping by residents and non-residents	
	Well signed waste storage rooms and bins.	Help reduce potential cross contamination of waste and reduce waste charges.	
Composting	Organic waste bins to be provided in waste storage areas.	Helps reduce potential waste charges	AWN

A waste generation model (WGM) developed by AWN, has been used to predict waste types, weights and volumes arising 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.

Waste from residential amenities has been calculated within the residential waste figures and waste will be stored within the closet residential waste store. The estimated waste generation for the development for the main waste types is presented in the following tables.

Waste type	Waste Volume (m ³ /week)	
	Residential Apartment Block 1 (Combined)	Residential Apartment Block 2 (Combined)
Organic Waste	0.36	0.85
DMR	2.54	6.05
Glass	0.07	0.17
MNR	1.34	3.18
Total	4.30	10.25

Estimated waste generation for the proposed development for the main waste types

The DLR Pre-Planning Waste Management Form recommends calculating residential waste using Section 4.7 of *BS5906:2005 Waste Management in Buildings – Code of Practice*²⁶. The predicted total waste generated from the residential units based on the Code of Practice is c. 12.13 m³ per week for the residential units. Whereas the AWN waste generation model estimates c. 14.55 m³ per week from the residential units. AWN’s modelling methodology is based on data from recent published data and data from numerous other similar developments in Ireland and based on AWN’s experience it is a more representative estimate of the likely waste arisings from the development.

Waste Storage And Collection

This section provides information on how waste generated within the development will be stored and how the waste will be collected from the development. 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 DLRCC. In particular, consideration has been given to the following documents:

BS 5906:2005 Waste Management in Buildings – Code of Practice;
DLRCC Guidance Notes for Waste Management Planning for Residential and Commercial Developments (2023);
DLRCC, Dún Laoghaire Rathdown County Council Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2019).
The NWMPCE 2024 - 2030;
DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2023)²⁷.
DoHLGH, Design Manual for Urban Roads and Streets (2019)²⁸

Waste Storage Areas

Apartment Block

2 no. shared communal Waste Storage Areas (WSAs) have been allocated within the development design for the residential apartment blocks. All WSAs have been strategically located on the ground floor levels.

The waste receptacles from the shared WSAs will be collected by facilities management, immediately prior to collection and brought to where the bins will be staged temporarily awaiting collection. The 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).

Using the estimated waste generation volumes, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the residential WSA. These are presented in the table below.

Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR*	DMR**	Organic	Glass
Residential Apartment Block 1 (Shared)	2 no. 1100L	3 no. 1100L	2 no. 240L	1 no. 240L
Residential Apartment Block 2 (Shared)	3 no. 1100L	6 no. 1100L	4 no. 240L	1 no. 240L

Note: * = Mixed Non-Recyclables

** = 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.

The Operational Waste Management Plan is included within the planning application.

2.5. Health and Wellbeing

The following are illustrations of how the health and wellbeing of future residents are considered.

Measure	Description	Benefit
Natural / Day Light	The design, layout and separation distances of the building blocks have been designed to optimize the ingress of natural daylight/sunlight to the proposed dwellings to provide good levels of natural light. Please see daylight and sunlight report prepared by 3D Design Bureau submitted with this planning application.	Reduces reliance on artificial lighting thereby reducing running costs.
Accessibility	All units will comply with the requirements of Building regulations Parts M and K.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
Security	<p>The scheme is designed to incorporate passive surveillance with the following security strategies available for adaptation into the design:</p> <ul style="list-style-type: none"> • CCTV monitoring details • Secure bicycle stands – covered by CCTV • Controlled Access to individual circulation cores <ul style="list-style-type: none"> • Controlled access between Public Spaces and Residents Communal Spaces • Routine access fob audits • Appropriately lit external spaces. 	Aids in reducing potential security/management costs. Enhances safety for residents and visitors.
Natural Amenity	The proposed scheme has a generous public open space with soft landscaping and high-quality surface materials and passive recreation areas away from traffic on Dundrum Road.	Facilitates community interaction, socialising and play – resulting in improved wellbeing. Proximity and use of external green spaces promote a healthy lifestyle. External spaces being provided separately for residents (communal spaces & private balconies) and public (Quality Public open Space).

2.6 Management

Consideration has been given to ensuring the residents have a clear understanding of the subject property.

Measure	Description	Benefit
<p>Home User Guide</p>	<p>Once a purchaser completes their sale, a homeowner box will be provided which will include:</p> <p>Homeowner manual – this will provide important information for the purchaser on details of their new property. It typically includes details of the property such as MPRN and GPRN, Information in relation to connect with utilities and communication providers, Contact details for all relevant suppliers and User Instructions for appliances and devices in the property.</p> <p>A Residents Pack prepared by the OMC which will typically provide information on contact details for the Managing agent, emergency contact information, transport links in the area and a clear set of rules and regulations.</p> <p>Tenant manual – this will provide important information for the tenant on details of their rental property. It typically includes details of the property such as MPRN and GPRN, Information in relation to connect with utilities and communication providers, Contact details for all relevant suppliers and User Instructions for appliances and devices in the property.</p>	<p>Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.</p>

2.7 Transport

Transport Insights has been appointed to undertake a public transport capacity study in relation to a planning application for a site at Leopardstown Road.

The study has been informed by comprehensive bus and Luas occupancy surveys, and review of a range of planning stage documents furnished to Transport Insights by Tent Engineering.

Based on the findings of the public transport occupancy survey and analysis contained within this Note, it was found that residents of the proposed development would utilise ca. 0.27% and 0.33% of the total capacity of existing AM and PM peak hour public transport services respectively. Furthermore, it has been determined that local public transport services (bus and Luas) have ample capacity to accommodate such demand. As such, it is apparent that current public transport capacity is sufficient to accommodate additional passenger demand generated by the proposed development.



Part of BusConnects Dundrum Area Map

Full map found at: <https://busconnects.ie/media/1727/dundrum-online-map-141019-fa.pdf>

Measure	Description	Benefit
Access to Public Transport (Bus Services)	Bus Route L13 & P13 operate from Kilternan to UCD and Stillorgan passing directly by the proposed development site with frequency of 30 mins.	The proximity, frequency and range of destinations served by these local bus services enhance the accessibility levels of the proposed residential development in addition to providing a viable and practical sustainable alternative to journeys undertaken by the private motor car.
Access to Public Transport (LUAS / Light Rail)	Luas green line stations are located within a 15 minute walk of the site at Glencairn. The Luas provides a high capacity high frequency connection to the city centre and Broombridge to the north, and to Sandyford and Cherrywood to the south.	The availability, proximity and ease of access to high quality public transport services contribute to reducing the reliance on the private motor vehicle for all journey types.
Permeable Connections	The site's redevelopment presents significant opportunities for enhanced local permeability and connectivity, for the integration of neighbouring and wider community.	Ensure the long-term attractiveness of walking and cycling to neighbourhood centres.
Bicycle Storage	<p>It is proposed to provide bicycle parking facilities as follows: 140 no. long stay spaces. 100% covered (incl. 4 no. non-standard bike spaces). 16 no. short-stay spaces. 50% covered. This amounts to a total of 156 no. bicycle spaces.</p> <ul style="list-style-type: none"> • Long stay (residents') is located within 50m of residential core entrances. • Short stay (visitor) parking is provided externally, convenient to entrances at ground level. • A mixture of Sheffield stands and stacking bike stands will be provided at resident long term secure storage areas. • Sheffield stands will be provided for all short stay locations. 	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle for both residences and guests.
ECAR Facilities	10% of all car parking spaces will be provided with E-Car Charging points. Ducting shall be provided from local distribution boards to all remaining car park spaces. This will enable the management company the option to install E-Car charging points to cater for future E-Car demand of residents.	To accommodate the growing demand for ECARS which assist in decarbonising society and reducing oil dependency.

2.8 Building Services Lifecycle

The heating and hot water strategy shall be used for the apartments in the development in accordance with current Part L of the building regulations and compliance demonstrated with the latest edition of the DEAP software. All units in the development shall be compliant with Part L and achieve an A2/A3 BER rating in conjunction with the building fabric performance and mechanical / electrical systems design.

Element 51 – Heating Centre

The proposed heating and hot solution for the apartments shall be designed as an exhaust air heat pump. An Exhaust Air Heat Pump (EAHP) is an energy recycling system. It extracts energy from the warm air as it leaves the home via the ventilation system and uses it to heat the radiators and Domestic Hot Water (DHW).

The installation of an EAHP is self-contained within each apartment and only requires an ESB connection and standard mains water connection.

An exhaust air heat pump can satisfy the heating requirements of a well-insulated apartment in some of the coldest conditions. When working efficiently, it can reduce energy consumption of heating by up to 50% when compared to conventional heating systems.

If there is an extended period of cold weather the heat pump will call on a suitably sized back up heater to assist in meeting the apartments heating requirement.

The extracted air from the wet rooms is passed through the ducting into the heat pump. At this point, if there is a heat or hot water demand, the air passes through the heat pumps evaporator, which transfers the heat into the heat pump's refrigerant circuit.

The cooled air is then discharged from the unit and exhausted outside. Meanwhile, the vapour compression cycle of the heat pump raises the temperature of the refrigerant and transfers the

extracted heat into a water-based system that can either heat the domestic hot water via a coil in an indirect cylinder or heat the building via radiators.

A local 200 litre hot water storage cylinder shall be located in a hot press of each apartment and meets the demands of the resident's hot water. An electric immersion shall be installed for boost and fast recovery of the cylinder if required.

Element 56 – Space Heating

The units will be heated with steel, horizontal panel radiators in each room of the units and designed for the operating temperature of the heat pump.

Each unit shall have two heating zones, the first zone will be the main open plan kitchen / living room and the second zone will be the bedrooms.

Heating control in the kitchen / living room will be with a 2-port valve and the room thermostat. Heating control in the master bedroom will be with a 2-port valve and thermostat. TRV's will control the space temperature in all other bedrooms.

Element 57 – Ventilation

The ventilation for the apartments shall be provided by the EAHP and be classed as mechanically ventilated. The central extract shall operate on the principle of mechanical extract ventilation (MEV).

MEV will be commissioned with two dedicated extract flow rates for the unit, one for background ventilation and one for boost ventilation.

- The background ventilation rate will be maintained 24/7 in order to ventilate the unit and maintain the heat pump operation volume flow rate.
- The boost ventilation will be activated by a drop-in air or water temperature and raise the volume flow rate to a maximum pre-set value.
- Passive wall inlet vents are required in all habitual rooms.

Element 61- Mains Distribution

A new ESB electrical supply will be brought to each apartment in accordance with ETCI and ESB standards. A centrally located meter enclosure shall be provided with direct access from the pedestrian walkway.

Element 63 – Lighting Services

Low energy LED lighting shall be designed and specified in accordance the BER requirements in each unit and in the landlord areas in accordance with Part L.

Low energy LED public lighting shall be designed in accordance with CIBSE lighting guide and local County Council public lighting standards.

APPENDIX A

BS 7543:2015



BSI Standards Publication

Guide to durability of buildings and building elements, products and components

Figure 4 Phases of the life cycle

