

**BUILDING LIFE CYCLE REPORT**

**FOR**

**RED ROCK GLENAGEARY LTD**

---

Project Reference:	J680
Revision Ref:	Planning
Date Issued:	28 <sup>th</sup> September 2023
Prepared by:	Ivan Daly & Martin Obst

---

---

**TABLE OF CONTENTS**

1. INTRODUCTION .....	3
2. PROPOSED DEVELOPMENT .....	4
3. AN ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS AS THEY WOULD APPLY ON A PER RESIDENTIAL UNIT BASIS AT THE TIME OF APPLICATION .....	6
4. MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS. ....	8
APPENDIX A: ITEMS INCLUDED IN A TYPICAL BIF.....	15
APPENDIX B: PHASES OF THE LIFE CYCLE OF BS7543; 2015.....	16
APPENDIX C: PHASES OF THE LIFE CYCLE OF BS7543; 2015.....	17

## **1. INTRODUCTION**

The purpose of this report is to provide an initial 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 to effectively manage and reduce costs for the benefit of the residents. This is achieved by producing a Building Lifecycle Report.

This report relates to a large-scale residential Development located at junction of Sallynoggin Road and Glenageary Avenue, Glenageary, Co. Dublin.

The Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities (2022) (hereafter referred to as the SUH Guidelines) introduced a requirement to include details on the management and maintenance of apartment schemes. This is set out in Section 6.11 to 6.14 - *“Operation & Management of Apartment Developments”*, specifically Section 6.13.

Section 6.13 of the SIH 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”*

*“demonstrate 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 6.13 of the Apartment Guidelines. The report is broken into two sections as follows:

### **Section 03:**

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 04:**

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

---

## **2. PROPOSED DEVELOPMENT**

Red Rock Glenageary Ltd., intend to apply to Dún Laoghaire Rathdown County Council for a Large-Scale Residential Development on a site of 0.74 ha at Junction of Sallynoggin Road and Glenageary Avenue, and Glenageary Roundabout, Glenageary, Co. Dublin.

The proposed development will consist of a new neighbourhood centre to include apartments, commercial and retail units, public plaza, childcare facility and all associated residential amenity spaces.

The proposed development includes:

- a) Construction of 138 no. residential apartment units (37 no. 1-bedroom units, 68 no. 2-bedroom (4 person units), 6 no. 2-bedroom (3 person units) and 27 no. 3-bedroom units) in 2 no. interlinked blocks at third to fifth floor level (ranging in height from four to seven storeys over basement level) consisting of:
  - i. Block A (5-6 storeys) comprising 41 no. apartments (8 no. 1-bedroom units, 17 no. 2-bedroom (4 person) units, 2 no. 2-bedroom (3 person) units and 14 no. 3-bedroom units).
  - ii. Block B (4-7 storeys) containing 97 no. apartments (29 no. 1-bedroom units, 51 no. 2-bedroom (4 person) units, 4 no. 2-bedroom (3 person) units and 13 no. 3-bedroom units).

Each residential unit has associated private open space in the form of a balcony/terrace.

- b) Residential amenity areas of approx. 342 sqm are proposed in the form of resident support services, concierge services, co-working space, social/activity spaces and gym at the ground floor level of Blocks A and B.
- c) Open Space (approx. 2,806.6 sqm) is proposed in the form of (a) public open space (c. 1,848.4 sqm) in the form of a public plaza accommodating outdoor seating, planting, pedestrian footpaths and cyclist links and (b) residential/communal open space (approx. 958.2 sqm) including c. 750.6 sqm at surface level (incl. playground), roof terrace at fifth floor level of link between Blocks A and Block B (c. 151 sqm) and roof terrace (c. 56.6 sqm) at fifth floor level of Block B. 1.8 m opaque screens are proposed around both roof gardens.
- d) Commercial and retail uses at ground floor level of Blocks A and B (c. 996 sqm) to include (a) 2 no. restaurants (c. 267 sqm and 295 sqm) in Block A, (b) a retail – clothing unit (c. 142 sqm), (c) retail - florist unit (c. 66 sqm), (d) retail - pharmacy unit (c. 126 sqm) and (e) hairdresser unit (c. 100 sqm) all in Block B.
- e) Childcare facility (c. 263 sqm) with dedicated open space and children's play area (c. 39.5 sqm) at ground floor level of Block B.
- f) Basement areas (total approx. 3,411 sqm) are proposed on one level and include car and bicycle parking areas, waste management and plant areas. An ESB substation (approx. 31.7 sqm) is proposed at surface level at the top of the basement ramp

- accessed off Glenageary Avenue. Commercial bin stores (c. 47.9 sqm) are proposed to be located at ground floor level of both Blocks A and B.
- g) A total of 80 no. car parking spaces at basement level are proposed to include 3 no. accessible parking spaces, 2 no. GoCar spaces and 17 no. EV charging spaces. 5 no. motorcycle parking spaces are also proposed at basement level.
  - h) A set down area/loading bay is proposed at surface level at Sallynoggin Road and 2 no. set down areas/loading bays including 1 no. accessible car parking space are proposed at surface level at Glenageary Avenue.
  - i) A total of 310 no. bicycle parking spaces to include 254 no. bicycle parking spaces at basement level including 10 no. cargo bicycle spaces and 56 no. bicycle parking spaces including 16 no. cargo bicycle spaces at surface level.
  - j) The development shall be served via a new vehicular access point to the basement level from Glenageary Avenue. New pedestrian and cyclist access points will be provided onto Sallynoggin Road and Glenageary Avenue from the site.
  - k) Removal of existing cycle path and footpath and dropped kerb pedestrian crossing at Glenageary Avenue to be reinstated by soft landscaping and replaced by a new shared cyclist and pedestrian raised table crossing point located on Glenageary Avenue linking to the existing signalised crossing on the R118. Existing 1.2 m pedestrian crossing on Glenageary Avenue to be widened to 2 m.
  - l) Emergency services/servicing access is proposed from Sallynoggin Road and Glenageary Avenue.
  - m) All associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposal; permeable paving; all landscaping works; green roofs; roof plant room and general plant areas; photovoltaic panels; landscaped boundary treatment; footpaths; public lighting; and electrical services.

### **3. AN ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS AS THEY WOULD APPLY ON A PER RESIDENTIAL UNIT BASIS AT THE TIME OF APPLICATION**

#### **3.1 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.

The property management company will enter into a contract directly with the Owners Management Company (OMC), for the ongoing management of the built development. Note This contract will be for a maximum period of 3 years and in the form prescribed by the PSRA.

The Property Management Company also has the following responsibilities for the apartment development once constructed:

- Timely formation of an 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 Unit Developments (MUD) Act 2011.
- 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.

#### **3.2 Service Charge Budget**

The property management company has a number of key responsibilities with first and foremost being the compiling of the service charge budget for the development for agreement with the OMC. 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 MUD Act.

This 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 by for the OMC. The BIF report once adopted by the OMC, determines an adequate estimated annual cost provision requirement based on the needs of the development over a 30-year cycle period. The BIF report will identify those works which are necessary to

maintain, repair, and enhance the premises over the 30year 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.

A sample format of the typical BIF report is set out in Appendix A.

Note: 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.

#### 4. MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS.

##### 4.1. ENERGY AND CARBON EMISSIONS

By taking due consideration of the energy and carbon emissions associated with the individual units of the proposed development will reduce the overall impact of the development on the environment, whilst reducing individual unit running costs for residents. The following are an illustration of the energy measures that are planned for the units to assist in reducing costs for the occupants:

Measure	Description	Benefit
<b>BER Certificates</b>	A Building Energy Rating (BER) certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation, and lighting and occupancy. It is proposed to target an A2/A3 rating for the apartments this will equate to the following emissions. A2 – 25-50 kwh/m <sup>2</sup> /yr with CO <sub>2</sub> emissions circa 10kgCO <sub>2</sub> /m <sup>2</sup> year A3 – 51-75 kwh/m <sup>2</sup> /yr with CO <sub>2</sub> emissions circa 12kgCO <sub>2</sub> /m <sup>2</sup> /year	Higher BER ratings reduce energy consumption and running costs.
<b>Fabric Energy Efficiency</b>	The U-values being investigated will be in line with the requirements set out by the current regulatory requirements of the Technical Guidance Documents Part L, titled “Conservation of Fuel and Energy Buildings other than Dwellings” - 2021. Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance with Appendix D within the Technical Guidance Documents Part L. See below Table 1 of Part L, Building Regulations.	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, decrease energy consumption and thus minimise carbon emissions to the environment.
<b>Energy Labelled White Goods</b>	The white good package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating. It is expected that the below appliance ratings will be provided: Oven - A plus Fridge Freezer - A plus Dishwasher - AAA Washer/Dryer - B	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
<b>External Lighting</b>	The proposed lighting scheme within the development consists of Architectural lighting for the public spaces. There is already will lit public roads adjacent to the proposed site and so minor external lighting is required.	The site lighting will be designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.



## 4.2 Low energy technologies

The following low energy technologies are being considered for the development and during the design stage of the development the specific combination from the list below will be decided on and then implemented to achieve Compliance with Part L 2021, A2/A3 BER Rating and striving to reach the upcoming NZEB (Near Zero Energy Building) standards:

Measure	Description	Benefit
<b>Centralised Plant</b>	Centralised plan will consist of Heat Pumps, Condensing Boilers in Cascading Arrangement and CHP. The Part L renewable contribution shall be covered by the combination of heat pumps and CHP unit. High efficiency gas boilers will be incorporated into the system.	High efficiency heat pump along with Condensing boilers & CHP offer reliable and effective solution for the development. This is done by transferring residual heat from outside to reduce electricity consumption in the provision of heating.
<b>Combined Heat and Power (CHP)</b>	Combined Heat and Power, (CHP), is a technology being evaluated for this project. This technology generates electricity and captures the waste heat from the generation unit that can be used to heat the building and hot water within the development.	CHP can achieve high energy efficiencies by reusing waste heat from electricity generation for space heating and domestic hot water services in the apartment developments. As electricity from CHP is both generated and consumed onsite, this also eliminates energy losses from transmission of the electricity.
<b>Pumps</b>	All pumps serving the plant to be A rated energy efficiency.	High efficiency band for appliances ensures reduction in required primary energy.
<b>BMS</b>	Advanced Building Energy Management system will control the plant to ensure its operation to maximum efficiency.	Optimised plant operation will use less primary energy.
<b>Heat Interface Unit</b>	Each apartment will be fitted with a Heat Interface Unit (HIU) which shall be wall mounted and designed to provide indirect space heating and Instantaneous DHW. Each unit contains an ultrasonic heat meter to fitted with MBUS communications which will be linked back to plantroom and provide a record of heat and hot water used by the occupier for purpose of billing.	The HIU has compact dimensions and greatly reduces the area required for plant within the apartments.
	Mechanical heat recovery ventilation (MVHR) will be considered to provide ventilation with low energy usage. MVHR provides tempered fresh air to occupied spaces. Heat is removed from exhaust air stream and transferred into the fresh air supply stream negating the need to use energy to heat the air.	MVHR reduces the heating load on the boiler plant by eliminating cold air infiltration.
<b>De-centralised Plant</b>	Decentralised plant will consist of individual domestic hot water heat pumps for each apartment unit. Combined with high efficient, smart electric radiators for space heating.	De-centralised Plant

#### 4.3. SELECTION MATERIALS, FINISHES & TREATMENTS

The practical implementation of the Design and Material principles has informed design of building facades, internal layouts and detailing of the proposed buildings. Both aesthetics and durability played a central role in the design process, with the element of durability directly linked with the need and associated expense for the maintenance, upkeep or potential replacement of the selected materials. This design approach has been applied in equal part to both the external building envelope and the landscaping scheme. Some of these specific design measures include the following:

##### 4.3.1. BUILDINGS

All proposed 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 and the common parts of the building and specific measures taken include:

Measure	Description	Benefit
Daylighting	Window are provided to stair cores where possible providing natural daylight to circulation areas.	Avoids the requirement for continuous artificial lighting.
Ventilation	Openable window sections are provided to stair cores within the development where possible providing Natural/Passive ventilation to common circulation areas.	Openable window sections are provided to all stair cores within the development providing natural daylight and ventilation throughout all common areas. Avoids costly mechanical ventilation systems and associated maintenance and future replacement.
Ventilation	Natural ventilation through grills, louvres and tree pits are proposed to provide fresh air to car park & ground floor enclosed areas.	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
Landscaping	External paved and landscaped areas	All of these require low/minimal maintenance Green roofs systems support the wider SUDS strategy for the development, protects the roof membrane and will thus minimize ongoing maintenance in the future.
Roofs	Any roof without plant equipment will be used as roof gardens. Roof construction to apartment blocks includes green roof systems and landscaped garden terraces for the residents.	Green roofs systems support the wider SUDS strategy for the development, gives a good appearance to the buildings, helps biodiversity, protects the roof membrane and will thus minimize ongoing maintenance in the future.

#### 4.3.2 MATERIAL SPECIFICATION

Measure	Description	Benefit
<b>Durability</b>	<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. 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 B 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"> <li>•Annex A Climatic Agents affecting Durability</li> <li>•Annex B Guidance on materials and durability</li> <li>•Annex C Examples of UK material or component failures</li> <li>•Annex D Design Life Data sheets</li> </ul>	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.
<b>Rainwater drainage</b>	Central rainwater gullies at roof level to collect rainwater. Gullies connected with fusion welded HDPE pipework routed within the building in risers to GF level and into local storm drain network.	High level of craftsmanship and material quality will reduce the maintenance requirements.
<b>Roof Accessories</b>	Detailed designing will indicate what services will penetrate through the roof level. Fall arrest will be provided on the green roofs by post fix galvanized anchors fixed to the structural screed/pre-cast concrete slabs. Each anchor will then be linked by a cable running line to clip a harness.	Increased safety of buildings.
<b>Roof Construction</b>	Roof construction to apartments includes green roof systems & landscaped roof gardens. Pre-cast concrete roof slabs with concrete topping screed laid to falls to central gullies. Waterproofing provided by a bituminous layer covered with insulation and green/brown roof build up.	Green roofs systems protect the roof membrane and will thus minimize ongoing maintenance in the future.
<b>External Walls</b>	The architectural approach to the scheme proposed the extensive use of robust materials of brickwork and render to the building envelope. All external walls shall be combination of brick, render and metal panels.	These traditional materials will require minimal on-going maintenance and have a longer life-cycle expectancy.
<b>External Windows &amp; Doors</b>	Use of factory finished and alu clad windows and doors. All windows shall be double glazed windows with a combined thermal transmittance not greater than 1.2W/m <sup>2</sup> K. All windows shall comply with BS EN ISO 10077-1: 2006 - 'Thermal performance of windows, doors and shutters.	Requires no on-going maintenance.
<b>Balconies</b>	Galvanized and powder coated steel frame and surrounding balustrade for balconies.	Requires no on-going maintenance.
<b>Internal Floors</b>	Detailed interior design will include combination of wood, tiles and carpet	High level of craftsmanship and material quality will reduce the maintenance requirements.
<b>Internal Walls</b>	Taped and jointed internal partition walls, reinforced concrete walls with dry lined face at party wall locations	High level of craftsmanship and material quality will reduce the maintenance requirements.
<b>Internal Ceilings</b>	Suspended ceiling made up of metal stud work and plasterboard which is taped and jointed	High level of craftsmanship and material quality will reduce the maintenance requirements.
<b>Internal Carpentry &amp; joinery</b>	Fitted kitchens and fitted wardrobes to all bedrooms	High level of craftsmanship and material quality will reduce the maintenance requirements.
<b>Internal Balustrades &amp; handrails</b>	All internal balustrades & handrails to be sand blasted, primed and painted	High level of craftsmanship and material quality will reduce the maintenance requirements.

#### 4.4 LANDSCAPING

Measure	Description	Benefit
<b>Site Planning</b>	Generous and high-quality landscape with ecological corridors designed within the proposed development. Pedestrians prioritized over the car. Significant tree planting and soft landscaping within courtyards and public spaces	Natural attenuation and landscape maintenance preferable
<b>Green Roofs</b>	Use of green roofs and roof gardens with robust and proven detailing to roof elements.	Attenuation reduces the burden on vulnerable rainwater goods, resulting in fewer elements that could require replacement or repair.
<b>Paving Materials</b>	Use of robust materials with high slip resistance to be used for paving. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.	Required ongoing maintenance significantly reduced through use of robust materials installed proven details.
<b>Planting details</b>	Proven trees staking details. Shrub, hedging, herbaceous and lawn installation planting details provided.	Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.

#### 4.5 WASTE MANAGEMENT

Measure	Description	Benefit
<b>Construction and Demolition Waste Management Plan</b>	The application is accompanied by an Outline Construction and Demolition Waste Management Plan prepared by Vision Contracting.	The report demonstrates how the scheme has been designed to comply with best practice.
<b>Operational Waste Management Plan</b>	The application is accompanied by an Outline Operational Waste Management Plan prepared by AWN Contractors.	The report demonstrates how the scheme has been designed to comply with best practice.
<b>Storage of Non-Recyclable Waste and Recyclable Household Waste</b>	Bins for commercial properties are located adjacent and ease of access for waste collection truck is considered.	Easily accessible by commercial premises users.
	Inclusion of 2 locations for centralised bin storage system in basement level to serve the apartment cores. Domestic waste management strategy: Grey, Brown and Green bin distinction. Competitive tender for waste management collection.	Easily accessible by all residents and minimises potential littering of the scheme Helps reduce potential waste charges.
<b>Composting</b>	Organic waste bins to be provided throughout.	Helps reduce potential waste charges.

#### 4.6 HEALTH & WELL BEING

Measure	Description	Benefit
<b>Sun lighting</b>	The design, separation distances and layout of the apartment blocks have been designed to optimize the ingress of natural daylight/ sunlight to the proposed dwellings to provide good levels of natural light.	Reduces reliance on artificial lighting thereby reducing costs. Increased natural light sources have proven health benefits over artificial varieties.
<b>Accessibility</b>	All units will comply with the requirements of Part M/K and a universal access statement is provided within the design statement of this submission.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances. Provides a level of assurance to residents by reducing the level of adaptation potentially necessitated by residents' future circumstances.
<b>Security</b>	The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: CCTV monitoring details Car registration recognition at entrance gate Secure bicycle stands – covered by CCTV Routine access fob audits.	Help to reduce potential security/management costs. The combination of digital and in-person security will foster a greater sense of safety among residents.
<b>Natural Amenity</b>	Nearby Thomastown Park and Killiney Hill park provide large outdoor spaces. Dun Laoghaire public plaza provides recreational and retail amenities.	Proximity and use of parks promote a healthy lifestyle.
	Generous courtyard spaces incorporated between the apartment blocks.	Facilitates community interaction, socialising and play – resulting in improved wellbeing.

#### 4.7 MANAGEMENT

Measure	Description	Benefit
<b>Home User Guide</b>	Once a purchaser completes their sale, a homeowner box will be provided which will include:  <b>Homeowner manual</b> – this will provide important information for the purchaser on details of their new property. It typically includes details of the property such as Meter Point Reference Number (MPRN) and Gas point Reference Number (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.  <b>A Residents Pack</b> 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.	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner. The documents will include simple guides for using the building services aim to inform the building occupants on effective strategies to use less resources, efficient appliances, efficient use of their heating/hot water controls and efficient transport/ commuting.

#### 4.8 TRANSPORT

Measure	Description	Benefit
<b>Access to Public Transport (DART)</b>	The Genageary Dart Station is located approximately 800m to the east of the proposed development. This equates to an approximate 12mins walk from the development to the train station and provides linkages to Tara Street and Connolly Station in Dublin City Centre.	The DART and light rail provide an alternative high frequency public transport option to the bus for commuting to the city centre. The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
<b>Access to Public Transport (LUAS)</b>	The proposed development is located approximately 3.5 km to the southwest of the Carrickmines Luas stop. This equates to an approximate 10mins drive from the development to the Luas and provides linkages to Dublin City Centre as well as employment centres located in Sandyford and Tallaght.	The LUAS provides an alternative high frequency public transport option to the bus for commuting to the city centre. The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
<b>Access to Public Transport (Bus Services)</b>	A number of bus routes service the proposed development via the R118 Road located to the east of the site. These services include: 7 / 7a / 7d – Brides Glen Luas terminal to Mountjoy Square via Booterstown Avenue. There are additional stops for the 45a, 45b, 46a, 111, 145, 155 and 84x bus services located nearby on Kill Avenue, Sallynoggin Road and the N11 which is located approximately 2km from the proposed development.	The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
<b>Permeable Connections (Walking &amp; Cycling)</b>	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with the public road network providing convenient access to local services including shops, schools, restaurants and doctor's surgeries. The Loughlinstown to Dean's Grange Greenway and the proposed 'Mountains to Metals' cycling safe route is located near to the proposed development. These Greenways form part of South Dublin's cycling infrastructure plans. Several sections of this greenway are under construction or are due to commence construction shortly. When this greenway is complete it will provide a high quality, high Level of Service cycle route connecting the proposed development with Dublin City Centre.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
<b>Bicycle Storage</b>	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle and encourages use of amenity spaces provided to stimulate a more vibrant and active series of open spaces.

**APPENDIX A: ITEMS INCLUDED IN A TYPICAL BIF**

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund. It is based on Apartment Block A1 in the development.

**BUILDING INVESTMENT FUND (SINKING FUND) ESTIMATION**

Example Apartment Block A1

*Specification to be finalized at detailed design stage.*

REF	ELEMENT	LIFE EXPECTANCY (YEARS)
<b>1</b>	<b>ROOFS</b>	
1.01	Replacement green roof covering incl. insulation to main roofs	25
1.02	Replacement parapet details	18
1.03	Replace roof access hatches	25
1.04	Specialist Roof Systems - Fall arrest	25
<b>2</b>	<b>ELEVATIONS</b>	
2.01	Decorate plaster finishes to apartment core & bin storage	18
2.02	Minor repairs and preparation for decorations of rendered areas (if applicable)	18
2.03	Replace exit/ entrance doors	25
2.04	Replace Rainwater goods	25
2.05	Recoat powder coated Finishes to balconies	20
2.06	Periodic replacement and overhauling of external fixings	5
2.07	Replace Balcony floor finishes	25
<b>3</b>	<b>STAIR CORES &amp; LOBBIES</b>	
3.01	Decorate Ceilings	7
3.02	Decorate Walls	7
3.03	Decorate Joinery	7
3.04	Replace fire doors	25
3.05	Replace carpets (stairwells & lobbies)	12
3.06	Replace entrance mats	10
3.07	Replace nosings	12
3.08	Replace ceramic floors tiles	20
<b>5</b>	<b>M&amp;E SERVICES</b>	
5.01	General - Internal relamping	7
5.02	Replace Internal light fittings	18
5.03	Replace External light fittings (lights at entrance lobbies)	18
5.04	Replace smoke detector heads	18
5.05	Replace manual break glass units	18
5.06	Replace Fire alarm panel	18
5.07	Replace lift car and controls	25
5.08	Replace AOV's	25
5.08	Replace security access control installation	15

5.09	Sump pumps replacement	15
5.1	External Mains Water connection	20
5.12	Electrical Mains and Sub Mains distribution	20
5.13	Emergency Lighting	20
<b>6</b>	<b>EXTERIOR</b>	
6.01	Repaint car parking	12
6.02	New tarmac	60
6.03	External boundary treatments - Recoat powder coated Finishes to railings	60
6.04	Replace cobble block areas	18
6.05	10 year cutback & thinning of trees. Overhaul landscaping generally	10
6.06	Replace CCTV provision	12
6.07	External Handrails and balustrade	18

## APPENDIX B: PHASES OF THE LIFE CYCLE OF BS7543; 2015

<i>Table 1 - Categories of Design Life for Buildings (from BS 7543:1992)</i>			
Category	Description	Building Life	Examples
1	Temporary	Up to 10 yrs	Site huts; temporary exhibition buildings
2	Short life	Min. 10 yrs	Temporary classrooms; warehouses
3	Medium Life	Min. 30 yrs	Industrial buildings; housing refurbishment
4	Normal life	Min. 60 yrs	Health, housing and educational buildings
5	Long life	Min. 120 yrs	Civic and high quality buildings



## APPENDIX C: PHASES OF THE LIFE CYCLE OF BS7543; 2015

