

**Mixed-Use Development
of 502 No. Dwellings,
Communal Facilities
& Retail Units**

at,

The Former Gallaher site

Airton Road

Tallaght

Dublin 24

Greenleaf Homes Ltd.

Building Lifecycle Report

**Rev 1
January
2020**

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1.0 Introduction

The Sustainable Urban Housing Design Standards for New Apartments – Guidelines for Planning Authorities (published in March 2018), introduced a requirement to include details on the management and maintenance of any apartments that may be contained within housing developments.

The Guidelines state that consideration of the long-term running costs and manner of compliance of the proposal with the Multi-Unit Developments Act, 2011 are matters which should now be considered as part of any assessment of a proposed apartment development.

Section 6.13 of the 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, and includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of this application, as well as demonstrating what measures have been specifically considered by the applicant to effectively manage and reduce costs for the benefit of residents. It is broken into two sections as follows:

Section 1: 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 2: Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.

2.0 Proposed Development

This report relates to the various elements of the proposed Greenleaf Homes Ltd. development at Airton Road, Tallaght, Dublin 24. The overall development will comprise the construction of a scheme comprising 502 No. residential units, in 6 blocks of varying heights, the maximum building height being 8 storeys:

Block A – 88 units

Block B – 94 units

Block C – 93 units

Block D – 107 units and

Blocks E & F – 120 units as well as the following spaces:

Block C Communal Facilities – 465m²

Block D Communal Facilities – 93m²

Blocks E & F Communal Facilities – 146m²

Block C Creche – 329m²

Block C Retail Unit – 187m²

Block D Retail Unit 1 – 161m²

Block D Retail Unit 2 – 134m²

The development will also include the construction of associated car parking spaces and bicycle parking spaces, respectively; vehicular, pedestrian and cycle access and egress; provision of electric vehicle charging points; provision of boundary treatments including associated lighting; changes in levels, associated hard and soft landscaping.

The location of the proposed apartments and commercial / communal & creche facilities (at Ground & First Floor Levels) are shown in Appendix A and comprise;

- 197 No. one bedroom apartments
- 257 No. two-bedroom apartments
- 48 No. three-bedroom apartments
- 2 No. Communal Facilities
- 1 No. Creche
- 3 No. Retail Units

202 carparking spaces including 10 car curb spaces have been provided.

In total, 584 bicycle spaces have also been provided comprising:

505 No. enclosed spaces for residential units

2 No. enclosed spaces for the creche

3 No. enclosed spaces for retail

74 No. spaces within the public open space

SECTION 1:

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 Long-Term Running Costs

The aim of the developer is to manage and minimise potential unnecessarily high running costs on a per residential unit basis. Greenleaf Homes Ltd. have a proven track record in the delivery of high-quality homes and apartments and have applied their experience to ensure the provision of a product which will be well managed and easily maintained.

1.2 Property Management of the Common Areas of the development

A property management company will be employed at an early stage to ensure that all property management functions are dealt with and that the running and maintenance costs of the common areas are kept within the agreed annual service charge.

1.3 Service Charge Budget

The property management company has a number of key responsibilities, primarily 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 *Multi Unit Developments Act 2011*.

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 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 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.

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

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 the figures provided are estimates.

1.4 Sinking Fund

It is expected that a sinking fund allowance will account for future major maintenance and upgrade costs. A 10-year Planned Preventative Maintenance (PPM) strategy will determine the level of sinking fund required.

SECTION 02

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

The following are an illustration of the energy measures that are planned for the units to assist in reducing costs for the occupants.

2.1 Building Design

| Measure | Description | Benefit |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Daylighting to apartments & circulation areas | A daylight and sunlight analysis was carried by IN2 Engineering Design Partnership in accordance with the BRE 'Site Layout Planning for Daylight and Sunlight' Design Guide (2 nd edition), ' <i>Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities</i> ' and BS 8206-2: 2008 – ' <i>Lighting for Buildings – Part 2: Code of Practice for Daylighting</i> '. Refer to IN2 report for details. | Reduces the requirement, and therefore expense, for continuous artificial lighting. |
| External Lighting | The proposed lighting scheme within the development consists of LED public lighting pole mounted fittings. Each light fitting shall be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile. | Lighting will be designed to achieve the required standards, provide a safe environment for pedestrians, cyclists, and vehicular traffic, provide surveillance and limit the impact of the artificial lighting on surrounding existing flora and fauna. Having PECU allows for the optimum operation of lighting which minimizes costs |

2.2 Landscape

| Measure | Description | Benefit |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paving and Decking Materials | Sustainable, robust materials, with high slip resistance to be used for paving. Durable and hardwearing equipment (e.g. play, exercise, fencing etc.) to be used throughout. | Robust materials and elements reduce the frequency of required repair and maintenance. |
| Soft Landscape | Planting proposals have been formulated to complement the local setting as well as being fit for purpose in respect of private and public realm uses and spatial constraints imposed by garden sizes and the width of planting strips. Native tree species have been selected in significant numbers for planting along boundaries and across open spaces while non-native species have also been selected where spatial constraints are a factor. | Reduction in the frequency of required soft landscape maintenance |
| Site Layout | High quality landscaping both hard surface (for the cycle /car parking and pavements) and soft landscaping with planting and trees. The landscaping will be fully compliant with the requirements for Part M / K of the Technical Guidance Documents and will provide level access and crossings for wheelchair users and pedestrians with limited mobility. Designated car parking including accessible & visitor car parking reduces the travel distances for visitors with reduced mobility. | Plenty of room for cyclists and pedestrians along with car spaces provides a good balance between pedestrians and car users. Wheelchair user-friendly. |
| Maintenance & Management | Maintenance and management requirements have been considered through the design process. Complex planting arrangements have been omitted thus avoiding onerous maintenance and management requirements | Estate maintenance costs reduced |
| Balconies & openable windows | Use of balconies & openable windows allow individuals to clean windows themselves | Reduces the cost and reliance on 3rd party contractors for cleaning & maintenance. |

| | | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Sustainability & Biodiversity | <p>Sustainability aspects of the proposed development include the retention of trees and hedgerows along site boundaries and the use of native trees where possible across the site. Other species have been carefully selected for compatibility with the size of available spaces which is an important factor in long term management of the housing estate. The overall objective is to enhance the biodiversity potential of the site in addition to providing seasonal interest and variety.</p> <p>Judiciously placed flowering shrub and groundcover planting have been included to further promote biodiversity (pollinator species attracting insects and birdlife).</p> | Enhanced sustainability of long-term estate management |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|

2.3 Energy & Carbon Emissions

| Measure | Description | Benefit |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| BER Certificates | <p>A Building Energy Rating (BER) certificate will be provided for each dwelling in the proposed development when complete 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 NZEB rating for the apartments this will equate to the following emissions:</p> <ul style="list-style-type: none"> • 10 kWh/m²/annum to energy use for domestic hot water heating, space heating/ cooling; or • 4 kWh/m²/annum of electrical energy; or • A combination of these which would have equivalent effect. | A BER rating is a reduction in energy consumption and running costs |
| Fabric Energy Efficiency. | <p>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, '<i>Conservation of Fuel and Energy Buildings other than Dwellings</i>'.</p> | Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, lower energy consumption and |

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|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| | <p>Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance Paragraphs 1.2.4.2 and 1.2.4.3 within the Technical Guidance Documents Part L. See below Table 1 of Part L, Building Regulations.</p> | <p>thus minimise carbon emissions to the environment.</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|

2.4 Low Energy Technologies Considered.

| Measure | Description | Benefit |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Exhaust air heat pump</p> | <p>An exhaust air heat pump system is under consideration for heating, hot water and ventilation of the apartment units.</p> | <p>Heat pumps operate with efficiencies >400%. Exhaust air heat pumps utilise extract air as the air source for the heat pump. This will re-cycle the heat from the dwelling's ventilation system. These machines are ideal for apartments and more compact air-tight low energy or passive homes. Air is drawn through ducts to the heat pump from the bathrooms, utility and kitchen areas. The cold waste air is discharged to outside through another duct, and condensation to a drain. Additional heat generated internally from lighting, people and domestic appliances is also utilised through heat recovery from outgoing exhaust air.</p> |

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|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electric Heating | Electric radiators made with high thermal ceramic heating elements with digital thermostat controls. | 100% efficient, i.e. all the electricity used is converted into heat. Low running / maintenance costs. No requirement for expensive equipment such as boilers, pumps, etc. Thermostatic controls allow the radiator to quickly adapt to changes in the room temperature. |
| Low energy LED Lighting | Shall be designed and specified in accordance with the BER requirements in each unit and in the landlord areas in accordance with Part L. | Lower consumption of energy and therefore lower carbon emissions. |
| Central extract/ demand-controlled ventilation | Central extract and demand-controlled ventilation will be considered to provide ventilation with low energy usage. | Central extract ventilation provides continuous ventilation with low energy usage. Central extract operates at a low trickle speed constantly and ramp up in response to an increase in humidity from wet areas. Demand control ventilation incorporates automated wall vents which open/close dependent on internal humidity conditions. |
| PV Panels | PV Panels are being considered which convert the electricity produced by the PV system (which is DC) into AC electricity. The panels are typically placed on the South facing side of the building for maximum heat gain and, in some instances, can also be used to assist the heating system. | PV Panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment. They also reduce the overall requirement to purchase electricity from the grid. |

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|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>ECAR Charging Points</p> | <p>Ducting shall be provided from a local landlord distribution board to designated E-car charging car park spaces. This will enable the management company the option to install E-car charging points within the carpark to cater for E-car demand of the residence. This system operates on a single charge point access card. A full re-charge can take from one to eight hours using a standard charge point.</p> | <p>Providing the option of E-car charging points will allow occupants to avail of the ever-improving efficient electric car technologies.</p> |
| <p>Combined Heat and Power</p> | <p>Combined Heat and Power, (CHP), is a technology being evaluated in the event a number of apartments remain in a single ownership. This technology generates electricity and captures the waste heat from the generation unit that can be used within the development. This works very well when used in conjunction with a central plant based system.</p> | <p>CHP can achieve energy efficiencies by reusing waste heat from the unit to generate heat required for space heating & domestic hot water services in the apartment developments.</p> |

2.5 Materials / Material Specification.

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

The proposed envelope of the building is a mix of stone, brick and durable render finish, with high-performance double or triple-glazed aluminium windows. These materials are considered durable and would not require regular replacement or maintenance.

It is expected that a sinking fund allowance will account for future major maintenance and upgrade costs. A 10-year Planned Preventative Maintenance (PPM) strategy will determine the level of sinking fund required.

The Apartment 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 |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Implementation of the Design and Material principles to the design of the proposed development. | Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and include reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'. | Longevity, durability and low maintenance of materials |
| Stone and/or Brickwork to the envelope | | Requires minimal maintenance and does not require regular replacement |
| Installation of factory finished aluminium / uPVC windows and doors | | Requires minimal maintenance and does not require regular replacement |
| Installation of factory finished Precast steel /glass balcony railings | | |

2.6 Waste Management

| Measure | Description | Benefit |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction & Demolition Waste Management Plan | <p>A Construction and Demolition Waste Management Plan has been prepared by Barrett Mahony Consulting Engineers which will be submitted to South Dublin County Council prior to commencement of the development.</p> <p>The waste management plan has been developed in line with the Waste Management Act (1996), the Eastern Midlands Waste Management Plan (2015-2021) and the Department of Environment and National Construction and Demolition Waste Council policy statements.</p> <p>Excavated material from the site will be disposed off site to a licensed facility.</p> <p>Excavated topsoil will be retained in a stock pile for re-use in the landscaping of the site.</p> | <p>The report demonstrates how the scheme has been Designed to comply with best practice.</p> |
| Operational Waste & Recycling Management Plan | <p>This application is accompanied by an Operational Waste & Recycling Management Plan (OWRMP) prepared by Traynor Environmental Ltd.</p> <p>The OWRMP has been developed in line with Eastern Midlands Region, South Dublin County Council for waste minimization, recycling and re-use.</p> | <p>The report demonstrates how the development has taken into account sustainable methods for waste and recycling management during its operation.</p> |
| Storage of non-recyclable waste and recyclable household Waste | <p>Inclusion of a number of covered & locked bin storage areas for each apartment.</p> <p>Domestic waste management strategy: Grey, Brown and Green bin distinction. Competitive tender for waste management collection.</p> | <p>Easily accessible by all residents and minimizes potential littering of the scheme.</p> |
| Composting | <p>Addition of organic waste bins to be provided throughout the development</p> | <p>Helps to reduce waste charges and the amount of waste going to landfill.</p> |
| Additional Recycling Centre | <p>Additional recycling centre to be provided within the associated housing scheme.</p> | <p>Helps to reduce waste charges and the amount of waste going to landfill.</p> |

2.7 Human Health and Well Being.

| Measure | Description | Benefit |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Natural Daylight | The design, separation distances and layout of the apartments have been optimised for 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. |
| Accessibility | All units, including access and egress, will comply with the requirements of Part M/K | Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances. |
| Private Open Space | Provision of private open space | Facilitates interaction with outdoors, increasing health benefits. |
| Security | <p>The scheme is designed to incorporate good passive surveillance with the following security strategies likely to be adopted:</p> <ul style="list-style-type: none"> • Secure bicycle storage areas for each apartment; • CCTV for common areas; • Routine access fob audits. | Access to all residents to reduce the risk of crime, littering within the scheme and reduction of potential waste charges. |
| Natural Amenity | A number of green spaces are proposed throughout the scheme, connecting to a large active and passive area along the southern boundary | Facilitates community interaction, socializing and play – resulting in improved wellbeing. |

2.8 Transport and Accessibility

| Measure | Description | Benefit |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Access to Public Transport.</p> | <p>Airton Road is a two-way carriageway with no cycle lanes along the road. Greenhills Road is a two-way carriageway with a shared pedestrian and cyclist walkway.</p> <p>2No. new site entrances are proposed to serve the development, 1No. on Airton Road and 1No. on Greenhills Road.</p> <p>A primary cycle route (Route 8) is planned along both Belgard Road and Greenhills Road with the route along the LUAS Red Line designated as a secondary route.</p> <p>Route 8 links South Great Georges Street in the city centre to Sundrive Road via the Coombe, branching onto Route 8A (LUAS red line) which terminates in Citywest / Fortunestown via Belgard and Ballymount and Route 8B (Greenhills Road) which proceeds to Tymon Park.</p> <p>The site is currently connected to the city centre and nearby suburbs by 3No. major bus routes together with the LUAS cross-city line. Dublin Bus services in the area provide direct linkage to the city, Route 27 (high-frequency) along Greenhills Road towards the city centre, the 76 Route along Belgard Road towards Chapelizod, and the 54A linking Tallaght to the city centre.</p> <p>A transport statement has been prepared by Barrett Mahony Consulting Engineers detailing the various transport options available in the vicinity of the site.</p> | <p>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.</p> |

| | | |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Permeable Connections | There is provision of dedicated pedestrian and cycle infrastructure within the site. Airton Road is subject to a speed limit of 50kph with street lighting available along the route. The upgrading and provision of new high quality pedestrian and cyclist facilities available along the development frontage are part of the proposal. These connect with existing paths on the site, subsequently providing convenient access to local services including shops, schools, restaurants and medical facilities. | Ensures long-term attractiveness of walking, and cycling to a range of local facilities. This strong infrastructure ensures that there will be a balance of transport modes used by future residents of the proposed development. |
| Bicycle Storage | The provision of private secure & covered bicycle parking facilities for each apartment, together with secure long-term parking for the creche and retail units as well as abundant short-term parking within the public open space. | Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle. |

2.9 Management

| Measure | Description | Benefit |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Residents Manual | <p>Once a purchaser completes their sale, a homeowner box will be provided which will include:</p> <ul style="list-style-type: none"> • 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. • 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. | Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner. |

APPENDIX B – ITEMS INCLUDED IN A TYPICAL BIF

Items Included in a Typical BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund.

| Ref | Element | Life Expectancy (Years) | Cost |
|------------|--------------------------------------------------------------------------------|----------------------------|------|
| 1.0 | Roofs | | |
| 1.1 | Replacement of flat roof covering including insulation to warm roof build ups. | 20 (40 for tiled roofs) | |
| 1.2 | Replacement parapet details | 20 | |
| 1.3 | Replacement/ repairs to fascias | 20 | |
| 2.0 | Elevations | | |
| 2.1 | Repairs & preparation for decorations of rendered areas | 20 | |
| 2.2 | Replace exit/ entrance doors | 25 | |
| 2.3 | Replace rainwater goods | 25 | |
| 2.4 | Recoat powder coated finishes to balconies | 15 | |
| 2.5 | Periodic replacement and overhauling of external fixings | 5 | |
| 2.6 | Replace balcony floor finishes | 25 | |
| 3.0 | Stair Cores and Lobbies | | |
| 3.1 | Decorate ceilings & walls (stairwells & lobbies) | 2 | |
| 3.2 | Decorate Joinery (stairwells & lobbies) | 2 | |
| 3.3 | Replace fire doors (stairwells & lobbies) | 25 | |
| 3.4 | Replace carpets (stairwells & lobbies) | 10 | |
| 3.5 | Replace entrance mats (stairwells & lobbies) | 10 | |
| 3.6 | Replace nosings (stairwells) | 10 | |
| 3.7 | Replace ceramic floors tiles (stairwells & lobbies) | 20 | |
| 3.8 | Fixed Furniture & Equipment (Provisional Sum) | 18 | |

| | | | |
|------------|------------------------------------------------------------------------------|----|--|
| 4.0 | M&E Services | | |
| 4.1 | General - Internal re-lamping (stairwells & lobbies) | 5 | |
| 4.2 | Replace Internal light fittings (stairwells & lobbies) | 15 | |
| 4.3 | Replace external light fittings (at entrance lobbies) | 15 | |
| 4.4 | Replace smoke detector heads | 18 | |
| 4.5 | Replace manual break glass units/ disabled refuge call points | 18 | |
| 4.6 | Replace fire alarm panel | 18 | |
| 4.7 | Replace AOV's | 25 | |
| 4.8 | Replace security access control installation | 15 | |
| 4.9 | External mains water connection | 20 | |
| 4.10 | Electrical mains and sub mains distribution. | 20 | |
| 4.11 | Emergency lighting | 20 | |
| 4.12 | Overhaul and/or replace waste pipes, stacks & vents | 20 | |
| 5.0 | Exterior | | |
| 5.1 | External boundary treatments - recoat powder coated finishes to railings | 40 | |
| 5.2 | Replace external signage | 15 | |
| 5.3 | Replace cobble-lock areas | 20 | |
| 5.4 | 15-year cutback & thinning of trees & general overhaul of the landscaping | 15 | |
| 5.5 | Replace CCTV provision | 10 | |
| 5.6 | External handrails and balustrade | 15 | |
| 5.7 | Replace Bicycle Stands | 25 | |

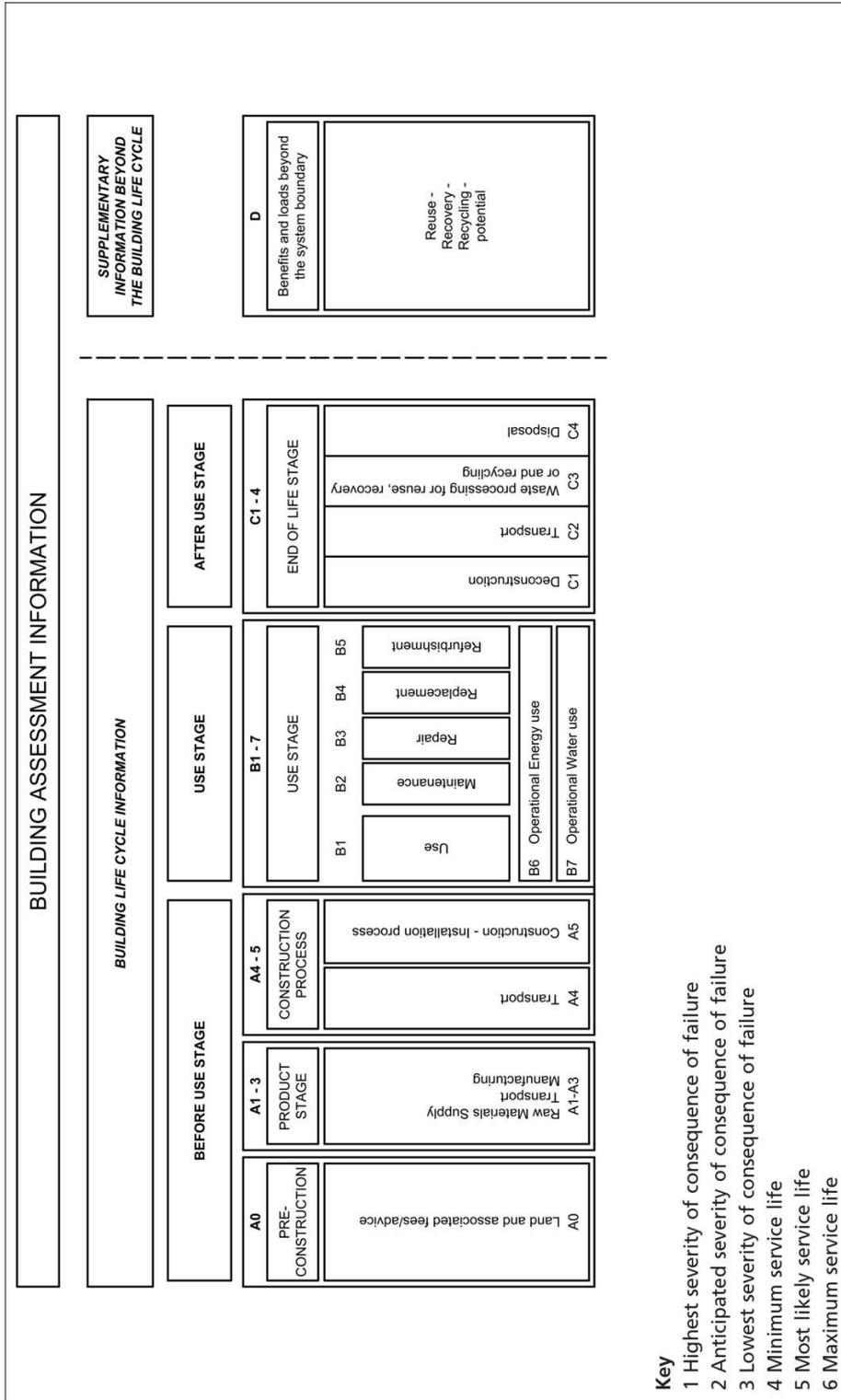
APPENDIX C – FABRIC REQUIREMENTS – BUILDING REGULATIONS PART L

| Fabric Elements | 2018 Part L (NZEB) |
|--------------------------------------------------|--------------------|
| Pitched Roof | 0.16 |
| Flat Roof | 0.20 |
| Walls | 0.18 |
| Ground Floors | 0.18 |
| Other Exposed Floors | 0.18 |
| External Personnel Doors, Windows and Rooflights | 1.4 |

Table 1: Maximum elemental U-value (W/m²K) for development

APPENDIX D – PHASES OF THE LIFE CYCLE BS7543:2015

Figure 4 Phases of the life cycle



Key

- 1 Highest severity of consequence of failure
- 2 Anticipated severity of consequence of failure
- 3 Lowest severity of consequence of failure
- 4 Minimum service life
- 5 Most likely service life
- 6 Maximum service life