

BUILDING LIFE CYCLE REPORT

Development at Farrankelly, Greystones, Wicklow



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INTRODUCTION

The Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities were published in March 2018 (hereafter referred to as the Apartment Guidelines). The Apartment 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 Apartment Guidelines 2018 requires that apartment applications shall:

“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 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 residents.

PROPOSED DEVELOPMENT

The development will consist of the construction of a residential development of 426 no. dwellings, a creche (c. 599 sq. m), residential amenity building (c. 325 sq. m), active open space of c. 4.5 hectares, greenway of c. 2.4 hectares and open space as follows:

- A) 245 no. houses comprising; 148 no. 3 bedroom houses, 93 no. 4 bedroom houses, and 4 no. 5 bedroom houses [houses are provided with two car parking spaces and solar panels – House Type E 3 storey to front – 2 storey to rear; House Types G1,G2,G3, and H dormer House Types, all other house types 2 storey];
- B) 93 no. apartments with balconies in 3 no. 4 storey apartment buildings (Blocks 1 and 2 over part basement/podium – [Block 2, 4 storeys over podium on eastern elevation]) comprising 36 no. 1 bedroom apartments, 53 no. 2 bedroom apartments and 4 no. 3 bedroom apartments;
- C) 44 no. 2 bedroom duplex apartments and 44 no. 3 bedroom duplex apartments in 11 no. 3 storey duplex buildings;
- D) Provision of a 2 storey split level residential amenity building of c. 325 sq. m (3 no. car parking spaces and 12 no. bicycle spaces). Temporary use of the residential amenity building as a marketing suite for a period of 3 years.
- E) Provision of a 2 storey creche of c. 599 sq. m (10 no. car parking & 12 no. cycle spaces), 1 no. ESB substation (beside creche) and ESB kiosks, associated single storey bicycle storage and refuse storage buildings.
- F) Active Open Space of c. 4.5 hectares comprising: 1 no. playing pitch, 1 no. multi-purpose pitch, tennis courts children’s play area, trim trail and parking (30 car parking spaces & 20 no. bicycle spaces),
- G) Approximately 4.2 hectares of open space comprising; a greenway (and associated paths, stream crossing and lighting) along the northern boundary at “*Three Trout’s*” stream (c. 2.4 hectares); c. 1.8 hectares of open space within the development (including playground areas); all ancillary landscape works with public lighting, planting and boundary treatments including regrading/re-profiling of site where required as well as provision of cycle paths.
- H) Access to the subject site will be from a priority junction, located on the Kilcoole Road (R761). The proposal includes for vehicular/pedestrian access from Priory Road. Provision for cyclist and pedestrian access to be provided to boundary of Eden Gate development located to the south (3 no. independent vehicular access points from Priory Road to serve 9 no. dwellings), 762 no. car parking spaces and 235 no. cycle spaces.

- I) Surface water and underground attenuation systems as well as all ancillary site development works (reprofiling of site as required) as well as to drainage services (including underground pumping station), all on a site of c. 21.2 hectares.
- J) Temporary marketing signage for a period of 3 years (located beside the Priory Road and Kilcoole Road).
- K) All associated site development and landscape works.

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, including communal areas of open space, residential amenity facilities and any public areas not taken in charge by the local authority, 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. This contract will be for a maximum period of 15 years and in the form prescribed by the PSRA.

The Property Management Company also has the following responsibilities for the apartment and duplex elements of the 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 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 (“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 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 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.

SECTION 02

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

2.1. Energy and Carbon Emissions

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																								
BER Certificates	<p>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.</p> <p>A2 – 25-50 kwh/m2/yr with CO2 emissions circa 10kgCO2/m2 year A3 – 51-75 kwh/m2/yr with CO2 emissions circa 12kgCO2/m2 /year</p>	Higher BER ratings reduce energy consumption and running costs.																								
Fabric Energy Efficiency	<p>Building Fabric Performance</p> <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 “Conservation of Fuel and Energy Buildings other than Dwellings”. The current regulation is Part L 2011 but this will be superseded by Part L 2019 in November 2019 and a transitional period of 12 months will commence. The dwellings built under this planning permission will be designed and constructed to meet the relevant regulation, as may be appropriate, in accordance with the transitional period.</p> <p>U-values</p> <p>The U-Values that will be targeted for the dwellings in this development will exceed the minimum targets set out in Part L 2011 or Part L 2019 as may be appropriate. The table below sets out the minimum requirements of each of these standards and the targets range that will be adopted for the site.</p> <table border="1"> <thead> <tr> <th>U-Values</th> <th>Range of Target Values Proposed</th> <th>Part L 2011 Compliant Values</th> <th>Part L 2019 Compliant Values</th> </tr> </thead> <tbody> <tr> <td>Floor</td> <td>0.10 to 0.18 W/m2K</td> <td>0.21W/m2K</td> <td>0.18 W/m2K</td> </tr> <tr> <td>Roof (Flat)</td> <td>0.15 to 0.18 W/m2K</td> <td>0.20 W/m2K</td> <td>0.20 W/m2K</td> </tr> <tr> <td>Roof (Pitched)</td> <td>0.11 to 0.16 W/m2K</td> <td>0.16 W/m2K</td> <td>0.16 W/m2K</td> </tr> <tr> <td>Walls</td> <td>0.12 to 0.18 W/m2K</td> <td>0.18 W/m2K</td> <td>0.18 W/m2K</td> </tr> <tr> <td>Windows</td> <td>1.2 to 1.5 W/m2K</td> <td>1.6 W/m2K</td> <td>1.4 W/m2K</td> </tr> </tbody> </table>	U-Values	Range of Target Values Proposed	Part L 2011 Compliant Values	Part L 2019 Compliant Values	Floor	0.10 to 0.18 W/m2K	0.21W/m2K	0.18 W/m2K	Roof (Flat)	0.15 to 0.18 W/m2K	0.20 W/m2K	0.20 W/m2K	Roof (Pitched)	0.11 to 0.16 W/m2K	0.16 W/m2K	0.16 W/m2K	Walls	0.12 to 0.18 W/m2K	0.18 W/m2K	0.18 W/m2K	Windows	1.2 to 1.5 W/m2K	1.6 W/m2K	1.4 W/m2K	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, lower of energy consumption and thus minimise carbon emissions to the environment.
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Measure	Description	Benefit
	<p>Thermal Bridging</p> <p>Thermal bridges occur at junctions between planar elements of the building fabric and are typically defined as areas where heat can escape the building fabric due to a lack of continuity of the insulation in the adjoin elements.</p> <p>Careful design and detailing of the manner in which insulation is installed at these junctions can reduce the rate at which the heat escapes. Standard good practice details are available and are known as Acceptable Construction Details (ACDs). Adherence to these details is known to reduce the rate at which heat is lost.</p> <p>The rate at which heat is lost is quantified by the Thermal Bridging Factor of the dwelling which is entered into the overall dwelling Part L calculation.</p> <p>It is intended that all building junctions will either be designed in accordance with the Acceptable Construction Details (issued by The Department of the Environment) or that thermal modelling will be carried out for all thermal bridges on the dwellings within proposed development. The resultant Thermal Bridging Factor will be in the range of 0.04W/m2K to 0.08W/m2K.</p> <p>Air Tightness</p> <p>A major consideration in reducing the heat losses in a building is the air infiltration. This essentially relates to the ingress of cold outdoor air into the building and the corresponding displacement of the heated internal air. This incoming cold air must be heated if comfort conditions are to be maintained. In a traditionally constructed building, infiltration can account for 30 to 40 percent of the total heat loss, however construction standards continue to improve in this area.</p> <p>In order to ensure that a sufficient level of air tightness is achieved, air permeability testing will be specified carried out on all dwellings. A design air permeability target of 3 m3/m2/hr has been identified for the apartments and houses on the site.</p>	
<p>Energy Labelled White Goods</p>	<p>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:</p> <ul style="list-style-type: none"> • Oven - A plus • Fridge Freezer - A plus • Dishwasher - AAA • Washer/Dryer - B 	<p>The provision of high rated appliances in turn reduces the amount of electricity required for occupants.</p>
<p>External Lighting</p>	<p>The proposed lighting scheme within the development consists of range of luminaires, each selected to suit the specific location on the site. All fittings selected will be LED and will be mounted on columns ranging in height from 4m to 6m.</p> <ul style="list-style-type: none"> • 3000K CCT LED to minimise impact on wildlife • High efficiency 119 lm/W • Zero Upward Light Output Ratio (ULOR) • Intelligent lighting control systems provided along pedestrian routes in sensitive woodland areas • Shading louvres included on light fittings adjacent to the most sensitive areas of the site. • Meets or exceeds all other WCC Specification criteria. <p>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.</p>	<p>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.</p>

The following are **Low energy technologies** that 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 the A2/A3 BER Rating.

Measure	Description	Benefit
Condensing Boilers	If gas fired heating is adopted, condensing boilers will be provided as they have a higher operating efficiency, typically over 90%, than standard boilers and have the benefit of lower fuel consumption resulting from the higher operating efficiencies.	<ul style="list-style-type: none"> Condensing boilers use the heat losses from the boiler flue to preheat the circulating heating water By preheating the heating water, the boiler can achieve efficiencies in excess of 90%
Demand Controlled Mechanical Ventilation	Centralised mechanical ventilation will be provided to all dwellings to ensure that the air quality within the dwellings will be adequate. The system will be designed to respond to occupancy usage patterns and to humidity levels within the dwelling.	<ul style="list-style-type: none"> Mechanical ventilation provides enhanced air quality in modern air tight dwellings which are otherwise designed to minimise unwanted air infiltration
PV Solar Panels	<p>PV Solar Panels will be considered as an option for both houses and apartments in order to meet the renewable energy contribution required by Part L of the Building Regulations. These panels convert sunlight into electricity which can be used within the dwelling.</p> <p>The panels are typically placed on the South facing side of the building to maximise the solar exposure.</p>	<p>PV Solar Panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment.</p> <p>They also reduce the overall requirement to purchase electricity from the grid.</p>
Air Source Heat Pump	<p>As part of the overall energy strategy for houses, the use of Air Source Heat Pumps will be assessed to determine their technical and commercial feasibility.</p> <p>These systems extract heat energy from the outside air and, using a refrigerant cycle, raise the temperature of the heat energy using a refrigerant vapour compression cycle.</p> <p>For apartments, there are products which incorporate air source heat pump technology but which do not require the traditional “outdoor unit” making them suitable for apartments. These are general referred to as “Exhaust Air Heat Pumps” and are capable of extracting energy from the air within the apartment through a ducting system.</p>	Air source heat pumps use electrical energy from the grid to drive the refrigerant cycle but do so extremely efficiently. Modern heat pumps will typically provide 4 to 5 times more heat energy to the dwelling than the electrical energy they consume.
ECAR Charging Points	<p>Within the basement parking areas, 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 a number of E-car charging points within the basement carpark to cater for E-car demand of the residence. Ducting and on street infrastructure will also be considered for the housing development to provide EV charging facilities in on-street parking spaces. 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>Furthermore, all houses with on-curtilage parking will be wired to allow future installation of EV charging points by house purchasers.</p>	Providing the option of E-car charging points will futureproof the development

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 buildings.



2.2.1. 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
Openable window sections are provided to all stair cores within the development providing natural daylight to circulation areas.	Avoids the requirement for continuous artificial lighting
Openable window sections are provided to all stair cores within the development 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.
Natural ventilation through grills, louvres and tree pits are proposed to provide fresh air to basement and sub-basement areas.	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 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"> • 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 	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.

<p>The architectural approach to the scheme proposed the extensive use of robust materials of brickwork and render to the building envelope.</p> <p>The primary facing materials are brickwork (red and buff) and self coloured render.</p>		<p>These robust traditional materials will require minimal on-going maintenance and have a long life-cycle expectancy.</p>
<p>Windows and door frames and leaves to be aluminum powder coated or uPVC.</p>		<p>Requires no on-going maintenance.</p>
<p>Balcony balustrades and railings to be powder coated.</p>		<p>Minimises on-going maintenance.</p>
<p>Roof tiles to be clay or concrete tiles.</p>		<p>A robust material that minimises on-going maintenance.</p>

2.3. Landscape

Measure	Description	Benefit
<p>Site Planning</p>	<p>The landscape strategy aims to integrate the proposed residential development with the existing landscape and create a network of attractive and useable open spaces while contributing to local biodiversity. Open spaces offer the opportunity for meeting, walking and formal and informal play. Pedestrian circulation routes prioritized throughout the site.</p>	<p>Well-designed path network supports long term maintenance of lawn, wildflower and planting areas by reducing desire lines and man-made tracks.</p>
<p>Retaining Existing Landscape</p>	<p>Existing native hedgerow and trees of good health and importance to green infrastructure links are to be retained.</p>	<p>Provides the scheme with high quality and robust landscape features. Improves local biodiversity which helps growth of new planting.</p>

Materials	Use of low maintenance surface materials such as in situ concrete. Feature paving limited to seating areas, robust and durable paving used. Similarly, robust street furniture used throughout open spaces. A preference for natural play equipment where possible.	Robust materials provide more durability and longevity to the open spaces, while the appearance of the space is more harmonious with a landscape
Planting details	Woodland planting and wildflower used along edges and boundaries. Open lawn areas provided. Planting selected to be suited to Irish climatic and specific site conditions.	Woodland and wildflower reduce maintenance operations. Areas of open lawn provide natural attenuation areas. Correct planting procedures ensure longevity to planting scheme.

2.4. Waste Management

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

Measure	Description	Benefit
Construction and Demolition Waste Management Plan	Details regarding Construction and Demolition Waste are set out in Chapter 11 of the EIAR prepared by Byrne Environmental Consulting Ltd.	Chapter 11 of the EIAR demonstrates how the scheme has been designed to comply with best practice.
Operational Waste Management Plan	The application is accompanied by an Outline Operational Waste Management Plan prepared by Byrne Environmental Consulting Ltd.	The report demonstrates how the scheme has been designed to comply with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Inclusion of a centralised bin storage system in basement for Block 1 and 2, and dedicated bin stores for Block 3, duplex units and creche. Houses include bin store within the curtilage of the property.	Easily accessible by all residents and minimises potential littering of the scheme
	Domestic waste management strategy: Grey, Brown and Green bin distinction. Competitive tender for waste management collection.	Helps reduce potential waste charges.
Composting	Organic waste bins to be provided throughout.	Helps reduce potential waste charges.

2.5. Health & Well Being

The following are illustrations of how the health and well-being of future residents are considered.

Measure	Description	Benefit
Natural / Day Light	The design, separation distances and layout of the apartment blocks and duplex units 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.
Accessibility	All units will comply with the requirements of Part M/K and a universal access statement is provided within the	Reduces the level of adaptation, and associated costs, potentially necessitated by residents'

Measure	Description	Benefit
	design statement of this submission.	future circumstances.
Security	<p>The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted:</p> <ul style="list-style-type: none"> • CCTV monitoring details • Car registration recognition at entrance gate of basement parking area. • Secure bicycle stands – covered by CCTV • Routine access fob audits 	Help to reduce potential security/management costs.
Natural Amenity	Large public areas of open space are evenly distributed throughout the site where they can be overlooked by surrounding residential units.	Proximity and use of parks promotes a healthy lifestyle
	Dedicated active open space facilities incorporating football pitch, tennis court, multi sports pitch, trim trail, children's play area and kick about area	Facilitates community interaction, socialising and play – resulting in improved wellbeing

2.6. Management

Consideration has been given to the ensuring the homeowners have a clear understanding of their property

Measure	Description	Benefit
Home User Guide	<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.

2.7. Transport

Measure	Measure Description	Benefit
Access to Public Transport (Bus Services)	Dublin Bus Route No.84, with a 1-hour frequency, operates along the Kilcoole Road along the eastern frontage of the site. Route 184 from Newtown Mount Kennedy to Bray via Greystones passes through Killincarrig Cross Roads along Mill Road which is about 750 m to the north of the subject site.	The availability, proximity and ease of access to public transport services contributes to reducing

	This route has a 30 minute frequency. The combined frequency of the 84 and 184 bus routes is every 20 minutes.	the reliance on the private motor vehicle for all journey types.
Access to Public Transport (DART)	Greystones Dart Station is 2.8km from the subject site, which is approximately 36-minute walk or a 10-minute cycle. Trains operated at a 30 minute frequency. Good quality cycle parking is provided at the station.	The DART 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.
Permeable Connections	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. Future pedestrian and cycle connections to adjoining private land is also facilitated.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
Bicycle Storage	The provision of high quality secure and sheltered bicycle parking facilities, for both short term and long-term parking requirements.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
E-car Facilities	Ducting will be provided from a local landlord distribution board to designated E-car charging car park spaces. Ducting and on street infrastructure will also be considered for the housing development to provide EV charging facilities in on-street parking spaces. Furthermore, all houses with on-curtilage parking will be wired to allow future installation of EV charging points by house purchasers.	To accommodate the growing demand for E-car which assist in decarbonising society and reducing oil dependency.

APPENDIX A:

ITEMS INCLUDED IN A TYPICAL BIF

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

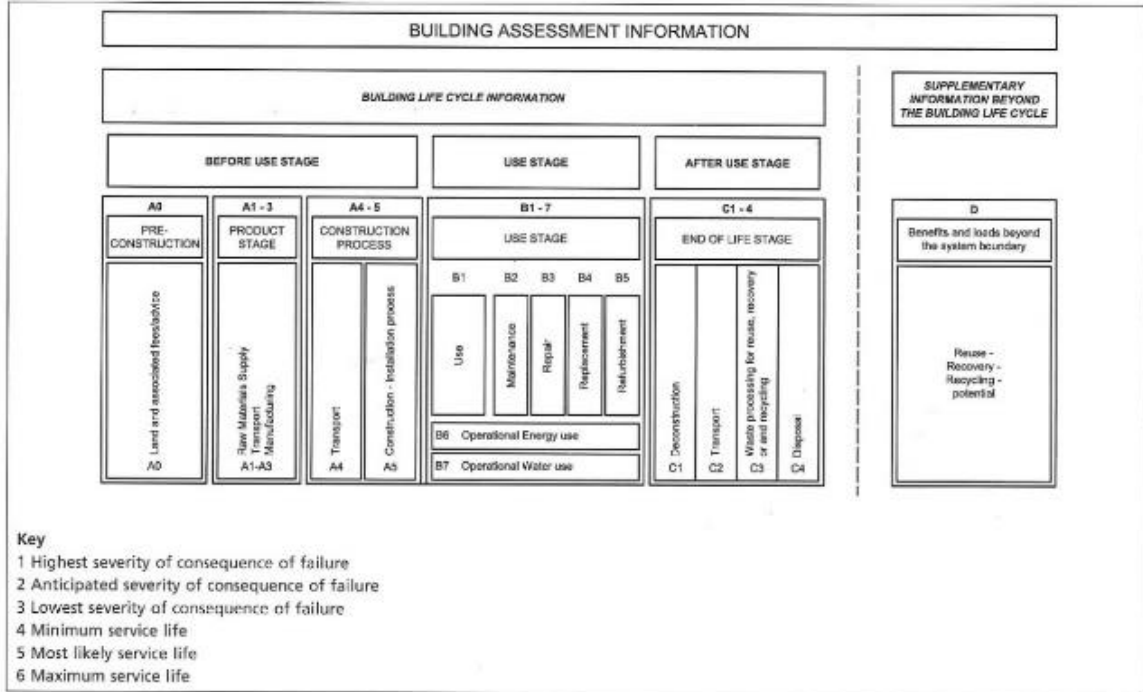
BUILDING INVESTMENT FUND (SINKING FUND) CALCULATIONS			
Ref	Element	Life Expectancy	Amount
1.00	Roofs		
1.01	Replacement felt roof covering incl. insulation to main roofs/ overhaul to green roofs.	18	
1.02	Replacement parapet details	18	
1.03	Replacement/ repairs to facias	18	
1.04	Replace roof access hatches	25	
1.05	Specialist Roof Systems - Fall arrest	25	
1.06	Overhaul waterproofing details to penthouse paved areas	12	
2.00	Elevations		
2.01	Recoat metal panels to penthouse apartments	25	
2.02	Minor repairs and preparation for decorations of rendered areas	18	
2.03	Replace exit/ entrance doors	25	
2.04	Replace Rainwater goods	25	
2.05	Recoat powder coated Finishes to balconies / Grills to Basement vents	20	
2.06	Periodic replacement and overhauling of external fixings	5	
2.07	Replace Balcony floor finishes	25	
3.00	Stair cores & lobbies (3No. Cores)		
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 nosing's	12	
3.08	Replace ceramic floors tiles Entrance lobbies	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	
4.00	Basement & Car Parking		
4.01	Remove/ Replace ceiling insulation	25	
4.02	Repaint parking spaces & Numbering	7	
4.03	Replace store doors, ironmongery & digi-locks	15	
4.04	Replace Bike stands	25	
4.05	Replace basement access control at entrance & core entrances	12	
5.00	M&E Services		
5.01	General - Internal re-lamping	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/ disabled refuge call points	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	
5.10	External Mains Water connection	20	
5.12	Electrical Mains and Sub Mains distribution	20	

5.13	Emergency Lighting	20	
5.14	Overhaul and/or replace Waste Pipes, Stacks & Vents	20	
6.00	Exterior		
6.01	External boundary treatments - Recoat powder coated Finishes to railings	60	
6.02	Replace external signage	18	
6.03	Replace cobblelock areas	18	
6.04	15-year cutback & thinning of trees. Overhaul landscaping generally	20	
6.05	Replace CCTV provision	12	
6.06	External Handrails and balustrade	18	

APPENDIX B:
Phases of the Life Cycle of 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