

**Proposed Strategic Housing  
Development of 152 no.**

**Residential units and creche.**

at Shackleton Road, Ballymakealy  
Upper, Celbridge, Co. Kildare

**Building Lifecycle Report**

CBR-MCA-00-XX-RP-A-1031

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## Introduction

The *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities* (March 2018, updated December 2020) outlines guidelines and policies required for development and maintenance of apartments and multi-residential units.

Clauses 6.11 to 6.14 of the Guidelines relate to the “Operations & Management of Apartment Developments”, and Clause 6.13 requires that apartment applications shall:

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

This Building Lifecycle Report sets out to address the requirements of these Guidelines and is divided into two sections: Section 1 will assess the long-term running and maintenance costs as they would apply on a per residential unit basis, at the time of application. Section 2 will demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.

## Project Description

The proposal for a new Strategic Housing Development on the lands to Shackleton Road, Ballymakealy Upper, Celbridge, co. Kildare. the housing development will be comprising of 152 no. houses, duplexes & maisonettes. The proposed housing mix - 12no. 1 bed units (8%) , 58no. 2 Bed Units (38%) • 76no. 3 Bed Units (50%), 6no. 4 Bed Units (4%). Supplementary to the units, the development is also providing a 42 child creche facility.

The scheme will have a mixture of on-street parking for the duplexes & maisonettes and front curtilage parking for the houses. Additional visitor carparking is also provide across the site. secure bike storage for the units will be proved as required. The main entrance to the scheme is the south east corner off Shackleton road, with additional pedestrian and cycle access further along the southern boundary.



## Section 1

### Assessment of Long-Term Running and Maintenance Costs

#### 1.1 Property Management of the Common Areas of the Development

As stated in the *Sustainable Urban Housing Guidelines 2018* section 6.14, the *Multi-Unit Developments Act, 2011* (MUD Act) sets out the legal requirements regarding the management of apartment developments. It is advised that when granting permission for such developments, planning authorities attach appropriate planning conditions that require:

- Compliance with the MUD Act
- Establishment of an Owners Management Company (OMC)
- Establishment and ongoing maintenance of a sinking fund commensurate with the facilities in a development that require ongoing maintenance and renewal.

A property management company will be engaged at an early stage of the development to ensure that all responsibilities within the remit of property management are dealt with 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. 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:

- Formation of an OMC within a timely manner – this will be a company limited by guarantee having no share capital. All future purchasers of residential units will be obliged to become members of this OMC.
- Preparation of annual service charge budget for the development of common areas.
- Fair and equitable apportionment of the annual operational charges in line with the 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.
- Insurance Management.
- After Hours Services.
- Staff Administration.
- Corporate Services.

### Section 1

#### Assessment of Long-Term Running and Maintenance Costs

### 1.2 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's 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 30-year life cycle period, as required by the MUD Act.

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 2

### Measures to 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 houses, duplexes & maisonettes to assist in reducing both carbon emissions and costs for the occupants.

Measure	Description	Benefit
<b>BER Certificates</b>	<p>A Building Energy Rating (BER) certificate will be supplied for each unit in the proposed development, which provides detail of the energy performance of the dwellings.</p> <p>A BER is calculated assessing 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, which will equate to the following emissions: A2: 25-50 kwh/m2/yr with CO2 emissions circa 10kgCO2/m2 year</p>	Higher BER ratings reduce energy consumption and running costs. Anticipated Ratings for this project are BER A2
<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: <i>Conservation of Fuel and Energy – Dwellings 2019</i> (Refer to Appendix B). Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance with Paragraphs 1.3.3 within TGD Part L.	Lower U-values and improved airtightness will help minimise heat losses through the building fabric, lower the 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 high standard and have a high energy efficiency rating. It is expected that the following appliance ratings will be provided: <ul style="list-style-type: none"> <li>•</li> </ul>	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
<b>External Lighting</b>	The external lighting is designed using the lighting simulation software DIALux and is in accordance with the following: <ul style="list-style-type: none"> <li>▪ CIBSE Lighting Guide LG – 6</li> <li>▪ IS EN 12464-2</li> <li>▪ CIE Guide regarding Illumination levels and “Obtrusive Light” to neighbouring properties</li> <li>▪ HSA Regulations for Electricity</li> <li>▪ ETCI National Rules for Electrical Installations ET 10101</li> </ul>	The site lighting has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behavior and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.

## Section 2

## Measures to Manage and Reduce Costs for the Benefit of Residents

The following low energy technologies are being considered for the development, and during the detail design stage the specific combination from the list below will be decided on and then implemented to achieve A2/A3 BER Rating.

Measure	Description	Benefit
<b>Natural Ventilation</b>	Natural ventilation is being evaluated as a ventilation strategy to minimise energy usage and noise levels.	Advantages of natural ventilation include: <ul style="list-style-type: none"> <li>• Low noise impact for occupants and adjacent units.</li> <li>• Completely passive therefore no energy required with associated.</li> <li>• Minimal maintenance required.</li> <li>• Reduced environmental impact as minimal equipment disposal over life cycle.</li> <li>• Full fresh air resulting in healthier indoor environment.</li> </ul>
<b>Mechanical Ventilation Heat Recovery</b>	Mechanical heat recovery ventilation will be considered to provide ventilation with low energy usage. *see exhaust air heat pump below.	Mechanical Heat Recovery Ventilation provides ventilation with low energy usage. The MVHR reduces overall energy and ensures a continuous fresh clean air supply.
<b>Combined Heat and Power</b>	Combined Heat and Power, (CHP), is a technology being evaluated for the development. This technology generates electricity and captures the waste heat from the generation unit that can be used within the development.	CHP can achieve energy efficiencies by reusing waste heat from on-site generation of electricity to generate heat used for space heating and domestic hot water services in the apartment developments. As electricity from CHP is both generated and consumed on-site, this also eliminates energy losses from transmission of the electricity.
<b>ECAR Charging Points</b>	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 13no. E-car charging points around the development 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.	Providing the option of E-car charging points will allow occupants to avail of the ever-improving efficient electric car technologies.
<b>Exhaust Air Heat Pump</b>	Exhaust air heat pumps are being considered given their ability to use heat recovery from ventilation, to generate heating and hot water.	Reduces overall energy usage whilst providing ventilation.

## Section 2

### Measures to Manage and Reduce Costs for the Benefit of Residents

#### 2.2 Buildings

The duplexes & maisonettes buildings are designed in accordance with the Building Regulations, in Particular Part D *Materials and Workmanship* which include all elements of the construction, where the design principles and specification are applied to both the residential units and the common areas of the building.

Specific design measures being investigated are:

Design Measure	Benefit
Daylighting to stair cores & protected lobbies	Avoids the requirement for continuous artificial lighting.
Natural / passive ventilation system	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
Secure basement level cycle storage areas accessed by a purpose-built bicycle stairway route via the main road entrance.	Encourages cycling by providing greater accessibility and ease of use.
External paved and landscaped areas	These will require low / minimal maintenance

#### 2.3 Materials

The proposal seeks to meet the requirements of the Building Regulations with particular reference to BS 7543:2015, 'Guide to Durability of Buildings and Building Elements, Products and Components', which provides guidance on the design life and predicted service life of buildings and their parts, ensuring that the long-term durability and maintenance of materials is an integral part of the specification of the proposed development.

The scheme is designed and specified in accordance with Phases of the Life Cycle of BS7543; 2015 Figure 04 (*Appendix C*). The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543: 2015 including: *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.*

Materials chosen including brickwork, render systems, powder-coated aluminium framed double-glazed windows and doors, metal rainscreen cladding, powder-coated aluminium balustrades, steel frame deck and sedum roofing all require minimum on-going maintenance and reduce ongoing associated costs.

## Section 2

### Measures to Manage and Reduce Costs for the Benefit of Residents

#### 2.4 Landscape

High quality landscape design strategies and the use of robust materials are employed to minimise ongoing maintenance and ensure the costs to the residents are reduced. See Derek Howlin landscape architects report for further detail.

	Measure Description	Benefit
<b>Site Layout and Design</b>	<ul style="list-style-type: none"> <li>• High quality mature landscape with emphasis on biodiversity.</li> <li>• Pedestrians are prioritised over the car</li> <li>• Tree planting and soft landscaping within courtyards and public spaces.</li> <li>• SUDs drainage system and landscape maintenance preferable.</li> </ul>	Provides for high levels of water absorption and natural attenuation on site to slow water discharge and minimise any risk of localised water pooling.
<b>Materials</b>	Use of robust, high quality paving and decking materials, with robust and proven details. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.	Require minimum on-going maintenance and reduces frequency of required repair.
<b>Planting</b>	The use of native and strategically located non-native plants will provide optimum biodiversity and aesthetic values. This varied profile is designed to provide a diversity of landscape	Low-cost, availability, ease of establishment and reduced requirements for maintenance.
<b>SUDS and NBS</b>	It is proposed to use Sustainable Urban Drainage Systems (SUDS) and Nature Based Systems (NBS) for managing stormwater for the proposed development. These systems are environmentally beneficial, causing minimal or no long-term detrimental damage. They are often regarded as a sequence of management practices, control structures and strategies to efficiently and sustainably drain surface water while minimising pollution and managing the impact of water quality of local water bodies.	<ul style="list-style-type: none"> <li>• Attenuate Stormwater run-off at source and site control areas</li> <li>• Reduce stormwater run-off leaving site</li> <li>• Reduce pollution impact and improve water quality of water bodies</li> <li>• Replicate the natural characteristics of rainfall runoff for the site</li> <li>• Recharge the groundwater profile</li> <li>• Biodiversity and ecology benefits</li> <li>• Protect natural flow regimes in watercourses</li> </ul>

## 2.5 Waste Management

The intentions for the management of waste include:

Measure	Description	Benefit
<b>Storage of Non-Recyclable Waste and Recyclable Household Waste</b>	Domestic waste management strategy: Grey, Brown, and Green bin distinction. Competitive tender for waste management collection	Helps reduce potential waste charges and disposal to landfill.
<b>Composting</b>	Organic waste bins to be provided throughout.	Helps reduce potential waste charges and disposal to landfill where organic waste breakdown and release methane

## Section 2

Measures to Manage and Reduce Costs for the Benefit of Residents

## 2.6 Health and Wellbeing

The duplexes & maisonettes have been designed with the health and wellbeing of the user in mind. Separation distances, layout of the units, circulation, provision of internal resident's amenity rooms, and private amenity spaces have all been carefully considered and tested to optimise the ingress of natural daylight/sunlight to the proposed dwellings, in addition to the provision of generous glazed windows and doors. This will reduce reliance on artificial lighting, and thereby reduce costs.

The development has been designed to meet Part M building regulation requirements and the considered layouts enable easy access for all within the units themselves, the circulation, amenity, and courtyard areas. The external communal areas all enjoy favourable orientation and passive surveillance from overlooking units – creating comfortable and secure places to be. Play areas and pocket parks are located centrally within the scheme, meaning children at play will be overlooked by units. The placement of the building entrances within the heart of the courtyards of the scheme results in an actively circulated open spaces, encouraging interaction between users and fostering a sense of community.

The development is along Shackleton road, which as a bus route into Celbridge town There is a direct cycle route also along the front of the site, Shackleton road, to provide access to the local area and amenities. The scheme will have public and private bike storage to encouraging cycling as an easy and healthy mode of transport.

## 2.7 Management

Consideration has been given to ensure the homeowners have a clear understanding of their property. Once a purchaser completes their sale, a homeowner box will be provided which will include:

- Homeowner manual which 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 will be as informed as possible so that any issues can be addressed in a timely and efficient manner.

## 2.8 Transport

The following are illustrations of how well connected the proposed scheme to the benefit of potential occupants.

Measure	Measure Description	Benefit
<b>Access to Public Transport (Bus Services)</b>	local Bus services operate in close proximity to the subject development site. Local bus stops for Dublin Bus Routes L59 are easily accessed from the proposed residential development stopping along Shackleton road which bounds the south of the site.	These bus services provide access to a range of additional destinations and other local bus routes from Celbridge town centre. The proximity, frequency and range of additional destinations served by these bus routes enhance the accessibility of the proposed residential development in addition to providing viable and practical sustainable alternative to journeys undertaken by the private motor car.
<b>Permeable Connections</b>	The proposed development is directly adjacent to the public road and footpath that connect to Celbridge and surrounding communities and facilities	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>	The provision of high-quality secure bicycle parking facilities to the front of duplexes & maisonettes units.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
<b>E-Car Facilities</b>	Ducting will be provided from a local landlord distribution board to designated E-car charging car park spaces.	To accommodate the growing demand for E-car vehicles which assist in de-carbonising society and reducing oil dependency.

### Appendix A

#### Sample Format of a Typical Building Investment (Sinking) Fund Table

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund. It is **for indicative purposes only**, Specification and costs to be finalised at Detail Design Stage.

Ref.	Element	Life Expectancy
1.00	Roofs	
1.01	Replacement felt roof covering incl. insulation to main roofs	18
1.02	Replacement parapet details	18
1.03	Replace roof access hatches	25
2.00	Elevations	
2.01	Decorate entrance lobbies	20
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	20
2.06	Periodic replacement and overhauling of external fixings	5
3.00	Stair cores & lobbies	
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 ceramic floors tiles	20
3.08	Fixed furniture & equipment- provisional sum	18
4.00	Car Park	
4.01	Repaint parking spaces & numbering	7
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	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

### Appendix B

#### Technical Guidance Documents Part L: Table 1

##### Section 1.3.2.2

*In order to limit heat loss through the building fabric reasonable provision should be made to limit transmission heat loss by plane elements of the building fabric. Acceptable levels of thermal insulation for each of the plane elements of the building to achieve this are specified in terms of average area weighted U-value ( $U_m$ ) in Table 1 (Column 2) for each fabric element type.*

*These values can be relaxed for individual elements or parts of elements where considered necessary for design or construction reasons. Maximum acceptable values for such elements or parts of elements are specified in Column 3 of Table 1. Where this relaxation is availed of, the average area-weighted values given in Column 2 continue to apply and compensatory insulation measures may be necessary for other elements or parts of elements of that type to ensure that these are met.*

<b>Table 1 Maximum elemental U-value (<math>W/m^2K</math>)<sup>1, 2</sup></b>		
<b>Column 1 Fabric Elements</b>	<b>Column 2 Area-weighted Average Elemental U-value (<math>U_m</math>)</b>	<b>Column 3 Average Elemental U-value – individual element or section of element</b>
Roofs		
Pitched roof		
- Insulation at ceiling	0.16	0.3
- Insulation on slope	0.16	
Flat roof	0.20	
Walls	0.18	0.6
Ground floors <sup>3</sup>	0.18	0.6
Other exposed floors	0.18	0.6
External doors, windows and rooflights	1.4 <sup>4,5</sup>	3.0
<b>Notes:</b>		
1. The U-value includes the effect of unheated voids or other spaces.		
2. For alternative method of showing compliance see paragraph 1.3.2.3.		
3. For insulation of ground floors and exposed floors incorporating underfloor heating, see paragraph 1.3.2.2.		
4. Windows, doors and rooflights should have a maximum U-value of 1.4 $W/m^2K$ .		
5. The NSAI Window Energy Performance Scheme (WEPS) provides a rating for windows combining heat loss and solar transmittance. The solar transmittance value $g_{perp}$ measures the solar energy through the window.		

## Appendix C Phases of the Life Cycle of BS7543; 2015 Figure 04

BRITISH STANDARD

BS 7543:2015

