

Building Lifecycle Report
provided as per OCC
DMS-114



Puttaghan Lands LRD
BUILDING LIFECYCLE REPORT

DOCUMENT REVISION HISTORY			Ref:	5251 – Building Lifecycle Report
Rev	Author	Verified By	Date	Comments / Status
P1	R. Kerrigan	B. Coffey	22/12/22	Preliminary Issue
P2	R. Kerrigan	B. Coffey	26/01/23	Comments incorporated
P3	R. Kerrigan	B. Coffey	02/02/23	Planning Issue



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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.

This is set out in Sections 6.11 to 6.14 of the guidelines, specifically Section 6.13 which state that apartment developments “shall include a building lifecycle report, which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.”

This Building Life Cycle Report document sets out to address the requirements of Section 6.13 of the Apartment Guidelines, and includes an assessment of long term running and maintenance costs per dwelling and demonstrate what measures have been specifically considered by the proposer to manage and reduce costs for the benefit of residents.

The report 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

PROPOSED DEVELOPMENT

Application for planning permission for the demolition of existing buildings and the construction of Large scale Residential Development comprising 148 dwellings which will consist of: 90no. houses (comprising 08 no. 2 bedroom houses, 58 no. 3 bedroom houses and 24 no. 4 bedroom houses. 89 no. of the houses are 2 storey with 1 no. 3 bed bungalow); 20 dwelling apartments (comprising 4 no. 1 bed units and 16 no. 2 bed units over 4 storeys); 38 no. age friendly assisted living units (comprising of 28 no. 1 bed units and 10 no. 2 bed units with associated communal and administrative facilities); a Creche; and all ancillary site development works including access, roads and footpaths, landscaping and boundary treatments, public and private open space areas, car parking, bicycle parking, ESB substations, bin and bicycle stores, replacement waste water pumping station and drainage connections; and all ancillary site development works on land at Wellwood Housing site at Tyrells Road, Puttaghan, Tullamore.

1-0 SECTION 1 - LONG TERM RUNNING & MAINTENANCE COSTS

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

1-1 PROPERTY MANAGEMENT OF COMMON AREAS

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development are kept within the agreed Annual operational budget.

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

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

- Timely formation of an 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 most notably, the compiling of the service charge budget for the development for agreement with the OMC. The service charge budget covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/ electrical lifts/ life safety systems, security, property management fee etc., to the development common areas in accordance with the MUD Act.

This service charge budget also includes an allowance for a sinking fund and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared by for the OMC.

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

Please note that it should be noted that 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.

2-0 SECTION 2 – PROPOSALS TO MANAGE & REDUCE RUNNING COSTS

This section describes the measures being considered by the proposer to efficiently manage and reduce running costs for the benefit of the 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 Certificate	<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.</p> <p>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/year (circa 10kgCO₂/m² year)</p> <p>A3: 51-75 kWh/m²/year (circa 12kgCO₂/m² year)</p>	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 (TGD) Part L, 'Conservation of Fuel and Energy – Dwellings (2019)' and 'Conservation of Fuel and Energy - Buildings other than Dwellings (2017)'.</p> <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 TGD Part L. See below Table 1 of Part L, Building Regulations.</p>	Lower U-values and improved air tightness are being considered to help minimise heat losses through the building fabric, lower of energy consumption and thus minimise carbon emissions to the environment.
External Lighting	<p>Each external light fitting shall be controlled via an individual photoelectric control unit (PECU). The operation of the lighting shall be on a dusk to dawn profile.</p> <p>The fittings shall have a minimum IK08 impact resistance and IP65 ingress protection and will meet or exceed DLR's requirements.</p>	The site lighting shall be designed to provide a safe environment for pedestrians, cyclists and motor vehicles, while deterring anti-social behaviour and limiting the environmental impact of artificial lighting on existing and proposed flora and fauna in the area.

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
Natural Ventilation	Natural ventilation is being evaluated as a ventilation strategy to minimise energy usage and noise levels.	<p>The advantages of natural ventilation are:</p> <ul style="list-style-type: none"> • Low noise impact on occupants and adjacent units. • Completely passive, no energy requirements. • Minimal maintenance required. • Reduced environmental impact, as minimal equipment disposal over life cycle. • Full fresh air, resulting in healthy indoor environment.
Demand Control Centralised Mechanical Extract Ventilation (CMEV)	CMEV provided by a single continuously operating central extract fan per dwelling.	<p>The advantages of CMEV are:</p> <ul style="list-style-type: none"> • Increased air comfort. • Reduces moisture in the air. • Reduced heating use, in comparison to natural ventilation. • Reduced carbon emissions, in comparison to natural ventilation.

Measure	Description	Benefit
Mechanical Ventilation Heat Recovery (MVHR)	MVHR provided by a continuously operating central supply and extract unit, with heat recovery per dwelling.	The advantages of MVHR are: <ul style="list-style-type: none"> • Provided tempered fresh air to habitable rooms. • Heat is transferred from the exhaust air to the fresh air, thereby negating the need to use energy to heat the air and reducing the heating load on the heat pump. • Reduces/ eliminates cold air infiltration and improves user comfort.
Exhaust Air Heat Pumps (EAHP)	The thermal energy is removed from the exhaust air from kitchens, bathrooms, etc. and utilised to provide heating and hot water to the dwelling, via an internally mounted heat pump.	The advantages of EAHPs are: <ul style="list-style-type: none"> • Reduced CO2 emissions. • Low fuel costs. • No fossil fuels required. • Contributes to the renewable energy requirement. • Single unit provides ventilation, heating and hot water, making maintenance easier.
Air Source Heat Pumps (ASHP)	The thermal energy is removed from the external air and utilised to provide heating and hot water to the dwelling, via an externally mounted heat pump.	The advantages of ASHPs are: <ul style="list-style-type: none"> • Reduced CO2 emissions. • Low fuel costs. • No fossil fuels required. • Contributes to the renewable energy requirement.
Lighting	High efficiency LED lighting shall be installed throughout the development.	LED lighting reduces the energy use, in comparison to other lighting sources.
Electric Vehicle Charging (EVCH) Points	Within the parking areas serving the apartments, ducting shall be provided from a local landlord distribution board or ESB mini pillar to designated EVCH car park spaces (10% of parking spaces will be provided with charging points, ducting will be provided to all other parking spaces for the future installation of EV chargers, in accordance with OCC's requirements). This will enable the management company the option to install a number of EVCH points within the carpark to cater for electrical car demand of the residents. This system operates on a single charge point access card.	Future-proofing the development by providing the infrastructure for EVCH points to be easily installed in the future.

2-2 MATERIALS

The practical implementation of the Design and Material principles has informed the 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 TGD 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 buildings and specific measures taken include:

Measure	Description
Windows are provided to all habitable rooms within the development, providing natural daylight to areas of regular use and circulation.	Avoids the requirement for continuous artificial lighting.
Passive infrared sensors (PIRs) provided in all common areas to control lighting.	Avoids the requirement for continuous artificial lighting.

Openable windows are provided to all habitable rooms within the development, providing natural ventilation to areas of regular use and circulation.	Avoids the requirement for costly mechanical ventilation systems and associated maintenance/ future replacement.
External paved and landscaped areas.	All these areas have been specifically designed to require low/ minimal maintenance.

2-2-2 MATERIAL SPECIFICATION

Implementation of the Design and Material principles to the design of the building envelope, internal layouts, facades and detailing has informed the materiality of the proposed development.

The proposed envelope of the building is a mix of brick and durable render finish and high-performance double-glazed aluminium windows. Based on comparison with similar schemes developed, the proposed materials are considered durable and would not require regular replacement or maintenance.

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
Brickwork to the building envelope	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'	Requires minimal maintenance and does not require regular replacement
Durable self-coloured synthetic render finish	Synthetic Render limits the risk of traditional render including cracking, colour fading and algal growth	Requires minimal maintenance and does not require regular replacement. Does not need painting.
Installation of factory finished double glazed aluminium windows and doors	Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and include reference to BS 543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'	Requires minimal maintenance and does not require regular replacement
Installation of factory finished steel balconies. All walking surfaces will utilise non-slip materials (paviours, composite decking, aluminium decking).	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'	Requires minimal maintenance and does not require regular replacement

2-3 LANDSCAPE

Measure	Description	Benefit
Paving Material	<p>Use of robust materials with high slip resistance to be used for paving. Durable and robust equipment (e.g. fencing etc.) to be used throughout.</p> <p>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 TGDs and will provide level access and crossings for wheelchair users and pedestrians with limited mobility.</p> <p>Designated car parking including accessible & visitor car parking reduces the travel distances for visitors with reduced mobility.</p>	<p>Required ongoing maintenance significantly reduced through use of robust materials installed with proven details.</p> <p>Plenty of room for cycles and pedestrians along with car spaces provide a good balance between pedestrians and car users.</p> <p>Wheelchair user-friendly.</p>
Planting Details	Proven trees staking details. Shrub, hedging, herbaceous and lawn installation planting details provided.	Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.
Balcony and Decking Materials	Use of robust high-quality materials and detailing to be durable for bikes, furniture, etc.	Ensures the longevity

2-4 WASTE MANAGEMENT

Measure	Description	Benefit
Operational Waste Management Plan	This application is accompanied by an Operational Waste Management Plan prepared by Complete Safety Solutions (CSS).	The Plan demonstrates how the scheme has been designed to comply with national regional, and local waste legislation, waste byelaws, along with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Inclusion of centralised communal waste storage areas for apartments and individual waste storage areas for the houses, with enough space to accommodate weekly storage of bins for dry mixed recyclable, organic waste and mixed non-recyclable waste. Glass will also be provided for in shared WSAs.	Easily accessible by all residents, facilities management personnel and the waste contractor(s), minimises potential littering of the scheme, reduce potential waste charges and does not limit waste contractor selection.
	Domestic waste management strategy (Apartment Units): Dry mixed recyclable, glass, mixed non-recyclable waste and organic waste segregation. Domestic waste management strategy (houses): Dry mixed recyclable, mixed non-recyclable waste and organic waste segregation.	Helps reduce potential waste charges and does not limit waste contractor selection.
	Security restricted waste storage rooms (Apartments).	Reduce potential for fly tipping by residents and non-residents.
	Well signed waste storage rooms and waste receptacles.	Help reduce potential cross contamination of waste and reduce waste charges.
Composting	Organic waste receptacles to be provided in the communal waste storage areas. Residents in houses will provide their own organic waste receptacles.	Helps reduce potential waste charges and compliance with national policy and legislation regarding segregation of biodegradable waste.

2-5 HEALTH AND HUMAN WELL-BEING

Measure	Description	Benefit
Natural Light	The design, separation distances and layout of the apartment blocks have been designed to optimise 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 Building Regulations, TGDs Parts K and M.	Reduces the level of adaptation, and associated costs potentially necessitated by residents' future circumstances.
Security	The scheme is designed to incorporate passive surveillance with the following security strategies being considered: <ul style="list-style-type: none"> • CCTV. • Secure bicycle stands • Overlooked communal open space. • Routine access fob audits 	Helps to reduce potential security/ management cost.
Natural Amenity	Communal amenity spaces incorporated into design.	Facilitates community interaction, socialising and play- resulting in improved well-being, promotes a healthy lifestyle.

2-6 MANAGEMENT

Measure	Description	Benefit
Residents User Guide	Once a resident signs their lease, a resident's pack will be provided which will include: <ul style="list-style-type: none"> • Residents 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, 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.

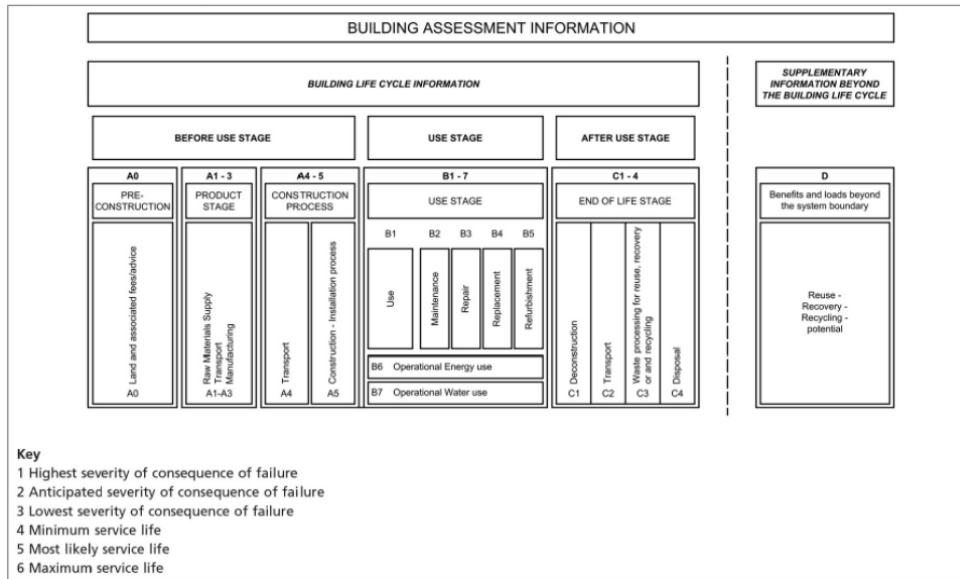
2-7 TRANSPORT & ACCESSIBILITY

Measure	Description	Benefit
Access to Public Transport (Bus Services)	There is a TFI Local Link Laois Offaly bus stop located at Bridge Street Centre, 1.1km away and a Bus Eireann bus stop located at Colmcille Street, 850m away.	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.	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.
Electric Vehicles	Ducting will be provided from a local landlord distribution board/ ESB mini-pillar to EV charging points and to designated future EVCH parking spaces.	To accommodate the growing demand for electric vehicles which assist in decarbonising society and reducing oil dependency.

APPENDIX I – TGD PART L 2022, TABLE 1

Table 1 Maximum elemental U-value (W/m ² K) ^{1, 2}		
Column 1 Fabric Elements	Column 2 Area-weighted Average Elemental U-value (U _m)	Column 3 Average Elemental U-value – individual element or section of element
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 ³	0.18	0.6
Other exposed floors	0.18	0.6
External doors, windows and rooflights	1.4 ^{4,5}	3.0
Notes:		
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 ² K.		
5. The NSAI Window Energy Performance Scheme (WEPS) provides a rating for windows combining heat loss and solar transmittance. The solar transmittance value g_{sep} measures the solar energy through the window.		

APPENDIX II – PHASES OF THE LIFE CYCLE – BS 7543: 2015



APPENDIX III – ITEMS INCLUDED IN A TYPICAL BIF

Reference	Element	Life Expectancy (Years)	Cost (€)
1.0 Roofs			
1.1	Repair/ replacement of flat roof covering	20/ 40 (tiled roofs)	
1.2	Replacement of specialist fall arrest system	25	
1.3	Replacement of parapet details	20	
1.4	Replacement/ repairs to fascias	20	
2.0 Elevations			
2.1	Repairs & preparation for decorations of rendered areas	20	
2.2	Repairs & preparation for decorations of timbered areas	20	
2.3	Replace entrance/ exit doors	25	
2.4	Replace rainwater goods	25	
2.5	Periodic replacements and overhauling of external fixings	5	
2.6	Replace balcony floor finishes	25	
3.0 Stair cores & Lobbies			
3.1	Decorate ceilings and 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 ceramic floors (stairwells & lobbies)	20	
3.6	Replace entrance mats (stairwells & lobbies)	10	
3.7	Replace nosings (stairwells)	10	
3.8	Fixed furniture & equipment	18	
4.0 Mechanical & Electrical 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 and disable refuge call points	18	
4.6	Replace fire alarm panel	18	
4.7	Replace AOVs	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	Overhaul/ replace emergency lighting	5	
4.12	Overhaul/ replace waste pipes, stacks and vents	20	
4.13	Replace lift car and controls	25	

Reference	Element	Life Expectancy (Years)	Cost (€)
5.0 External Areas			
5.1	External boundary treatments – recoat powder coated finishes to railings	40	
5.2	Replace external signage	18	
5.3	15-year cut-back and thinning of trees and general overhaul of landscaping	15	
5.4	Replace CCTV	10	
5.5	External handrails and balustrade	18	
5.6	Repaint parking spaces and numbering	5	
5.7	Replace bicycle stands	25	