



*Artist Impression of proposed Mungret residential development*

## **Building Lifecycle Report**

Proposed Apartment Buildings for Independent Living for Older Persons, Apartment Block over Creche & Proposed Corner Apartment Blocks.

**Mungret, Limerick**

On Behalf of Limerick City & County Council.

RP-A-1511 – November 2023

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## **Disclaimer**

Without Prejudice to the generality of this Building Lifecycle Report, the information provided is indicative and subject to change following detailed design and construction. As far as possible information is correct at the time of submission to the relevant authority for Planning Approval.

## 0.0 Introduction

The *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities* (March 2018) provide policy guidance on the operation and management of apartment developments and include the requirement for the submission of a Building Lifecycle Report with planning applications.

This report is required to provide certainty on the long-term management and maintenance structures of Multi- Unit Developments, demonstrating compliance with *Multi-Unit Developments Act* of 2011. It should outline legal and financial arrangements, effective and appropriately resourced maintenance and operational regimes and show consideration of the long-term running costs of any scheme as they would apply on a per residential unit basis at the time of application. The *Building Lifecycle Report* should also demonstrate what specific measures have been considered to effectively manage and reduce costs for the benefit of residents.

**Section 6.13** of the *Sustainable Urban Housing* guidelines requires that apartment applications shall:

- **“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 Apartment Guidelines 2018, and is divided into 2 sections to reflect the above requirements:

### Section 01

***Demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents***

## 0.1 Proposed Development

This Building Lifecycle Report relates to three elements within a wider residential scheme of houses. The first is the Apartment Block element intended for Independent Living for Older Persons, the second is the apartment block located over the creche and community facility located to the north of the Independent Living for Older Persons block and the third is the corner apartment blocks which are spread throughout the scheme which both form part of the greater proposed residential scheme at Mungret, Limerick. The complete proposal includes a variety of housing types, from detached houses to apartments. The scheme comprises 250 No. Units, of which 42no. one-bedroom apartments, 29no. two-bedroom apartments, 44no. two-bedroom houses and duplex units, 108no. three-bedroom houses, 25no. four-bedroom houses and 2no. five-bedroom detached community houses. 55no. of the one and two-bedroom apartments are provided within the proposed Independent Living for Older Persons development located in area A4 of the overall site. 12no. one and two-bedroom apartments are provided within the building over the creche and the community facility to the north of A4 and just south of Mungret College. 4no. two-bedroom apartments and 8no. two-bedroom duplex apartments are located in the 4no. corner apartment blocks located in areas A1 and A3 fronting the Link Street of the overall site.

Within the greater housing development, a range of open spaces and amenities such as a dedicated play area are provided. These will also be available to the residents within the apartment elements.

### 0.1.1 Independent Living for Older Persons Apartment Block

The proposed Independent Living for Older Persons apartment development will be comprised of 55no. apartment units designed to the highest standards as Independent Living. These are arranged over 3 storeys including the ground floor comprising a variety of common use areas, administration office, consulting room, community spaces and, 1 and 2-bedroom units. All apartments are reachable via lifts and stair cores and are therefore accessible to disabled people. Total gross floor area for Independent Living for Older Persons equates to 5,040sqm, designed around a central landscaped courtyard.

Internally the block includes a recycling area of 49.0sqm and a bicycle store for 18no. bikes of 29.0sqm. 18no. secure visitor bicycle parking spaces are also provided to the front of the building.



*Artist Impression of proposed Mungret Independent Living for Older Persons*

The building is designed around a landscaped courtyard for community use by the residents with communal spaces on the

ground floor. The building is sited on the public square (S1) of 2,195sqm that forms the main focal point of the entire development. The square leads up to the existing Mungret College, park, and amenity facilities with a new proposed creche and community building across the road located at the ground floor. External landscaped and private amenity space is provided through small front gardens to each ground floor apartment with the central courtyard providing a shared communal space with formal tree-lined landscaped orchard, seating and shared surfaces, games area and in combination with balconies and a bridge link at the first-floor level. The area of the landscaped courtyard equates to 1,800sqm.

All ancillary servicing and infrastructure are included within the application site, with photovoltaic panels expected to be provided on the rooftop to meet the balance of Part L renewable requirement.

### 0.1.2 Apartment Block over Creche and Community Facility

The proposed apartment block is located north of the Independent Living block with the building consisting of a creche and community facility at the ground floor with 12 apartments overhead. The building is 3 storeys in height to match the Independent Living block and design to enclose the public square and front the public access route leading to Mungret College, Mungret Park and the village beyond. The apartments are located on the first and second floors with 5 apartments on the first floor and 8 apartments on the second floor consisting of one & two-bedroom apartments. All apartments are reachable via a lift and stair core and are therefore accessible to disabled people. Total gross floor area for block equates to 2,155sqm with the gross area for the apartments 1,275sqm. The building is designed to address the public square and public route running north to south on the western boundary. The apartments are orientated to face south and west to minimize overlooking of the creche areas on the ground floor to the east and the north.

A designated parking area is located to the rear of the block with 15no. bays. This includes 1no. accessible bay and 2no. bays for electric vehicle charging. A standalone waste and recycling store of 20sqm is located within the parking area together with a secure bicycle store for 12no. bicycle. This area is access through a private gate off the road linking to area A4. Visitors parking bays are located to the front of the building together with visitor’s bicycle stands. The rear parking area is separated from the creche play area by a 2.1m high boundary fence and a green strip including a line of trees. Private amenity space is provided to each apartment with a balcony and these are located to maximise orientation to the south and west.

All ancillary servicing and infrastructure are included within the application site, with photovoltaic panels expected to be provided on the rooftop to meet the balance of Part L renewable requirement.



*Artist Impression of proposed Mungret Apartments over Creche & Community Facility*

### **0.1.3 Corner Apartment Blocks**

There are four proposed apartment buildings which will be comprised of 3no. apartment units each. These are arranged over 3 storeys with a single storey two-bedroom apartment above 2no. two-storey two-bedroom duplex apartments. The top floor apartment has own door access at street level with an internal stair suitable for ambulant disabled people. Total gross floor area per block is 280 m<sup>2</sup>.

The apartment blocks are interspersed into the greater scheme of two and three storey houses, and to further integrate them into this context, each apartment has own-door access and its own private outdoor amenity area at ground level, which provides space for refuse & recycling storage, renewable energy installations, and bicycle storage.

As the blocks are small, vertical circulation is provided by internal stairs as outlined in TGD-M Section 1.3.4.1.1 and Section 3.3.2.2. There are no lifts in the buildings. This has the effect of significantly reducing the maintenance and management burden on the owners and residents of these small blocks.

## Section 01

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

The following is an indication of the energy saving measures that are planned for all units to assist in reducing day to day running costs for occupants:

### 1.1 Building Design

Measure	Description	Benefit
Daylighting to units	Where possible, as outlined in ‘Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (July 2023)’ to have regard for quantitative performance approaches to daylight provisions outlined in guides like A New European Standard for Daylighting in Buildings EN17037 or UK National Annex BS EN17037 and the associated BRE Guide 209 2022 edition (June 2022) when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision’.	Reduces the requirement for continuous daylighting, thus reducing the expense of artificial lighting
Daylighting to circulation areas	Natural lighting provided via tall windows at both the front and rear elevations to the Independent Living for Older Persons Block. There are windows provided to the private stairwells in the Corner Apartment Blocks.	Reduces the requirement for continuous daylighting
External Lighting	<p>External lighting will comply with the latest standards and achieve:</p> <ul style="list-style-type: none"> <li>• Low-level lighting</li> <li>• Utilise low voltage LED lamps</li> <li>• Minimum upward light spill</li> </ul> <p>Each light fitting is to be controlled via an individual Photoelectric Control Unit (PECU) and infra-red motion sensor (PIR). The operation of the lighting shall be on a dusk-dawn profile.</p>	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 on the artificial lighting on surrounding existing flora and fauna.



## 1.2 Landscape

Measure	Description	Benefit
Paving and Decking Materials	Use of robust high-quality materials and detailing to be durable for bikes, play, etc.	Ensures the longevity of materials.
Site Layout & Landscaping Design	High quality landscaping both hard surface (for the pedestrians, 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 cycles and pedestrians along with car spaces provide a good balance between pedestrians and car users.  Wheelchair user-friendly.
Balconies & openable windows	Use of balconies & openable windows allow individuals to clean windows themselves	Reduces the cost and reliance on 3 <sup>rd</sup> party contractors for cleaning & maintenance.

## 1.3 Energy & Carbon Emissions

Measure	Description	Benefit
BER Certificates	A Building Energy Rating (BER) certificate will be provided for each unit in the proposed development. This will provide detail of the energy performance of the units. This is calculated through energy use for space and hot water heating, ventilation, and lighting and occupancy. It is proposed to target an A2 rating for the apartments this will equate to the following emissions. A2 – 25-50 kWh/m <sup>2</sup> /yr with CO <sub>2</sub> emissions circa 10kgCO <sub>2</sub> /m <sup>2</sup> year.	A BER rating is a reduction in energy consumption and running costs
Fabric Energy Efficiency	Proposed U-Values will be in line with the requirements set out by the current & proposed Part L including Nearly Zero Energy Buildings (nZEB) targets.  <i>“Conservation of Fuel and Energy Buildings other than Dwellings”.</i>  Thermal bridging at junctions between construction elements and at other locations to be minimised in accordance Paragraphs 1.2.4.2 and 1.2.4.3 within the Technical Guidance Documents Part L. See Table 1 of Part L, Building Regulations (Appendix C).	Lower u-values and improved airtightness will be achieved to reduce the amount of heat loss throughout the building fabric and lower the consumption of energy and therefore carbon emissions.

#### 1.4 Low energy technologies considered:

Measure	Description	Benefit
Heat Pump	<p>An exhaust air heat pump can cover up to 100% of the heating requirements of a well-insulated apartment.</p> <p>Can also work in conjunction with underfloor heating.</p>	<p>Modern heat pumps will typically provide 4 to 5 times more heat energy to the dwelling than the electrical energy they consume. They have a lower consumption of energy and therefore lower carbon emissions.</p>
Low energy LED Lighting	<p>Shall be designed and specified in accordance with the BER requirements in each unit and in the landlord areas in accordance with Part L.</p>	<p>Lower consumption of energy and therefore lower carbon emissions.</p>
Mechanical Demand Control Ventilation (DCV)	<p>The ventilation for the apartments shall be provided by a mechanical system with central extract and operating on the principle of Demand Control Ventilation (DCV)</p>	<p>Improved air quality and reduced costs in providing alternative heating etc.</p>
E-car Charging Points	<p>Charging points are to be provided to designated car parking spaces for of E-car charging points, further additional ducting is provided around the site for additional charging points in the future.</p>	<p>Facilitating residents &amp; visitors using EV vehicles.</p>
Renewable Energy	<p>In accordance with the proposed part L amendments, the balance of renewable energy requirements shall be satisfied with roof-mounted photovoltaic panels for the Independent Living for Older Persons apartment Block. The corner apartment blocks do not have shared circulation areas that require lighting or heating.</p>	<p>Reducing electrical loads for each resident</p>

### 1.5 Materials & Materials 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 selected face brick and durable render finish, with 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.

Materials have been selected with a view to longevity, durability, and low maintenance. Consideration has been given to Building Regulations and includes reference to BS 7543:2015 ‘Guide to Durability of Buildings and Building elements, Products and Components’.

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		Requires minimal maintenance and does not require regular replacement
Durable Synthetic Render Finish  Mineral Paint to sand / cement render finish	Synthetic Render limits the risk of traditional render including cracking, colour fading and algal growth  For the corner apartment blocks, a durable mineral paint to a sand / cement render finish is proposed which will extend the maintenance cycle.	Requires minimal maintenance and does not require regular replacement
Installation of factory finished double glazed aluminium windows and doors		Requires minimal maintenance and does not require regular replacement
Installation of factory finished Precast concrete/ steel composite balconies		Requires minimal maintenance and does not require regular Replacement

## 1.6 Waste Management:

Measure	Description	Benefit
Construction and Operational Waste Management Plan	<p>This application is accompanied by a Construction Management Plan prepared by Arup.</p> <p>A Construction and Operational Waste Management Plan will be prepared by Arup Consulting Engineers and submitted to Limerick City &amp; County Council prior to commencement of the development.</p>	Demonstration of how the scheme has been designed to comply with best practice.
Storage of non-recyclable waste and recyclable household Waste	<p>For the Independent Living for Older Persons block, the inclusion of two centralised bin storage area. For the corner blocks, ground level private curtilage areas provide space for domestic waste storage. Domestic waste management strategy in place:</p> <ol style="list-style-type: none"> <li>1) Grey, Brown and Green bin distinction</li> <li>2) Regular tendering for waste management collection</li> </ol>	Access to all residents to reduce the risk of littering within the scheme and reduces potential waste charges.
Additional Recycling Centre	Additional recycling centre to be provided throughout the development	Helps to reduce waste charges and the amount of waste going to landfill.
Composting	Addition of organic waste bins to be provided throughout the development	Helps to reduce waste charges and the amount of waste going to landfill.

## 1.7 Human Health & Well Being

How human health and well-being is been considered:

Measure	Description	Benefit
Natural daylight	Design of the layout of the building has been optimised to achieve a good quality of natural daylight to the units.	Demonstration of how the scheme has been designed to comply with best practice
Security	Passive surveillance is incorporated into the design	Access to all residents to reduce the risk of crime, littering within the scheme and reduction of potential waste charges.
Accessibility	All units, egress routes and stair cores to comply with the requirements of Technical Guidance Documents Part M/ Part K	Demonstration of how the scheme has been designed to comply with best practice in relation to accessibility, reachability, and inclusivity.
Amenity	For the Independent Living for Older Persons block, provision of external communal amenity space. For the corner apartment blocks, integration into the wider residential scheme with a variety of public open spaces.	Facilitates socialising & community interaction.
Private Open Space	Provision of private open space	Facilitates interaction with outdoors, increasing potential health benefits.

## 1.8 Transport & Accessibility

**Transport considerations for increasing the use of public transport, cycling, and walking and reducing the ownership of private cars and reducing oil dependency:**

Measure	Description	Benefit
Access to Public Transport	<p>Within 900m of the development is Mungret bus stop 332081 and 335461 operates service number 314 along Father Russell Road. This service connects Mungret Village with Limerick City, also serving University Hospital Limerick, The Crescent Shopping Centre, and Colbert Station.</p> <p>There are also a variety of other bus services available served from Limerick City located at Colbert Station that limit both locally and nationally.</p> <p>The closest train station to the subject site is the Colbert Station located approximately 5.9Km north of the subject site. There are several high frequency peak period services operating daily to/from the Station serving Dublin, Kildare/Portlaoise, Cork and Galway.</p>	<p>Availability, proximity to bus services reduces the reliance on the private motor.</p>
Pedestrian Permeability	<p>There is provision of dedicated pedestrian and cycle infrastructure within the site. The new link street is subject to a speed limit of 50kph with street lighting available along both sides of the route. There are good quality pedestrian and cyclist facilities available along the route, which alternate between pedestrian footways with dedicated cycle tracks, pedestrian footways with adjacent on-road cycling, and shared pedestrian/cycle track to the north of the site. Immediately to the west of the building is a pedestrian crossing provided to access the north / south route between the Mungret Park and the residential development.</p>	<p>Ensures long-term attractiveness of walking and cycling to a range of local facilities.</p> <p>This strong infrastructure ensures that there will be a balance of transport modes used by future residents of the proposed development.</p>
Bicycle Storage	<p>For the Independent Living for Older Persons Block, 18No. bicycle parking spaces are provided internally within the scheme along with 18No. external visitor bicycle spaces. The apartment block over the creche and community facility a provision of 12no. secure bicycle parking bays are located to the rear of the development together with 4no. visitors bicycle stands to the side of the main entrance. The creche and community facility each have their own bicycle stands. This is in line with the new apartment guidelines and promotes sustainable transport modes.</p> <p>For the corner apartment blocks, 2no. residents bicycle parking spaces are provided within the ground floor secure private curtilage area of each two-bed apartment. In addition, public bicycle parking throughout the scheme provides for visitor spaces for the apartment blocks.</p>	<p>Accommodates the uptake of cycling and reduces the reliance on the private motor vehicle.</p>

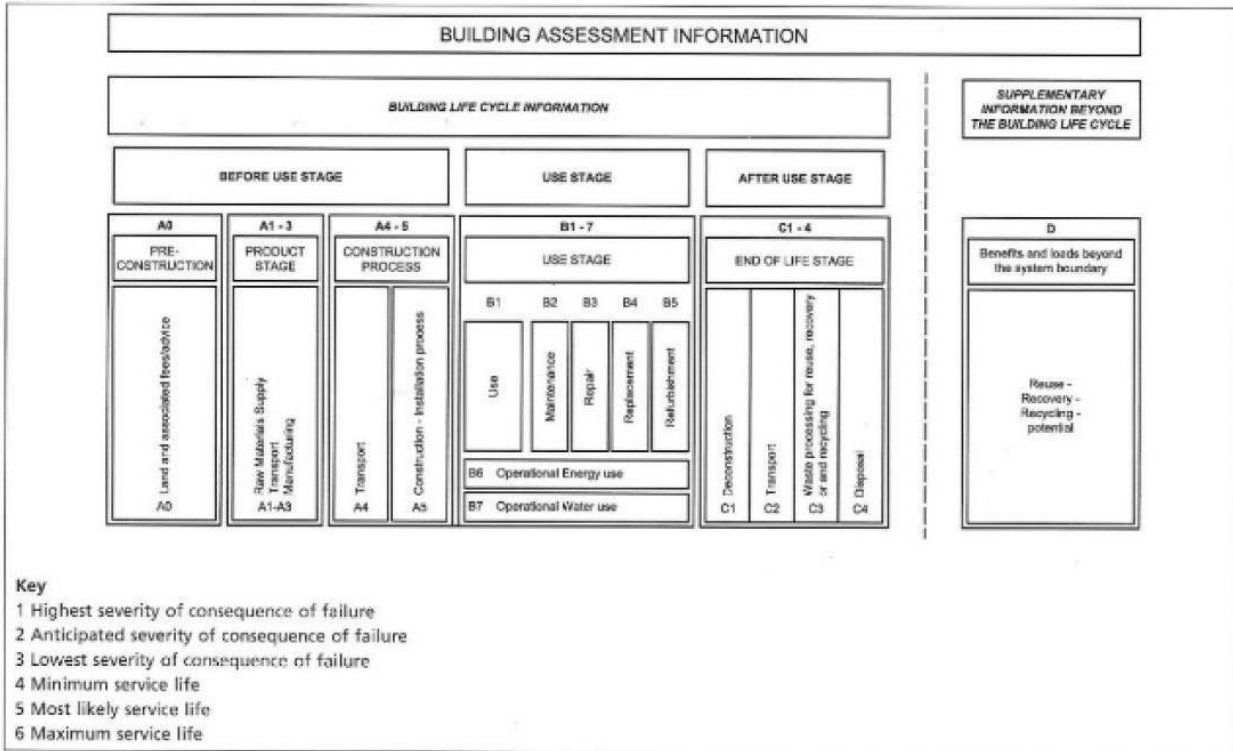
## Appendix A

Table 1 Maximum elemental U-value (W/m <sup>2</sup> K) <sup>1, 2</sup>		
Column 1 Fabric Elements	Column 2 Area-weighted Average Elemental U-value (Um)	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 <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
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 <sup>2</sup> K.		
5 The NSAI Window Energy Performance Scheme (WEPS) provides a rating for windows combining heat loss and solar transmittance. The solar transmittance value $g_{\text{dep}}$ measures the solar energy through the window.		

Figure 1- TGD Part L 2022, Table 1

## Appendix B

Figure 4 Phases of the life cycle



BRITISH STANDARD

BS 7543:2015

Figure 2 - BS 7543:2015 Figure 4