

BUTLER \ CAMMORANESI

Strategic Housing Development at Millfield Service Station, Redforge Road,
Blackpool, Cork

Bellmount Developments Ltd.

Building Life Cycle Report

09 September 2021



Quality Information

| | |
|-----------------|--|
| Project Title: | Strategic Housing Development at Millfield Service Station, Redforge Road, Blackpool, Cork |
| Project no.: | 19082 |
| Document title: | Building Lifecycle Report |
| Document no.: | - |
| Rev.: | A |
| Series: | Planning |
| Prepared by: | PB |
| Checked by: | LC |
| Date: | 09 September 2021 |

This document has been prepared by Butler Cammoranesi architects, taking into account the instructions and requirements of our Client. It should be read in conjunction with all other Tender documents. Contractors when tendering shall make provision for the contents therein.

Butler Cammoranesi architects accepts no responsibility or liability arising from the use of this document for any purpose other than that for which it is intended to be used, or by any third party.

© The copyright of this document is vested with Butler Cammoranesi architects and no part may be reproduced without prior written agreement.



Butler Cammoranesi architects
6 George's Quay, Cork City, T12 Y38A
T +353 21 2417273 \ E info@butlercammoranesi.ie
butlercammoranesi.ie

Butler Cammoranesi architects Ltd.
Registered in Ireland. Reg. No.: 568136
Registered office: 6 George's Quay, Cork City
Directors: Paul Butler, Lorenzo Cammoranesi





Contents

| | |
|--|----|
| Disclaimer | 4 |
| 1.0 Introduction | 5 |
| 2.0 Proposed Development (Description) | 6 |
| 3.0 Section 01 | 7 |
| 3.1 Property Management Company (PMC) | 7 |
| 3.2 Service Charge Budget | 7 |
| 3.3 Sinking Fund | |
| 4.0 Section 02 | 9 |
| 4.1 Building Design | 9 |
| 4.2 Landscape | 10 |
| 4.3 Energy and Carbon Emissions | 11 |
| 4.4 Low Energy Technologies Considered | 12 |
| 4.5 Materials & Material Specification | 13 |
| 4.6 Waste Management | 14 |
| 4.7 Human Health and Well Being | 14 |
| 4.8 Transport & Accessibility | 15 |
| Appendix A | 17 |
| Appendix B | 18 |
| Appendix C | 20 |



Disclaimer

This Building Lifecycle report provides information which is indicative and subject to change following further review when a more detailed specification of scope of works becomes available. It is intended that this study would form the basis of pre-application discussions with the planning department and other relevant authorities.



1.0 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 Apartments Guidelines 2018 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 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 in 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.



2.0 Proposed Development (Description)

The proposed development for a Strategic Housing Development at Millfield Service Station, Redforge Road, Blackpool, Cork comprising:

1. The demolition of existing structures on site including a single storey building, pump island canopy, 4 no. fuel pumps and the decommissioning/removal of 4 no. underground fuel tanks; and
2. The construction of 114 no. Build to Rent apartments (comprising a mix of 1 and 2 bed apartments) in 2 no. blocks, ranging in height from 4 to 9 storeys;
3. 1 no. 313 sqm retail unit;
4. Residential amenity facilities including a reception, residents gym, lounge area and shared workspace;
5. The provision of landscaping and amenity areas including an enclosed courtyard and 1 no. rooftop garden;
6. The provision of public realm improvements on Redforge Road and the access road to Blackpool Retail Park including widened footpaths and pavement improvements, pedestrian crossing, tree planting, raised tables/planters and seating areas; and
7. All associated ancillary development including pedestrian/cyclist facilities, lighting, drainage, boundary treatments, bin and bicycle storage, ESB Sub-station and plant at ground floor level.



3.0 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.

3.1 Property Management Company

Bellmount Developments Ltd. have considered the long-term running costs for residents and maintenance costs for the operators from the commencement of the design process, with the aim to manage and minimise potential unnecessarily high running costs for expenditure on a per residential unit basis. This exercise is a result of learning from previously undertaken residential projects and the application of changes in the standards arising from the new apartment guidelines. For this report the Residential development will be considered as per a Build-to-Rent and Shared Accommodation scheme, where there is a commercial entity owning or operating and maintaining the development.

6.14 The Multi-Unit Developments Act, 2011 (MUD Act) sets out the legal requirements regarding the management of apartment developments. In this regard 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) and:*
- *Establishment and ongoing maintenance of a sinking fund commensurate with the facilities in a development that require ongoing maintenance and renewal.*

6.15 Build-To-Rent and Shared Accommodation schemes, where there is a commercial entity owning, or operating and maintaining the development, may by their nature have different arrangements and obligations. Planning authorities should provide planning conditions for such developments which ensure the provision of appropriate management and maintenance structures including for the scenario where the BTR nature of a development is altered following specified period under SPPR 7(a) above.

3.2 Service Charge Budget

The property management company (PMC) has a number of key responsibilities for the development for agreement with the development owners. There would typically be a service charge budget in multi-unit developments to cover 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); With Build-to-Rent, this is required to be undertaken by management instead.

3.3 Sinking Fund

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



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.



4.0 Section 02

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:

4.1 Building Design

The building has been designed in accordance with the building regulations and particular measures have been implemented at the early stage of design to reduce potential costs for the effective functioning of the completed development. Some of these specific design measures include the following

| Measure | Description | Benefit |
|--|---|--|
| Site Specific Location | The site is an under utilised brown field site in an inner urban location in close proximity to the centre of the city. The site sits within a mixed use residential / commercial area. | <p>The proposed development makes better and more sustainable use of brown field land.</p> <p>The site location will promote more sustainable forms of transport between local employment zones, city centre and place of residence.</p> <p>Residential accommodation within an already established residential / mixed use will be less disruptive on adjoining uses.</p> |
| Internal circulation areas have been minimised | 2no. stair / lift cores are provided to serve a total of 2 blocks. | Minimises the number of access lifts, maximises the use of space, avoids unnecessary expense in cleaning and renewal of finishes. |
| Dual aspect design where possible. | Apartments are designed to be dual aspect where feasible. There are no north facing single aspect units in the scheme. | Increased access to natural daylight and ventilation. |



| | | |
|----------------------------------|--|---|
| Daylighting to units | Where possible, as outlined in ' <i>Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities</i> (March 2018)' to have regard for quantitative performance approaches to daylight provisions 'outlined in guides like the BRE guide ' <i>Site Layout Planning for Daylight and Sunlight</i> ' (2 nd edition) or BS 8206-2: 2008 – ' <i>Lighting for Buildings – Part 2: Code of Practice for Daylighting</i> ' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision'. | Reduces the requirement for continuous daylighting, and reduces costs assoc. with artificial lighting. |
| Daylighting to circulation areas | Circulation areas include windows to corridors. | Reduces the requirement for continuous daylighting (permits natural ventilation when necessary). |
| External Lighting | <p>External lighting will comply with the latest standards and achieve:</p> <ul style="list-style-type: none"> • Low level lighting • Utilise low voltage LED lamps • Minimum upward light spill • Be pre-approved by / in accordance with City Council requirements <p>Each light fitting is to be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.</p> | Lighting will be designed to achieve required standards, provide a safe environment for pedestrians, cyclists, vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna. |

4.2 Landscape

| Measure | Description | Benefit |
|----------------------------------|--|--|
| Site Layout & landscaping design | <p>High quality landscaping selected from a tried and tested palette of attractive and hard wearing materials.</p> <p>Refer to Landscape Design Rational report prepared by Cathal O'Meara Landscape Architects.</p> | Minimum ongoing maintenance associated with the choice of materials. |
| Paving and Decking materials | Use of robust high-quality durable materials and detailing. | Ensure longevity of materials. |



4.3 Energy and Carbon Emissions

By taking due consideration of the energy and carbon emissions associated with the proposed development it will be possible to reduce the overall impact of the development on the environment, whilst reducing unit running costs for residents. Measures taken, in particular in relation to the construction stage include the following:

| Measure | Description | Benefit |
|--------------------------|---|--|
| Fabric Energy Efficiency | <p>Building Fabric Performance – U-Values Proposed U-Values will be in line with the requirements set out by the current Technical Guidance Document Part L – “<i>Conservation of Fuel and Energy Buildings other than Dwellings</i>” 2017 (operable 2019) including Nearly Zero Energy Buildings targets.</p> <p>The U-Values that will be targeted for the development will exceed the minimum targets set out in TGD Part L Table 1 – refer Appendix A.</p> <p>Thermal bridging Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance Paragraphs 1.2.4.2 and 1.2.4.3 within the Technical Guidance Documents Part L.</p> <p>Air Tightness 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>The building will be designed to achieve an air permeability (airtightness) target of 3 m³/hr/m²@50Pa.</p> | <p>Reduced u-values, minimisation of thermal bridging and improved airtightness will reduce the amount of heat loss throughout the building fabric, and lower overall consumption of energy. And therefore carbon emissions.</p> |
| BER Certificates | <p>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/A3 rating for the apartments this will equate to the following emissions.</p> | <p>A BER rating is a rating given based on the overall energy efficiency of the building.</p> |



| | | |
|-------------------------------|---|--|
| | <p>A2 – 25-50 kwh/m2/yr with CO2 emissions circa 10kgCO2/m2 year.</p> <p>A3– 51-75 kwh/m2/yr with CO2 emissions circa 12kgCO2/m2 /year.</p> | |
| White Goods (Energy Labelled) | High standard, energy efficient “A” rated white goods will be supplied to all units. It is anticipated that ‘A’ rated appliances will be installed in the development. | High energy rated appliances will reduce electrical energy consumption and associated costs for residents. |
| External Lighting | <p>Low energy LED public lighting shall be designed and specified in accordance with CIBSE lighting guide and City Council public lighting standards and shall include:</p> <ul style="list-style-type: none"> • Low level lighting • Utilise low voltage LED lamps • Minimum upward light spill <p>Each light fitting is to be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.</p> | Lighting will be designed to achieve required standards, provide a safe environment for pedestrians, cyclists, vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna |

4.4 Low Energy Technologies

To achieve the best possible BER rating, as discussed above, the following low energy technologies will be considered to achieve the required rating as well as striving to reach the upcoming NZEB (Near Zero Energy Building) standards:

| Measure | Description | Benefit |
|-------------------------------|---|---|
| Air Source Heat Pumps (ASHPs) | An air to water heat pump extracts heat from the outside air, upgrades it to a higher temperature and the resultant heat is then used for space and water heating in the building | With a high conversion factor of up to 4:1 energy in (electricity) to energy out (heat) heat pumps are classified as renewable heating source. Running costs can typically be up to one third of a conventional heating system. |



| | | |
|--|--|--|
| | | The use of heat pump technology will also achieve reduction in Gas (non-renewable) central heating requirements. |
| Low energy LED Lighting | Shall be designed and specified in each unit and in the landlord areas in accordance with Part L requirements. | Lower consumption of energy and therefore lower carbon emissions. |
| Demand Control (Mechanical) Ventilation (DCV)s | Ventilation for the development will be provided by means of Natural Ventilation with Extract Fans serving WCs/Ensuites. | Improved air quality and reduced costs in providing alternative heating etc. |

4.5 Materials and Material Specification

The practical implementation of the Design and Material principles has informed the design of the building – its form, position, internal layout, façade treatment and detailing have informed the proposed building design.

To improve on building standards there has been an increase in the expected build cost. 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'.

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

The proposed envelope of the building comprises of brickwork, with aluminium double-glazed windows. Roofs will be asphalt coated warm inverted roof balasted. Based on comparison with similar schemes developed in the immediate locality, the proposed materials are durable and will not require regular replacement or maintenance. Specific design measures include the following:

| 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 includes 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 includes 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 |
| Installation of factory finished and aluminium windows and doors | Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and includes 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 |

4.6 Waste Management

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

| Measure | Description | Benefit |
|--|---|--|
| Construction and Operational Waste Management Plan | The final application will be accompanied by a Construction and Demolition Waste Management Plan. | Will demonstrate how construction & demolition waste will be managed to maximise recycling and reuse rates, while minimising waste for disposal to landfill. |
| Operational Waste Management Plan | The final application will be accompanied by an Operational Waste Management Plan. | Will demonstrate how waste will be managed during the operational phase of the development to maximise recycling rates, while minimising waste for disposal to landfill. |

4.7 Human Health & Well Being

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

| Measure | Description | Benefit |
|---------|-------------|---------|
|---------|-------------|---------|



| | | |
|--------------------|---|--|
| Natural daylight | Design of the layout of the development 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 risk of littering within the scheme and Reduces Potential waste charges. |
| Accessibility | All units, egress routes and stair cores to comply with the requirements of Technical Guidance Documents Part M/K | Helps to reduce waste charges and the amount of waste going to landfill |
| Amenity | Provision of both internal and external public / communal amenity space | Facilitates socialising, community interaction. |
| Private Open Space | Provision of private open space | Facilitates interaction with outdoors. |

4.8 Transport & Accessibility

The proposed development is highly accessible via a variety of modes of transport options including public transport (bus), cycling and walking. The following table illustrates how such accessibility allows residents to manage and reduce costs associated with travel to and from home / reducing the costs of ownership of private cars and reducing fossil fuel dependency:

| Measure | Description | Benefit |
|----------------------------|--|---|
| Access to Public Transport | <p>The development is served directly by the frequent bus route to/from the city centre and wider environs.</p> <p>The site is also in walking distance of Blackpool Retail Park and Blackpool Village (ca. 5mins) and the city centre (ca. 15-20mins)</p> <p>There are a number of bus stops adjacent to the development.</p> | Availability of and close proximity to quality bus routes reduce the reliance on private motor vehicles |
| Pedestrian Permeability | The proposed design provides dedicated pedestrian and cycle infrastructure. | Ensures long term attractiveness of walking, and cycling to a range of local retail, sports, education and office facilities. |



| | | |
|---------------------------|--|---|
| Cycling – Bicycle Storage | 114no. bicycle parking spaces are provided within the scheme. This is in line with the requirements of the City Development Plan and new apartment guidelines for Build-to-rent requirements and the promotion of sustainable transport modes. | Accommodates the uptake of cycling and reduces the reliance on the private motor vehicle. |
| Car Free Development | There are no proposed car parking spaces on the site | This reduces the dependency on car parking spaces. |



Appendix A

Table 1 Technical Guidance Document Part L - Conservation of Fuel and Energy Buildings other than Dwellings 2017 (operable 2019).

| Table 1 Maximum elemental U-value ¹ (W/m²K) | | |
|--|---|--|
| 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 ² Pitched roof - Insulation at ceiling - Insulation on slope | 0.16 0.16 | 0.3 |
| Flat roof | 0.20 | |
| Walls ² | 0.21 | 0.6 |
| Ground Floors ^{2,3} | 0.21 | 0.6 |
| Other exposed floors ² | 0.21 | 0.6 |
| External personnel doors, windows ⁴ and rooflights ⁶ | 1.6 ⁵ | 3.0 |
| Curtain Walling | 1.8 | 3.0 |
| Vehicle access and similar large doors | 1.5 | 3.0 |
| High usage entrance door ⁷ | 3.0 | 3.0 |
| Swimming Pool Basin ⁸ | 0.25 | 0.6 |
| <p>Notes:</p> <ol style="list-style-type: none"> 1. The U-value includes the effect of unheated voids or other spaces. 2. Reasonable provision would also be achieved if the total heat loss through the roof, wall and floor elements did not exceed that which would be the case if each of the area weighted average U-value (U_m) for these elements set out in Column 2 were achieved individually. 3. Where the source of space heating is underfloor heating, a floor U-value of 0.15 W/m²K should generally be satisfactory. 4. Excludes display windows and similar glazing but their impact on overall performance must be taken into account in EPC and CPC calculation. 5. In buildings with high internal heat gains a less demanding area-weighted average U-Value for the glazing may be an appropriate way of reducing overall primary energy and CO₂ emissions. Where this can be shown then the average U-value for windows can be relaxed from the values given above. However values should be no worse than 2.2 W/m²K. 6. This is the overall U-value including the frame and edge effects, and it relates to the performance of the unit in the vertical plane so, for roof-lights, it must be adjusted for the slope of the roof as described in Sect 11.1 of BR 443 7. High Usage Entrance door means a door to an entrance primarily for the use of people that is expected to experience larger volumes of traffic, and where robustness and/or powered operation is the main performance requirement. To qualify as a high-usage entrance door the door should be equipped with automatic closers and except where operational requirements preclude it, be protected by a lobby. 8. Where a swimming pool is constructed as part of a new building, reasonable provision should be made to limit heat loss from the pool basin by achieving a U Value no worse than 0.25 W/m²K as calculated according to BS EN 13370 | | |



Appendix B

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

| Building Investment Fund (BIF) Sinking Fund Calculations (Specification to be finalised at detail design stage) | | | |
|--|--|------------------------|---------------|
| Ref. | Element | Life Expectancy | Amount |
| 1.00 | Roofs | | |
| 1.01 | Replacement asphalt roof covering inc insulation | 25 | |
| 1.02 | Replacement parapet details / fascias | 25 | |
| 1.03 | Replacement roof access hatches & fall arrest | 25 | |
| 2.0 | Elevations | | |
| | Replacement brick finishes | 60 | |
| | Replace / recoat metal cladding panels | 20 | |
| | Replace curtain wall / windows | 25 | |
| | Replace curtain entrance doors | 25 | |
| | Replace Rainwater Goods | 25 | |
| | Replace external surface finishes inc balcony floor finish | 25 | |
| 3.0 | Staircores & Lobbies (2No. Cores) | | |
| | Replace fire doors | 25 | |
| | Replacement handrails / balustrades | 25 | |
| | Replace floor finishes (carpet / vinyl) | 10 | |
| | Replace floor finishes (ceramic tile) | 20 | |
| | Replace entrance mats | 10 | |
| | Replace nosings | 12 | |
| | Decorate walls | 7 | |



| | | | |
|------------|---|----|--|
| | Decorate ceilings | 7 | |
| | Decorate joinery | 7 | |
| 4.0 | M&E Services | | |
| | General internal re-lamping | 7 | |
| | Replace internal light fittings | 18 | |
| | Replace external light fittings | 18 | |
| | Replace Smoke Detector Heads | 18 | |
| | Replace Fire Alarm Control Panel | 18 | |
| | Replace lift Car & Controls | 25 | |
| | Replace AOV's | 25 | |
| | Replace Manual Break Glass Units / Refuge Call Points | 18 | |
| | Replace Security system | 15 | |
| | Replace / upgrade external mains water connection | 20 | |
| | Replace / upgrade electrical mains and sub mains distribution | 20 | |
| | Replace emergency lighting | 20 | |
| | Replace / overhaul waste pipes, stacks and vents | 20 | |
| 5.0 | Exterior | | |
| | External boundary treatments – recoat pc finishes to metal railings | 60 | |
| | Replace external signage | 15 | |
| | Replace cobblelock areas | 18 | |
| | Overhaul of landscaping generally | 10 | |
| | Replace CCTV provision | 12 | |
| | External Handrails and balustrades | 20 | |



Appendix C

Phases of Life Cycle of BS 7543:2015 (Figure 4)

Figure 4 Phases of the life cycle

