

BUILDING LIFE CYCLE REPORT

Ballincollig Apartments – Residential Development

Old Fort Road, Ballincollig, Co. Cork

Prepared for O'Flynn Construction Co. Unlimited Company

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BALLINCOLLIG – PROPOSED DEVELOPMENT DESCRIPTION

The Development is situated on a developable site area of 1.21 Ha, which slopes down approximately 8m from the south to the north boundaries.

The proposed number of units is 157 apartments over a range of 2 to 6 floors, with a proposed density of 130.2 units to the hectare. 260 Cycle spaces and 91 car parking spaces are to be provided.

The 3 Main Blocks are orientated along a North-South axis which allows for predominantly East and West facing apartments. This layout also allows for views through the site from Old Fort Road to the Regional Park and Lee Valley Hills beyond. Street Level Units and the main Entrance Lobbies, are strategically located along Old Fort Road to create an active street front.

INTRODUCTION TO BUILDING LIFECYCLE REPORT

The purpose of this report is to provide an initial 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 to effectively manage and reduce costs for the benefit of the residents.

This Building Lifecycle Report has been developed on foot of newly revised guidelines for Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) under Section 28 of the Planning and Development Act 2000 (as amended) December 2020.

The relevant direction stated in the Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) can be found in section 6.11 to section 6.14 and are as follows;

"Operation and Management of Apartment Developments

6.11 Certainty regarding the long-term management and maintenance structures that are put in place for an apartment scheme is a critical aspect of this form of residential development. It is essential that robust legal and financial arrangements are provided to ensure that an apartment development is properly managed, with effective and appropriately resourced maintenance and operational regimes.

6.12 In this regard, consideration of the long-term running costs and the eventual manner of compliance of the proposal with the Multi- Unit Developments Act, 2011 are matters which should be considered as part of any assessment of a proposed apartment development.

6.13 Accordingly, planning applications for apartment development 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.

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."

SECTION 1 – PROPERTY MANAGEMENT

1.1. PROPERTY MANAGEMENT OF THE COMMON AREAS OF THE DEVELOPMENT

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development 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 in place for a period of time and form prescribed by the PSRA's best practice.

The PMC – Property Management Company has the following duties once the development has been constructed;

- *Preparation of annual service charge budget for the development common areas.*
- *Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (MUD Act).*
- *Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act - including completion of Developer OMC Agreement and transfer of common areas.*
- *Transfer of documentation in line with Schedule 3 of the MUD Act.*
- *Estate Management.*
- *Third Party Contractors Procurement and management.*
- *OMC Reporting.*
- *Accounting Services.*
- *Corporate Services.*
- *Insurance Management.*
- *After Hours Services.*
- *Staff Administration.*

1.2. SERVICE CHARGE BUDGET

The property management company has a number of key responsibilities, primarily the compiling of the service charge budget for the development for agreement with the OMC. The service charge budget covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/electrical lifts/ life safety systems, security, property management fee, etc., to the development common areas in accordance with the Multi Unit Developments Act 2011 ("MUD" Act). This service charge budget also includes an allowance for a Sinking Fund and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared for the OMC.

The BIF report will identify those works which are necessary to maintain, repair, and enhance the premises over the 30-year life cycle period, as required by the Multi Unit Development Act 2011. In line with the requirements of the MUD Act, the members of the OMC will determine and agree each year at a General Meeting of the members, the contribution to be made to the Sinking Fund, having regard to the BIF report produced.

A sample BIF document has been included in appendix A to illustrate some of the items/ works which are to be assessed in the report. Time periods and schedules for works are to be formulated by the property management company and agreed by the OMC for the benefit of the residents.

SECTION 2 – OUTLINE SPECIFICATION

The following section of this document reviews the outline specification set out for the Large Scale Residential Development scheme on lands adjacent to the Old Fort Road, Ballincollig, Co. Cork and explores the practical implementation of the design and material principles which has informed the design of building roofs, façades, internal layouts and detailing of the proposed development.

Please note that detailed specifications of building fabric and services have not been provided at this stage. This report reflects the limited information available to WILSON ARCHITECTURE at the date of this issue. For any elements where information was not available, typical examples have been provided of building materials and services used for schemes of this nature and their associated lifespans and maintenance requirements. All information is therefore indicative subject to further information at detailed design stage.

As the building design develops this document will be updated and a schedule will be generated from the items below detailing maintenance and replacement costs over the lifespan of the materials and development constituent parts. This will enable a robust schedule of building component repair and replacement costs which will be available to the property management company so that running and maintenance costs of the development are kept within the agreed annual operational budget.

2.1 ENERGY PERFORMANCE AND CARBON EMISSIONS

The core tenets and aims of 'The European Performance of Buildings Directive 2010' have been integrated into Irish legislation in the form of TGD Part L (2021) and the requirement to achieve an NZEB energy rating for new residential developments. A Building energy Rating (BER) certificate will be provided which will provide detail of the energy performance and carbon emissions associated with the dwellings. It is proposed to target a BER Rating for each apartment of A2/A3 which will situate the developments energy performance within the NZEB classification and thus comply with the relevant legislation governing this aspect of the development. This will equate to the following emissions:

A2 – 25-50 kWh/m2/yr. with CO2 emissions approx. 10 kgCO2/m2/yr.

A3 – 51-75 kWh/m2/yr. with CO2 emissions approx. 10 kgCO2/m2/yr.

The following table outlines the proposed passive and active, energy and carbon emission reduction measures which will directly benefit occupants in terms of reducing operational costs.

<table>
<tr><th>MEASURE</th><th>DESCRIPTION</th><th>BENEFIT</th></tr>
<tr><td>Building Fabric Efficiency</td><td>The U-Value of a building element is a measure of the amount of heat energy that will pass through the constituent element of the building envelope. Increasing the insulation levels in each element will reduce the heat lost during the heating season.

It is possible to exceed the requirements of the current building regulations. The current target U-Values are identified below:

<table>
<tr><th>Element</th><th>Required U-values for New Buildings (W/m²k)</th><th>Target U-values for this development (W/m²k)</th></tr>
<tr><td>Roof</td><td>0.20</td><td>0.15</td></tr>
<tr><td>External Walls</td><td>0.18</td><td>0.18</td></tr>
<tr><td>Ground Floors</td><td>0.18</td><td>0.15</td></tr>
<tr><td>Glazing</td><td>1.4</td><td>1.4</td></tr>
</table>
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.

With good design and strict on-site control of building techniques, infiltration losses can be significantly reduced.

In order to ensure that a sufficient level of air tightness is achieved, air permeability testing will be specified, with the responsibility being placed on the main contractor to carry out testing and achieve the targets identified in the tender documents.

A design air permeability target of 3 m³/m²/hr has been identified

Air testing specification will require testing to be carried out by an independent third party (National Standards Authority of Ireland or equivalent certification body).</td><td>Reduction in the consumption of fuel and the associated carbon emissions and operating costs</td></tr>
<tr><td>Lighting Efficiency</td><td>It is proposed to provide 100% of lighting outlets to be low energy (LED)</td><td>Reduction in the consumption of electricity and the associated carbon emissions and operating costs.</td></tr>
<tr><td>Air Source Heat Pump Per Apartment</td><td>Conventional air source heat pumps per apartment have been incorporated into this development by situating external condensers on the roof of each apartment block in a designated Plant area.

Aside from the environmental benefits of heating homes with an Air source heat pump rather than for example a direct electric heating system heat source, there are substantial savings to be made when this system is employed with an air-tight approach to building detailing and construction.

With lower energy usage within buildings; they have become increasingly airtight. This increased airtightness while providing lower energy levels can lead to problems because stale air is not exhausted from the dwelling and replaced with outside air.

A Mechanical Heat Recovery Ventilation system provides outdoor filtered air into the apartment whilst retaining most of the energy that has already been used in heating the building. It works on the principle of extracting air from the wet rooms (WCs, kitchens,</td><td>Reduction in the consumption of electricity and the associated carbon emissions and operating costs.</td></tr>
</table>

	etc) and recovering the heat energy from this air in a high efficiency heat exchanger and supplying tempered fresh air into the occupied rooms (living area, bedrooms, etc). As the possibility of carbon taxation being increased over the years within the Irish legislative framework becomes evermore likely, this system and its's low CO_2 output represents a shrewd environmental and financially sound means of heating the development.	

2.2 MATERIALS

The practical implementation of the Design and Material principles has informed the design of internal layouts, detailing of the proposed apartment buildings, and building facades. The façade materials will consist of render, brick, glazing, spandrel panels, profiled metal cladding, and pressed metal parapet.

2.2.1 BUILDINGS

The Buildings are designed in accordance with the Building Regulations, in particular Part D 'Materials and Workmanship', which includes all elements of the construction. The Design Principles and Specification are applied to both the apartment units and the communal areas of the building and specific measures taken include:

MEASURE / DESCRIPTION	BENEFIT
Daylighting to circulation areas where possible	Avoids the requirement for continuous artificial lighting
External paved and landscaped areas	All of these require low/minimal maintenance

2.2.2 MATERIAL SPECIFICATION

MEASURE / DESCRIPTION	BENEFIT
Consideration is given to the requirements of the Building Regulations and includes reference to BS 7543:2015, 'Guide to Durability of Buildings and Building elements, Products and Components', which provides guidance on the durability, design life and predicted service life of buildings and their parts. All common parts of the proposed Apartment buildings and, the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.
The primary structural materials are a structural concrete frame combined with standard concrete block infill. A contemporary palette of render colours are proposed with complementary tones of brick, spandrel panels and standing metal seam cladding as the principal finishes to the apartment elevations on all Blocks. Render makes up the majority of the façade treatment and is to be silicone based. This provides a finish with high water shedding characteristics whilst remaining vapour permeable. A colour-through render is proposed, with algae and mould resistant properties which would result in low maintenance and counteract staining and discolouration.	Requires minimal on-going maintenance.
High quality powder coated aluminum framed glazing systems will be installed throughout the development.	Requires no on-going maintenance.

2.3 LANDSCAPE

MEASURE / DESCRIPTION	BENEFIT
Robust, locally sourced materials, with high slip resistance to be used for paving. Durable and robust furniture and equipment (e.g. play, fencing etc.) to be used throughout. All external metal fittings galvanised and powder coated to minimise painting requirements.	Robust materials and elements reduce the frequency of required repair and maintenance. Required ongoing maintenance significantly reduced through use of robust materials installed to high standards and robust detailing.
The landscape design strategy is achieved by: • greening of courtyard spaces with trees, wall-climbers, planters and planting beds at ground level. • careful consideration to needs of disabled and visually impaired persons in design of steps and furniture. • careful selection of materials with regard to robustness, durability, • ease of maintenance and compatibility with the site's setting in Ballincollig. • selection of suitably sized, native/adaptive trees and planting is proposed. • Hard and soft landscaped areas are balanced to ensure a quality public environment. A wide variety of flowering plants and shrubs including native and near-native plant species will provide a valuable food source for pollinating insects throughout the year. No invasive plant species have been included in the scheme. Low maintenance planting schemes with suitable species, plant size, and spacing with bark mulching to minimise herbicide treatment. Planting selected to suit site micro-climate, soils and other horticultural variables. Select low maintenance grass mix to be used in landscape areas.	High quality soft landscaping improves the general quality of the environment for residents. Enhanced biodiversity within the site. Avoid problematic, invasive vegetation for future maintenance. Minimise maintenance weeding, pruning etc. Planting selected to establish and thrive to provide required aesthetic, screening, and biodiversity functional requirements with minimal maintenance. Reduce grass cutting within scheme.

2.4 WASTE MANAGEMENT

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

MEASURE	DESCRIPTION	BENEFIT
Storage of Non- Recyclable Waste and Recyclable Household Waste	Inclusion of centralised waste storage areas, with enough space to accommodate a weekly collection of bins	Easily accessible by all residents, minimises potential littering of the scheme, reduce potential waste charges and not limit waste contractor selection
	Domestic waste management strategy: General waste, mixed recyclable and organic bin distinction	Helps reduce potential waste charges and not limit waste contractor selection
	Security restricted waste storage rooms	Reduce potential for fly tipping by residents and non-residents
	Well signed waste storage rooms and bins	Help reduce potential cross contamination of waste and reduce waste charges.
Composting	Organic waste bins intended to be provided in waste storage areas	Helps reduce potential waste Charges

2.5 MANAGEMENT

Consideration has been given to ensuring the residents have a clear understanding of the subject property.

MEASURE	DESCRIPTION	BENEFIT
Home User Guide	The management of the property will be ultimately be the responsibility of the owners and operators of this scheme. Consideration has been given to ensuring tenants have a clear understanding of the property which they will rent and we the following will be provided at a minimum to ensure homeowners have a clear understanding of their property. Tenant packs will be provided to new residents which will include a homeowners manual to provide information to purchasers in relation to their new property. This pack will typically include details of the property such as information in relation to connection with utilities and communication providers, contact details for all relevant suppliers and instructions for the use of any appliances and devices in the property. A resident's pack prepared by the operational management company will also be provided and will include information on contact details for the managing agent, emergency contact details, transport links and a clear set of rules and regulations for tenants of the property. This will ensure residents are appropriately informed, so any issues can be addressed in a timely and efficient manner and ensure the successful operation of this build to let scheme.	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

2.6 HEALTH & WELL BEING

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

MEASURE	DESCRIPTION	BENEFIT
Natural / Day Light	The design, layout and separation distances of the buildings have been designed to optimize the ingress of natural daylight/ sunlight to the proposed dwellings to provide good levels of natural light.	Reduces reliance on artificial lighting thereby reducing running costs.
Accessibility	All units will comply with the requirements of Building regulations Parts M and K.	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 likely to be adopted: • CCTV monitoring details • Secure bicycle stands – covered by CCTV • Controlled Access to the under-podium parking space • Controlled Access to individual circulation cores • Controlled access between Public Spaces and Residents Communal Spaces • Routine access fob audits • Appropriately lit external spaces.	Aids in reducing potential security/management costs. Enhances safety for residents and visitors.
Natural Amenity	• Public plaza area, and enhanced public streetscape • External courtyard and terraces	Facilitates community interaction, socialising and play – resulting in improved wellbeing. Proximity and use of external green spaces promotes a healthy lifestyle.

2.7 TRANSPORT

MEASURE	DESCRIPTION	BENEFIT
Access to Public Transport (Bus Services)	The site is well located with regard to the city's bus network, being served by both primary and secondary bus routes. Bus Eireann bus stops located on the main thoroughfare of Ballincollig is a five-minute walk from the site which provides easily accessible travel.	The proximity, frequency and range of additional destinations served by these local bus services enhance the accessibility levels of the proposed residential development.
Permeable Connections	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with adjoining third party lands and off-site networks, providing connectivity and continuation of the City Wide Green Route, subsequently providing convenient access to local services including shops, schools, restaurants and doctor's surgeries.	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 260 no. bicycle spaces in a secure facilities on the ground floor.	Accommodates the uptake of cycling.

APPENDIX A:

ITEMS INCLUDED IN A TYPICAL BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund. Note that Life Expectancy figures are purely for the purposes of illustration and are not to be taken as proscriptive.

	BUILDING INVESTMENT FUND (SINKING FUND) CALCULATIONS		
Ref	**Element**	**Life Expectancy**	**Amount**
1.00	**Roofs**		
1.01	Replacement felt roof covering incl. insulation to main roofs/ overhaul to green roofs.	18	
1.02	Replacement parapet details	18	
1.03	Replacement/ repairs to facias	18	
1.04	Replace roof access hatches / roof lights	25	
1.05	Specialist Roof Systems - Fall arrest	25	
1.06	Overhaul waterproofing details to terraces / balconies	12	
2.00	**Elevations**		
2.01	Recoat metal panels	25	
2.02	Minor repairs and preparation for decorations of rendered areas	18	
2.03	Replace exit/ entrance doors	25	
2.04	Replace Rainwater goods	25	
2.05	Recoat powder coated Finishes to balconies & terrace railings	20	
2.06	Periodic replacement and overhauling of external fixings	5	
2.07	Replace balcony floor & soffit finishes	25	
3.00	**Staircores & lobbies (6 No. Cores)**		
3.01	Decorate Ceilings	7	
3.02	Decorate Walls	7	
3.03	Decorate Joinery	7	
3.04	Replace fire doors	25	

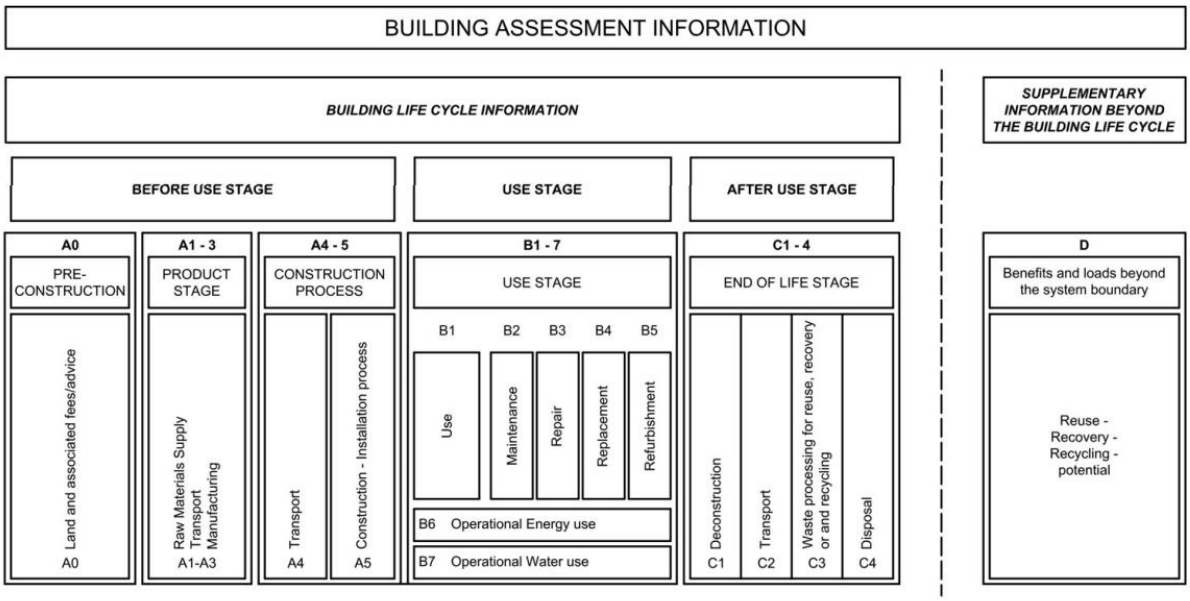
3.05	Replace carpets (stairwells & lobbies)	12	
3.06	Replace entrance mats	10	
3.07	Replace nosing's	12	
3.08	Replace ceramic floors tiles Entrance lobbies	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	
4.00	**Car Parking, Bike Storage**		
4.01	Repaint parking spaces & Numbering	7	
4.03	Replace store doors, ironmongery & digi-locks	15	
4.04	Replace Bike stands	25	
5.00	**M&E Services**		
5.01	General - Internal relamping	7	
5.02	Replace Internal light fittings	18	
5.03	Replace External light fittings (lights at entrance lobbies)	18	
5.04	Replace smoke detector heads	18	
5.05	Replace manual break glass units/ disabled refuge call points	18	
5.06	Replace Fire alarm panel	18	
5.07	Replace lift car and controls	25	
5.08	Replace AOV's	25	
5.08	Replace security access control installation	15	
5.09	Sump pumps replacement	15	
5.10	External Mains Water connection	20	
5.12	Electrical Mains and Sub Mains distribution	20	
5.13	Emergency Lighting	20	
5.14	Overhaul and/or replace Waste Pipes, Stacks & Vents	20	
6.00	**Exterior**		
6.01	External boundary treatments - Recoat powder coated finishes to railings	60	
6.02	Replace external signage	18	
6.03	Replace cobble lock areas	18	

6.04	15-year overhaul of soft landscaping generally	15	
6.05	Replace CCTV provision	12	
6.06	External Handrails and balustrade	18	

APPENDIX B:

Phases of the Life Cycle of BS7543; 2015

Figure 4 **Phases of the life cycle**



Key
1 Highest severity of consequence of failure
2 Anticipated severity of consequence of failure
3 Lowest severity of consequence of failure
4 Minimum service life
5 Most likely service life
6 Maximum service life