



THORNTON O'CONNOR
TOWN PLANNING

Lifecycle Report

Planning Application

In respect of a Residential Development

Foxburrow,
Beladd,
Portlaoise

Submitted on Behalf of
Boderg Development Limited

June 2020



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1.0 INTRODUCTION

1.1 Purpose of this Building Lifecycle Report

This lifecycle report has been prepared in support of a full planning application by Boderg Developments Limited (the applicant) for a new residential development on lands measuring approximately 4.492 hectares at Foxburrow, Portlaoise, Co. Laois.

The application is for the a development consisting of No. 155 dwellings consisting of:

- 18 No. 1 bedroom apartments
- 18 No. 2 bedroom apartments
- 4 No. 1 bedroom own door maisonettes
- 44 No. 4 bedroom houses
- 48 No. 3 bedroom houses
- 23 No. 2 bedroom houses

The development includes both communal and private parking on curtilage; surface water attenuation, landscaping and all associated site development works. The scheme consists of 3 apartment blocks and 1 containing 4 own door maisonette apartments. The site is a large semi-developed residential estate known as Foxburrow and the application net site area measures approximately 4.492 hectares. It is located to the east of Portlaoise Town Centre and is bounded by existing residential developments to the north and west, St. Peter and Paul's Cemetery to the south and agricultural land to the east.

Sections 6.11 to 6.14 of the document *Sustainable Urban Housing; Design Standards for New Apartments- Guidelines for Planning Authorities* relate to the "Operation and Management" of Apartment developments.

Section 6.13 of the Guidelines 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 the costs for the benefit of residents"

The report sets out to address the stated requirements in Section 6.13 in relation to the Apartment element of the development, and is divided into the following sections:

Section 2.0- Assessment of Long Term Running and Maintenance Costs.

Section 3.0- Measures specifically considered by the proposer to effectively manage and reduce the costs for the benefit of residents.



2.0 ASSESSMENT OF LONG-TERM RUNNING AND MAINTENANCE COSTS

2.1 Property Management Company and Owners Management Company

2.1.1 Property Management of 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 apartment element of the development and that running and maintenance costs of the common areas of the development are kept within the annual operational budget.

The property management company will enter into a contract directly with the OMC for the ongoing management of the built development. It is intended that this is a contract for a maximum of 3 years and in the form prescribed by the PSRA.

The property management will also have the following responsibilities for the apartment element of the development once completed:

- Timely formation of an Owner's 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 MUD Act.
- Estate management.
- Third Party Contractors procurement and management.
- OMC Reporting.
- Accounting Services.
- Corporate Services.
- Insurance Management.
- After Hours Services.
- Staff Administration.

2.1.2 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 *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 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 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.

Notwithstanding the above, 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.

3.0 MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS

3.1 Energy and Carbon Emissions

The following are an illustration of the energy measured that are planned for the units to assist in reducing costs for the occupants:

Measure	Description	Benefit
BER Certificates	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. A BER is calculated through energy use for space and hot water heating, ventilation, lighting and occupancy. It is proposed to target an A2 rating for the apartments, this will equate to the following emissions- A2- 25 to 30kwh/m ² with CO ₂ emissions circa 10kgCO ₂ /m ² / year.	Higher BER ratings reduce energy consumption and running costs.
Fabric Energy Efficiency	The U Values being investigated will be in line with the requirements set out by the current regulatory requirements of Technical Guidance Document Part L, "Conservation of Fuel and Energy Buildings other than dwellings". Thermal bridging at junctions.	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, lower energy consumption and thus minimise carbon emissions to the environment.
Energy Labelled White Goods	The white goods package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating. It is expected that the following appliance standards will be provided: Oven- A+ Fridge Freezer- A+ Dishwasher- AAA Washer/ Dryer- B	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
External Lighting	The proposed lighting scheme within the development consists of 5m & 6m pole mounted fittings as indicated on the drawings. The luminaire selected is the C U Phosco P516 fitting, this fitting was selected for the following reasons:	The site lighting has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting

	<ul style="list-style-type: none"> • Dark sky friendly, minimal upward light • High performance photometrics • Efficient thermal management • Maximised savings on energy and maintenance costs <p>Each light fitting shall be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.</p> <p>The site lighting has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area. Having PECU allows for the optimum operation of lighting which minimizes costs.</p> <p>Further detail can be found in the Lighting Report by Sabre.</p>	<p>on existing fauna and flora in the area.</p> <p>Having PECU allows for the optimum operation of lighting which minimises costs.</p>
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The following are low energy technologies that are being considered for the development and during the design stage. The specific combination from the list below will be decided upon and then implemented to achieve an A2 BER rating:

Measure	Description	Benefit
Condensing boilers	Condensing boilers are being investigated as they have a higher operating efficiency, typically over 90% than standard boilers and have the benefit of lower fuel consumption resulting from the higher operating efficiencies.	Higher BER ratings reduce energy consumption and running costs.
Air Source Heat Pumps	Air source heat pumps (ASHPs) are being considered as a heating source for the apartments and houses. It utilises grid supplied electricity to extract thermal energy from a heat source, in this case, the external ambient air.	Certified seasonal efficiencies of some models can exceed 500% meaning that the use of this technology can easily deliver compliance with current Part L requirements.

Mechanical Ventilation Heat Recovery	Mechanical heat recovery ventilation will be considered to provide ventilation with low energy usage.	Mechanical Heat Recovery Ventilation provides ventilation with low energy usage. The MVHR reduces overall energy and ensures a continuous fresh air supply.
PV Solar Panels	<p>PV solar panels are being considered which converts the electricity produced by the PV system (which is DC) into AC electricity.</p> <p>The panels are typically placed on the south facing side of the building for maximum heat gain and in some instances, can also be used to assist the heating system.</p>	<p>PV solar panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment.</p> <p>They also reduce the overall requirement to purchase electricity from the grid.</p>

3.1.1 Commentary from Mechanical and Electrical

All dwellings in the proposed development will be required to minimise overall energy use and to incorporate an adequate proportion of renewable energy in accordance with Building Regulations Part L 2019, Conservation of Energy & Fuel (hereinafter referred to as Part L) and anticipated future revisions.

The Department of Environment has recently issued revisions to Part L of the Building Regulations which have been published as “Part L 2019”. This standard introduces the “Near Zero Energy Buildings” (NZEB) concept for dwellings. NZEB targets will require that the energy consumption of new dwellings be reduced by 25% from the previously compliant level.

The key changes from the current standard that are proposed to the standard are as follows

- Further 25% reduction in energy use compared to current standards (Energy Performance Coefficient (EPC) reduces from 0.4 to 0.3)
- Further 26% reduction in carbon emissions compared to current standards (Carbon Performance Coefficient (CPC) reduces from 0.46 to 0.35)
- A change in how the renewable energy contribution is measured, from an absolute measure (10kWHrs/m2/yr) to a percentage-based assessment, with the introduction of the “Renewable Energy Ratio” (RER) which will be set at 20% of the total energy consumption.

Based on the current design (as outlined below), all of the proposed apartments in Foxburrow are expected to comply with the requirements of Part L 2019. Preliminary calculations have been completed using the DEAP 4.2 software tools released by the SEAI and these indicate that the apartments will meet the new standard. The BER calculations that have been prepared indicate that all dwellings will achieve an A2 rating

Proposed Heating systems:

Air source heat pumps (ASHPs) utilise grid supplied electricity to extract thermal energy from a heat source. The electricity consumed is obviously not renewable resource, however the efficiency at which a heat pump operates allows a significant portion of the heat delivered to be considered as renewable. The amount of heat considered to be renewable is determined by the efficiency of the heat pump and the “primary energy conversion factor” for grid supplied electricity. Typically, approximately 40% to 50% of the heat supplied is considered to be renewable energy

In recent years, the design of ASHPs has improved bringing about higher efficiencies and reduced costs. This, in turn, has led to an increase use of this technology in large scale housing developments. Certified seasonal efficiencies of some models can exceed 500% in heating mode and 250% to 300% in hot water mode meaning that the use of this technology can deliver compliance with Part L 2019 requirements.

Typically, Air Source Heat Pumps require an indoor and an outdoor component however a particular type of Air Source Heat Pump has been developed for apartments which do not require any outdoor component and which can extract the thermal energy from the exhaust air from bathrooms and kitchens within the apartment. These will operate on the same principle as the air source heat pumps but will generally have a smaller capacity making them suitable for use in apartments.

Proposed Ventilation System:

Mechanical Extract Ventilation (MEV) systems will be provided in each apartment. The system will extract air from all wet rooms (bathrooms, en suites, kitchens and utility rooms) using a central extract fan which runs continuously with supply air to the dwelling being provided through trickle vents in each habitable room.

Where Exhaust Air Heat Pumps are specified, the extract fan for the MEV system is incorporated into the heat pump, allowing the heat from the exhaust air to be recovered prior to it being expelled from the building.

This approach to the design of a domestic ventilation system minimises energy consumption by retaining close control of the ventilation rates thereby minimising heat loss by infiltration.

Proposed Lighting:

All lighting installed in the dwellings will include LED type luminaires. LED light fittings typically use 50% less energy than compact fluorescent fittings and produce a superior quality of lighting in the dwelling. LED fittings have a life expectancy in excess of 10 years which reduces the volume of waste produced and further reduces the overall carbon footprint.

3.2 Materials

The practical implementation of the Design and Material principles has informed design of the building facades, internal layouts and detailing of the proposed apartment buildings.

3.2.1 Buildings

The apartment 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 common parts of the building and specific measures taken include:

Measure Description	Benefit
Daylighting to circulation areas	Avoids the requirement for continuous artificial lighting
External Paved and Landscaped areas	All of these require low/ minimal maintenance
Roof construction includes significant areas of traditional pitched roofs including traditional tiled coverings	Minimises ongoing maintenance

3.2.2 Material Specification

The following demonstrates how the materials used comply with building standards and help to provide for long term durability and lower maintenance costs.

Measure Description	Benefit
<p>Consideration is given to the requirements of the building regulations and includes reference to BS 7543:2015, “<i>Guide to Durability of Buildings and Building Elements, Products and Components</i>”, which provides guidance on the durability, design life and predicted service life of buildings and their parts.</p> <p>All common areas in the scheme, and their durability and performance are designed and specified in accordance with Figure 4: Phases of Life Cycle BS 7543:2015. The common parts are designed to incorporate the guidance, best practice, principles and mitigations of Annexes of BS 7543:2015 including:</p> <ul style="list-style-type: none"> • Annex A - Climatic Agents affecting durability • Annex B - Guidance on materials and durability • Annex C- Design Life data sheets 	<p>This ensures that the long term durability and maintenance of materials is an integral part of the design and specification of the proposed development.</p>
Use of brickwork and pigmented render systems to envelope	Requires no ongoing maintenance

UPVC windows and doors, and powder coated steel balconies	Requires no ongoing maintenance
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In addition to low maintenance materials, the apartment buildings will be completed to a high standard of energy performance to reduce heating and cooling costs for the residents.

Measure	Description	Benefit
BER Certificates	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. A BER is calculated through energy use for space and hot water heating, ventilation, lighting and occupancy. It is proposed to target an A2 rating for the apartments, this will equate to the following emissions- A2- 25 to 30kwh/m ² with CO ₂ emissions circa 10kgCO ₂ /m ² /year	Higher BER ratings reduce energy consumption and running costs

3.3 Landscaping

The following details how the completion of landscaped areas and communal open space will be provided for in the ongoing maintenance costs of the development.

Element	Measure Description	Benefit
Paving and decking Materials	Use of robust, high quality paving and decking materials, with robust proven details	Requires no ongoing maintenance.
Materials	Sustainable, robust materials, with high slip resistance to be used for paving. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.	Robust materials and elements reduce the frequency of required repair and maintenance.
Site Layout and Design	Generous and high quality mature landscaping, prioritising pedestrians and landscape over the car-increase in soft landscaping	Natural attenuation and landscape maintenance preferable.

3.3.1 Landscape Masterplan

The Landscape Masterplan has been prepared by Cunnane Stratton Reynolds Landscape Architects. To provide the Apartment buildings with Communal Open space, the 3 No. areas located adjacent to the apartment buildings are provided as part of the overall landscape master plan.

- Block A: 182 sq m
- Block B: 185 sq m
- Block C: 159 sq m

3.4 Waste Management

An *Operational Waste Management Plan* has been prepared by AWN Consulting as part of this application. The following details the key measures taken to implement this plan.

Measure	Description	Benefit
Construction and Operational Waste Management Plan	The application is accompanied by a Construction and Operational Waste Management Plan by the applicant.	The report demonstrates how the scheme complies with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Domestic waste management strategy- Grey, brown and green bin distinction Competitive tender for waste management collection.	Helps reduce potential waste charges.
Composting	Organic waste bins to be provided throughout.	Helps reduce potential waste charges.

The common waste outputs of the apartment buildings will be controlled by the recommendations of the *Operational Waste Management Plan*.

3.5 Human Health and Wellbeing

The following describes how the application has taken account of the health and wellbeing of residents in the design and location of the apartment buildings.

Measure	Description	Benefit
Natural/ day 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, Technical Guidance Documents 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 likely to be adopted: <ul style="list-style-type: none"> • CCTV monitoring details • Secure bicycle sheds • Overlooked communal open space adjacent to the apartment blocks and public open spaces. 	Helps to reduce potential security/ management cost.

3.6 Management

Consideration has been given to ensuring that homeowners have a clear understanding of their property:

Measure	Description	Benefit
Home User Guide	Once a purchaser completes their sale, a homeowner box will be provided which will include: Homeowner Manual- This will provide important information for the purchaser on details of the property. Typically it includes details of the property such as MPRN and GPRN information in relation to connection with utilities and communication providers. Contact details for all relevant	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

	<p>suppliers and user instructions for appliances and devices in the property.</p> <p>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</p>	
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3.7 Mobility Management and Transport

The following is a summary of the public transport and mobility management steps considered in the development of this application.

Measure	Description	Benefit
Access to Public Transport (Bus Services)	<p>Bus stops situated on Dublin Road served by:</p> <p>Bus Éireann Route X12, Dublin - Portlaoise - Nenagh - Limerick seven times daily</p> <p>Local Link Route 834 Roscrea - Portlaoise three times daily</p> <p>Slieve Bloom Coaches 829/830 -Mountmellick - Portlaoise - Tullamore Seven times daily</p> <p>Dublin Coach Route 726 - Portlaoise - Dublin Daily buses every hour</p>	<p>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.</p>
Permeable Connections	<p>The development is fully interconnected by pedestrian and cycling routes both within the scheme and to adjoining existing residential developments.</p>	<p>Ensures the long term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.</p>
Bicycle Storage	<p>Secure high quality secure bicycle parking both for short and longer term parking requirements.</p>	<p>Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.</p>



4.0 CONCLUSION

Through the implementation of the material, infrastructure and design choices outlined in this document the proposed apartment buildings will be developed to current standards and provide for an affordable development in the long term. This will be facilitated by the management company and the ongoing maintenance of communal facilities and infrastructure associated with the apartment buildings.