



BUILDING LIFE CYCLE REPORT

IN RESPECT OF:

PROPOSED HOUSING DEVELOPMENT
AT CARMELITE MONASTERY SITE,
DELGANY, CO. WICKLOW

on behalf of:

DRUMAKILLA LIMITED

bba architecture

Introduction

This Building Life Cycle report has been prepared in support of a strategic housing development proposed by Drumakilla Limited for a new residential development on lands measuring approximately 6.08 ha located at Carmelite Monastery lands, Delgany, Co. Wicklow.

The application is for a development comprising of 232 No. dwellings consisting of:

- 96 No. 2, 3 & 4 bed, 2 storey detached, semi-detached & terraced houses and 8 bungalows.
- 52 No. 2 & 3 bed duplex units in 8 No. 3 storey blocks, and
- 84 No. 1, 2 & 3 bed apartments in 2 No. 3 & 4 storey blocks.

The proposed development also provides, within the 2 storey House (protected structures), for a 2 storey crèche (403m²) and within the protected Revival Chapel, for a community arts & cultural centre (128m²) and a 93 Sqm dual usage area (crèche/community) , all associated site development works etc.

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") and they introduced a requirement to include details on the management and maintenance of apartment schemes. This is set out in Sections 6.11 to 6.14 under "*Operation & Management of Apartment Developments*".

Specifically, Section 6.13. of the Apartment Guidelines 2018 requires that applications for apartment developments shall:

"include a building lifecycle report which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents".

This Building Life Cycle Report document sets out to address the requirements of Section 6.13 of the Apartment Guidelines. The report is broken into two sections as follows:

Section 1: An assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application

Section 2: Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents

Section 1 _ An Assessment of Long Term Running and Maintenance Costs as they would Apply on a Per Residential Unit Basis at the Time of Application.

Property Management Company and Owner's Management Company (OMC)

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 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 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.

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.

Section 2 _ Measures specifically considered by the proposer to effectively manage and reduce the costs for the benefit of residents

2.1 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	<p>A Building Energy Rating (BER) Certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation, lighting and occupancy. It is proposed to target an NZEB rating for all units.</p> <p>All dwellings within the proposed development achieve a BER rating of A2/A3 throughout.</p>	Higher BER ratings reduce energy consumption and running costs
Fabric Energy Efficiency	<p>The U Values being investigated will be in line with the requirements set out by the current regulatory requirements of Technical Guidance Document Part L, "Conservation of Fuel and Energy Buildings other than dwellings".</p> <p>Thermal bridging at junctions.</p>	Lower U-values and improved air tightness is being considered to help minimize heat losses through the building fabric, lower energy consumption and thus minimize carbon emissions to the environment.
Energy Labelled White Goods	Should the applicants provide a white goods package for the residential units, they will be A rated appliances to achieve a high energy efficiency rating.	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
Ext. lighting	<p>The proposed lighting scheme within the development utilise 4.5m & 6m column height fittings as indicated on the lighting drawings. The luminaire schedule as per lighting drawings was selected for the following reasons:</p> <ul style="list-style-type: none"> • Economical LED alternative • High efficiency and energy savings • Good application coverage • Dedicated light recipes that help with maintaining an optimal ecosystem for bats or 2) preserving a dark night sky and reduce light pollution. <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>	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.

The following are low energy technologies that are being considered for the development and during the design stage of the development the specific combination from the list below will be decided upon and then implemented to achieve an nZEB BER rating:

Measure	Description	Benefit
Condensing boilers and Air to Water Heat Pumps	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. Air to Water heat pumps may be considered as an alternative.	Higher BER ratings reduce energy consumption and running costs
Demand control Ventilation	Demand control ventilation (DCV) is proposed within the houses and duplexes	Provides the right amount of fresh air, when it is needed, where this is useful. The main advantages of DCV are- <ul style="list-style-type: none"> • Better air renewal • Protection against moisture • Reduced and controlled heating consumption
Mechanical Ventilation Heat Recovery	Mechanical heat recovery ventilation will be considered as an option to provide ventilation with low energy usage within the apartments	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	PV solar panels are being considered which convert the electricity produced by the PV system (which is DC) into AC electricity. 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.	PV solar panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment. They also reduce the overall requirement to purchase electricity from the grid.
Combined Heat and Power	Combined heat and power (CHP) is a technology being evaluated. This technology generates electricity and captures the waste heat from the generation unit that can be used within the development.	CHP can achieve energy efficiencies by reusing waste heat from the unit to generate heat required for space heating and domestic hot water services in the apartment development.
ECAR charging points	Charging shall be provided from a local landlord distribution board to designated E-car charging car parking spaces. This will enable the management company the option to install a number of E-car charging points within the surface car parking spaces to cater for E-car demand of the residences. This system operates on a single charge point access card. A full re-charge can take from one to eight hours using a standard charge point.	Providing the option of E-car charging points will allow occupants to avail of the ever-improving efficient electric car technologies.

2.2 Materials

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

2.2.1 Buildings

All 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 residential units and the common parts of buildings and specific measures taken include:

Measure Description	Benefit
Daylighting to circulation areas (Where Possible)	Avoids the requirement for continuous artificial lighting
Natural/Passive ventilation system to circulation areas (Where Possible)	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
External paved and landscaped areas	All of these require low maintenance

2.2.2 Material Specification

Measure Description	Benefit
<p>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.</p> <p>All common areas of 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> <p>Annex A- Climatic Agents affecting durability Annex B- Guidance on materials and durability Annex C- Design Life data sheets</p>	Ensures that the long-term durability and maintenance of materials is an integral part of the design and specification of the proposed development.
Use of brickwork, stone and pigmented render systems to envelope	Requires no ongoing maintenance
Factory finished and aluminium (or similar) windows and doors and powder coated galvanized steel balconies	Requires periodic maintenance

2.3 Landscaping

Element	Measure Description	Benefit
Paving	Use of robust, high quality paving, 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.

2.4 Waste Management

Measure	Description	Benefit
Construction and Operational Waste Management Plan	The application is accompanied by a Construction and Operational Waste Management Plan by the applicants.	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

2.5 Human Health and Wellbeing

Measure	Description	Benefit
Natural / day light	The design, separation distances and layout of all residential units 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 ▪ Overlooked communal open spaces 	Helps to reduce potential security/ management cost
Natural Amenity	Active open space and existing and reinforced trees and hedgerows. Walkable Connections to local amenities such as cafe, restaurant, schools, shops and parks.	Facilitates community interaction, socialising and play- resulting in improved well being

2.6 Management

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

Measure	Description	Benefit
Home User Guide	<p>Once a purchaser completes their sale, a homeowner box will be provided which will include:</p> <p>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 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>	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

2.7 Transport

Measure	Description	Benefit
Access to Public Transport (Bus & Train Services)	<p>There are bus stops located c. 300 meters south of the subject site which is serviced by the route 184. These routes provide local links to Greystones DART Station, approximately 3Km away from the site.</p> <p>The route 84 (to Bray) and 84x (to Dublin)</p>	Availability, proximity and ease of access to quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types and enhance the accessibility levels of the proposed residential development
Permeable Connections	The development facilitates interconnections by pedestrian and cycling routes both within the scheme and to adjoining existing lands residential developments.	Ensures the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
Bicycle Storage	Secure high-quality bicycle parking both for short and longer term parking requirements.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
ECAR facilities	Ducting provided from a local landlord distribution board to designated e-car charging car spaces.	To accommodate the growing demand for e-cars which assist in decarbonising society and reducing oil dependency.