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CLIMATE ACTION ENERGY STATEMENT

For

RESIDENTIAL NEW BUILD

AT

BALLYHOOLY ROAD LAHERDANE, WHITES CROSS, CORK.

Date: 15th May 2026 – Rev E

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1.0 INTRODUCTION

This preliminary energy and sustainability statement in support of a planning application for the proposed construction of 2 no. apartment blocks, duplex properties, housing and creche proposal at Laherdane, Ballyvolane / Whites Cross, Cork providing a total of 263 no. new homes.

The report outlines how the proposed development will meet or exceed the legislative and planning requirement for energy conservation and sustainability, in accordance with the following:

- Cork City Climate Action Plan 2024-2029 - Chapter 10.
- Part L - Conservation of Fuel and Energy in Dwellings (2022).
- NZEB - Nearly Zero Energy Building.

Key design features for energy and sustainability includes:

- Enhanced building fabric insulation and air tightness levels.
- Low energy lighting with occupancy and daylight control where appropriate.
- Renewable air to water heat pump system for heating and hot water.

2.0 DEVELOPMENT DESCRIPTION

The proposed Large Scale Residential Development (LRD) consists of the development of zoned residential lands in Laherdane / White's Cross and the construction of 2 no. apartment blocks of 4 storey's, a number of duplex properties, a creche and traditional residential homes providing a total of 263 no. homes, the provision of open space, car parking, bicycle store and bin stores a new vehicular and pedestrian access and all associated site development works. The development will be constructed in a series of phases.

The proposed apartment sizes range from 1 to 2 bed apartments and the proposed apartments will have private open space by way of balconies and communal open space will also be provided within the proposed scheme.

Houses proposed will be 2-3 Bed room homes and will be a mix of terraced and semi detached homes.

3.0 LEGISLATIVE AND PLANNING REQUIREMENTS

The proposed scheme is subject to the requirements of EU, national and local energy policy, and the proposed design is developed in accordance with these policies.

3.1 EU ENERGY POLICY: ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD)

The EPBD requires countries to gradually increase energy efficiency requirements for buildings, leading to requirements for near zero energy buildings in 2020. These requirements are introduced in national building codes in the EU countries including Ireland. The Directive was adopted in 2010 and was revised in 2018.

The main elements of the EPBD, Directive 2010/31/EU, are as follows:

- Energy efficiency requirements should be set to cost-optimal levels.
- Energy efficiency requirements shall be gradually increased to reach "near zero energy houses" for all new buildings in 2020.

- Countries shall set energy efficiency requirements for technical building systems, such as heating systems, ventilation, windows, and other building envelope parts, condensing boilers, high-efficiency heat pumps, low-energy windows, and energy efficient ventilation.
- With major renovations of buildings, the renovated parts of the building shall be energy efficient, also when renovating small buildings.
- Renewable energy shall be used when it is cost-effective.
- Buildings shall be certified regarding energy efficiency when sold, and for larger buildings at regular intervals.

3.2 NATIONAL IMPLEMENTATION OF THE REVISED EPBD (2018/844/EU)

The Directive sets requirements for Member States to improve the energy performance of buildings and make an important contribution to the reduction of greenhouse gas emissions. A revised Technical Guidance Document, L (Conservation of Fuel and Energy) Dwellings has been published to accompany the Regulations.

The Directive defines a Nearly Zero Energy Building (NZEB) as a building that has a very high energy performance. It states that the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.

Directive requires Member States to ensure that by 31 December 2020, all new buildings are nearly zero energy buildings. Under the previous 2011 regulations, a typical new dwelling is built to an A3 Building Energy Rating (BER). The NZEB requirements will equate to an A2 BER. This represents a 70% improvement in energy efficiency and a 70% reduction in CO₂ emissions compared to 2005. It also introduces 20% renewables as a percentage of the total building energy use.

3.3 TECHNICAL GUIDANCE DOCUMENT PART L 2022 (DWELLING)

The Building Regulations set out requirements for specific aspects of building design and construction. The requirements concerning conservation of fuel and energy are laid out in Technical Guidance Document (TGD) Part L. The aim of TGD Part L is to limit the use of fossil fuel energy and related CO₂ emissions arising from the operation of buildings, while ensuring that occupants can achieve adequate levels of lighting and thermal comfort. The key issues to be addressed to ensure compliance are as follows.

- a) Limitation of primary energy use and CO₂ emissions
- b) Building fabric standards
- c) Building services standards
- d) The use of renewable energy sources

3.3.1 LIMITATION OF PRIMARY ENERGY USE AND CO₂ EMISSIONS

Primary energy use and the associated carbon dioxide emissions are calculated using the Domestic Energy Assessment Procedure (DEAP) and these parameters must not exceed specified target values.

To achieve NZEB compliance for primary energy use, the energy performance coefficient (EPC) of a building must be no greater than the Maximum Permitted Energy Performance Coefficient (MPEPC), which is 0.30.

An acceptable carbon dioxide emissions rate for NZEB compliance is achieved if the calculated carbon performance coefficient (CPC) is no greater than the Maximum Permitted Carbon Performance Coefficient (MPCPC), which is 0.35.

3.3.2 BUILDING FABRIC

TGD Part L outlines the acceptable levels of insulation necessary to ensure that heat loss through the fabric of a building is minimised. The technical document discusses various aspects, including:

- Insulation levels to be achieved by the plane fabric elements.
- Thermal bridging.
- Limitations of air permeability.

The maximum permitted area-weighted U-values in Part L 2022 applicable to this project are as follows:

- a) Flat Roof 0.20
- b) Walls 0.18
- c) Ground Floors 0.18
- d) External Personnel Doors, Windows and Rooflights 1.4

The maximum area-weighted U-Values may be relaxed for individual elements where necessary for design or construction reasons, but the maximum elemental U-Values still applies. Additional insulation will be required in the same elements to ensure that the maximum area-weighted averages are met. Heat losses due to thermal bridging are considered in the DEAP calculation and thus in the calculation of the EPC, CPC and RER.

TGD Part L requires an air permeability level no greater than $5\text{m}^3/\text{h}/\text{m}^2$ at 50 Pascals.

4.0 ENERGY & CARBON REDUCTION MEASURES PROPOSED

Table 1: TDG Part L Specification

Requirements	Domestic	
	Proposed Design ¹	Part L 2022 Reference
Flat Roof	0.15	0.20
Above-Grade Wall	0.15	0.18
Ground-Contact Floor	0.15	0.18
Exposed Floor (where applicable)	0.15	0.21
Window/Curtainwall (glazing + frame)	1.4	1.6
External Door	1.4	1.6
Air-Leakage Rate ($\text{m}^3/\text{hr. m}^2$ @ 50 Pa)	3	5
Lamp Type	LED -	
Space Heating System	Air to Water Heat Pump	
Domestic Hot Water System		

¹ Subject to planning, construction detail and final building specification / building services agreement. Final design will be compliant with Part L need and specification and overall compliance with BER objective

EPC Compliant		0.235
CPC Compliant		0.153
RER Compliant		0.48
Part L Compliance	Yes	

4.1 AIR PERMEABILITY

One major contributing factor to unnecessary heat loss is infiltration. Infiltration is the air leakage of external air into a building due to the pressure difference associated with internal and external temperatures.

Under the Part L 2022 (NZEB), a performance level of 5 m³/hr/m² @ 50Pa represents a reasonable upper limit for air permeability. It is intended that the proposed development will target an air permeability rate of 3 m³/hr/m² @ 50 Pa.

4.2 THERMAL BRIDGING

Thermal bridges occur where the insulation layer is penetrated by a material with a relatively high thermal conductivity and at interfaces between building elements where there is a discontinuity in the insulation. Where an existing construction element to be retained shows a risk of thermal bridging, every effort will be made to reduce the risk by upgrading the façade to ensure continuity of insulation to limit local thermal bridging as much as practically possible.

4.3 VENTILATION SYSTEM

Ventilation will be performed using a low energy central mechanical extract ventilation (MEV) system within each unit. Background trickle vents shall be included in the window system generally, and the full system shall be designed, installed, tested, commissioned and validated in line with TGD Part F.

4.4 SPACE HEATING & DOMESTIC HOT WATER

The final space heating and domestic hot water system will be selected based on operating cost and efficiency mandated by TGD Part L. The system will likely be provided by an air to water heat pump system within each apartment. The space heating systems will be fully time and temperature zone controlled with load and weather compensation.

The landlord areas will also be heated by an air to water heat pump serving low temperature radiators.

4.5 LIGHTING

The electrical design will require that all lighting be LED and occupancy sensing where required.

5.0 RENEWABLE ENERGY (RER)

The following renewable technologies will be considered for this development:

- Apartment air to water heat pumps – individual heat pump per apartment unit.
- Landlord air to water heat pump – individual heat pump in each landlord core.

6.0 FINAL EVALUATION

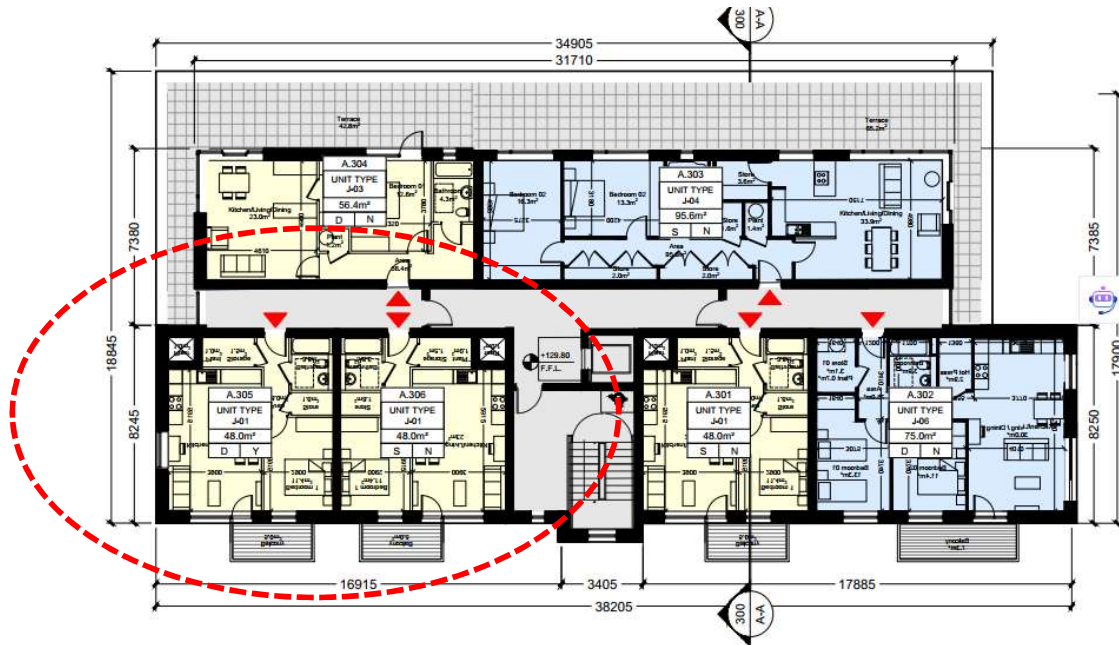
The detailed design will be evaluated using the Simplified Building Energy Model (sBEM), which will calculate the energy performance and carbon emissions for each unit, to ensure that NZEB compliance is achieved prior the commencement of construction.

As part of the preliminary evaluation. A sample set of apartments have been assessed to ensure compliance Refer to Appendix A for calculated data.

Based on the above energy strategies and approaches, the proposed construction of 2 no. apartment blocks and other housing will achieve TGD Part L NZEB 2022 compliance and a BER rating of A2 for each unit.

APPENDIX – SAMPLE PART L REPORTS

- Apartment A.305 – Ground Floor 1- Bedroom
- Apartment A.306 – Ground Floor 1- Bedroom



Apt 305 (formerly 307)

Apt 306 (formerly 308)