

**SUSTAINABILITY & ENERGY STATEMENT
FOR
LRD Amendment Application
Lands at Ballykeeran and Cornamaddy
Townlands,
Athlone**

Project Reference:	J727
Revision Ref:	PL1
Date Prepared:	01/07/2026
Date Issued:	05/08/2026
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1. INTRODUCTION

The development will comprise amendments to the permitted development as per LRD permission reference 318736-23 which comprises 175no. dwellings and 130 apartments, a creche and associated site works. The proposed development incorporates the following amendments:

1. Alteration to the permitted phasing with phase one incorporating a total of 130no. residential units of which there 102no. dwellings and 28no. duplex apartment units, in lieu of 129no. residential units as granted.
2. Phase one incorporating 102no. 2storey dwellings with the dwelling mix comprising 57no. 3bed units and 45no. 4bed units.
3. Phase one incorporating 2no. duplex apartment blocks which comprises 12no. 1bed triplex apartments, 8no. 2bed duplex apartments and 8no. 3bed duplex apartments. (overall units in phase one increasing from 129no. residential units as granted to 130no. residential units).
4. The provision of a Creche.
5. Alterations to the site layout in phase one comprising a reconfiguration of public open spaces, communal spaces and overall site layout along with public lighting, planting and boundary treatments to include boundary walls, railings & fencing.
6. Provision of a revised road layout to serve phase one.
7. All ancillary site development/construction works to facilitate foul, water and service networks for connection to the existing foul, water and ESB networks.
8. Provision of associated site infrastructure works to include for foul, water and storm water infrastructure.
9. Provision of 2no. ESB substations.

A Sustainability and Energy Statement has been prepared and accompanies this application to demonstrate compliance.

2. EXECUTIVE SUMMARY

The proposed development is a large scale housing Development project and, together with its density and layout, will promote the efficient use of land and energy. Its location in relation to public transport and cycling routes will also serve to reduce greenhouse gas emissions.

The residential units in the development shall be constructed to achieve a high level of thermal efficiency through highly insulated building fabric and optimised passive solar gains. All dwellings will achieve a very high energy performance rating, with residual energy demand covered by high efficiency heat pumps.

Our in-depth analysis and design modelling of the development have demonstrated that the most suitable system employs high efficiency heat pumps for each unit serving both heating and hot water.

3. BUILDING REGULATIONS

PART L & NEARLY ZERO-ENERGY BUILDING

The Part L building regulation sets the standard for the energy performance and carbon emissions of new and existing buildings. Part L - Dwelling 2023 set building fabric and energy performance to achieve Nearly Zero-Energy Building. Part L compliance will be demonstrated using SEAI DEAP software.

Part L - Buildings other than Dwellings 2022 outlines the requirements for the proposed commercial units. Part L compliance will be demonstrated using SEAI ISBEM software.

Nearly Zero-Energy Building (NZEB) means a building that has a very high energy performance as determined in accordance with Annex I of the EU Energy Performance of Buildings Directive Recast (EPBD Recast). 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. This is discussed in further detail later on in this report.

EPC & CPC DWELLINGS

In order to achieve the acceptable primary energy consumption rate for a nearly zero energy dwelling, the calculated energy performance coefficient (EPC) of the dwelling being assessed should be no greater than the Maximum Permitted Energy Performance Coefficient (MPEPC). The MPEPC for a nearly zero energy dwelling is 0.30.

To demonstrate that an acceptable CO₂ emission rate has been achieved for a nearly zero energy dwelling, the calculated carbon performance coefficient (CPC) of the dwelling being assessed should be no greater than the Maximum Permitted Carbon Performance Coefficient (MPCPC). The MPCPC for a nearly zero energy dwelling is 0.35.

BER RATING SCALE UPDATE

A Building Energy Rating (BER) is an indicator of the energy performance of a dwelling, covering energy use for space heating, water heating, ventilation, and lighting, calculated on the basis of the building's characteristics. BER certificates are administered by SEAI and every certificate is published on the national BER register.

From 24 May 2026, SEAI introduced a revised and simplified BER scale for both residential and non-domestic buildings, in line with the EU Energy Performance of Buildings Directive (EPBD). The previous 15-level scale (A1, A2, A3, B1, B2, B3, C1, C2, C3, D1, D2, E1, E2, F, G) has been replaced with a streamlined 8-category scale:

- **A0** – The highest category. Reserved for buildings that are highly energy-efficient and do not use fossil fuels for heating or hot water. This represents net zero-ready performance.
- **A** – Very high energy performance. Equivalent to the former A1–A3 sub-categories. All new dwellings are required to achieve a minimum of A rating under NZEB regulations (Part L 2023).
- **B to G** – Progressively lower energy performance, with G representing the least efficient buildings. These ratings apply primarily to the existing building stock.

All existing BER certificates issued under the previous scale remain valid for their 10-year term. Any new certificates issued from 24 May 2026 onward will use the updated scale.

The dwellings at Cornamaddy Phase 1 are designed and specified to achieve a minimum **A** rating under the new SEAI BER scale, with the potential to achieve the **A0 rating**, meeting the

criteria for the top category on the revised scale. Compliance will be confirmed through DEAP assessment for each dwelling type prior to construction.

RENEWABLE ENERGY RATIO

The Part L building regulation is defining the renewable energy contribution to the buildings energy usage called the Renewable Energy Ratio (RER). This is defined as the ratio of the primary energy, from renewable energy sources, to total primary energy as defined and calculated in the Dwelling Energy Assessment Procedure (DEAP). Minimum RER is 0.2 and this index has replaced Part L 2011 Renewable contribution. This figure applies on both dwellings and commercial units.

EV CHARGING PROVISION

The building regulations require that a functional EV charging point is provided for the development, with all remaining spaces having cable infrastructure installed to enable future EV charging. 2 visitor parking places will have active EV chargers installed. See EV drawing for reference CRM-JAK-SW-ZZ-DR-E-63001. We have prepared a drawing outlining the methodology for EV charging within the parking scheme.

4. SUSTAINABILITY & ENERGY STATEMENT

The location of the proposed development close to public transport routes will ensure good connectivity. The development is 1.6km from town centre, which can be reached by 6 minutes cycle.

To reduce energy demand, the residential units will be constructed to a high standard of insulation and air tightness. Additional energy demand reduction will be achieved by applying passive design techniques. The design of the fabric and proposed equipment will satisfy the requirements of the new Part L Building Regulations and NZEB.

The specification of individual building elements, building services and items linked to energy efficiency was reviewed in detail for the typical dwelling types occurring throughout the development to ensure compliance with the building regulations and requirements of the local council.

Key Sustainable Design Elements:

- High performance double glazed windows (U-value $\leq 1.4 \text{ W/m}^2\text{K}$).
- High levels of insulation
- A+ Low energy LED lighting throughout the development.
- High levels of air-tightness of the dwellings.
- Demand controlled ventilation for each dwelling.
- High efficiency heat pump for each unit serving heating & hot water requirements

WINDOWS AND BUILDING FABRIC

All windows shall be double glazed windows with a combined thermal transmittance not greater than $1.4 \text{ W/m}^2\text{K}$. All windows shall comply with BS EN ISO 10077-1: 2006 - 'Thermal performance of windows, doors and shutters. Calculation of thermal transmittance'

Building fabric will include insulation levels sufficient to meet the Part L 2023 U-values.

Table 1. Building Elements U-values Dwellings

Building Fabric Element	Target U values	Part L 2022 Buildings other than Dwellings Maximum Elemental U-value	Part L 2022 Dwellings Maximum Elemental U-value
Exposed & Ground floor	$0.12 \text{ W/m}^2\text{K}$	$0.21 \text{ W/m}^2\text{K}$	$0.18 \text{ W/m}^2\text{K}$
External Wall	$0.18 \text{ W/m}^2\text{K}$	$0.21 \text{ W/m}^2\text{K}$	$0.18 \text{ W/m}^2\text{K}$
Pitched Roof	$0.16 \text{ W/m}^2\text{K}$	$0.16 \text{ W/m}^2\text{K}$	$0.16 \text{ W/m}^2\text{K}$
Flat Roof	$0.2 \text{ W/m}^2\text{K}$	$0.2 \text{ W/m}^2\text{K}$	$0.2 \text{ W/m}^2\text{K}$
External Windows & Doors	$1.4 \text{ W/m}^2\text{K}$	$1.4 \text{ W/m}^2\text{K}$	$1.4 \text{ W/m}^2\text{K}$

THERMAL BRIDGING ACCEPTABLE CONSTRUCTION DETAILS DWELLINGS

Building Regulations TGD L Appendix D is defining thermal bridges that occur at junctions between building elements and are included in the calculation of transmission heat losses. The DEAP calculation includes thermal bridging, at junctions between elements and around openings.

For purpose of this statement and preliminary BER results a value of $\psi = 0.08 \text{ W/m}^2\text{K}$ was used. Value $0.08 \text{ W/m}^2\text{K}$ may be used for new dwellings whose details conform with

“Limiting Thermal Bridging and Air Infiltration – Acceptable Construction Details” as referenced in Building Regulations 2011 TGD L. This requires that the details described in the above document are adhered to and relevant drawings be signed off by the site engineer or architect.

AIR PERMEABILITY

Part L (2023) specifies 5 m³/m²/hr @ 50Pa as the upper limit for air permeability and requires that every house is pressure tested. To reduce heat loss by infiltration, the target air permeability will be 3.0 m³/m²/hr @ 50Pa.

Air permeability shall be measured by means of pressure testing of a building prior to completion in accordance with BS EN ISO 9972:2015 ‘Thermal performance of buildings. Determination of air permeability of buildings. Fan pressurization method ‘

HEATING & HOT WATER

Use of low carbon technology includes High Efficiency Air Source Heat Pumps. This unit and key sustainable measures will satisfy the Renewable Energy Ratio.

The heat pump type should be a single phase All-in-One Combination type Air Source Heat Pump. This is a monoblock type system with an external fan unit and pre-plumbed internal unit with buffer tanks and integrated stainless steel domestic hot water cylinder. The heat pump should be fully compliant with Eco-Design Labelling Directive, both EN14825 and EN16147.

High level of controls and multiple zones will also aid to more efficient usage of the system and further reduce the energy demand. For the new DEAP assessment detailed design for hot water fittings will be carried out.

Booster pump and all heating pump shall have energy rating class A.

DEMAND CONTROLLED VENTILATION

This ventilation system is proposed for the standard houses. Part F of building regulations requires adequate and effective means of ventilation shall be provided for people in buildings. This shall be achieved by:

- (a) limiting the moisture content of the air within the building so that it does not contribute to condensation and mould growth, and
- (b) limiting the concentration of harmful pollutants in the air within the building.

It is proposed that Demand controlled ventilation (DCV) system will serve each unit to provide high indoor air quality for the occupants. Max SPF of the fan should not be higher than 0.25 W/l/s and has to be listed on the SAP Appendix Q database.

The design of dwellings shall provide required area of background ventilators via wall vents/trickle vents & undercut doors to wet rooms to provide fresh air in place of extracted air from the wet rooms. Systems should be installed, balanced and commissioned by competent installers eg Quality and Qualifications Ireland accredited or Education Training Board or equivalent. Systems when commissioned and balanced should then be validated to ensure that they achieve the design flow rates by an independent competent person eg NSAI certified or equivalent.

ENERGY SAVING LIGHTING

The new DEAP requires a detailed design of lighting for each dwelling. For this project the calculation of lighting use shall be based on the installed fixed lighting, and on the contribution of daylight. The calculation will include low-energy lighting provided by fixed outlets based on lighting design details (e.g. lamp power and efficacy), lamp type, and number of lamps.

5. CONCLUSION

In summary the proposed development is designed incorporating sustainable features and the resulting dwellings will operate in a very energy efficient manner.

All dwellings will achieve full compliance with the building regulations, exceeding the minimum requirements and achieve BER rating of A/A0.