



Climate Action Energy Statement Ballymastone Phase 3, Donabate, Co. Dublin

13-10-2025

Glenveagh Homes Ltd



Ballymastone Phase 3, Donabate

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Climate Action Energy Statement

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1. Introduction

This document provides an overview of the development's energy strategy and relates to the sustainability and energy targets proposed for the project. The development will approach the energy design in an efficient manner that reduces energy demand initially through passive strategies such as an efficient envelope which in turn reduces the energy demands relating to items such as the heating system. This initial approach in reducing the energy demand significantly aids the project in obtaining the required energy goals. Performance criteria relating to the development's envelope are set out in the following document.

The energy systems design will also focus on specifying energy efficient equipment to ensure the day to day running of the energy systems is optimized to further enhance energy savings and the related energy cost. Specifications relating to efficient heating, lighting and auxiliary equipment are set out in the document.

The report sets out to demonstrate a number of methodologies in Energy Efficiency, Conservation and Renewable Technologies that will be employed in part or in combination with each other for this development. These techniques will be employed to achieve compliance with the building regulations Part L and NZEB standards currently in public consultation.

This report also will also address the following Policies of the Fingal County Development Plan 2023 - 2029 as follows:

- CAP 11 - Climate Adaptation Actions in the Built Environment (Addressed in section 9)
- CAP 12 - Climate Action Energy Statements (Addressed in all sections of the report)
- CAP 13 - Energy from Renewable Sources (Addressed in section 7)

2. Proposed Development

The proposed development will consist of the construction of a residential development, which represents Phase 3 of the wider development of the Ballymastone Lands, ranging in height from 2 to 6-storeys, to accommodate 398 no. residential dwellings (including a mix of apartments, duplexes and houses), private amenity space, a crèche (c. 646sq.m), and a community space (c. 100sq.m). The site will accommodate 316 no. car parking spaces in total (comprised of 288 no. residential spaces, 10 no. spaces for the proposed crèche/community space, 6 no. EV charging spaces including accessible spaces, and 12 no. spaces ducted for future provision), 1,619 total no. bicycle parking spaces, new pedestrian/cycle links, road improvements, storage, services (including water, wastewater, electricity and telecommunications) and plant areas. Landscaping will include communal amenity areas, SuDS features, and significant public open space (c. 15.3% of the net site) including outdoor exercise and play equipment.

3. Climate Impact Assessment

In accordance with Fingal Development Plan 2023 – 2029, this section outlines how the proposed development contributes to the delivery of a climate-resilient, biodiversity-rich, and climate-neutral economy by 2050. A Climate Impact Assessment is provided to demonstrate how the location, design, and layout of the scheme have been optimised to reduce climate impact and support national sustainability goals.

Policy CAP12 - Climate Action Energy Statements

All new developments involving 15 residential units and/or more than 1,000 sq. m. of commercial floor space, or as otherwise required by the Planning Authority, will be required to submit a Climate Action Energy Statement as part of the overall Design Statement to demonstrate how low carbon energy and heating solutions, have been considered as part of the overall design and planning of the proposed development.

3.1 Climate Resilience & Site Layout

The development is located in a high-amenity suburban setting located near Donabate Village and within short walking distance to several bus stops and train station in the area, ensuring strong integration with sustainable transport infrastructure. This transit-oriented approach reduces car dependency and contributes to lower long-term transport emissions.

The site layout has been designed to optimise solar gain, passive ventilation potential, and overall building orientation, which supports energy demand reduction and thermal comfort. Green infrastructure and open space provision have been integrated to enhance microclimatic conditions, reduce the urban heat island effect, and contribute to urban climate resilience.

Surface water will be managed through an ecosystem services approach utilizing Sustainable Urban Drainage Systems (SuDS). Measures such as permeable paving, green roofs, rain gardens, bioretention swales, tree trenches, and water butts will be employed to reduce runoff at source and enhance water quality, supporting both site-level and regional climate resilience. Surface water flooding has been considered and mitigated, performance specifications will be included in the Engineers reports and Architectural drawings.

3.2 Climate Neutrality & Energy Strategy

The development has been designed to meet and exceed the requirements of Part L 2022 of the Building Regulations, and to comply with Near Zero Energy Building (NZEB) standards. Key measures include:

- High-performance thermal envelope.
- Air source heat pump systems with Seasonal Coefficient of Performance (SCOP) values exceeding 400%, providing efficient heating, and ventilation.
- 100% low-energy lighting, with daylight and occupancy controls.
- Air permeability values of 3 m³/hr/m².
- Energy Performance Coefficients (EPCs) and Carbon Performance Coefficients (CPCs) below regulatory thresholds.
- Renewable energy contributions exceeding 0.2% residential elements.
- Overheating measures such as building orientation, selecting windows with low g-values, installing shade devices such as blinds and curtains and installing energy efficient ventilation system to prevent a buildup of indoor heat will be incorporated into the design.

The predicted Building Energy Rating (BER) across all residential units falls within the A2 range, contributing to significantly lower operational carbon emissions and long-term energy cost reductions for occupants.

3.3 Biodiversity Integration

The proposed development incorporates a range of measures to support and enhance on-site biodiversity. The site layout and landscaping strategy have been designed to integrate green infrastructure.

Native and pollinator-friendly planting will be used throughout soft landscape areas to support local ecosystems and provide year-round habitat and food sources for birds, insects, and other pollinators. In addition, green roofs and rain gardens — integral parts of the SuDS strategy—will also serve as biodiversity features, offering habitat niches in an urban setting.

Where possible, tree trenches and bioretention areas will incorporate native species and ground flora, contributing to ecological connectivity and improving soil health. The inclusion of public open space further supports ecological enhancement by creating microhabitats and encouraging passive interaction with nature for future residents.

4. Building Energy Rating

As of 2006 all domestic buildings that were newly built and existing buildings that are for sale or rent require a BER (Building Energy Rating) certificate. The actual building energy rating is based on the primary energy used for one year and is classified on a scale of A1 to G with A1 being the most energy efficient. It also gives the anticipated carbon emissions for a year's occupation based on the type of fuel that the systems use. In order to identify Primary energy consumption of the building, the BER assesses energy consumed under the following headings:

- Building type (house, apartment etc.)
- Building orientation
- Thermal envelope (insulation levels of the façade, roofs, ground floor etc.)
- Air Permeability (how much air infiltrates into the building through the façade)
- Heating systems (what type of heat source is used and how efficient)
- Ventilation (what form of ventilation is used. Natural vent, mixed mode mechanical ventilation)
- Fan and pump efficiency (how efficient are the pumps and fans)
- Domestic hot water generation (is a high efficiency boiler used)
- Lighting systems (how efficient is the lighting in the building)

Through the specification of an energy efficient façade and HVAC systems, the energy consumption of the building will be reduced compared to a set baseline. This ensures the environmental and economic impact of the operation of the building is reduced. The key philosophy of this plan is to reduce energy consumption by firstly limiting the energy needed by improving the buildings insulation. The second step is to utilise energy in the most efficient way through the selection and installation of energy efficient plant and equipment. The final step is to introduce energy from renewable sources to reduce the burden on Fossil Fuels.

5. Utilities

Initial discussions have taken place with the ESB regarding existing infrastructure in the locality and existing overhead cables will be undergrounded. The preliminary loading for the site is estimated to be in the region of 2500 kVA. (This is subject to change dependent on final renewable considerations etc.) Preliminary design estimates would indicate 4 no. additional unit sub stations will be required.

6. Structure and Building Element

While the construction works will incur an initial investment, the lifetime running cost of the buildings will be considered to reduce water, fuel and electrical energy consumption. To that end methods will be explored to further improve the building's energy rating and reduce the carbon emissions. This includes decreasing the thermal conductivity (heat losses) of the building fabric, take advantage of passive solar gain to reduce the heating demand in the space and increase day lighting to reduce artificial lighting. Natural ventilation may be employed or if deemed as a requirement mechanical ventilation and heat recovery techniques will be employed to recover energy in the exhausted air. The following are some outline u-value specifications which will achieve the required energy specification:

6.1. Fabric 'U' Values Dwelling Apartments

- Walls - 0.18 W/m².K
- Window - 1.2 W/m².K (solar fraction (g factor) of 0.7, frame factor of 0.7 or better)
- Roof - 0.16 W/m².K (Flat roof)
- Doors - 1.4 W/m².K (This is to include frame)
- Ground Floor slab - 0.15 W/m².K
- Thermal Bridging - Factor of 0.15

6.2. Fabric 'U' Values Dwelling Duplex units

- Walls - 0.18 W/m².K
- Window - 1.2 W/m².K (solar fraction (g factor) of 0.7, frame factor of 0.7 or better)
- Roof - 0.15 W/m².K
- Doors - 1.4 W/m².K (This is to include frame)
- Ground Floor slab - 0.15 W/m².K
- Thermal Bridging - Factor of 0.15

6.3. Fabric 'U' Values Dwelling Houses

- Walls - 0.14 W/m².K (Timber frame)
- Window - 1.2 W/m².K (solar fraction (g factor) of 0.7, frame factor of 0.7 or better)
- Roof - 0.15 W/m².K
- Doors - 1.4 W/m².K (This is to include frame)
- Ground Floor slab - 0.12 W/m².K
- Thermal Bridging - Factor of 0.15

6.4. Air Permeability (Air Tightness against infiltration)

One of the most significant heat loss factors in any buildings is through controlled and uncontrolled ventilation through the introduction of ambient/outside air into the heated space. The apartments are to be constructed with a high degree of air tightness to a possible value of 3m³/m²/hr or 0.15 Air Changes with a permeability test conducted post construction to demonstrate this level in accordance with the TGD's.

Dwelling houses are expected to achieve an air permeability level of 0.25 m³/hr/m² or less.

6.5. Secondary Heat Source

The dwellings do not contain a secondary heat source therefore this is not applicable.

7. Building Services (M&E) & Renewable Energy Overview

The following section addresses the policy CAP 13 of the Fingal Development Plan 2023-2029. Section 7.1 – 7.5 address CAP 13.

Policy CAP13 – Energy from Renewable Sources

Actively support the production of energy from renewable sources and associated electricity grid infrastructure, such as from solar energy, hydro energy, wave/tidal energy, geothermal, wind energy, combined heat and power (CHP), heat energy distribution such as district heating/cooling systems, and any other renewable energy sources, subject to normal planning and environmental considerations.

Objective DMSO261- Climate Action Energy Statements

All new developments involving 15 residential units and/or more than 1,000 sq. m. of commercial floor space, or as otherwise required by the Planning Authority, will be required to submit a Climate Action Energy Statement as part of the overall Design Statement to demonstrate how low carbon energy and heating solutions, have been considered as part of the overall design and planning of the proposed development.

All new dwellings must meet overall energy performance levels (as defined by the Energy Performance Coefficient - EPC) and must have a portion of their annual energy demand provided by renewable energy sources.

The renewable energy source can be thermal energy such as solar thermal collection, biomass boilers or heat pumps or it can be electrical energy as generated by photovoltaic solar panels or wind turbines. The minimum renewable energy contributions defined in Part L 2022 Dwellings Part (b) is 20% of the total energy consumption for the dwelling. Solutions involving gas as the primary fuel source will typically include a solar technology such as PV panels to meet the renewable energy requirements while solutions relying on electricity will include heat pump technology.

The options presented in Sections 7.1 & 7.2 below set out two possible means of complying with Part L 2022 Dwellings for the apartments. Each is based on the building fabric performance levels identified in Section 6. Section 7.3 sets out the typical means for complying with Part L 2022 Buildings Other Than Dwellings (BOTD) for the landlord areas. Section 7.4 and 7.5 sets out the possible means of complying with Part L 2022 Dwellings for the houses. The final selection and combination of technologies will most likely be selected from these options based on a more in-depth technical and financial appraisal of the technologies which will be carried out during detailed design.

7.1. Apartments Option 1 – Exhaust Air Heat Pumps

The following section addresses Cap 13 and complies with objective DMSO261 by evaluating the possible low carbon and energy heating solutions for the apartments.

Exhaust Air heat pumps (EAHPs) operate in a very similar manner to the more conventional air source heat pumps and utilise grid supplied electricity to extract thermal energy from a heat source, in this case, the internal air within the apartment. The internal air is extracted from kitchens and wet rooms and is drawn into the heat pump via ductwork in the ceiling void. The heat pump extracts heat from this air before expelling it from the apartment.

The electricity consumed is not renewable energy but the efficiency at which a heat pump operates allows a significant portion of the heat delivered to the dwelling be considered as renewable. There are a number of manufacturers offering products of this type and the certified seasonal efficiencies of some models can exceed 450% in heating mode and 170% to 190% in hot water mode. These efficiencies can deliver Part L 2022 compliance in most circumstances but in some instances may need supplementary PV panels in order to meet the required energy targets.

There is no requirement for a separate Mechanical Extract Ventilation (MEV) system when an exhaust air heat pump is used as the heat pump draws the air from all wet rooms in the same manner as an MEV system would. The fan will run continuously to ensure that the minimum ventilation rates are maintained and the supply air to the dwelling is provided through trickle vents in each habitable room.

7.2. Apartments Option 2 – Electric heaters, Hot water heat pumps, Heat recovery ventilation & PV panels

The following section addresses Cap 13 and complies with objective DMSO261 by evaluating the possible low carbon and energy heating solutions for the apartments.

This approach includes the provision of electric storage and/or convector heaters in the living & sleeping areas to meet all of the space heating requirements with electric towel rads provided in main bathrooms and en-suites.

The hot water demand is met by a hot water heat pump which utilise grid supplied electricity to extract thermal energy from a heat source in a similar manner to an Exhaust Air Heat Pump. The heat pump is ducted directly to the external façade through insulated supply & exhaust ductwork and uses external air for the hot water needs. It can use up to 3 times less electricity than direct acting water heaters and produces renewable energy to aid Part L compliance.

Heat Recovery Ventilation would then be provided in order meet the ventilation needs of the apartments. Air is extracted from wet rooms and supplied to living spaces via a central unit which contains supply and extract fans and a heat exchanger. This system recovers the heat from the warm air being extracted from the dwelling and uses the heat recovered to raise the temperature of the incoming air stream leading to improved overall efficiency.

PV panels are also then needed to improve the overall renewable energy contribution and improve the overall energy performance of the dwellings. Generally, 1 or 2 PV panels will be required for each apartment.

7.3 Apartment corridors/Landlord Areas

The following section addresses CAP 13 and complies with objective DMSO261 by evaluating the possible low carbon and energy heating solutions for the landlord areas.

In accordance with the requirements of Part L 2022 Dwellings, the common areas within the apartment blocks are required to meet the requirements of Part L 2022 for “Buildings Other Than Dwellings”. Under Part L 2022 BOTD, a portion (10% to 20%) of the energy demand of the common areas must be met by a renewable energy source. The energy demand within these spaces will be exclusively provided by electrical energy (lighting, space heating & lifts etc) so a photovoltaic array would be best suited to meet this renewable energy demand. Generally, 10 to 15 PV panels will be required for an unheated landlord core.

7.4 Houses Option 1 – Air source heat pumps

The following section addresses CAP 13 and complies with objective DMSO261 by evaluating the possible low carbon and energy heating solutions for the houses.

Air source heat pumps (ASHPs) utilise grid supplied electricity to extract thermal energy from a heat source, in this case, the external ambient air. While the electricity consumed is obviously not renewable energy, the efficiency at which a heat pump operates allows a significant portion of the heat delivered to be considered as renewable energy. 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.

Air source heat pumps require an indoor and an outdoor component. The outdoor unit is the evaporator which extracts the thermal energy from the ambient air while the indoor unit typically includes the heating buffer tanks and the hot water cylinder for the dwelling. The outdoor unit is typically located in the back garden of a dwelling.

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% meaning that the use of this technology can easily deliver compliance with Part L 2022 Dwellings.

7.5 Houses Option 2 – Electric heaters, hot water only heat pump & PV

The following section addresses CAP 13 and complies with objective DMSO261 by evaluating the possible low carbon and energy heating solutions for the houses.

This approach includes the provision of electric storage and/or convector heaters in the living & sleeping areas to meet all of the space heating requirements with electric towel rads provided in main bathrooms and en-suites.

The hot water demand is met by an hot water only heat pump which utilise grid supplied electricity to extract thermal energy from a heat source, in this case, the internal air within the apartment. The internal air is extracted from kitchens and wet rooms and is drawn into the heat pump via ductwork in the ceiling void. The heat pump extracts heat from this air before expelling it from the house.

There is no requirement for a separate Mechanical Extract Ventilation (MEV) system when an exhaust air heat pump is used as the heat pump draws the air from all wet rooms in the same manner as an MEV system would. The fan will run continuously to ensure that the minimum ventilation rates are maintained and the supply air to the dwelling is provided through trickle vents in each habitable room.

PV panels are also then needed to improve the overall renewable energy contribution and improve the overall energy performance of the dwellings. Generally, 5 to 7 PV panels will be required for each House.

7.6 Lighting

All lighting to be energy efficient with provision made for low energy lamps such as Compact Fluorescent Lamps (CFLs) which use 80% less electricity and last up to 10 times longer than ordinary light bulbs in the dwellings.

8. Electric Vehicle Charging

All new commercial buildings (residential and non-residential) must make a provision for charging electric vehicles. This applies where more than 10 parking spaces are provided. For residential buildings, the regulations state that future provision, in the form of cable ducting and capacity on distribution boards and meters etc. be made for at all parking spaces associated with multiunit developments with more than 10 parking spaces. The proposed multi-unit residential development includes a total of 316 parking spaces so future provision for all spaces will be required and 20% of spaces will incorporate EV charging points. Since the development will also include Part M compliant accessible spaces, the location of the charging point will be such that it can serve one accessible parking space and one standard parking space.

Therefore, the proposed Phase 3 Ballymastone development provides a total of 316 no. car parking spaces, comprising 288 no. residential spaces, 10 no. creche/community hall spaces, 3 no. accessible spaces, 6 no. EV spaces (including one accessible space) and 12 no. spaces (10 no. standard and 2 no. accessible spaces) ducted for future EV provision. A total of 73 no. off curtilage spaces are proposed. As per DBFL's Traffic and Transportation Assessment, the development plan requirements, 20% of these spaces are required to be equipped with EV chargers equating to 15 no. spaces. With 6 no. 22kW chargers implemented serving ~66 EV users, this well exceeds the 20% coverage required under the development plan.

9. Climate Change Adaptation Actions in the Built Environment

The following measures have been implemented in the design to address policy CAP 11 of the Fingal Development Plan 2023-2029. This is a summary of the measures with separate reports addressing each measure in more detail.

Policy CAP 11 - Climate Adaptation Actions in the Built Environment

Development proposals should demonstrate sustainable design principles for new buildings/ services/site. The Council will promote and support development which is resilient to climate change. This would include:

- a) Measures such as green roofs and green walls to reduce internal overheating and the urban heat island effect;
- b) Ensuring the efficient use of natural resources (including water) and making the most of natural systems both within and around buildings;
- c) Minimising pollution by reducing surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems (SuDS);
- d) Reducing flood risk, damage to property from extreme events– residential, public and commercial;
- e) Reducing risks from temperature extremes and extreme weather events to critical infrastructure such as roads, communication networks, the water/drainage network, and energy supply;
- f) Promoting and protecting biodiversity and green infrastructure.

9.1 On-site Construction

The construction and waste management proposals for the scheme are comprehensively addressed in the Resource Waste Plan submitted with this planning application, the measures below are provided as a summary of the recommendations contained within the plan.

The demolition arising on site will be undertaken in a considered manner. Only after in-situ reuse and recycling options have been fully considered will the demolition waste will be disposed of off-site by licensed waste contractors.

During the construction phase of the project, proposals for the minimisation / reuse and recycling of construction arisings will be implemented as set out in the Resource Waste Plan included in the EIAR submitted as part of this section:

- In the case of topsoil, careful planning and on-site storage can ensure that this resource is reused on-site as much as possible.
- Earthworks for road, drainage and structure foundation forms a major part of the quantity of waste that will be generated by the construction phase of this project. To optimise the impact of the generation of surplus material due to excavation every attempt to optimise cut and fill volumes will be undertaken.
- The treatment of excavated materials (cement / lime stabilisation) where necessary to allow their reuse as fill materials, further reducing the need to remove these materials to landfill and import stone and concrete materials.
- Appropriate material ordering to minimise waste.
- It is envisaged that most of the recyclable waste on site will come from house construction in a form of wood and metal. Any excess wood or metal generated on site will be kept segregated and removed off site to a licenced recycling facility.

9.2 Long-term management

Encouraging the use of public transport by using the principles of environmental assessment methodologies to reduce the reliance on cars and encourage a shift to less carbon intensive modes of transport.

All in-curtilage parking spaces will be capable of being fitted with EV charging points. The off-curtilage spaces will have 6 no. live 22kW EV chargers serving approximately 66 EV users and an additional 12 no. spaces (10 no. standard and 2 no. accessible) will be ducted to allow for the future provision of additional EV chargers as demand increases across the development.

9.3 Environmental Assessment Methodologies

Addressing operational energy use in a manner set out in the preceding sections of this report is a vital component of any construction project however consideration must also be given to other aspects of sustainable design such as water use, material selection and minimising pollutants.

Various assessment methodologies have been developed by organisations such as the Building Research Establishment (BREEAM Methodology) and the US Green Building Council (LEED Certification) to measure the performance of various environmental and sustainable aspects of the design, construction and operation of proposed developments.

The Irish Green Building Council has also developed a similar assessment methodology in recent years which is specifically aimed at residential developments in Ireland. The Housing Performance Index (HPI) assessment provides a method for measuring the performance of residential developments against a range of verifiable indicators that are divided into five technical categories.

- Environment
- Economic
- Health and Wellbeing
- Quality Assurance
- Sustainable Location

It allows several levels of achievement based on good, better and best practice. The award of the certificate is based on the overall attainment across all categories.

A decision will be made during detailed design as to whether formal HPI certification will be sought on the project, however, the principles set out within the HPI system will be used as guidance throughout the design process regardless of whether certification is targeted.

9.4 Embodied Carbon

Recent advances in the energy efficiency of buildings have reduced operational energy use to such an extent that the life cycle carbon emissions of a building are now influenced more by the carbon that is embodied in the materials and processes used during the construction than it is by the carbon emitted as a result of energy used in the building's operation. As such, the embodied carbon of a building must now be considered if a construction project is to be considered low carbon or "net-zero" carbon.

Addressing the embodied carbon requires that all the key building element categories (substructure, structure, façade, MEP services) are assessed to identify the optimal solutions in terms of embodied carbon and assess them through a multidisciplinary and holistic approach, considering implications in different areas such as efficiency, cost, programme etc.

The process of design and of material and product selection must include an analysis of the final embodied carbon and comparison with benchmarks to identify the areas that need to be optimised. This process allows the building designers and procurement managers to focus on how to eliminate the impact of the key identified hotspots, through comparative assessments and specification of products that demonstrate low embodied carbon and facilitate the production of the final embodied carbon assessment at the end of the detailed design to identify the expected impact of the Development.

9.5 Sustainable Urban Drainage

An ecosystems services approach utilizing Sustainable Urban Drainage Systems (SuDS) to reduce runoff at source and apply site and regional SuDS measures to enhance water quality by the use of inter alia green roofs, rain gardens, bioretention measures/swales, tree trenches and water butts and other such measures.

Table 1: Summary of Part L compliance for Apartment units

	Typical Ground floor Apartments	Typical Mid & Top floors Apartments
<u>U-values</u>		
	W/m ² .K]	[W/m ² .K]
Floor [Max, Part L 2022 = 0.18]	0.15	N/A
	<i>Floor to have minimum 100mm PIR with thermal conductivity of 0.022 W/m.K</i>	
Roof [Max, Part L 2022] = 0.2 [Flat Roof]	N/A	0.16
	<i>Flat roof insulation to be minimum 130mm Xtrodeck with thermal conductivity 0.021 W/m.K</i>	
Wall [Max, Part L 2022 = 0.18]	0.18	0.18
	Wall insulation to comprise 175mm Stonewell insulation with thermal conductivity 0.035 W/m.K	
Door [Max, Part L 2022 = 1.4]	1.4	1.4
Window [Max Av, Part L 2022 = 1.4], solar factor 0.73	1.2	1.2
	<i>Windows to south façade to have minimum solar factor of 0.5</i>	
<u>Mechanical plant</u>		
Heating source	Exhaust air source heat pump.	Exhaust air source heat pump.
Heating controls	Time and temperature control of heating/hot water with individual heating zones	Time and temperature control of heating/hot water with individual heating zones
Heat emitters	Oversized radiators with mean water temperature 40 Deg C	Oversized radiators with mean water temperature 40 Deg C
Hot water cylinder	180 litre cylinder	180 litre cylinder

Ventilation	Centralised ducted extract system serving heat pump. Specific fan power 0.33 W/L/s minimum	Centralised ducted extract system serving heat pump. Specific fan power 0.33 W/L/s minimum
<u>Additional requirements</u>		
Lighting	100% energy efficient lighting	100% energy efficient lighting
Air permeability	Air permeability @ 3 m ³ /hr/m ²	Air permeability @ 3 m ³ /hr/m ²
Thermal bridging	Factor of 0.15 - Default	Factor of 0.15 - Default
Secondary heating	N/A	N/A
BER results	25 -49 (A2)	25 -49 (A2)
EPC [MPEPC = 0.3]	<0.3	<0.3
CPC [MPCPC = 0.35]	<0.35	<0.35
Renewable contribution [RER]	>0.2	>0.2

Table 2: Summary of Part L compliance for typical dwelling houses

<u>U-values</u>	
	[W/m ² .K]
Floor [Max, Part L 2022 = 0.18]	0.12
	<i>Floor to have minimum 150mm PIR with thermal conductivity of 0.022 W/m.K</i>
Roof [Max, Part L 2022 = 0.16 Insulation on Ceiling/rafter]	0.15
	<i>Pitched roof with ceiling insulation to be minimum 300mm earth wool with thermal conductivity 0.044 W/m.K</i>
Wall [Max, Part L 2022 = 0.18]	0.14
	Timber frame
Door [Max, Part L 2022 = 1.4]	1.4
Window [Max Av, Part L 2022 = 1.4], solar factor 0.73	1.2
	<i>Windows to have minimum solar factor 0.71</i>
<u>Mechanical plant</u>	
Heating source	Air to water Heat Pump
Heating controls	Time and temperature control of heating / hot water with individual heating zones
Heat emitters	Oversized radiators with mean water temperature 42.5 Deg C
Solar requirements	None
Hot water cylinder	200 litre cylinder
Ventilation	Centralised ducted extract system serving heat pump. Specific fan power 0.33 W/L/s minimum
<u>Additional requirements</u>	
Lighting	100% energy efficient lighting
Air permeability	Air permeability @ 5 m ³ /hr/m ²
Thermal bridging	Factor of 0.15 - Default
Secondary heating	N/A
BER results	25 -49 (A2)
EPC [MPEPC = 0.3]	<0.3
CPC [MPCPC = 0.35]	<0.35
Renewable contribution [RER]	>0.2

Table 3: Summary of Part L compliance for typical dwelling Duplex units

<u>U-values</u>	
	[W/m ² .K]
Floor [Max, Part L 2022 = 0.18]	0.15
	<i>Floor to have minimum 110mm PIR with thermal conductivity of 0.022 W/m.K</i>
Roof [Max, Part L 2022 = 0.16 Insulation on Ceiling/rafter]	0.15
	<i>Pitched roof with ceiling insulation to be minimum 300mm earth wool with thermal conductivity 0.044 W/m.K</i>
Wall [Max, Part L 2022 = 0.18]	0.18
	Wall insulation to comprise 110mm PIR board with thermal conductivity 0.022 W/m.K
Door [Max, Part L 2022 = 1.4]	1.4
Window [Max Av, Part L 2022 = 1.4], solar factor 0.73	1.2
	<i>Windows to have minimum solar factor 0.71</i>
<u>Mechanical plant</u>	
Heating source	Air to water Heat Pump
Heating controls	Time and temperature control of heating / hot water with individual heating zones
Heat emitters	Oversized radiators with mean water temperature 42.5 Deg C
Solar requirements	None
Hot water cylinder	200 litre cylinder
Ventilation	Centralised ducted extract system serving heat pump. Specific fan power 0.33 W/L/s minimum
<u>Additional requirements</u>	
Lighting	100% energy efficient lighting
Air permeability	Air permeability @ 5 m ³ /hr/m ²
Thermal bridging	Factor of 0.15 - Default
Secondary heating	N/A
BER results	25 -49 (A2)
EPC [MPEPC = 0.3]	<0.3
CPC [MPCPC = 0.35]	<0.35
Renewable contribution [RER]	>0.2

Table 4: Summary of Part L compliance for typical Commercial unit

<u>U-values</u>	
	[W/m ² .K]
Floor [Max, Part L 2022 = 0.21]	0.18
	<i>Floor to have minimum 100mm PIR with thermal conductivity of 0.022 W/m.K</i>
Roof [Max, Part L 2022 = 0.16 Insulation on Ceiling/rafter]	0.15
	<i>Pitched roof with ceiling insulation to be minimum 300mm earth wool with thermal conductivity 0.044 W/m.K</i>
Wall [Max, Part L 2022 = 0.21]	0.18
	<i>Wall insulation to comprise 100mm PIR board with thermal conductivity 0.023 W/m.K</i>
Door [Max, Part L 2022 = 1.6]	1.6
Window [Max Av, Part L 2022 = 1.6], solar factor 0.73	1.4
	<i>Windows to have minimum solar factor 0.65</i>
<u>Mechanical plant</u>	
Heating/cooling source	Air conditioning split heat pump unit SSEER <2
Heating controls	Time and temperature control of heating/hot water with individual heating zones
Heat emitters	Heat/cooling via ventilation grilles
Solar requirements	None
Hot water	Via heat pump
Ventilation	Ventilation provided via ducted air supply from external. Extract from wet areas in accordance with CIBSE requirements. Specific fan power 1.2 W/L/s minimum
<u>Additional requirements</u>	
Lighting	Lighting to have minimum 80 lumens/watt with lighting controls to incorporate daylight/occupancy sensing
Air permeability	Air permeability @ 3 m ³ /hr/m ²
Thermal bridging	Factor of 0.15 - Default
BER results	(A3)
EPC [MPEPC = 1]	<1
CPC [MPCPC = 1.15]	<1.15
Renewable contribution	20% Minimum