

**CLIMATE ACTION ENERGY STATEMENT
FOR THE
RESIDENTIAL DEVELOPMENT
AT
GREENFIELDS,
SWORDS BUSINESS PARK,
SWORDS, CO. DUBLIN.**

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1.0 INTRODUCTION

Planning Permission is sought for a residential development at Greenland's, Swords Business Park, Swords, Co. Dublin. This Climate Action Energy statement has been prepared to accompany the planning application.

Jackie Green Construction Limited intend to apply for permission for a residential development on lands at Greenland's, Swords Business Park, Swords, Co. Dublin.

The proposed development consists of a mixed-use development that constitutes a 'Large-Scale Residential Development' (LRD) at this site of 2.22 Ha principally located at Swords Business Park, Swords, Co. Dublin. The site is principally bound: to the north by an access road and ancillary car park to serve Swords Business Park; to the east by the M1 Motorway; to the south by Mantua Road; and to the west by an access road to serve Swords Business Park. The application site also extends to include parts of: the access road to the north and west for footpath, landscape and foul drainage connection works; Mantua Road to the west for foul drainage connection works; and the green strip to the south at Mantua Road for a pedestrian and cyclist connection.

Permission is sought for a mixed-use development with a gross floor area of 30,358 sq m and principally comprised in 5 No. blocks (A–E), with heights ranging from 1 No. to 9 No. storeys. The proposed block heights are as follows: Block A is 6 No. to 7 No. storeys; Block B is 6 No. to 7 No. storeys; Block C is 6 No. to 7 No. storeys; Block D is 6 No. to 9 No. storeys; and Block E is 1 No. to 9 No. storeys. The development consists of: 289 No. residential apartments (60 No. 1-bed, 200 No. 2-bed and 29 No. 3-bed); retail/commercial unit (701 sq m); and crèche (418 sq m) with outdoor play area (42 sq m).

Permission is also sought for: new multi-modal site entrance to the west; minor relocation of existing northern site entrance to the east; internal road, cycle and footpath network; 132 No. car parking spaces; 13 no. motorcycle parking spaces; cycle parking; hard and soft landscaping, including public open space, communal amenity space (at-grade and as roof gardens atop Block D and Block E) and incidental open space; private amenity space as balconies and terraces facing all directions; public lighting; bin stores; plant rooms; 2 No. sub-stations; green roofs; rooftop plant, PV panels, telecommunications infrastructure, lift overruns and automatic opening vents; and all associated works above and below ground.

2.0 ENERGY & CARBON EMISSIONS STRATEGY

This report outlines the energy performance of the proposed new development and compare the standards prescribed in the building regulations TGD Part L. As part of the development's efforts to further reduce energy consumption, the residential units shall target a minimum BER energy rating of 'A'.

The built environment has been designed to maximise the quality of life within the development, with the health and wellbeing of the user in mind. Generous open spaces surrounding the housing units have been defined and orientated for this purpose.

The garden design in the scheme is integral to the health and wellbeing approach of the development and has been maximized in specific units where possible.

Passive surveillance is incorporated into the design of the proposed buildings on the development. This reduces the risk of crime to all residents within the scheme, littering, and loitering of green spaces.

The proposed dwellings shall be designed to meet the requirements set out in the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities; Urban Development and Building Heights Guidelines for Planning Authorities and the "Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities".

The dwellings shall include several energy conservation measures to achieve a high energy rating for each dwelling:

- High-performance thermal envelope with low U-values for the fabric
- Low thermal bridging construction details
- Airtight construction
- Energy efficient ventilation system
- Energy efficient heating and hot water generation system
- Energy efficient lighting to be used throughout.
- On-site energy generation (where required)

The sustainable design of the proposed development ensures that each dwelling in the development performs efficiently and complies with the NZEB criteria.

3.0 LEGISLATIVE BACKGROUND

The Planning and Development Act 2000 (as amended) sets out clear requirements for the monitoring and review of local authority housing strategies. Section 95 subsection (1)(b) requires that a planning authority's development plan should include objectives to ensure that the housing strategy is implemented. The stated objective is as follows:

“To support the development of quality residential schemes with a range of housing options having regard to the standards, principles and any specific planning policy requirements (SPPRs) set out in the Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities; Urban Development and Building Heights Guidelines for Planning Authorities and the “with Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities”.

3.1 CLIMATE ACTION PLAN 2024

The government is creating and implementing policies and strategies to achieve its long-term goal of transitioning to a low-carbon, climate resilient and environmentally sustainable economy by 2050.

By 2030, the government aims to achieve the following.

- Cutting greenhouse gas emissions by at least 30%
- Reaching a target of at least 32.5% energy efficiency
- Delivering 70% renewable electricity

The climate action and low carbon development act 2024 sets Ireland on the path to a 51% reduction in emissions by 2030 and to net-zero emissions no later than 2050.

This will require the introduction of a range of further measures, in addition to those already committed to in the 2021 Climate Action Plan, including:

- Improving the fabric and energy efficiency of our existing buildings
- Rolling out zero-carbon heating solutions, predominantly heat pumps and district heating networks.
- Planning for a full phase out of fossil fuels in buildings by 2050
- Progressive strengthening of building standards for all types of buildings
- Promoting the use of lower carbon alternatives in construction
- Promoting behavioural change in how households use energy.

3.1 FINGAL COUNTY COUNCIL – DEVELOPMENT PLAN 2023-2029

The development is subject to the Fingal development plan. The following council policies have been considered as part of the proposed Climate Action Energy strategy.

Fingal Development Plan Chapter 5 and relevant policies including the below:

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.

To provide energy in a resource efficient manner, various low energy and zero carbon technologies have been assessed to determine suitability for the proposed development.

3.2 BUILDING REGULATIONS – PART D

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

The proposed dwellings 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 the units of the development.

The dwellings are designed with sufficient width in the party walls so that that construction can be completed using a timber frame construction, subject to detailed design.

3.3 BUILDING REGULATIONS – PART L

The current edition of the Building Regulations Technical Guidance Document Part L – Conservation of Fuel and Energy – Dwellings sets out the requirements for the minimum fabric and air permeability requirements, maximum primary energy use and carbon dioxide (CO₂) emissions as well as the minimum amount of energy derived from renewable sources, as calculated using the Domestic Energy Assessment Procedure (DEAP) methodology. The compliance with the requirements of this document is compulsory for all new dwellings.

Three design aspects demonstrate compliance:

1. The quality of building fabric
2. The limitation of primary energy use and CO₂ emissions
3. The use of energy from renewable sources

The table below outline the maximum fabric U value for each element as outlined in the Building Regulations TGD-L:

Maximum Building Fabric U-values

Building Fabric Element	TGD-L-2022 / NZEB U-value (W/m ² K)
Pitched Roof	0.16
Flat Roof	0.20
External Walls	0.18
Ground Floor / Exposed Floor	0.18
External doors, Windows, Rooflights	1.40
Air Permeability (Air Tightness)	5.0 m ³ /h m ² @ 50Pa

The table below outline the minimum energy values for the dwelling as outlined in the Building Regulations TGD-L:

Energy / Carbon Performance Limits and Renewable Energy Target

Element	TGD-L-2022 / NZEB	Reduction vs Reference building
Maximum Permitted Energy Performance Coefficient (MPEPC)	0.30	70%
Maximum Permitted Carbon Performance Coefficient (MPCPC)	0.35	65%
Minimum Amount of Energy from Renewable Sources	0.20	-

The current edition of the Building Regulations “TGD-L” sets out the design requirements for Nearly Zero Energy Buildings (NZEB). In accordance with the requirements of The European Energy Performance of Buildings Directive Recast (EPBD) all new buildings must achieve the Nearly Zero Energy Building (NZEB) standard.

4.0 SUITABILITY OF ENERGY TECHNOLOGIES

To provide energy in a resource efficient manner, various low energy and zero carbon technologies have been assessed to determine suitability for the proposed development. The selection of technologies will be confirmed at the detailed design stage; however, it is envisaged that a combination of technologies shall be required to achieve building regulation compliance on the residential development as follows:

4.1 District Heat Networks

District heat networks use a combination of excess heat generated from large-scale commercial, industrial, or medical processes and heat generated from a centralised source to heat buildings connected to the network.

At present there are two large district heating schemes available in the Greater Dublin Area:

- District Heating Scheme (DHS) in Tallaght, Dublin 24, associated with large data centre in the area, utilising waste energy to heat some offices, local library, with a possibility of future extension to heat affordable dwellings in the area. As the proposed development site in question is located in North Co Dublin region, it is out of reach for the Tallaght DHS.
- Dublin District Heating Project (DDHP) associated with the waste incinerator in Ringsend, Dublin 2, with a potential to heat up to 80,000 homes. The project is at the development stage and has yet to become operational. Due to its nature, it is likely to start locally near the source and grow organically. According to Dublin City Council website, there are plans for the DDHP to reach the Docklands in Dublin City.

For the above reason District Heat networks is not feasible for the proposed development.

4.2 Communal Heat Network

Communal heat networks use heat generated from a centralised source to heat dwellings connected to the network.

It requires relatively large plant room, heat distribution pipework, heat metering and billing arrangements. The additional investment and the operational requirements do not seem to be sufficiently offset by energy savings, when compared to individual heating systems.

For the above reason Communal Heat network is not feasible for the proposed development.

4.3 Combined Heat and Power

Combined Heat & Power (CHP) is a system that utilises an internal combustion engine to mechanically drive an electric generator and produce electricity. At the same time the waste heat emitted from the engine is utilised for space or hot water heating purposes, resulting in an improved overall energy efficiency over a traditional electricity generation in power plants. Generally suitable for communal / district heating schemes only.

The CHP plant requires large heat demand to operate effectively and requires large plant room spaces for CHP and back up boilers.

For the above reason Combined Heat at Power is not feasible for the proposed development.

4.4 Ground Source Heat Pump

Ground Source Heat Pump (GSHP) utilised the natural heat of the ground. A refrigeration cycle is used to draw energy from the low-temperature medium (ground) and heat the higher-temperature medium (heating water). The amount of energy transferred is much higher than the amount of energy required to power the system. The energy efficiency of a GSHP is generally higher than that of an ASHP especially during the coldest weather, however the additional capital cost required to install the ground energy collector typically cannot be offset by the higher efficiency and lower running cost, given that spells of cold weather are not very often occurrence in the relatively mild climate in Ireland.

For the above reason Ground Source Heat Pump is not feasible for the proposed development.

4.5 Air Source Heat Pump

Air Source Heat Pump (ASHP) utilise the natural heat of the ambient air. A refrigeration cycle is used to draw energy from the low-temperature medium (air) and heat the higher-temperature medium (heating water). The amount of energy transferred is much higher than the amount of energy required to power the system. The energy efficiency of an ASHP is generally lower than that of a GSHP especially during the coldest weather, and it may require supplementation with electric heater at peak heat demand times, however such occurrences are not very often in the relatively mild climate in Ireland.

An initial assessment shows that a certain amount of outdoor space is required for these units. Large Balcony size would need to be considered for this type of system.

For the above reason Air Source Heat Pump is not feasible for the proposed development

4.6 Exhaust Air Source Heat Pump

Exhaust Air Heat Pump (EAHP) is a certain type of an ASHP which draws energy from the air being extracted from the house through the ventilation system. As the temperature of this air is constant throughout the year, the output and energy efficiency of an EAHP also stays constant, i.e. it is not affected by low ambient air temperatures. Another advantage of an EAHP is that it can help in ventilating the house with its constantly running fan. The downside of EAHPs is the limited output that is related to the ventilation requirements of the house – EAHPs are deemed suitable for relatively small and well insulated houses or apartments.

For the above reason Exhaust Air Heat Pumps appear to be feasible for the proposed development

It is proposed to consider the use EAHP units in individual heating systems subject to further assessment at the detailed design stage.

4.7 Electric heaters + Indoor Air Source Heat Pump

With the progressing decarbonisation of the national electricity grid and the falling energy demand to heat dwellings, electric room heaters combined with an ASHP to generate hot water appear to be a viable alternative that can deliver the currently required energy and carbon emissions targets. However, the effectiveness of this solution varies from development to development as it seems to be best suited for small apartments with low heat losses. In less than ideal conditions this system may need to be supplemented with on-site energy generation.

For the above reason Electric Heaters & Indoor Air source Heat Pumps appear to be feasible for the proposed development

It is proposed to consider the use Electric Heaters & Indoor Air source Heat Pumps with roof solar pv panels in individual heating systems subject to further assessment at the detailed design stage.

4.8 Wind Turbines

A mast mounted wind turbine can generate significant amounts of electrical energy. However due to the physical size and clearances required from buildings or trees, they are suitable for sites with large open areas. Also not deemed suitable for a suburban location due to size, aesthetical and noise implications.

For the above reason wind turbines is not feasible for the proposed development.

4.9 Solar Photovoltaic

Solar Photovoltaic (PV) collectors convert the energy of the sun into electricity that can be used within the household reducing the amount of electricity imported from the grid. PV collectors can be installed on the roof or integrated with external walls. While only up to 20% of the sun irradiation available is recovered, this energy form (electricity) comes with the flexibility of being suitable for many uses.

For the above reason Solar PV collectors are feasible for the proposed development as required.

It is proposed to use Solar PV collectors for this project subject to further assessment at the detailed design stage.

5.0 BUILDING DESIGN

High-performance building fabric elements are being considered and selected to minimise unnecessary heat loss from the internal spaces.

In addition to the reduction in energy consumption and associated carbon emissions for space heating and ventilation through a high performance fabric, high efficiency heating systems are being proposed for use throughout the development, minimising heat losses through the buildings fabric as well as a lower than required air permeability rate, helps to ensure lower energy consumption rates and associated carbon emissions are achieved throughout the year thus reduces the overall cost of heating for the end user.

The buildings will be designed and constructed in accordance with the building regulations and best practices and can be summarised as follows:

Fabric Insulation

The following target U-values have been adopted for the project:

Building Fabric Element	Backstop (max.) U-value TGD-L 2022	Target U-value for this project
Floor	0.18W/m ² K	0.18W/m ² K
External walls	0.18W/m ² K	0.18W/m ² K
Roof	0.16W/m ² K	0.16W/m ² K
External doors	1.40W/m ² K	1.40W/m ² K
Windows & rooflights	1.40W/m ² K	1.40W/m ² K

Air permeability

The level of air permeability should be achievable by adherence to the BR Part L 2022 Acceptable Construction Details and monitoring during the construction.

	Backstop (max.) value TGD-L 2022	Target value for this project
Air permeability @ 50Pa	5.0m ³ /h/m ²	3.0m ³ /h/m ²

Thermal bridging

The adherence to the Building Regulations TGD Part L 2022 Acceptable Construction Details, adequate design considerations and monitoring during the construction should assist reducing thermal bridging.

6.0 BUILDING SERVICES SYSTEMS DESIGN

Energy technologies for this development shall be selected on the following basis:

- Compliance with the Building Regulations – Part L 2022 (NZEB)
- Operation strategy: individual vs communal
- Life-cycle cost

The selection of technologies will be confirmed at the detailed design stage. Based on our experience we would deem the following combinations to be suitable:

Heating system

Individual Exhaust Air Heat Pump subject to detailed design.

The apartments shall be heated by means of either underfloor heating or low temperature radiators / fan coil units. Alternatively, electrical radiant panel heaters shall be considered during the detailed design.

Heating controls in the apartments consists of a heating zone with individual time and temperature controls.

Domestic hot water

Domestic hot water shall be generated in every apartment with individual time and temperature controls. The heat source shall be shared with that powering the heating system.

Ventilation

The ventilation solutions considered for the development are as follows:

- i. Natural Ventilation + Intermittent Extract Fans. This is the least preferred solution as it is not fully compatible with the low air permeability targets.
- ii. Continuous (Centralised or Decentralised) Mechanical Extract Ventilation (CMEV) or demand control ventilation (DCV), which operates by extracting warm, stale air from dwelling wet rooms either centrally or decentralised. Wall vents in the habitable rooms shall be provided and acoustically treated as required.
- iii. Balanced Whole House Mechanical Ventilation (with or without Heat Recovery) as a whole dwelling approach with 'mechanical ventilation with heat recovery system (MVHR). The unit works by extracting warm, stale air from 'wet rooms' (kitchen, utility, bathroom, etc.), and extracting the embodied energy (heat) from this exhaust air and re-introducing this captured energy into the incoming fresh air.
- iv. Mechanical cooker extract hood ducted to the outside shall be installed in the Kitchen irrespective of the ventilation system type.

Water Conservation Measures

The requirements for low flow sanitary ware (water restrictors) in each dwelling shall be considered during the detailed design stage. This is a water conservation initiative and reduces waste by restricting water flowrates to a shower within the dwelling.

The shower head fittings shall be with a reduced flow to allow for the conservation of water use as well as reducing energy used to heat hot water.

Lighting

Provision for natural daylight in modern buildings helps to create a better internal environment for occupants and helping to assist in the well-being of the inhabitants.

All light fittings are to be based on LED type (A+ Rated light bulb) located throughout each occupiable space, such as bedroom, lobby, living/dining etc. A significant reduction in electrical energy usage shall also be realised using high efficiency lights.

External Lighting shall be energy efficient and provided with LED type with photocell technology as outlined in the proposed public lighting layouts.

Renewable Technologies

To demonstrate the compliance with the Building Regulations Part L, each apartment is required to have a portion of its energy requirements provided from a source of renewable energy.

In addition to heat pumps, additional Solar PV panels on the roof of the apartment building will be considered to ensure building regulation compliance subject to detailed design.

7.0 CLIMATE / ENERGY IMPACT CALCULATIONS

The below calculations are based on the results of a preliminary DEAP assessment for a typical dwelling, extrapolated for all 289 dwellings in the development based on the floor area. The typical dwelling was selected to demonstrate average energy consumption for the development.

The DEAP assessment results for the typical dwelling included in the development are available in Appendix A to this document.

Typical dwelling:		Area, m ² : 79.6			BER: A		
Element	Reference Building Performance	Target			Achieved		
		Total	per m ²	Performance Coefficient	Total	per m ²	Performance Coefficient
Primary Energy, kWh/a	9,685	2,906	36.50	0.3	2,838	35.65	0.293
Carbon Dioxide, kg/a	1,815	635	7.98	0.35	363	4.56	0.2
Renewable Energy, kWh/a	-	1,056	13.27	0.2	1,621	20.37	0.307
Table 7.1							
Overall development:		Area, m ² : 23,004					
Element	Reference Building Performance	Target			Achieved		
		Total	per m ²	Performance Coefficient	Total	per m ²	Performance Coefficient
Primary Energy, kWh/a	2,799,000	839,700	36.50	0.3	820,107	35.65	0.293
Carbon Dioxide, kg/a	524,500	183,575	7.98	0.35	104,900	4.56	0.2
Renewable Energy, kWh/a	-	305,277	13.27	0.2	468,600	20.37	0.307
Table 7.2							
Overall improvement:							
Primary Energy, kWh/a	-1,978,893	Reduction by 71%					
Carbon Dioxide, kg/a	-419,600	Reduction by 80%					
Renewable Energy, kWh/a	468,600	Contribution					
Table 7.3							

8.0 CONCLUSION

This Climate Action Energy Statement provides a comprehensive overview of the anticipated energy performance of the proposed development and demonstrates compliance with the relevant standards, principles and Specific Planning Policy Requirements (SPPRs) contained within the *Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities*.

The Energy Efficiency and Climate Change Adaptation Statement has assessed the key climate-related considerations applicable to the site and development proposal. In terms of climate mitigation and operational energy performance, the development has been designed in accordance with Part L of the Building Regulations (Conservation of Fuel and Energy) and the Nearly Zero Energy Building (NZEB) standard. This is achieved through a fabric-first design strategy, enhanced levels of airtightness, and the incorporation of high-efficiency building services, including low-carbon heating systems and on-site renewable energy generation such as Air Source Heat Pumps (ASHPs) and solar photovoltaic (PV) panels.

Preliminary DEAP and BER assessments, together with Part L compliance calculations, indicate that the proposed dwelling types are expected to achieve A-rated BER standards, with EPC and CPC values remaining within the prescribed regulatory limits. Subject to detailed design, specification and commissioning at construction stage, the proposed development will satisfy the applicable Part L performance requirements.

The proposed development is therefore considered to be consistent with the objectives of the Fingal County Development Plan 2023–2029 in relation to energy efficiency, climate mitigation and sustainable residential development. The scheme incorporates energy-conscious site planning and orientation, a robust fabric-first specification, renewable energy technologies, Sustainable Drainage Systems (SuDS), water efficiency measures, and durable landscaping and material strategies aimed at supporting long-term climate resilience.

In conclusion, the proposed development represents a sustainable, low-carbon and climate-resilient residential development in accordance with current national and local planning policy objectives.

Appendix A

Typical sized dwelling: Preliminary Part L compliance Report

The following preliminary Part L compliance check was carried out by MandE Consulting Engineers for a typical sized dwelling in the development. The provisional inputs used are subject to confirmation at detail design stage.



Part L Report
Date report created: 29/04/2026
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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	Mid-floor apartment	Type of BER rating	New Dwelling - Provisional
Address line 1	TYPICAL 2 BED GREENFIELD	Year of Construction	2026
Address line 2	SWORDS BUSINESS PARK	Date of Assessment	29/04/2026
Address line 3	SWORDS	Date of Plans	29/04/2026
County	Co. Dublin	Planning Reference	
Eircode		Building Regulations	2019 TGD L
BER Number		MPRN No.	0
Purpose of Rating	New dwelling for owner occupation	Is MPRN shared with another dwelling?	N/A
Assessor Name	Eamonn Brown	Assessor Number	106085
Comment		BER number assigned to shared dwelling	N/A

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]	
Ground Floor	79.60	2.50	199.00	
First Floor	0.00	0.00	0.00	
Second Floor	0.00	0.00	0.00	
Third and other floors	0.00	0.00	0.00	
Room in roof	0.00	0.00	0.00	
Total Floor Area	79.60		199.00	
Living Area [m ²]	28.50			Living area percentage [%] 35.80
No of Storeys	1			

Ventilation Details

	Number		
Chimneys	0	Has permeability test been carried out?	Yes
Open Flues	0	Structure type	N/A
Fans & Vents	1	Is there a suspended wooden ground floor?	No
Number of flueless combustion room heaters	0	Percentage windows/doors draught stripped [%]	N/A
Is there a draught lobby on main entrance?	Yes	Number of sides sheltered	2
Ventilation method	Exhaust Air Heat Pump	Mechanical Ventilation Manufacturer	N/A
Specific fan power [W/(L/s)]	0.260	Mechanical Ventilation Model Name	N/A
Heat exchanger efficiency [%]	N/A	How many wetrooms (incl. kitchen)?	N/A

Building Elements - Floor Details

Type	Description	Underfloor heating	U-Value [W/m ² K]	Area [m ²]
	Non-Heat Loss Floor	N/A	0	79.6

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
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Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
	Unknown	0.18	20

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
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DRAFT

Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Double-glazed, argon filled	Yes	1.400	12.450

DRAFT

Other Details

Thermal bridging factor [W/m ² k]	0.1500	Thermal mass category of dwelling	Medium
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Heating System - Solar Water Heating

Solar Water Heating Present?	No	Aperture area of solar collector [m ²]	N/A
Type, manufacturer, model	N/A		
Zero loss collector efficiency, η_0	N/A	Collector heat loss coefficient, U_L [W/m ² >K]	N/A
Annual Solar Radiation [kWh/m ²] (Refer to Appendix H in DEAP)	N/A	Overshading factor	N/A
Dedicated storage volume [Litres]	N/A	Combined Cylinder	N/A
Solar fraction [%]	0.000		

Heating System - Hot Water System

Distribution Losses	261.57	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	NIBE S735-4E	Declared loss factor [kWh/d]	1.35
Temperature factor unadjusted	0.6	Temperature Factor Multiplier	1
Primary Circuit loss type	Boiler / heat pump and thermal store within a single casing (cylinder thermostat present)		
Is hot water storage indoors or in group heating system?	Yes	Insulation type	N/A
Insulation thickness [mm]	N/A		

Heating System - Dist. system losses and gains

Temperature adjustment [°C]	0	Control Category	2	Responsiveness category	1
Central heating pumps	1	Oil Boiler Pump	0	Oil boiler pump inside dwelling	No
Gas boiler flue fan	0	Warm air heating or fan coil radiators present	No		

Heating System - Energy Requirements (Individual)

Main space heating system efficiency [%]	391.19	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	226.34	Water heating efficiency adjustment factor	1.0000	Main water heating fuel	Electricity
Secondary heating system efficiency [%]	N/A	Fraction of heating from secondary heating system	N/A	Secondary space heating system fuel	None
Fraction of main space and water heat from CHP	N/A	Electrical efficiency of CHP	N/A	Heat efficiency of CHP	N/A
CHP Fuel type	N/A				

Summary for Part L Conformance (Applies to TGD L 2008/2011/2019 for new dwellings only)

BER Number		Building Regulations	2019 TGD L
BER Result	A2	Energy Value kWh/m ² /yr	35.65
CO ₂ emissions [kg/m ² /yr]	4.56		
EPC	0.293	EPC Pass/Fail	Pass
CPC	0.200	CPC Pass/Fail	Pass

Part L Conformance - Fabric

Conformity with Maximum avg U-value requirements	U-value [W/m ² K]	Pass/Fail	Conformity with Maximum U-value requirements	U-Value [W/m ² K]	Pass/Fail
Pitched roof insulated on ceiling	0.00	Pass	Roofs	0	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0	Pass	Floors	0	Pass
Floors with no underfloor heat	0.00	Pass	External doors / windows / rooflights	1.40	Pass
Floors with underfloor heat	0.00	Pass			
Walls	0.18	Pass			
Percentage of opening areas [%]	15.64				
Average U value of openings	1.40	Pass			
Permeability test carried out and meets guidelines in TGD L				0.25	Pass

Part L Conformance - Renewables (applies to TGD L 2019)

	Source	Renewables Primary Energy	Total Primary Energy	RER
+ Delivered energy	PV/Wind	0.00	0.00	
+ Delivered energy	Other	0.00	0.00	
+ Delivered energy	Solar	0.00	0.00	
+ Delivered energy	Biomass	0.00	0.00	
+ Delivered energy	Biodiesel	0.00	0.00	
+ Delivered energy	Bioethanol	0.00	0.00	
+ Environmental energy	HP	1254.75	1254.75	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	2837.62	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1254.75	4092.37	0.31 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1254.75	4092.37	0.31

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Energy Requirements: Individual Heating Systems

	Fuel Type	Electricity Fuel Factors Date	Primary energy conversion factor	CO ₂ emission factor
Main space heating system	Electricity	Current	1.75	0.224
Secondary space heating system	None	Current	0.00	0.000
Main water heating system	Electricity	Current	1.75	0.224
Cooling System	None	Current	0.00	0.000
Pumps, fans	Electricity	Current	1.75	0.224
Energy for lighting	Electricity	Current	1.75	0.224

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