



Delap & Waller

Old Connaught Phase 1 Residential Development

Energy & Sustainability Statement

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1.0 Executive Summary

This report prepared by Delap & Waller, outlines the sustainable fabric and services specification strategy for the proposed development at Old Connaught to demonstrate compliance with Part L 2022 and the Old Connaught Local Area Plan 2025. This report forms part of the planning application.

The proposed development comprises 271no. dwellings in a mix of houses and duplex / apartment units, including 103no. 2 to 3-storey houses (22no. 4-bedroom, 68no. 3-bedroom and 13no. 2-bedroom), 162no. apartments (113no. 2-bedroom and 49no. 1-bedroom) across 4no. blocks ranging from 1-5 storeys in building height and 6no. 3-bedroom duplex units; 1no. creche (c. 574 sqm) at ground floor of Apartment Block 3; and all associated and ancillary site development and infrastructural works including on site attenuation, hard and soft landscaping and boundary treatment works, including: public open space; communal open space; components of the regional attenuation pond; public lighting; surface car parking spaces; bicycle parking spaces/stores for houses and duplex / apartment units; 5no. ESB substations; bin stores; vehicular access via existing Old Connaught Avenue and a proposed new primary north-south street into the eastern portion of the Central Character Area. The proposed development also includes the construction of a new pumping station, associated single storey building, twin rising mains extending circa 400m along Old Connaught Avenue under the M11 connecting to the existing gravity foul network on Old Connaught Avenue 125m east of the M11 bridge and associated storage, together with all ancillary site development and reinstatement works required to facilitate these elements.

The development will also include infrastructural works, hard and soft landscaping and boundary treatment works, including public open space; communal open space; regional attenuation pond; public lighting; surface car parking spaces; bicycle parking spaces/stores for houses and duplex / apartment units; 4no. ESB Substation; bin stores; the proposed development is accessed from proposed primary north-south street into the Central Character Area Lands-East. The proposed development will also comprise a new pumping station and storage as required and all associated and ancillary site development and reinstatement.

The proposed development will be designed and constructed to meet Approved Document Part L 2022 Conservation of Fuel and Energy – Dwellings. This standard is also referred to as Nearly Zero Energy Building Standard (NZEB), which has become the regulatory standard since October 2022. The Part L regulation requires an overall improved energy performance for the fabric, services, lighting and renewable specification.

For the residential dwellings, the standard requires an overall improved energy performance for the fabric, services and lighting specification. The standard requires a Carbon Performance Coefficient level of <0.35 and an Energy Performance Coefficient level of <0.30. The NZEB standard also introduces a mandatory requirement for renewable energy sources, to provide a minimum of 20% of the primary energy use from renewable energy.

The report will outline target U-Values of each fabric element, air permeability rates and options for the space heating, hot water and ventilation considered. Please note the specification and efficiencies outlined within this report are based on calculations and design information available at the time of writing. A further Part L analysis shall be carried out as the design development, in conjunction with any design and or specification changes.



Figure 1: Old Connaught Residential Development (Site Plan) – OMP Architects

2.0 Assessment Methodology

2.1 Architectural Design

The energy and carbon calculations have been carried out using floor plans, sections and elevations provided by OMP architects. The table below summarises the drawings used during this analysis.

Title	Drawing Number	Revision	Date
Blocks 1 & 2 – Levels 00 & 01	24004-OMP-00-ZZ-DR-A-1000	P04	22/12/2025
Blocks 1 & 2 – Levels 02 & 03	24004-OMP-B1-ZZ-DR-A-1000	P04	22/12/2025
Blocks 1 & 2 – Level 04	24004-OMP-B1-ZZ-DR-A-1002	P03	18/12/2025
Block 3 – Level 00 & 01	24004-OMP-B1-ZZ-DR-A-1004	P01	07/01/2025
Block 3 – Level 02 & 03	24004-OMP-B3-ZZ-DR-A-1000	P01	07/01/2025
Blocks 3 – Level 04	24004-OMP-B3-ZZ-DR-A-1001	P01	07/01/2025
Block 3 - Elevations & Sections	24004-OMP-B3-ZZ-DR-A-1002	P01	07/01/2025
Block 4 – Level 00 & 01	24004-OMP-B3-ZZ-DR-A-2000	P01	07/01/2025
Block 4 – Level 02 & 03	24004-OMP-B4-ZZ-DR-A-1000	P01	07/01/2025
Block 4 - Elevations & Sections	24004-OMP-B4-ZZ-DR-A-1001	P01	07/01/2025
Block 4 - Elevations & Sections	24004-OMP-B4-ZZ-DR-A-2000	P01	07/01/2025
Site Plan	24004-OMP-00-SP-DR-A-1000	P09	01/07/2026

Table 1: Architectural Drawing Schedule

2.2 Software

Energy and carbon calculations have been carried out to demonstrate the performance of the buildings against the NZEB standard. The residential units are assessed using the Dwelling Energy Assessment Procedure (DEAP). DEAP is the Irish official procedure for calculating and assessing the energy, carbon and renewable performance values for space heating, space cooling, ventilation, water heating and lighting. DEAP calculates the annual delivered energy consumption, primary energy consumption and carbon dioxide emissions using standardised occupancy.

3.0 Assessment Criteria

3.1 Technical Guidance Document – Part L (2022)

Technical Guidance Document Part L Conservation of Fuel and Energy – Dwellings (2022), has been issued by the Department of Housing, Local Government & Heritage. This document became the regulatory standard for all new and existing dwellings from October 2022, to achieve Nearly Zero Energy Building standard (NZEB).

A Nearly Zero-Energy Building 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 (EPBD) Recast Directive. 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.

For the residential dwellings, the standard requires an overall improved energy performance for the fabric, services and lighting specification. The standard requires a Carbon Performance Coefficient (CPC) level of <0.35 and an Energy Performance Coefficient (EPC) level of <0.30. The NZEB standard also introduces a mandatory requirement for renewable energy sources, with each dwelling required to provide 20% of the primary energy use through the use of renewable energies.

The Renewable Energy Ratio (RER) is the ratio of the primary energy from renewable energy technologies to total primary energy used, as defined and calculated in NEAP/DEAP respectively. Renewable energy technologies means technology, products or equipment that supply energy derived from renewable energy sources, e.g. solar thermal systems, solar photovoltaic systems, biomass systems, systems using biofuels, heat pumps, wind turbines/ aerogenerators and other small scale renewable systems. NEAP and DEAP analyses have been completed for each unit type to demonstrate compliance with the Part L (2022) Building Regulations.

Part L also outlines the requirement for new developments to include provision for electric vehicle charging. This report will outline how the proposed Old Connaught development complies with TGD Part L in this regard.

3.2 Building Energy Rating (BER) Certificates

The recast Energy Performance of Buildings Directive (Recast EPBD) was adopted by the European Union (EU) in 2024 and must be transposed into Irish law by May 2026. The directive aims to accelerate building renovation across Europe to achieve a fully zero-emission building stock by 2050.

For Ireland, the recast EPBD requires updates to the existing Building Energy Rating (BER) scale. From May 2026, there will be a standardised scale across the EU and Ireland's scale is being simplified accordingly. The new BER scale is in effect from 24 May 2026. There are two main reasons for the updates to the BER scale: to make energy ratings for Irish homes more understandable, accurate and comparable, and to support government policy by aligning performance certificates with retrofit targets, deep renovation goals, and grant criteria.

As a result of the rescaling, some of the content and layout of the existing BER Certificate will be changed into a new three-page certificate, which will be published from 24 May 2026. From that date onward, the BER Certificate in its current format will no longer be issued and will be replaced by the new BER scale and Certificate. There will be no transition period from the old BER scale, certificate, calculation or methodology to the new version before its implementation on 24 May 2026.

From 24 May 2026, the BER scale will be simplified to A, B, C, D, E, F, and G, with all subcategories removed, such as B1, B2, B3. This will reduce the number of levels displayed on the BER certificate

from 15 to a more accessible 8 categories. This will include the introduction of a new A0 grade to certify Zero Emission Building (ZEB) as the most energy efficient buildings that do not use fossil fuels.

The current A, B and C performance thresholds will largely remain unchanged, as shown in the diagram below. There may be some deviations from this resulting from calculation and methodology updates, and updates to the primary energy factor. The directive outlines that the G category shall correspond to the very worst performing buildings in the national building stock at the time of the introduction of the scale. BERs with D to F ratings will be divided equally between the C and G categories. The ratings from the lower edge of the C category to the top of the G category are divided equally between D, E, & F.

While, at the time of writing the DEAP software has not yet been updated to accommodate the EPBD recast, for the purpose of this energy and sustainability assessment, the simplified BER scale will be applied when reporting on the estimated BER Rating.

Simplified BER Scale (effective 24 May 2026)



Figure 2: Simplified BER Scale (effective 24th May 2026)

3.3 Old Connaught Local Area Plan 2025

The Old Connaught Local Area Plan provides a positive vision for the local area, which will enable the area to continue to make a significant contribution to the national economy by promoting more sustainable developments. The energy and sustainability strategy for the proposed development in Old Connaught will consider and adhere to the following relevant policies as outlined within Chapter 3 of the Local Area Plan 2025.

Section 3.2.1 DLR County Development Plan 2022-2028

“The dlr County Development Plan 2022-2028 sets out overarching policies in relation to energy efficiency, renewable energy, decarbonising motorised transport and urban greening. This Plan implements at the local level the climate action policies and objectives of the County Development Plan. The relevant Policy Objectives contained in the County Development Plan apply to development in the Plan area and therefore have generally not been duplicated in this Plan. Policies and objectives for inclusion have been subject to the iterative Strategic Environmental Assessment process.”

Section 3.2.2 dlr Climate Action Plan 2024-2029

“The dlr Climate Change Action Plan 2024-2029 (CCAP) addresses climate adaptation and mitigation across six themes as follows:

- Energy and Building
- Transport
- Flood resilience
- Nature based solutions
- Circular Economy and Resource management
- Citizen Engagement

The Plan has been prepared with the purpose of integrating and implementing the policies and provisions of the dlr CCAP where relevant.”

Section 3.3 Low Carbon and Climate Resilient Community

“Old Connaught presents a unique opportunity to develop as a low carbon and climate resilient community. Consistent with the overarching Strategic County Outcome of the dlr County Development Plan 2022-2028, it is policy to support the creation of a low carbon and climate resilient urban village at Old Connaught.”

Policy OCLAP1 – Low Carbon and Climate Resilient Community

It is Policy to progress the development of Old Connaught as a low carbon and climate resilient community.

Section 3.4 Climate Change Adaption and Mitigation

“An overarching strategic objective of this Plan, is the creation of a low carbon and climate resilient residential community at Old Connaught:

“Climate and Ecosystems - To progress the development of Old Connaught as a low carbon and climate resilient community and provide a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.”

While climate action comprises a standalone Chapter, the theme permeates the entire Plan with policies and objectives throughout all Chapters, all contributing to support the strategic objective. Measures to deal with climate change can be defined as either mitigation measures which reduce emissions (e.g. energy efficiency and sustainable transport) or adaptation measures (e.g. flood alleviation), with some measures incorporating elements of each (e.g. green infrastructure). Climate change mitigation objectives are integral to the overarching objectives and principles of the Plan, including, in particular, the concept of the ten-minute neighbourhoods, proximity to public transport, public transport improvements, sustainable neighbourhood infrastructure, compact growth, energy efficiency in new buildings and provision of green spaces within the area.”

4.0 Energy Strategy

4.1 Energy Hierarchy

The design of the Old Connaught Residential Development will incorporate the principles of the energy hierarchy. The energy hierarchy consists of three key principles:

1. **Be Lean**
2. **Be Clean**
3. **Be Green**

The **Be Lean** stage encourages a passive strategy whereby space heating, cooling and lighting energy demand is minimised through a fabric first approach. A carefully designed fabric will ensure a robust, efficient and sustainable design throughout the lifetime of the building, which is more affordable in the long term. Furthermore, it reduces the reliance on technologies, which overtime will require maintenance or replacing.

The **Be Clean** stage encourages that energy supplied to the development, such as heating or domestic hot water, is delivered efficiently through highly efficient systems.

The **Be Green** stage ties in with the Renewable Energy Ratio requirement of Part L 2022, whereby any remaining requirements are addressed through on-site renewable energy.

4.2 Be Lean

4.2.1 Passive Design Measures

The table below outlines the target thermal performance for the heat loss elements within the houses, duplex units and apartments in order to achieve compliance with Part L 2022 (NZEB). The values are compared with the Part L (2022) limiting values for new build developments.

Element	Proposed Fabric Design (Dwellings)	Part L (2022) Limiting Values
Ground Floor / Exposed Floor	0.15 W/m ² K	0.18 W/m ² K
External Walls	0.18 W/m ² K	0.18 W/m ² K
Walls/ Floors Adjacent Unheated Spaces	0.18 W/m ² K	0.18 W/m ² K
Pitched Roof	0.15 W/m ² K	0.16 W/m ² K
Flat Roof	0.15 W/m ² K	0.20 W/m ² K
Windows / Glazed Doors	1.40 W/m ² K	1.40 W/m ² K
	G-Value 0.50	N/A

Entrance Doors	1.40 W/m ² K	1.40 W/m ² K
Air Permeability	3.00 m ³ /hr/m ² @50Pa	5.00 m ³ /hr/m ² @50Pa
Thermal Bridging Factor	Accredited Construction Details (ACDs) Throughout	Default Y-value of 0.15 W/m ² K

Table 2: Dwellings - Proposed Fabric Specification

To ensure energy use is minimised from the outset, wherever feasible, the proposed development has been designed with regard to the principles of passive design including; orientation, location of openings, local shading to maximise the potential for solar gain and limiting overheating.

The fabric specification has been optimised in order to strike a balance between maximising natural daylight benefits to reduce the use of artificial lighting, the provision of solar gains to reduce space heating demands during the winter months, whilst limiting summertime solar gains to reduce space cooling demands. This can be exhibited in the design window U-Value of 1.40 W/m²K and a solar transmission value of 0.50.

4.2.2 Thermal Bridging

Heat loss via thermal bridging is a critical aspect of the energy performance, for the purposes of the provisional Part L analysis an indicative Y-Factor of 0.08 W/m²K has been used – the same value used when ACDs are adhered to. At detail design stage, where architectural details are bespoke, a specific thermal modelling calculation will be carried out to ensure the Psi Value (Ψ) is within acceptable parameters. Refer to Figure 2 below for examples of bespoke calculations for an intermediate floor and roof detail

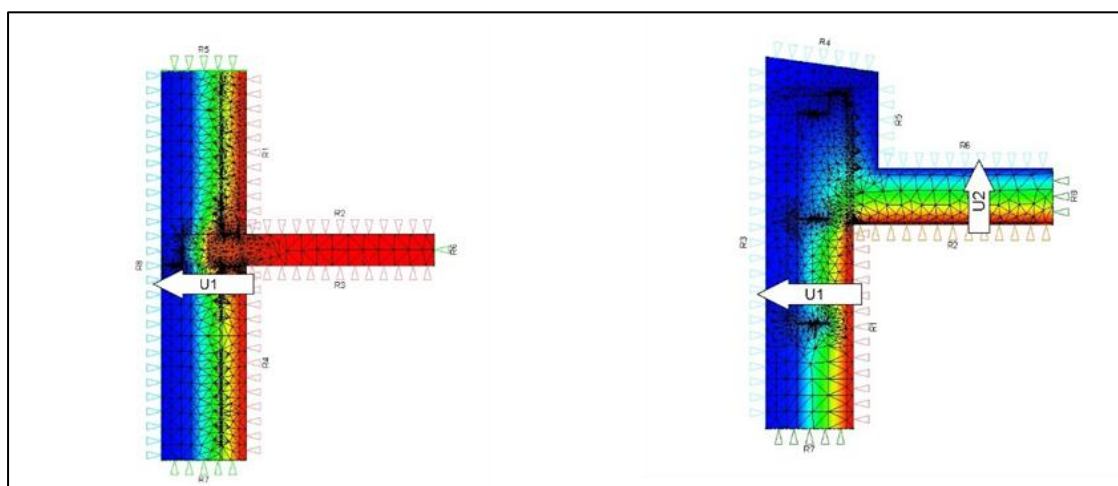


Figure 2: Typical Linear Thermal Bridging Examples

4.2.3 Air Permeability

Convective losses through drafts and junctions are another main source of heat loss within a dwelling. This is referred to Air Permeability or Infiltration. Part L (2022) outlines that an air permeability level of 5.00 m³/hr/m² @50Pa represents a reasonable upper limit for air permeability in new build dwellings. Therefore, the dwellings have been designed to achieve a reduced air permeability rate of 3.00 m³/hr/m² @50Pa.

4.2.4 Thermal Comfort

Incremental changes to construction regulations and methodologies have introduced greater thermal standards, higher proportions of glazing, lightweight construction and inadequate ventilation strategies in some instances. This has led to an increasing number of occupants experiencing overheating in new build developments. The Old Connaught Development has been designed to achieve thermal comfort in accordance with the industry standard CIBSE TM59 (2017). Compliance has been achieved through; reduced glazing solar transmission values, to control excessive solar gains, high thermal mass capacity of the floors, increased openable windows for purge ventilation and mechanical ventilation to provide continuous background ventilation.

CIBSE TM59 sets out differing criteria for thermal comfort compliance depending on whether the rooms are predominately naturally or mechanically ventilated. The standard required that for bedrooms, to guarantee comfort during the sleeping hours, the operative temperature from 10pm to 7am shall not exceed 26°C for more than 1% of annual hours. (Note: 1% of the annual hours between 22:00 and 07:00 for bedrooms is 32 hours, so 33 or more hours above 26°C will be recorded as a fail).

4.3 Be Clean

4.3.1 Space Heating

A feasibility study was carried out to determine the most appropriate energy strategy for the development, the study took into consideration, energy demand, spatial requirements, end user requirements, maintenance, operational energy costs and planning implications.

With the passive measures above incorporated into the design of the Old Connaught Development, the space heating demand within the dwellings is notably low. Therefore, following a detailed assessment of available space heating generation options, an air to water heat pump is the most feasible solution for the dwellings in Old Connaught. The table below summarises the heating strategies and efficiencies in each of the unit types in the Old Connaught Development.

Space	Heating Strategy	Heating Seasonal Efficiency	Domestic Hot Water Generation	DHW Seasonal Efficiency
Houses	Air Source Heat Pump	≥ 350%	Air Source Heat Pump	≥ 140%
Duplex Units	Air Source Heat Pump	≥ 350%	Air Source Heat Pump	≥ 140%
Apartments	Electric Panel Heaters	100%	Air Source Heat Pump	≥140%
Common Corridors (Apartment Blocks)	Electric Panel Heaters	100%	-	-
Creche Space	Air Source Heat Pump	≥ 350%	Air Source Heat Pump	≥ 140%

Table 3: Heating & DHW Systems Summary

4.3.2 Heating Controls

The dwellings will have separate time and temperature controls for the living area and sleeping areas, to further reduce heating consumption.

4.3.3 Ventilation

In accordance with TGD Part F, due to the airtight constructions proposed, the dwellings will have continuous mechanical ventilation specified in all instances. The houses and duplex units will utilise Mechanical Extract Ventilation (MEV). This system extracts stale air from kitchens, bathroom and utility areas, fresh air is then drawn into habitable rooms through passive wall ventilation. The apartments will utilise Mechanical Ventilation with Heat Recovery (MVHR), which works the same as MEV, but it differs by recovering usable heat from the extract side, and then supplying tempered, fresh air back into the occupied areas mechanically.

Space	Ventilation Strategy	Specific Fan Power (W/l/s)	Heat Recovery Efficiency (%)
Houses	Mechanical Extract Ventilation (MEV)	≤ 0.27	-
Duplex Units	Mechanical Extract Ventilation (MEV)	≤ 0.27	-
Apartments	Mechanical Ventilation with Heat Recovery (MVHR)	≤1.40	≥ 85%
Common Corridors (Apartment Blocks)	Natural Ventilation (Openable Windows)	-	-
Creche Space	Mechanical Ventilation with Heat Recovery (MVHR)	≤1.40	≥ 85%

Table 4: Ventilation Systems Summary

4.3.4 Lighting

The design intent is to achieve good levels of natural daylighting within each of the habitable spaces of the Old Connaught Development, in order to minimise artificial lighting requirements. Highly energy efficient LED fittings are proposed for all dwellings. The lighting design will be designed with the most appropriate level of control based on the room's activity. The table below summarises the lighting efficiency and level of control for each of the unit types in the Old Connaught Development.

Space	Lighting Efficiency (Lm/W)	Lighting Control
Houses	≥ 90.00	Manual
Duplex Units	≥ 90.00	Manual
Apartments	≥ 90.00	Manual
Common Corridors (Apartment Blocks)	≥ 90.00	Automatic
Creche Space	≥ 125.00	Space Dependent

Table 5: Lighting Summary

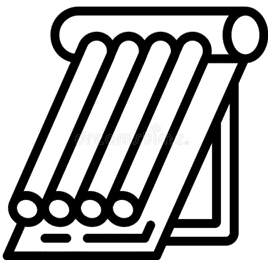
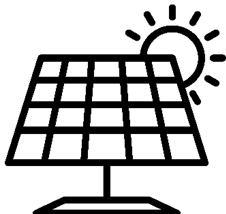
4.3.5 Domestic Hot Water Generation

Hot water generations can typically account for up to 50% of the overall regulated energy demand within modern dwellings. Therefore, the design team have selected a highly efficient and low carbon strategy to address this demand, in accordance with Part L and the Old Connaught Local Area Plan. Air Source Heat Pumps (ASHPs) provide an efficient, low carbon and future proofed means of space heating and domestic hot water generation. The heat pumps absorb heat from the atmosphere by directing a flow of air across the primary (evaporator) side of the heat pump. The heat pump, through the normal refrigerant cycle elevates the temperature of the rejection (condenser) side circuit water to upwards of 65°C.

To help reduce domestic hot water consumption, the dwellings will be provided with efficient water fittings to sanitaryware such as flow restrictors to showers and taps. This will allow the dwellings to achieve an estimated water consumption of ≤ 125 litres/person/day.

4.4 Be Green

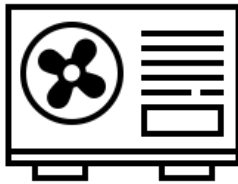
A feasibility study has been carried out to determine the most appropriate low zero carbon or renewable energy systems suitable for use in the Old Connaught Development. Each system was assessed based on cost, planning implications, carbon emissions reductions and maintenance.

Technology	Comment	Feasibility
	<u>Wind Turbines:</u> Ground mounted wind turbines is best located in an open area away from obstructions such as buildings. Due to the location of the Old Connaught Development, it is deemed that a ground mounted wind turbine installation is not feasible.	Low
	<u>Solar Thermal System:</u> The term 'solar thermal' (ST) is used to describe a system where the energy from the sun is harvested to be used for its heat. Solar thermal systems differ from solar photovoltaics by converting sunlight directly into usable heat. The use of the term 'solar thermal' is sometimes associated with the integration of 'passive' heating and cooling technologies in buildings. The main application for solar thermal systems in Ireland is domestic hot water heating - although there are also 'combi-systems' that use non-potable thermal stores directly linked with low temperature space heating systems. Solar thermal systems typically have a payback greater than 10 years and also require regular maintenance to remain efficient. Given the proposed energy strategy is an all-electric solution, solar photovoltaic panels would provide a greater energy and carbon saving compared to solar thermal. For these reasons, this solution has been discounted for the Old Connaught Development.	Medium
	<u>Photovoltaic (PV) Panels:</u> These systems offer a "passive" method for the generation of electricity. Photovoltaic systems use solar cells to convert sunlight into electricity. The PV cell consists of one or two layers of a semi-conducting material, usually silicon. When photovoltaic modules are exposed to the sun rays, they generate a direct current (DC).	Medium

The DC power is then typically converted into AC power, dependant on the application, which is then utilised by the systems on site and/or exported to the electrical grid and sold.

In summary the greater the solar intensity, the greater the flow of electricity. With recent/ upcoming changes to feed in tariffs, PV panels have a payback period of approximately 6 years.

This technology is deemed as technically feasible for the apartment and Creche areas within the Old Connaught Development. The common access corridor allocation for PV is currently set at 17 kWh/m² to ensure Part L compliance is achieved.



Air Source Heat Pumps:

Air source heat pumps (ASHP) can be designed to cater for the heating, cooling, and hot water loads of a building. The heat pumps absorb heat from the atmosphere, by directing a flow of air across the primary (evaporator) side of the heat pump. The heat pump, through the normal refrigerant cycle, then elevates the temperature of the rejection (condenser) side circuit to typically 50°C. The 50°C water produced by the ASHPs would typically then be stored within buffer vessels for use with the building, as and when required. This heated water could also be used within a domestic hot water cylinder to satisfy all DHW demands of the building.

The ASHP systems efficiency (COP) varies depending on variables such as the external temperature and the temperature to which the water is to be heated, but can range between 2.50 – 3.80 (250% - 380%). As ASHP extract heat from external air at a high efficiency, they are classified as a renewable energy source and contribute towards the renewable energy ratio under TGD Part L (2022).

This technology is deemed as feasible for the house, duplex, apartment and Creche areas within the Old Connaught Development.

High



Ground Source Heat Pumps (GSHP) are a proven and efficient method of heating and cooling both domestic and non-domestic developments. Just like the ASHP example above, heat pumps use refrigerant gases and an electrical compressor to take heat from a source and deliver it to an output. Chillers and refrigerators are examples of systems that remove heat, but other types of system use the heat removed from a source to heat a building. Traditional heat pumps use the air as the source of heat. However, the ideal source for maximum efficiency

Low

	would be one having a stable temperature, and the ground provides such a resource. The ground itself acts as a solar collector and thermal store. The surface is warmed by the sun and the adjacent air during daytime and in the summer. Similarly, it is cooled during night time periods. Fluctuations in ground temperature reduce with depth and stabilise at the annual mean for the location at about 12m below the surface. This temperature ranges between 9°C -12°C in Ireland. Due to the high technical requirements, and associated costs, this solution has been discounted for the Old Connaught Development.	
	Exhaust Air Heat Pumps (EAHPs) operate in a similar manner to air source heat pumps. However, as opposed to extracting heat from the external air (which varies between -5°C to 26°C), EAHP's extract air from the building itself (from 'wet' rooms) for hot water generation. EAHPs have a high COP of ~ 3.9 due to the high extract air temperature of around 20°C - which is relatively constant all year round, guaranteeing high seasonal efficiencies. EAHP's are optimal for small apartments or terraced dwellings with a low level of heat loss. Therefore, they are not considered a viable option at this point for the houses/ duplex and Creche units within the Old Connaught Development. A further review at design stage will be carried out to re-assess the feasibility of this system for the apartment units.	Medium

Table 6: Review of Renewable Energy Technologies

Following the feasibility assessment for the Old Connaught Development, the most feasible renewable energy strategy is to incorporate high efficient air source heat pumps in order to provide space heating for the houses, duplexes and Creche areas, and hot water for all spaces.

4.5 Electric Vehicle Charging

Electric vehicle charging provision shall be provided in accordance with TGD Part L requirements and the Old Connaught Local Area Plan. All residential dwellings will be provided with provision to enable the installation of an electric vehicle recharging points easily, and will therefore include appropriate electric vehicle infrastructure to the car parking space.

The infrastructure will be installed in accordance with I.S. 10101:2020. Appropriate electric vehicle recharging infrastructure will provide a safe, unobstructed route, e.g. ducting infrastructure, from a metered electrical supply point to a future recharging point location, to enable the installation of an electric vehicle recharging point without the need for any builder's work being required.

For parking spaces which are off-curtilage, functional electric vehicle charging points will be provided to 20% of the total car parking spaces.

5.0 Conclusion

This report, prepared by Delap & Waller, outlined the sustainability design and construction strategy for the proposed residential development in the Old Connaught Development. The proposed development is required to demonstrate compliance with the energy and sustainability standards of Part L (2022), whilst being aware of the requirements also outlined in the Old Connaught Local Area Plan 2025.

Technical Guidance Documents Part L requires an overall improved energy performance for the fabric, services, lighting and renewable specification of all new build developments. For the residential dwellings, the standard requires an overall improved energy performance for the fabric, services and lighting specification. The standard requires a Carbon Performance Coefficient (CPC) level of <0.35 and an Energy Performance Coefficient (EPC) level of <0.30. The NZEB standard also introduces a mandatory requirement for renewable energy sources, providing 20% of the primary energy use.

The 'Be Lean, Be Clean, Be Green' principles of the energy hierarchy have been incorporated throughout the design. As a result, the space heating, cooling (as relevant) and lighting energy demand is minimised through a passive fabric first approach. This is exemplified through improved u-values, good thermal detailing, low air tightness rates, high levels of natural daylight penetration and a passive thermal comfort strategy.

A feasibility study was carried out to determine the most feasible and effective low zero carbon and renewable energy technologies for use within the development. The analysis and proposed strategy uses highly efficient Air Source Heat Pumps (ASHPs) to deliver space heating and domestic hot water.

Using the proposed fabric, energy and renewable strategies outlined in the previous sections, all buildings within the proposed development will achieve compliance with TGD Part L (2022) and consequently the Old Connaught Local Area Plan 2025 policies. Compliance has been demonstrated through DEAP calculations. The table below summarises the provisional results achieved.

House Type	Energy Performance Coefficient (EPC)	Carbon Performance Coefficient (CPC)	Renewable Energy Ratio (RER)	BER Rating
Apartment Type 1	0.238	0.157	0.332	BER A
Apartment Type 2	0.277	0.182	0.277	BER A
House Type 1	0.264	0.170	0.261	BER A
House Type 2	0.270	0.175	0.244	BER A
Duplex Type 1	0.272	0.175	0.277	BER A
Duplex Type 2	0.276	0.178	0.268	BER A

Table 7: Part L Energy, Carbon and Renewable Performance – Dwellings

Appendix A: DEAP Dwelling Reports

Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	Top-floor apartment	Type of BER rating	New Dwelling - Provisional
Address line 1	25236	Year of Construction	2026
Address line 2	Old Conna Block 3 - Apartment 1	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	46.14	2.58	119.04
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	46.14		119.04
Living Area [m ²]	22.95		
No of Storeys	1		
			Living area percentage [%] 49.74

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	Balanced whole- house mechanical ventilation with heat recovery	Mechanical Ventilation Manufacturer	TBC
Specific fan power [W/(L/s)]	1.400	Mechanical Ventilation Model Name	TBC
Heat exchanger efficiency [%]	85.00	How many wetrooms (incl. kitchen)?	Kitchen + 2

Building Elements - Floor Details

Type	Description	Underfloor heating	U-Value [W/m ² K]	Area [m ²]
Ground Floor – Above Unheated Basement		No	0.18	46.14

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]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	23.8

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
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Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	8.640
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	192.54	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	TBC	Declared loss factor [kWh/d]	1.40
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	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 [%]	100	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	284.21	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	46.74
CO ₂ emissions [kg/m ² /yr]	5.98		
EPC	0.238	EPC Pass/Fail	Pass
CPC	0.157	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	0.18	Pass
Floors with no underfloor heat	0.18	Pass	External doors / windows / rooflights	1.40	Pass
Floors with underfloor heat	0.00	Pass			
Walls	0.18	Pass			
Percentage of opening areas [%]	26.92				
Average U value of openings	1.40	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1070.71	1070.71	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	2156.39	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1070.71	3227.10	0.33 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1070.71	3227.10	0.33

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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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	Ground-floor apartment	Type of BER rating	New Dwelling - Provisional
Address line 1	25236	Year of Construction	2026
Address line 2	Old Conna Block 3 - Apartment 2	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	73.29	2.58	189.09
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	73.29		189.09
Living Area [m ²]	32.05		
No of Storeys	1		
			Living area percentage [%] 43.73

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	Balanced whole- house mechanical ventilation with heat recovery	Mechanical Ventilation Manufacturer	TBC
Specific fan power [W/(L/s)]	1.400	Mechanical Ventilation Model Name	TBC
Heat exchanger efficiency [%]	85.00	How many wetrooms (incl. kitchen)?	Kitchen + 2

Building Elements - Floor Details

Type	Description	Underfloor heating	U-Value [W/m ² K]	Area [m ²]
Non-Heat Loss Floor		N/A	0	73.29

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
Flat Roof		0.15	73.29

Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	46.053

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
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Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	8.640
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	240.08	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	TBC	Declared loss factor [kWh/d]	1.40
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	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 [%]	100	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	284.21	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	45.48
CO ₂ emissions [kg/m ² /yr]	5.82		
EPC	0.277	EPC Pass/Fail	Pass
CPC	0.182	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	0.15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0.15	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 [%]	27.26				
Average U value of openings	1.40	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1276.14	1276.14	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	3333.56	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1276.14	4609.70	0.28 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1276.14	4609.70	0.28

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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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	End of terrace house	Type of BER rating	New Dwelling - Provisional
Address line 1		Year of Construction	2026
Address line 2	Old Conna -Duplex 2	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	44.00	2.58	113.52
First Floor	44.00	2.58	113.52
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	88.00		227.04
Living Area [m ²]	30.44		
No of Storeys	2		
			Living area percentage [%] 34.59

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)]	0.220	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]
Ground Floor - Solid	Floor	No	0.15	44
Non-Heat Loss Floor	Party Floor	N/A	0	44

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
Flat Roof	Flat Roof	0.15	44

Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	127.36

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
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Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	8.160
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	257.55	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	Nilan Compact P2 180L	Declared loss factor [kWh/d]	0.44
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	Oil Boiler Pump	0	Oil boiler pump inside dwelling	No
Gas boiler flue fan	0	Warm air heating or fan coil radiators present	Yes		

Heating System - Energy Requirements (Individual)

Main space heating system efficiency [%]	385.37	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	162.69	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	49.53
CO ₂ emissions [kg/m ² /yr]	6.34		
EPC	0.272	EPC Pass/Fail	Pass
CPC	0.175	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	0.15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0.15	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 [%]	30.75				
Average U value of openings	1.40	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1672.46	1672.46	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	4358.73	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1672.46	6031.19	0.28 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1672.46	6031.19	0.28

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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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	Mid-terrace house	Type of BER rating	New Dwelling - Provisional
Address line 1		Year of Construction	2026
Address line 2	Old Conna -Duplex 2	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	44.00	2.58	113.52
First Floor	44.00	2.58	113.52
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	88.00		227.04
Living Area [m ²]	30.44		
No of Storeys	2		
			Living area percentage [%] 34.59

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)]	0.220	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]
Ground Floor - Solid	Floor	No	0.15	44
Non-Heat Loss Floor	Party Floor	N/A	0	44

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
Flat Roof	Flat Roof	0.15	44

Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	99.27

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
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Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	8.160
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	257.55	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	Nilan Compact P2 180L	Declared loss factor [kWh/d]	0.44
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	Oil Boiler Pump	0	Oil boiler pump inside dwelling	No
Gas boiler flue fan	0	Warm air heating or fan coil radiators present	Yes		

Heating System - Energy Requirements (Individual)

Main space heating system efficiency [%]	387.9	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	162.69	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	47.60
CO ₂ emissions [kg/m ² /yr]	6.09		
EPC	0.276	EPC Pass/Fail	Pass
CPC	0.178	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	0.15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0.15	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 [%]	30.75				
Average U value of openings	1.40	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1535.71	1535.71	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	4188.98	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1535.71	5724.68	0.27 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1535.71	5724.68	0.27

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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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	End of terrace house	Type of BER rating	New Dwelling - Provisional
Address line 1		Year of Construction	2026
Address line 2	Old Conna - House 1	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	48.90	2.98	145.72
First Floor	50.71	2.42	122.72
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	99.61		268.44
Living Area [m ²]	30.44		
No of Storeys	2		
			Living area percentage [%] 30.56

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)]	0.220	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]
Ground Floor - Solid	Floor	No	0.15	48.9
Non-Heat Loss Floor	Party Floor	N/A	0	48.9
Exposed / Semi Exposed	Exposed Floor	No	0.15	1.81

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
Pitched Roof - Insulated on Ceiling	Pitched Roof	0.15	50.71

Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	112.8

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
	1	1.6	2.400

Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.400
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	5.280
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	1.430
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	1.400

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	266.38	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	Nilan Compact P2 180L	Declared loss factor [kWh/d]	0.48
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	Oil Boiler Pump	0	Oil boiler pump inside dwelling	No
Gas boiler flue fan	0	Warm air heating or fan coil radiators present	Yes		

Heating System - Energy Requirements (Individual)

Main space heating system efficiency [%]	384.75	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	162.69	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	44.03
CO ₂ emissions [kg/m ² /yr]	5.64		
EPC	0.264	EPC Pass/Fail	Pass
CPC	0.170	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	0.15	Pass	Roofs	0.15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0	Pass	Floors	0.15	Pass
Floors with no underfloor heat	0.15	Pass	External doors / windows / rooflights	1.60	Pass
Floors with underfloor heat	0.00	Pass			
Walls	0.18	Pass			
Percentage of opening areas [%]	24.13				
Average U value of openings	1.42	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1547.78	1547.78	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	4385.78	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1547.78	5933.56	0.26 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1547.78	5933.56	0.26

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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Part L Specification

BER IS NOT PUBLISHED

Property Details

Dwelling Type	Mid-terrace house	Type of BER rating	New Dwelling - Provisional
Address line 1		Year of Construction	2026
Address line 2	Old Conna - House 2	Date of Assessment	27/02/2026
Address line 3		Date of Plans	
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?	No
Assessor Name		BER number assigned to shared dwelling	N/A
Comment			

Dimension Details

	Area [m ²]	Height [m]	Volume [m ³]
Ground Floor	48.90	2.98	145.72
First Floor	50.71	2.42	122.72
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	99.61		268.44
Living Area [m ²]	30.44		
No of Storeys	2		
			Living area percentage [%] 30.56

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)]	0.220	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]
Ground Floor - Solid	Floor	No	0.15	48.9
Non-Heat Loss Floor	Party Floor	N/A	0	48.9
Exposed / Semi Exposed	Exposed Floor	No	0.15	1.81

Building Elements - Roof Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
Pitched Roof - Insulated on Ceiling	Pitched Roof	0.15	50.71

Building Elements - Wall Details

Type	Description	U-Value [W/m ² K]	Area [m ²]
300mm Cavity	EW01 External Wall Pre-Cast	0.18	67.82

Building Elements - Door Details

Description	Number of Doors	U-Value [W/m ² K]	Area [m ²]
	1	1.6	2.400

Building Elements - Window Details

Glazing type	User defined u-value	U-Value [W/m ² K]	Area [m ²]
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.400
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	5.280
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	1.430
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	3.780
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	2.450
Triple-glazed, argon filled (low-E, en = 0.05, soft coat)	Yes	1.400	1.400

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Other Details

Thermal bridging factor [W/m ² k]	0.0800	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	266.38	Combi boiler present?	No
Supplementary electric water heating	N/A	Water Storage Volume [L]	180
Hot water storage manufacturer and model name	Nilan Compact P2 180L	Declared loss factor [kWh/d]	0.48
Temperature factor unadjusted	0.89	Temperature Factor Multiplier	0.81
Primary Circuit loss type	None		
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	3	Responsiveness category	1
Central heating pumps	0	Oil Boiler Pump	0	Oil boiler pump inside dwelling	No
Gas boiler flue fan	0	Warm air heating or fan coil radiators present	Yes		

Heating System - Energy Requirements (Individual)

Main space heating system efficiency [%]	388.78	Space heating efficiency adjustment factor	1.0000	Main space heating fuel	Electricity
Main water heating system efficiency [%]	162.69	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	41.31
CO ₂ emissions [kg/m ² /yr]	5.29		
EPC	0.270	EPC Pass/Fail	Pass
CPC	0.175	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	0.15	Pass	Roofs	0.15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0.18	Pass
Flat Roof	0	Pass	Floors	0.15	Pass
Floors with no underfloor heat	0.15	Pass	External doors / windows / rooflights	1.60	Pass
Floors with underfloor heat	0.00	Pass			
Walls	0.18	Pass			
Percentage of opening areas [%]	24.13				
Average U value of openings	1.42	Pass			
Permeability test carried out and meets guidelines in TGD L				0.15 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	1326.18	1326.18	
+ Saved energy	CHP	0.00	0.00	
+ District heating	District Heating	0.00	0.00	
+ Delivered energy	Grid	0.00	4114.42	
+ Delivered energy	Thermal	0.00	0.00	
SUBTOTAL		1326.18	5440.60	0.24 - Pass
Energy not used in Regulated Loads	PV/Wind/CHP	0.00	0.00	
TOTAL		1326.18	5440.60	0.24

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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