Hodson Bay

Water Sports Pavilion and Café

Energy Statement

July 2026

PREPARED FOR

Roscommon County Council

The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund

Energy Statement

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1. Introduction

The following Energy Statement has been prepared by CIVIC MEP on behalf of Roscommon County Council to support a planning application for the proposed water sports pavilion and café at Hodson Bay.

This Energy Statement sets out the proposed strategy for minimising the operational energy demand of the development through a fabric-first approach, the use of energy-efficient building services and the integration of appropriate renewable energy technologies. It has been prepared to support the planning application and should be regarded as a planning-stage strategy rather than a detailed Part L compliance report. The proposed building will be designed to comply with the requirements of Technical Guidance Document Part L (2022) – Buildings Other Than Dwellings and achieve the Nearly Zero Energy Building (NZEB) standard. At this stage, the Statement establishes the key design principles and outlines the proposed energy strategy to be developed through the detailed design process. An initial SBEMie Part L compliance assessment has been undertaken to inform the planning application, and the associated BRIRL is included as supporting evidence. The assessment provides an indicative demonstration of compliance with the Irish Building Regulations Part L; however, the model and results will be reviewed and updated during the technical design stage. A final NEAP assessment and Building Energy Rating (BER) certification will be undertaken by an SEAI Registered Non-Domestic BER Assessor. Accordingly, the EPC, CPC, RER and BER values presented within this report should be regarded as preliminary and subject to refinement as the design develops.

1.1. The Site and Proposed Development

The site is located along the waterfront of Hodson Bay on Lough Ree and includes the connecting road between Hodson Bay and the N61. The waterfront is currently used by a number of facilities, including Hodson Bay Marina and Bay Sports. Hodson Bay Hotel is adjacent to the site, while Hodson Bay Golf Course lies to the west of the northern part of the site. The proposed development falls within the administrative area of Roscommon County Council.

The Hodson Bay Waterfront Project is a multi-disciplinary initiative intended to enhance the area as a flagship tourism destination. The project is funded by Roscommon County Council and Waterways Ireland, with support from Fáilte Ireland under the EU Just Transition Fund. The energy strategy has therefore been developed to support a durable, all-electric and low-carbon public facility appropriate to its prominent waterfront setting.

The proposed development will include the following:

- A water sports pavilion with reception, circulation, changing, shower and sanitary accommodation.
- A public café with seating, customer areas, kitchen/servery and associated storage.
- Staff, administration, plant, cleaners, stores and other back-of-house spaces.
- External terraces, access routes, public realm, landscaping, services and associated infrastructure.

1.2. Proposed Energy Strategy - Summary

The proposed buildings will be all-electric. The planning-stage servicing strategy comprises:

- Space heating and cooling provided by air-source heat pump (ASHP) variable refrigerant flow (VRF) systems, capable of simultaneous heating and cooling through fan coil units where required.
- Heating-only provision to selected back-of-house areas using direct electric panel heaters, where the intermittent use and low design heat loss make a simple local solution appropriate.
- Mechanical ventilation with heat recovery. The final arrangement, including whether systems are centralised or local/decentralised, will be confirmed at detailed design.
- Central domestic hot-water generation using dedicated air-source heat pumps and insulated hot-water storage tanks. The system will be sized to address the relatively high and variable shower demand.
- A central, pressurised cold-water storage tank and booster arrangement to provide potable-water resilience. Low-flow fittings will be provided; greywater and rainwater harvesting are not proposed.
- High-efficiency LED lighting with daylight dimming and occupancy sensing appropriate to each space.
- A roof-mounted photovoltaic array maximised to the suitable available roof area.
- A high-performance thermal envelope, low air permeability and controlled solar gain to reduce heating, cooling and ventilation energy demand.
- Initial EV charging provisions with electrical capacity to allow for future expansion.

Figure 1: Proposed Site Layout

Figure 2: Proposed Ground Floor Plan

1.3. Relevant Policies and Guidance

The policy and regulatory context has been reviewed at the national, regional and local levels. This section identifies the principal documents relevant to the planning-stage energy strategy.

1.3.1. National Policy and Legislation

Table 1: National policy and regulatory context

Plan/policy	Key requirement or direction	Relevance to the development
Climate Action and Low Carbon Development (Amendment) Act 2021	Establishes Ireland's legally binding climate objective, including a 51% reduction in greenhouse-gas emissions by 2030 and a transition to a climate-neutral economy by 2050.	The all-electric, heat-pump-led and renewable-energy strategy supports the transition away from direct fossil-fuel use in buildings.
Climate Action Plan 2025	Provides the current statutory roadmap of actions to deliver national carbon budgets and sectoral emissions ceilings, and to halve national emissions by 2030 on the pathway to climate neutrality.	Supports high building efficiency, electrification of heat and increased renewable electricity generation.
National Planning Framework - First Revision (April 2025)	Provides the national spatial planning framework and promotes climate-resilient, resource-efficient development and renewable-energy capacity.	The project supports sustainable tourism infrastructure and integrates energy efficiency and renewable energy at the design stage.
Building Regulations 1997-2024, Part L - Conservation of Fuel and Energy	Requires new buildings other than dwellings to limit primary energy use and CO_2 emissions, use energy-efficient building services and incorporate renewable energy so that NZEB performance is achieved.	Detailed compliance will be demonstrated using NEAP during detailed design. This planning statement establishes the proposed route to compliance.
Technical Guidance Document L 2022 - Buildings Other Than Dwellings	Provides guidance on Part L compliance, including fabric backstops, energy-efficient services, NEAP methodology, EPC / CPC limits and renewable-energy requirements.	The proposed fabric targets materially improve on the elemental backstops, and the proposed all-electric services align with the NZEB methodology.
European Union (Energy Performance of Buildings) Regulations, as amended	Establishes requirements relating to energy performance and Building Energy Rating certification.	The final building will be assessed and certified by an appropriately registered BER assessor at the relevant statutory stage.

1.3.2. Regional Policy

Table 2: Regional policy context

Plan/policy	Relevance to the development
Northern and Western Regional Assembly - Regional Spatial and Economic Strategy 2020-2032	Provides the regional framework for sustainable growth, climate resilience, low-carbon development, renewable energy and tourism. The proposed energy strategy supports these principles through efficient, all-electric building services and on-site solar generation.
EU Just Transition Fund programme context	The project is supported through Fáilte Ireland under the EU Just Transition Fund. The efficient, fossil-fuel-free operational strategy supports the wider objective of resilient and sustainable regional economic development.

1.3.3. Local Policy - Roscommon County Council

Table 3: Local policy context

Plan/policy	Policy or action summary	Relevance to the development
County Roscommon Local Authority Climate Action Plan 2024–2029 – Overarching objective	Establishes a county-level framework for climate mitigation and adaptation. It seeks to reduce emissions from the Council's operations and areas of influence and to support the transition towards a climate-resilient and climate-neutral economy.	The development supports this direction through a fabric-first, all-electric energy strategy. Heat-pump systems, heat-recovery ventilation, efficient lighting and roof-mounted solar PV will reduce operational energy demand and avoid direct fossil-fuel combustion on the site.
Built Environment and Transport Strategic Goal	Seeks amenity and tourism development that protects the environmental integrity of the county and delivers a built environment reflecting Roscommon County Council's low-carbon ambition.	The proposal is an amenity and tourism development at an established waterfront destination. Its energy strategy incorporates high-performance fabric, low-carbon building services and on-site renewable electricity while having regard to the sensitive lakeside setting.
Objective BET (i)	Reduce emissions across all sectors identified at the earliest possible opportunity, prioritising actions related to Transport and Thermal emissions.	Thermal emissions will be minimised through enhanced insulation, double glazing, controlled airtightness, heat-recovery ventilation and high-efficiency heat pumps. The building will contain no gas- or oil-fired space-heating or hot-water plant.
Objective BET (ii)	Ensure a climate aware response to operations, works and development across the Council area.	Climate considerations have informed the proposed fabric, servicing and renewable-energy strategy. The design includes reduced heat loss, solar-control glazing, energy-efficient cooling, water-efficient fittings and the maximisation of roof-mounted PV.
Objective BET (vi)	Focus ancillary tourism facilities in established destinations to promote sustainable travel choices, rationalise investment in services and utilities, consolidate destination benefits and protect amenity assets in accordance with appropriate guidance including the National Investment framework for Transport	The pavilion and café form part of the enhancement of the established Hodson Bay tourism and water-sports destination, alongside the marina, Bay Sports and Hodson Bay Hotel. The proposal makes use of existing destination infrastructure while adopting measures intended to protect the environmental quality and amenity of the waterfront.
Action BET 1: New Local Authority Buildings	Ensure that all new Local Authority Buildings are designed to meet Net Zero Carbon using new innovative construction techniques, products, and processes. Identify a pilot building project to establish RCC as an exemplar of best practice.	The proposed all-electric design, enhanced thermal envelope, low air-permeability target, heat pumps, heat recovery and maximised PV array establish an appropriate pathway towards very low operational carbon. Initial NEAP modelling demonstrates Part L and NZEB compliance, but detailed NEAP modelling and BER assessment will be completed during detailed design to confirm.
Action BET 4: Alternative and Renewable Energy	Promote the development of suitable alternative energy projects in appropriate areas, including on degraded lands in RCC ownership (e.g. historic landfill sites) and particularly those developed and run by	Roof-mounted solar PV has been maximised within the available suitable roof area to offset electricity imported for the building's operational demands, with due consideration given to visual, ecological and glint-and-glare factors.

	communities aligned with the SEC programme and in accordance with the adopted RCC Renewable Energy Strategy (CDP).	
Action BET 6: Water Conservation	Embed water conservation measures throughout all RCC buildings.	Low-flow taps, showers and sanitary fittings will be provided. A central pressurised cold-water storage tank will provide operational resilience. Rainwater harvesting and greywater recycling are not currently proposed; consequently, careful specification of shower and sanitary flow rates will be important given the anticipated high water and hot-water demand.
Roscommon County Development Plan 2022–2028 – Chapter 8 and Renewable Energy Strategy, as referenced by the Climate Action Plan	The Climate Action Plan identifies Chapter 8 of the County Development Plan as supporting renewable-energy research and development, low-carbon alternatives and nature-based approaches. It also requires alternative-energy projects to accord with the Council's Renewable Energy Strategy.	The use of air-source heat pumps and roof-mounted PV is consistent with this strategic direction. The scheme does not rely on fossil-fuel heating and will maximise renewable generation within the practical and planning constraints of the waterfront site.

1.4. Part L and NZEB Planning-Stage Target

Building Regulations Part L requires new buildings other than dwellings to be designed and constructed so as to limit primary energy use and carbon dioxide emissions, provide energy-efficient building services and achieve NZEB performance. Compliance is assessed using the Non-domestic Energy Assessment Procedure (NEAP), which compares the proposed building with a reference building and reports the Energy Performance Coefficient, Carbon Performance Coefficient and Renewable Energy Ratio.

For this planning-stage strategy, the following compliance criteria are noted for future verification:

Table 4: Part L and NZEB targets

Part L / NZEB metric	Requirement to be demonstrated
Energy Performance Coefficient (EPC)	EPC not greater than the Maximum Permitted EPC (MPEPC), currently 1.00.
Carbon Performance Coefficient (CPC)	CPC not greater than the Maximum Permitted CPC (MPCPC), currently 1.15.
Renewable Energy Ratio (RER)	Required renewable contribution to be demonstrated in accordance with TGD L 2022 and the achieved EPC / CPC pathway.
Building Energy Rating (BER)	A BER assessment and certificate are required at the appropriate statutory stage.
Supporting evidence	Final fabric, airtightness, thermal-bridging, plant, controls, lighting, ventilation, PV and commissioning information.

2. Energy and Emissions Strategy

2.1. Approach

The energy strategy follows a three-stage hierarchy. Measures are considered sequentially so that energy demand is reduced before efficient systems and low- and zero-carbon energy generation are applied.

Figure 3: Energy hierarchy

	Stage	Aim	Typical measures
1	**Minimise Energy Demand**	Reduce the building's underlying need for heating, cooling, ventilation and lighting.	Passive design, high-performance fabric, airtightness, reduced thermal bridging, solar control and effective use of daylight.
2	**Use Energy Efficiently**	Meet the remaining demand using efficient systems and controls.	High-efficiency heating, cooling and ventilation, heat recovery, efficient hot-water generation, LED lighting, zoning and automatic controls.
3	**Low- and Zero-Carbon Energy Generation**	Supply part of the residual energy demand from renewable or low-carbon sources.	Solar PV, heat pumps and other site-appropriate low- and zero-carbon technologies.

2.2. Minimising Energy Demand

The building envelope will be designed to reduce heat loss, uncontrolled air infiltration and avoidable cooling demand. The proposed U-values and air-permeability rate are substantially better than the elemental backstops in TGD L 2022 and provide an appropriate basis for a robust fabric-first strategy.

Table 5: Planning-stage fabric performance targets

Element	TGD L 2022 reference/backstop	Proposed target
Ground floor	0.21 W/m²K maximum elemental U-value	0.10 W/m²K
Roof	0.20 W/m²K flat roof / 0.16 W/m²K pitched roof maximum elemental U-value	0.12 W/m²K
External walls	0.21 W/m²K maximum elemental U-value	0.13 W/m²K
Glazing/roof lights	1.65 W/m²K maximum elemental U-value	1.2 W/m²K, double glazing
Solar transmittance	No single universal backstop; determined by overheating and energy assessment	0.40
Air permeability	5.0 m³/(h·m²) @ 50 Pa is identified in TGD L as a reasonable upper limit for new buildings	3.0 m³/(h·m²) @ 50 Pa
Thermal bridging	Reasonable provision required	Accredited Psi-values

The proposed fabric values are design targets rather than certified construction values. They should be reviewed alongside moisture, condensation, fire, durability and buildability requirements. Final U-values and thermal-bridge inputs will be based on the completed construction details and product data.

2.2.1. Airtightness and Thermal Bridging

A continuous air barrier will be defined around the conditioned envelope and coordinated through walls, roofs, floors, glazing and doors. The design team will prepare an airtightness strategy and drawing mark-up before construction. Intermediate air testing is recommended while the air barrier remains accessible, followed by the final test required for Part L / NEAP evidence.

Thermal bridging will be reduced through continuity of insulation and careful detailing at slab edges, parapets, roof interfaces, openings, structural penetrations and external canopies. Project-specific Psi-values will be calculated where standard details are not applicable or where calculation provides a material energy benefit.

2.2.2. Solar Gain, Daylight and Overheating

The architectural design will seek to maximise views and daylight in response to the surrounding waterfront context, while also managing solar gains and overheating risk. A maximum glazing g-value of 0.40 is proposed, with the final value selected according to orientation. External shading, recessed glazing, and blinds will be incorporated where analysis identifies a risk of overheating.

The VRF system will provide active cooling to occupied zones where required. Passive measures will be prioritised to avoid creating unnecessary cooling demand. The detailed design will assess summer comfort using an appropriate methodology and representative occupancy profiles, including peak café use and humidity loads associated with the changing areas.

2.2.3. Water Demand

The water sports use is expected to create a significant shower and domestic hot-water demand. Reducing water use therefore reduces both potable-water consumption and the energy required for hot-water generation. Low-flow showers, taps and sanitary fittings will be selected to achieve water efficiency.

A central cold-water storage tank and variable-speed booster arrangement will provide site resilience. The detailed design should minimise unnecessary storage volume and distribution pressure, provide leak detection/isolation where appropriate, and insulate pipework against heat gain, condensation and frost. Rainwater harvesting has been considered but is not proposed, as the principal water demand within the building arises from showers and washbasins, which require a potable water supply. The potential for rainwater reuse is therefore limited primarily to WC flushing and does not justify the additional storage, treatment and maintenance requirements of a rainwater harvesting system. Water efficiency will instead be achieved through low-flow sanitary fittings and efficient water management measures.

2.3. Using Energy Efficiently

The proposed building-services systems are designed to meet the operational needs of the water sports pavilion and café while reducing energy use for fans, pumps, heating, cooling, hot water, and lighting.

Table 6: Planning-stage building-services strategy

System/element	Proposed strategy	Energy-efficiency measures and detailed-design requirements
Space heating and cooling	All-electric ASHP-driven VRF system serving fan coil units (FCU), with simultaneous heating and cooling capability where required. SCOP = 4, SEER = 7.5, FCU Specific Fan Power = 0.3 W/l/s	High seasonal efficiency; heat recovery between zones where available; appropriate zoning; weather/load compensation; occupied and setback schedules; local temperature control; prevention of simultaneous heating and cooling within the same zone; refrigerant leak detection and F-gas compliance as applicable.
Back-of-house heating	Electric panel heaters to selected heating-only back-of-house spaces. Efficiency = 100%	Restricted to low-load / intermittently occupied areas; local time and temperature controls; window/door interlock where appropriate; final extent to be minimised through the NEAP zoning review. Efficiency = 100%
Mechanical ventilation	Mechanical ventilation with heat recovery; centralised or local arrangement to be confirmed. Specific Fan Power = 1.6 W/l/s	High heat-recovery efficiency; low specific fan power; variable-volume or demand control where appropriate; occupancy / CO_2 / humidity control; proper commissioning and accessible filters. Separate kitchen extract and make-up air to be coordinated.
Domestic hot water	Central air-source heat pump(s) with insulated hot-water storage tank(s). SCOP = 3.5 Storage = 1000 L	High-efficiency heat pumps; optimised storage volume and temperatures; short, insulated distribution routes; secondary circulation only where needed and controlled by time/temperature; high-performance storage and pipe insulation; Legionella-control strategy.
Cold water	Central potable-water storage and pressurisation.	Variable-speed booster pumps; efficient pressure setpoints; leak detection/isolation; low-flow outlets;

		submetering as appropriate. No rainwater or greywater reuse.
Lighting	LED lighting throughout, with dimming and occupancy sensing. Efficacy = 100 lm/W	High luminaire efficacy; daylight dimming near façades; occupancy or absence detection; timeclock/photocell control externally; task-appropriate lighting levels; commissioning and user override.
Controls and metering	Integrated controls appropriate to building scale, with separate local controls where simpler.	Energy metering and submetering for major end uses; trend logging where practicable; fault indication; accessible controls; seasonal commissioning and clear operating instructions.
Café and specialist equipment	Efficient catering, refrigeration, dishwashing and specialist equipment selected by the operator/fit-out team.	Specify efficient products, automatic shut-down, insulated appliances, heat recovery where practical and submetering. These process loads may not be fully represented in NEAP but will materially affect operational energy use.

2.3.1. Heating and Cooling

The principal occupied spaces will be served by a variable refrigerant flow heat-pump system connected to fan coil units. The system will be selected to provide efficient part-load operation and, where the selected manufacturer's arrangement allows, heat recovery between zones requiring cooling and zones requiring heating. This is particularly relevant to a mixed-use building where solar gains, café activity, changing areas and back-of-house spaces may create different simultaneous loads.

Outdoor units will be selected using winter and summer design conditions appropriate to the site. Capacity correction, defrost operation, acoustic performance, refrigerant charge, refrigerant pipe lengths and the exposed waterfront environment will be considered. Final seasonal coefficients of performance and energy-efficiency ratios will be entered into the NEAP model using certified product data.

Direct electric panel heaters are proposed only for selected back-of-house areas. Although their point-of-use efficiency is effectively 100%, direct electric heating does not provide the renewable ambient-energy contribution associated with a heat pump. Its use will therefore be limited and tested in the detailed NEAP assessment.

2.3.2. Ventilation and Indoor Air Quality

Balanced mechanical ventilation with heat recovery is proposed for the occupied areas. The final solution may comprise centralised air-handling units, or more localised heat-recovery units or a hybrid arrangement. The selection will be based on zoning, operating hours, humidity control, acoustic requirements, maintenance access and the need to avoid excessive ductwork pressure losses.

Changing and shower areas will require effective moisture extraction, while the café kitchen will require a dedicated extract and make-up-air strategy. Fans will be selected for low specific fan power, and systems will be commissioned to the design air volumes.

2.3.3. Domestic Hot Water

Domestic hot water will be generated by a central air-source heat pump plant and stored in insulated hot-water storage tanks. The high shower demand will be assessed using realistic peak-use profiles rather than relying only on generic occupancy assumptions. The detailed design will confirm recovery time, storage capacity, peak flow, distribution losses, backup/pasteurisation arrangements and operational resilience.

Hot-water distribution will be arranged to minimise dead legs and standing losses. Where a secondary circulation loop is required, it will be as short as practicable, fully insulated and controlled by time and temperature. Low-flow shower fittings will reduce both water and hot-water energy demand. Final measures must be coordinated with the water hygiene and Legionella risk-management strategy.

2.3.4. Lighting, Controls and Metering

All internal and external lighting will use high-efficiency LED sources. Occupancy sensing will be used in circulation, sanitary, store, office and other intermittently occupied spaces, while daylight dimming will be provided where useful

daylight is available. External lighting will use photocell and time controls and will be coordinated with ecology and dark-sky considerations.

The controls philosophy will be proportionate to the building scale and operator capability. The detailed design will provide clear zoning, setpoints, schedules, and override functions. Major energy uses should be separately metered so that the operator can identify abnormal consumption. Metering should, as a minimum, distinguish whole-building electricity, heat-pump systems, domestic hot water, catering/tenant loads and PV generation where feasible.

2.4. Low and Zero Carbon Technologies

2.4.1. Technology Feasibility Review

A qualitative review of low- and zero-carbon technologies has been undertaken for the planning-stage design. The assessment considers technical fit, site constraints, likely operational profile, maintenance and compatibility with the all-electric strategy. Quantitative lifecycle cost and carbon calculations have not been completed at this stage.

Table 7: Low and zero carbon technology feasibility review

Technology	Planning-stage assessment	Recommendation
Air-source heat pumps	Technically suitable for the mixed-use building and capable of efficient heating and cooling and hot water. External plant requires acoustic, visual, airflow and corrosion coordination.	Proposed for space heating, cooling and hot water
Solar photovoltaic panels	The roof provides an opportunity to generate renewable electricity close to the point of use. Output will vary with orientation, pitch, shading and roof constraints.	Proposed. Maximise suitable roof coverage and coordinate at the detailed design stages.
Battery storage	Could increase on-site use of PV and provide limited demand management, but adds capital cost, space, fire-safety and replacement requirements. No project requirement has been identified at the planning stage.	Not proposed.
Ground-source heat pump	Potentially efficient but would require ground loops or boreholes, specialist investigation and greater capital/programme commitment. The waterfront ground conditions and wider site works would need assessment.	Not proposed; ASHP is the preferred lower-complexity solution.
District or communal heat network	No heat-network connection is assumed for the site. The building is relatively isolated, and an efficient standalone all-electric solution is available.	Not proposed.
Combined heat and power (CHP)	Combustion-based CHP is inconsistent with the proposed fossil-fuel-free strategy and is generally less appropriate as the electricity grid decarbonises. It also requires a stable year-round heat load.	Not proposed.
Biomass heating	Would require fuel deliveries, storage, flue, ash handling and ongoing maintenance, with potential local air-quality and operational impacts.	Not proposed.
Solar thermal hot water	The high hot-water demand provides a potential use, but roof area is better retained for flexible electrical PV generation, and solar thermal adds hydraulic complexity and summer heat-management requirements.	Not proposed; maximise PV and use heat-pump DHW.
Wind turbine	The exposed location may have wind resource, but a building-scale turbine could create visual, acoustic, ecological, structural and maintenance constraints in a prominent waterfront setting. A site-specific study would be needed.	Not proposed.
Micro hydro	The presence of Lough Ree does not in itself establish a viable hydro or water-source heat-pump opportunity. Environmental licensing, ecology, intake/discharge, and maintenance constraints would require specialist assessment.	Not proposed.

Based on this review, the combined low- and zero-carbon strategy is:

- ASHP-based VRF heating and cooling with heat recovery where practicable.

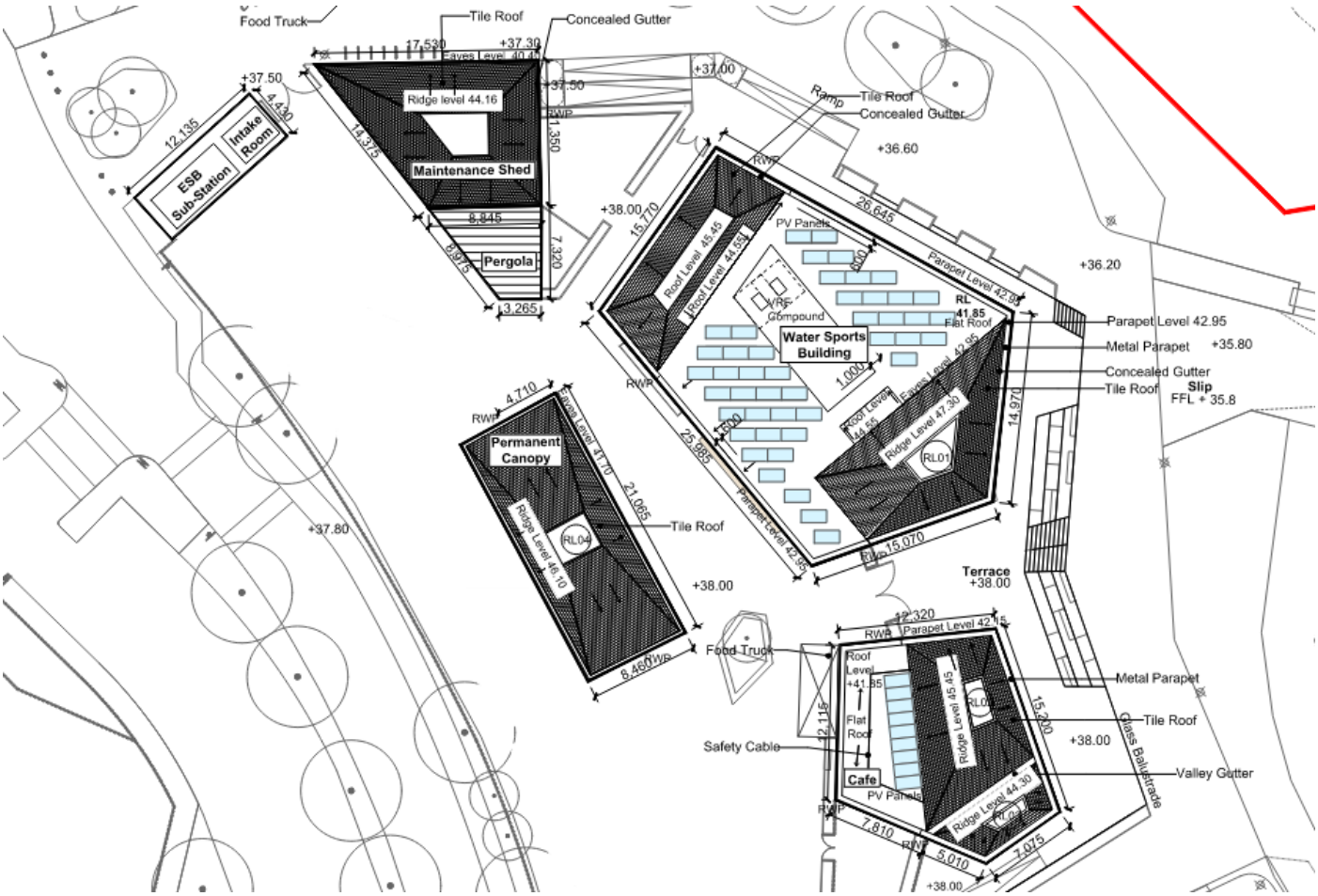
- Dedicated central ASHP domestic-hot-water generation with insulated hot-water storage tanks
- A maximised roof-mounted solar PV array serving on-site electrical demand.

2.4.2. Solar Photovoltaic Array

The PV array has been maximised to the suitable available roof area. The electricity generated will be used on-site in preference to imports from the grid, with any surplus exported through the final electrical connection arrangement. No battery storage is proposed.

It is proposed to include 45 panels on the water sports pavilion and 9 panels on the café, totalling 54 panels with an area of 108m^2. The array will have 21.6 kW peak, assuming 400W per panel, and would generate approximately 16-20 MWh of electricity annually, depending on the final module efficiency.

Figure 4: Proposed Roof Plan and PV Layout



2.4.3. EV Charging and Electrical Capacity

The development is expected to include an initial provision of approximately 18 no. 7 kVA slow electric vehicle chargers and 12 no. 24 kVA rapid chargers. The electrical infrastructure will allow for future expansion to approximately 150 slow chargers and 12 rapid chargers, subject to the final operational requirements and detailed design of the charging strategy.

The estimated maximum electrical demand for the development, including the initial electric vehicle charging provision, is approximately 716 kVA. Allowing for the future expansion of the charging infrastructure, the estimated maximum demand increases to approximately 1,202 kVA, of which the future electric vehicle charging provision is expected to contribute approximately 835 kVA of connected load. The final electrical demand and charging capacity will be confirmed during detailed design stages.

3. NEAP/Part L Compliance BRIRL

3.1. Overview

The energy performance of the proposed development has been assessed using the Non-Domestic Energy Assessment Procedure (NEAP) in accordance with the requirements of Technical Guidance Document (TGD) Part L – Conservation of Fuel and Energy (Buildings other than Dwellings).

NEAP is the Irish National Calculation Methodology for assessing the energy performance of non-domestic buildings and is used to demonstrate compliance with the mandatory requirements of Part L. The assessment evaluates the proposed building against a notional reference building and determines compliance through the Energy Performance Coefficient (EPC), Carbon Performance Coefficient (CPC) and Renewable Energy Ratio (RER), together with the elemental fabric and building services requirements prescribed within TGD Part L.

An initial planning-stage NEAP assessment has been undertaken using the SBEMie calculation engine to establish the proposed building's anticipated energy performance and demonstrate compliance with Part L. The assessment confirms that the proposed development satisfies the applicable Part L compliance criteria and therefore achieves the Nearly Zero Energy Building (NZEB) standard.

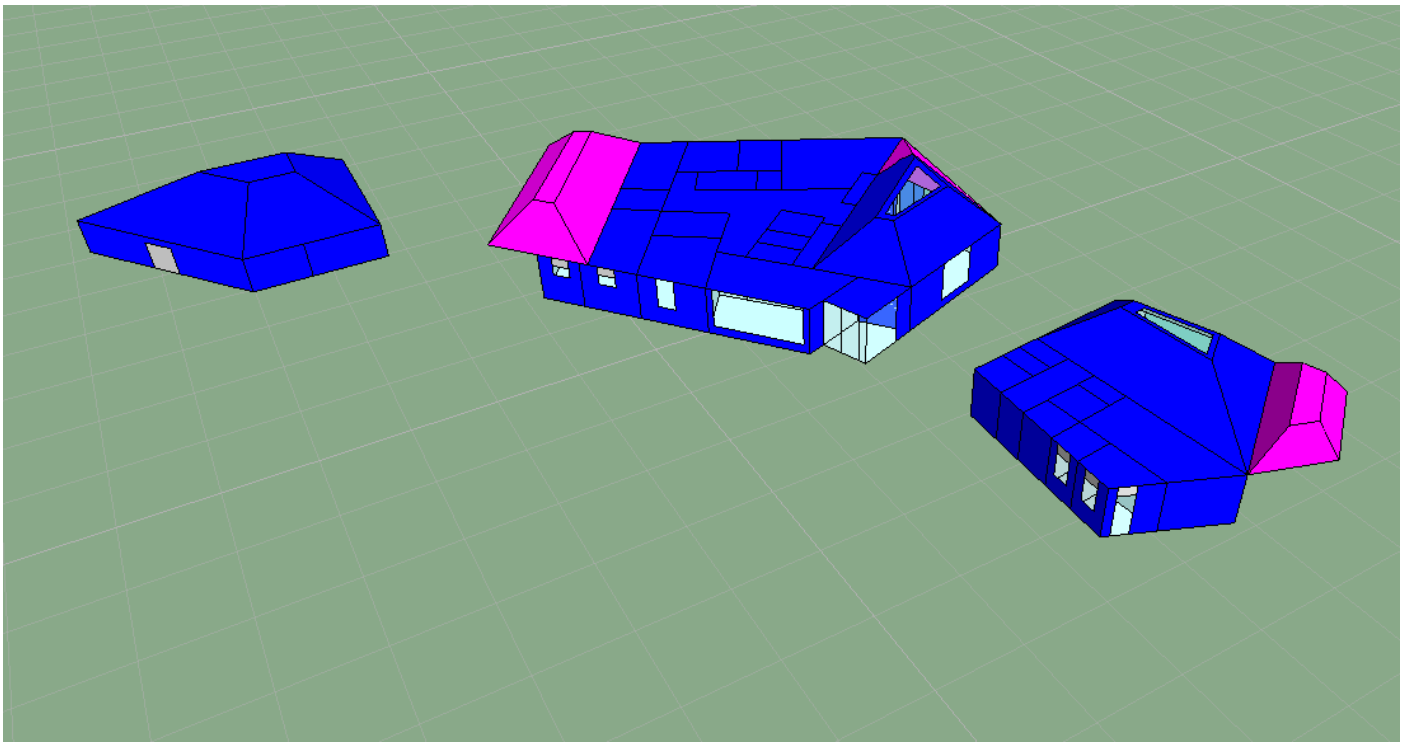
The NEAP assessment will be reviewed and updated as the design develops. A final assessment and Building Energy Rating (BER) certification will be completed by an SEAI Registered Non-Domestic BER Assessor prior to occupation.

3.2. Energy Model

A three-dimensional building energy model has been developed using IES Virtual Environment (IES VE) to undertake the initial NEAP assessment. The modelling assumptions, including the proposed building fabric, glazing specification, HVAC strategy, lighting and renewable energy systems, are consistent with the design specifications outlined in Section 2 of this report.

The model has been prepared using the SBEMie Compliance module within IES VE, which interfaces directly with the approved SBEMie calculation engine to generate the Building Regulations Ireland Report (BRIRL).

Figure 5: IES VE model developed for the planning-stage NEAP assessment.



3.3. NEAP Results

The initial NEAP assessment demonstrates that the proposed development complies with the principal energy performance requirements of Technical Guidance Document Part L. Compliance has been demonstrated against the Energy Performance Coefficient (EPC), Carbon Performance Coefficient (CPC) and Renewable Energy Ratio (RER), together with the elemental fabric requirements.

The results of the planning-stage assessment are summarised in Table X. The full BRIRL output is provided in Appendix A.

Performance Metric	Requirement	Proposed	Compliance
Carbon Performance Coefficient (CPC)	≤ 1.15	0.46	✓
Energy Performance Coefficient (EPC)	≤ 1.00	0.62	✓
Renewable Energy Ratio (RER)	≥ 0.10*	0.38	✓
Primary Energy Consumption (kWh/m²/annum)	—	75.1	—
CO_2 Emissions (kgCO_2/m²/annum)	—	9.6	—
Building Regulations Part L	Compliant	Pass	✓
Nearly Zero Energy Building (NZEB) Standard	Achieved through Part L compliance	Pass	✓

4. Conclusion

This Energy Statement sets out a planning-stage energy strategy for the proposed Water Sports Pavilion and Café at Hodson Bay, County Roscommon. The design follows the energy hierarchy by first minimising demand through a high-performance envelope, then using energy efficiently through heat recovery, efficient controls, lighting and heat-pump systems, and finally supplying a proportion of the residual demand from on-site renewable energy.

The development is proposed as an all-electric building. Space heating and cooling will be provided by an ASHP-driven VRF system serving fan coil units, with limited direct electric panel heating in selected back-of-house areas. Mechanical ventilation with heat recovery will be provided, with the final centralised or local arrangement confirmed at detailed design. Central air-source heat pumps and insulated hot-water storage tanks will serve the significant shower and domestic hot water demand. A maximised roof-mounted PV array will generate renewable electricity; no battery storage is proposed.

The target fabric performance—including floor and roof U-values of 0.10 and 0.12 W/m²K, wall U-values of 0.13 W/m²K, double glazing of 1.2 W/m²K, a maximum g-value of 0.40 and an airtightness target of 3.0 m³/(h·m²) at 50 Pa—provides a strong basis for reducing heating and cooling demand. Low-flow water fittings, efficient lighting and controls, metering and commissioning will further reduce operational resource use.

The proposed building has been designed to comply with the requirements of Building Regulations Part L (Buildings Other Than Dwellings) and achieve the Nearly Zero Energy Building (NZEB) standard. An initial NEAP assessment has been completed using the SBEMie calculation engine, confirming that the proposed building satisfies the applicable Part L compliance criteria. The associated BRIRL output is included as supporting evidence. The assessment will be reviewed and updated during detailed design, with final BER certification completed by an SEAI Registered Non-Domestic BER Assessor prior to occupation.

By demonstrating compliance with TGD Part L, the proposed development supports Ireland's national transition towards highly energy-efficient, low-carbon buildings and aligns with the objectives of the "Towards Nearly Zero Energy Buildings in Ireland" guidance. The proposed all-electric design, high-performance building fabric, efficient building services and on-site renewable energy generation minimise operational energy demand and carbon emissions while providing a resilient and future-ready building.

The development also supports the objectives of Roscommon County Council Climate Action Plan 2024–2029, Action BET 1, which seeks to ensure that new Local Authority buildings are designed to achieve net zero carbon through innovative construction techniques, products and processes. Whilst achievement of net zero carbon extends beyond the scope of a Part L compliance assessment, the proposed design adopts the key principles of the policy through the elimination of on-site fossil fuel combustion, the use of high-efficiency air source heat pump technology, and the incorporation of on-site renewable energy generation, providing a strong foundation for a low-carbon public building.

Key commitments for planning:

- All-electric development; no direct fossil-fuel heating.
- High-performance fabric and 3.0 m³/(h·m²) @ 50 Pa airtightness target.
- ASHP/VRF heating and cooling, heat recovery ventilation and ASHP domestic hot water.
- LED lighting with occupancy and daylight controls.
- Low-flow water fittings and resilient pressurised cold-water storage.
- Maximised roof-mounted PV array, with no battery storage proposed.
- Detailed NEAP assessment, BER certification and commissioning evidence to be completed at detailed design and prior to occupation.

Appendix A - BRIRL

The planning-stage NEAP assessment demonstrates that the proposed building satisfies the applicable Part L compliance criteria for Energy Performance Coefficient (EPC), Carbon Performance Coefficient (CPC) and Renewable Energy Ratio (RER). The detailed compliance outputs are presented in the appended BRIRL.

BRIRL Output Document

Compliance Assessment with the Building Regulations (Ireland) TGD-Part L 2017

This report demonstrates compliance with specific aspects of Part L of the Building Regulations. Compliance with all aspects of Part L is a legal requirement. Demonstration of how compliance with every aspect is achieved may be sought from the Building Control Authority.

Hodson Bay Waterfront Par

Date: Wed Aug 05 07:45:48 2026

Administrative information

Building Details

Address: Hodson Bay, -, -, -, Co. Roscommon, N37 KH72

NEAP

Calculation engine: SBEMIE

Calculation engine version: v5.6.a.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: 7.0.30

BRIRL compliance check version: v5.6.a.0

Client Details

Name: -

Telephone number: -

Address: -, Co. Roscommon, -

Energy Assessor Details

Name: Stewart Somerville

Telephone number: -

Email: -

Address: 36 Lad Lane, Baggot Street, Dublin 2, D02 T208

Primary Energy Consumption, CO2 Emissions, and Renewable Energy Ratio

The compliance criteria in the TGD-L have been met.

Calculated CO2 emission rate from Reference building	20.7 kgCO2/m2.annum
Calculated CO2 emission rate from Actual building	9.6 kgCO2/m2.annum
Carbon Performance Coefficient (CPC)	**0.46**
Maximum Permitted Carbon Performance Coefficient (MPCPC)	**1.15**
Calculated primary energy consumption rate from Reference building	121.3 kWh/m2.annum
Calculated primary energy consumption rate from Actual building	75.1 kWh/m2.annum
Energy Performance Coefficient (EPC)	**0.62**
Maximum Permitted Energy Performance Coefficient (MPEPC)	**1**
Renewable Energy Ratio (RER)	**0.38**
Minimum Renewable Energy Ratio	**0.1**

Heat Transmission through Building Fabric

Element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Limit}$	$U_{i\text{-}Calc}$	Surface with maximum U-value*
Walls**	0.21	0.13	0.6	0.13	CF000009_W1
Floors (ground and exposed)	0.21	0.1	0.6	0.1	CF000007_F
Pitched roofs	0.16	0.12	0.3	0.12	RF000000_C
Flat roofs	0.2	0.12	0.3	0.12	CF000007_C
Windows, roof windows, and rooflights	1.6	1.15	3	1.2	CF000009_W1_O0
Personnel doors	1.6	1.2	3	1.2	CF000009_W1_O1
Vehicle access & similar large doors	1.5	-	3	-	"No ext. vehicle access doors"
High usage entrance doors	3	-	3	-	"No ext. high usage entrance doors"

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m2K)]
$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m2K)]
$U_{i\text{-}Limit}$ = Limiting individual element U-values [W/(m2K)]
$U_{i\text{-}Calc}$ = Calculated individual element U-values [W/(m2K)]

* There might be more than one surface with the maximum U-value. ** Automatic U-value check by the tool does not apply to curtain walls whose area-weighted average and individual limiting standards are 1.8 and 3 W/m2K, respectively.

Air Permeability	Upper Limit	This Building's Value
m3/(h.m2) at 50 Pa	5	3.39

Building Services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the Building Regulations documents for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	0.9 to 0.95

1- EPH

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	1	-	-	-	-
Standard value	N/A	N/A**	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

** No automatic check on chiller efficiency has been performed by the tool in this case. Refer to Building Regulations documents for limiting efficiency.

2- ASHP VRF FCU

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	4	7.5	-	1.6	0.83
Standard value	2.75	N/A**	N/A	1.6^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

** No automatic check on chiller efficiency has been performed by the tool in this case. Refer to Building Regulations documents for limiting efficiency.

^ Limiting SFP may be extended by the amounts specified in the Building Regulations documents if the system includes additional components as listed in those documents.

1- SYST0002-DHW

	Water heating efficiency	**Storage loss factor [kWh/litre per day]**
This building	3.5	0.004
Standard value	0.8*	N/A

* Standard shown is for all types except absorption and gas engine heat pumps.

2- SYST0000-DHW

	Water heating efficiency	**Storage loss factor [kWh/litre per day]**
This building	Hot water provided by HVAC system	-
Standard value	N/A	N/A

Local mechanical ventilation, exhaust, and terminal units

ID	**System type in Building Regulations documents**
A	Local supply or extract ventilation units serving a single area
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	**SFP [W/(l/s)]**									**HR efficiency**	
ID of system type	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	**Zone**	**Standard**
Cafe_00_WC1	-	-	0.3	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Cafe_00_WC2	-	-	0.3	-	-	-	-	-	-	-	N/A
Cafe_00_WC3	-	-	0.3	-	-	-	-	-	-	-	N/A
Cafe_00_WC4	-	-	0.3	-	-	-	-	-	-	-	N/A
Sports_00_WC Acc	-	-	0.3	-	-	-	-	-	-	-	N/A
Sports_00_WC Female	-	-	0.3	-	-	-	-	-	-	-	N/A
Sports_00_WC Male	-	-	0.3	-	-	-	-	-	-	-	N/A
Cafe_00_Seating	-	-	-	-	-	-	-	0.3	-	-	N/A
Cafe_00_Servery	-	-	-	-	-	-	-	0.3	0.8	-	N/A
Cafe_00_Staff Room	-	-	-	-	-	-	-	0.3	-	-	N/A
Cafe_00_WC Circ	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Changing	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Lobby1	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Lobby2	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Main Circulation	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Office	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Staff Room	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Changing Female	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Changing Male	-	-	-	-	-	-	-	0.3	-	-	N/A
Sports_00_Briefing Room	-	-	-	-	-	-	-	0.3	-	-	N/A

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
Cafe_00_Elec	100	-	-	33
Cafe_00_Store	100	-	-	10
Cafe_00_Store	100	-	-	7
Cafe_00_WC1	-	100	-	33
Cafe_00_WC2	-	100	-	28
Cafe_00_WC3	-	100	-	28
Cafe_00_WC4	-	100	-	30
MShed_00_Engine Room	100	-	-	60
MShed_00_Maintenance	100	-	-	124
MShed_00_Storage	100	-	-	70
MShed_01_Storage	100	-	-	108
Sports_00_Changing Cubicle 1	-	100	-	53
Sports_00_Changing Cubicle 2	-	100	-	51
Sports_00_Chnaging Cubicle Acc	-	100	-	63
Sports_00_Cloak Room	100	-	-	23
Sports_00_MEP	100	-	-	42
Sports_00_Stairs	100	-	-	12
Sports_00_WC Acc	-	100	-	32
Sports_00_WC Female	-	100	-	75
Sports_00_WC Male	-	100	-	62

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
Sports_00_Showers Female	-	100	-	116
Sports_00_Showers Male	-	100	-	115
Cafe_00_Seating	-	100	-	229
Cafe_00_Servery	-	100	-	232
Cafe_00_Staff Room	100	-	-	61
Cafe_00_WC Circ	-	100	-	26
Sports_00_Changing	-	100	-	26
Sports_00_Lobby1	-	100	-	27
Sports_00_Lobby2	-	100	-	61
Sports_00_Main Circulation	-	100	-	152
Sports_00_Office	100	-	-	430
Sports_00_Staff Room	100	-	-	126
Sports_00_Changing Female	-	100	-	52
Sports_00_Changing Male	-	100	-	53
Sports_00_Briefing Room	100	-	-	630

Solar Gain in Summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Cafe_00_Elec	N/A	N/A
Cafe_00_Store	N/A	N/A
Cafe_00_Store	N/A	N/A
Cafe_00_WC1	N/A	N/A
Cafe_00_WC2	N/A	N/A
Cafe_00_WC3	N/A	N/A
Cafe_00_WC4	N/A	N/A
MShed_00_Engine Room	N/A	N/A
MShed_00_Maintenance	N/A	N/A
MShed_00_Storage	N/A	N/A
MShed_01_Storage	N/A	N/A
Sports_00_Changing Cubicle 1	N/A	N/A
Sports_00_Changing Cubicle 2	N/A	N/A
Sports_00_Chnaging Cubicle Acc	N/A	N/A
Sports_00_Cloak Room	N/A	N/A
Sports_00_MEP	N/A	N/A
Sports_00_Stairs	N/A	N/A
Sports_00_WC Acc	N/A	N/A
Sports_00_WC Female	N/A	N/A
Sports_00_WC Male	N/A	N/A
Sports_00_Showers Female	NO (-92.4%)	NO
Sports_00_Showers Male	NO (-90.8%)	NO
Cafe_00_Seating	YES (+10.4%)	NO
Cafe_00_Servery	N/A	N/A
Cafe_00_Staff Room	NO (-58.3%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Cafe_00_WC Circ	N/A	N/A
Sports_00_Changing	N/A	N/A
Sports_00_Lobby1	NO (-14.7%)	NO
Sports_00_Lobby2	NO (-12.2%)	NO
Sports_00_Main Circulation	N/A	N/A
Sports_00_Office	NO (-51.7%)	NO
Sports_00_Staff Room	NO (-47.1%)	NO
Sports_00_Changing Female	NO (-89.6%)	NO
Sports_00_Changing Male	NO (-87.6%)	NO
Sports_00_Briefing Room	NO (-67.7%)	NO

Overheating

Zone	Risk of overheating
Cafe_00_Elec	Low risk
Cafe_00_Store	Significant risk
Cafe_00_Store	Low risk
Cafe_00_WC1	High risk
Cafe_00_WC2	High risk
Cafe_00_WC3	High risk
Cafe_00_WC4	High risk
MShed_00_Engine Room	Low risk
MShed_00_Maintenance	Low risk
MShed_00_Storage	Low risk
MShed_01_Storage	Low risk
Sports_00_Changing Cubicle 1	High risk
Sports_00_Changing Cubicle 2	High risk
Sports_00_Chnaging Cubicle Acc	High risk
Sports_00_Cloak Room	Low risk
Sports_00_MEP	Low risk
Sports_00_Stairs	Low risk
Sports_00_WC Acc	High risk
Sports_00_WC Female	High risk
Sports_00_WC Male	High risk
Sports_00_Showers Female	High risk
Sports_00_Showers Male	High risk
Cafe_00_Seating	N/A
Cafe_00_Servery	N/A
Cafe_00_Staff Room	N/A
Cafe_00_WC Circ	N/A
Sports_00_Changing	N/A
Sports_00_Lobby1	N/A
Sports_00_Lobby2	N/A
Sports_00_Main Circulation	N/A
Sports_00_Office	N/A
Sports_00_Staff Room	N/A
Sports_00_Changing Female	N/A
Sports_00_Changing Male	N/A

Zone	Risk of overheating
Sports_00_Briefing Room	N/A

Primary Energy Contributions to RER

Technology	kWh/annum
Photovoltaic systems	25145.4
Wind turbines	0
Solar thermal for water heating	0
Biomass for space and/or water heating	0
Biogas for space and/or water heating	0
Heat pumps for space and/or water heating	19769.2
CHP generators for space and/or water heating	0
District heating for space and/or water heating	0
Process energy	0
Total for renewables	**44914.6**
Total for renewables & non-renewables	**117515.1**

Technical Data Sheet (Actual vs. Reference Building)

Building Global Parameters

	Actual	Reference
Area (m2)	989	989
External area (m2)	2569	2569
Weather	DUB	DUB
Infiltration (m3/hm2 @ 50Pa)	3	3
Average conductance (W/K)	495.57	791.25
Average U-value (W/m2K)	0.19	0.31
Alpha value* (%)	29.15	23.91

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	162.6	11.1	53.7	0	0.2	0.84	0	1	0
	Reference	181.1	36.8	61.4	0	0.4	0.82	0	----	----
[ST] Fan coil systems, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	59.2	137.1	4.6	6.5	24.4	3.59	5.89	4	7.5
	Reference	153	146.2	51.9	11.3	25.7	0.82	3.6	----	----

Building Use

% area	Building Type
	Retail/Financial and Professional services
	Restaurants and Cafes/Drinking Est./Takeaways
	Offices and Workshop businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
	Hotels
	Residential Inst.: Hospitals and Care Homes
	Residential Inst.: Residential Primary schools
	Residential Inst.: Universities and colleges
	Secure Residential Inst.
	Residential spaces
	Non-residential Inst.: Community/Day Centre
	Non-residential Inst.: Libraries, Museums, and Galleries
	Non-residential Inst.: Primary Education
	Non-residential Inst.: Primary Health Care Building
	Non-residential Inst.: Law Courts
100	**General Assembly and Leisure, Night Clubs and Theatres**
	Others: Passenger terminals
	Others: Emergency services
	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others - Stand alone utility block
	Non-residential Inst.: Post-primary Education
	Residential Inst.: Residential Post-primary schools

Key to terms

Alpha value (%)	= percentage of the building's average heat transfer coefficient which is due to thermal bridging
Heat dem (MJ/m2)	= Heating energy demand
Cool dem (MJ/m2)	= Cooling energy demand
Heat con (kWh/m2)	= Heating energy consumption
Cool con (kWh/m2)	= Cooling energy consumption
Aux con (kWh/m2)	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type

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