

Haringey Council
10 Station Road
Wood Green
London
N22 7TR

20th June 2024

Our Ref: 22-E067-014
Application Ref: APP/2022/2801

SHURGARD, UXBRIDGE ROAD, HAYES, UB4 0HD – ENERGY PLAN

Planning permission was granted for the *the 'partial demolition and extension to existing building to provide additional self-storage floorspace (Use Class B8) with associated new car and cycle parking, refuse storage, landscaping and other associated works ancillary to the development'* (LPA Ref: 49467/APP/2022/2801). (Application Ref: APP/2022/2801) on the 18th May 2023.

As part of the S106 Agreement, the Council requested a review of the Energy Strategy. The below summarises the Energy Plan for the development.

a) Confirmation on how the development will meet the zero-carbon policy requirement in line with the Energy Hierarchy, in line with Part L 2021

The development aims to achieve the zero-carbon policy through a good thermal performance of the building's fabric for the 'Be Lean' and for the 'Be Green' through the implementation of renewable energy systems such as an air-source heat pump (ASHP) for the office/ shop areas and PV panels.

As identified in the Energy Statement submitted as part of the planning application, there are no existing District Energy Networks (DEN) in close proximity to the Site. Also, as the source of the heat is likely higher carbon than the current strategy, and the heating demand of the development is only small, it was not proposed to accommodate DEN as part of the energy strategy. Instead, heat pumps are proposed for space heating in the office areas only. This means the development will effectively become zero-carbon over time with the decarbonisation of the National Grid.

For the 'Be Seen' conditions, the applicant is committed to protecting the building users from high prices and is therefore committed to post-construction monitoring. This information will be used to encourage building users to minimise energy demand during peak hours. The applicant will also undertake a programme of aftercare support as part of its handover process, which will also align with the BREEAM Man05 credit requirements.

The extensive metering and integration with the Building Management System (BMS) will facilitate the collation of data. The systems specified will be efficient and of sufficient size to accommodate peaks in energy demand; thus, short-term battery energy storage is not considered appropriate.

The applicant will undertake a programme of aftercare support as part of its handover process, which will also align with the BREEAM Man05 credit requirements.

Extensive installation of smart meters, with distribution boards on every other floor and integration with an energy monitoring system, will facilitate the collation of data. Whilst it is expected that all loads will be monitored, the metering strategy has been optimised to reduce the overall embodied carbon of the electrical distribution of the scheme.

The solar PV array will also be installed with monitoring equipment prior to completion and will be maintained at least annually thereafter.

The following table summarise the carbon reductions at each stage of the Energy Hierarchy:

CO₂ Emissions after Each Stage of the Energy Hierarchy (SAP10.2)

Step	Carbon Dioxide Emissions (Tonnes CO ₂ per annum)	
	Regulated	Unregulated
Baseline: Part L 2021	4.3	1.3
After energy demand reduction	3.5	1.3
After heat network connection	3.5	1.3
After renewable energy	0.7	1.3

Regulated CO₂ Savings from Each Stage of the Energy Hierarchy

	Regulated Carbon Dioxide Savings	
	(Tonnes CO ₂ per annum)	%
Be Lean: Savings from energy demand reduction	0.8	18%
Savings from heat network	0.0	0%
Savings from renewable energy	2.9	66%
Total Cumulative Savings	3.7	85%

In line with the Energy Statement submitted at planning, the application reports emissions under Part L 2021, with the revised GLA's Carbon Emissions Reporting Spreadsheet appended.

Based on current modelling, the GLA's Carbon Emissions Reporting Spreadsheet has been used to predict a carbon shortfall of 20 tonnes CO₂. This would require a £1,914 Carbon Offset payment at the GLA's recommended price of £95 per tonne of CO₂.

b) Confirmation on the necessary fabric and system efficiencies to achieve an onsite emissions reduction equal to or greater than 35%

It is intended that the performance of the building fabric will incorporate relatively low U-Values to reduce the rate at which the buildings lose heat, preserving the heat within the space and reducing the requirement for mechanical heating. The fabric aim is to achieve a minimum u-value of 0.2 W/m²K for the external wall, 0.12 W/m²K for the ground floor and roof, and 1.4 W/m²K for the glazing. The u-values are specified in Table 6.1 of the Energy Statement submitted with the planning application.

Heat pumps are proposed for space heating in the office areas only. Other spaces will not be comfort heated.

The proposed heat pump specification is the 'Mitsubishi Electric PUMY-P R410A Inverter Heat Pump' (12.5-22.4kW) – PUMY-P112VKM5 with a COP 4.61 and EER 4.48. The datasheet, which confirms a nominal heating capacity of 14 kW and a cooling capacity of 12.5 kW, has been provided in the appendices.

Hot water will be provided by instantaneous electric heaters on the basis that demand is very low and this type of system avoids storage losses (and is therefore lower carbon than an alternative ASHP option).

Mechanical Ventilation Heat Recovery (MVHR) will be provided in the Office/Shop area. The unit is anticipated to be a Nuaire 'XBC25-H-EESBA', with a minimum heat exchanger efficiency of 90%.

The development will satisfy the Council target for an on-site carbon saving of >35% relative to Part L 2021. Residual emissions will be offset through a Carbon Offset payment.

c) Location, specification and efficiency of the proposed technologies including details including details of the PV

It is proposed that the PV panels will be mounted southwards to increase their effectiveness and energy production potential. Whilst the exact specification cannot be confirmed at this stage as it will be dependent on the advice of the appointed PV specialist, it is noted that the best performing panels in the market have an efficiency between 22-23%

With approximately 200 square meters of roof space allocated for PV panels, it's anticipated that the array's capacity will likely exceed 30 kWp. Overheating can be minimised by using the latest durable technical panels which prevent hot spot formations. This will be subject to the appointed PV specialist's decision. The solar PV array will be installed with monitoring equipment prior to completion and will be maintained at least annually thereafter.

The confirmation of lighting and PV quantum to be confirmed and coordinated by the M&E Engineers.

d) A metering strategy and 'be seen' measures.

The Applicant will undertake a programme of aftercare support as part of its handover process, which will also align with the BREEAM Man05 credit requirements. An energy monitoring system with metering by alternate floor plate will also be installed to allow the collection of data.

The majority of the energy supply will be monitored with an accessible energy monitoring and management system. The energy meters will be installed allowing for approximately 90% of the estimated annual energy consumption of each fuel to be assigned to the following end-use categories:

- Lighting and small power
- Heating and hot water
- Modular boiler systems
- Small function areas or departments

The building users should be able to identify the energy consuming end uses, for example through labelling or data outputs.

I trust the above is to your satisfaction. Should you have any questions or comments, please do not hesitate to contact me.

Yours faithfully



Pete Jeavons
DIRECTOR

Appendix A - GLA Spreadsheet

Part L 2021 Performance

Residential

Table 1: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for residential buildings

	Carbon Dioxide Emissions for residential buildings (Tonnes CO ₂ per annum)	
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	0.0	
After energy demand reduction (be lean)	0.0	
After heat network connection (be clean)	0.0	
After renewable energy (be green)	0.0	

Table 2: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for residential buildings

	Regulated residential carbon dioxide savings	
	Tonnes CO ₂ per annum	(%)
Be lean: savings from energy demand reduction	0.0	0%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	0.0	0%
Cumulative on site savings	0.0	0%
Annual savings from off-set payment	0.0	-
	(Tonnes CO ₂)	
Cumulative savings for off-set payment	0	-
Cash in-lieu contribution (£)	0	

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development

Non-residential

Table 3: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for non-residential buildings

	Carbon Dioxide Emissions for non-residential buildings (Tonnes CO ₂ per annum)	
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	4.3	1.3
After energy demand reduction (be lean)	3.5	1.3
After heat network connection (be clean)	3.5	1.3
After renewable energy (be green)	0.7	1.3

Table 4: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for non-residential buildings

	Regulated non-residential carbon dioxide savings	
	Tonnes CO ₂ per annum	(%)
Be lean: savings from energy demand reduction	0.8	18%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	2.9	66%
Total Cumulative Savings	3.7	85%
Annual savings from off-set payment	0.7	-
	(Tonnes CO ₂)	
Cumulative savings for off-set payment	20	-
Cash in-lieu contribution (£)	1,914	

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development