

		Our ref: HGY/2022/4411 Contact: James Mead Date: 16/02/2023
Town and Country Act 1990 (As amended)		
Location:	Lynton Grange, Fortis Green, Hornsey, London, N2 9EU	
Proposal:	Demolition of 20 x existing garages on-site and erection of 5 x two-storey residential units with associated landscaping, parking, refuse and cycle storage.	

Carbon Management Response 16/02/2023

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement prepared by the PES (dated 20/10/2022)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 76.54% carbon dioxide emissions on site which goes beyond the zero-carbon policy requirement for the residential proportion, which is supported in principle.

The applicant needs to provide further information on the sustainable strategy. This should be addressed prior to the determination of the application or should be addressed through planning conditions.

2. Energy – Overall

Policy SP4 of the Local Plan Strategic Policies, requires all new development to be zero carbon (i.e. a 100% improvement beyond Part L (2013)). The London Plan (2021) further confirms this in Policy SI2.

The overall predicted reduction in CO₂ emissions for the development shows an improvement of approximately 76.54% in carbon emissions with SAP10 carbon factors, from the Baseline development model (which is Part L 2013 compliant). This represents an annual saving of approximately 5.74 tonnes of CO₂ from a baseline of 7.49 tCO₂/year.

<i>Residential (SAP10 emission factors)</i>			
	Total regulated emissions (Tonnes CO₂ / year)	CO₂ savings (Tonnes CO₂ / year)	Percentage savings (%)
Part L 2013 baseline	7.49		
Be Lean	6.21	1.28	17.09%
Be Clean	6.21	0.00	0.00%
Be Green	1.75	4.46	59.55%
Cumulative savings		5.74	76.54%
Carbon shortfall to offset (tCO₂)	1.75		
Carbon offset contribution	£95 x 30 years x 1.75 tCO ₂ /year = £4,987.5		

Energy – Lean

The applicant has proposed a saving of 1.28 tCO₂ in carbon emissions (17.09%) through improved energy efficiency standards in key elements of the build, based on SAP10 carbon factors. This goes

beyond the minimum 10% reduction respectively set in London Plan Policy SI2 for minor applications, so this is supported.

The following u-values, g-values and air tightness are proposed:

Floor u-value	0.14 W/m ² K
External wall u-value	0.15 W/m ² K
Roof u-value	0.12 W/m ² K
Door u-value	1.20 W/m ² K
Window u-value	1.20 W/m ² K
Air permeability rate	4 m ³ /hm ² @ 50Pa
Ventilation strategy	Natural ventilation with trickly ventilation, purge ventilation and wet room extraction.
Thermal bridging	Accredited Construction Details
Low energy lighting	100%
Heating system Be Lean only	Individual gas boiler (90% + SEDBUK seasonal efficiency)
Thermal mass	High
Space heating requirement	52.35 kWh/m ² /year
Fabric energy efficiency improvement	15.71%
Energy Use Intensity	69.43 kWh/m ² /year

London Plan Policy SI4 requires developments to minimise adverse impacts on the urban heat island, reduce the potential for overheating and reduce reliance on air conditioning systems. Through careful design, layout, orientation, materials and incorporation of green infrastructure, designs must reduce overheating in line with the Cooling Hierarchy.

Energy – Clean

The applicant is not proposing any Be Clean measures. The site is not within reasonable distance of a proposed Decentralised Energy Network (DEN). A Combined Heat and Power (CHP) plant would not be appropriate for size of development.

Energy – Green

As part of the Be Green carbon reductions, all new developments must achieve a minimum reduction of 20% from on-site renewable energy generation to comply with Policy SP4.

The application has reviewed the installation of various renewable technologies. The report concludes that air source heat pumps (ASHPs) and solar photovoltaic (PV) panels are the most viable options to deliver the Be Green requirement. A total of 4.46 tCO₂ (59.55%) reduction of emissions are proposed under Be Green measures, based on SAP10 carbon factors.

The application proposes 5 panels, 2.2 kWp PV array per dwelling with total 11kWp estimated to produce around 9,500 kWh/year of renewable electricity per year.

Actions:

- Please provide some commentary on how the available roof space has been maximised to install solar PV, the orientation of the panels.
- A living roof should be installed under the solar PV, or if this is not feasible, the roof should be light coloured to reduce solar heat gains and the improve efficiency of the solar panels.
- Please identify on the plans where the internal and external parts of the air source heat pumps will be located and how the units will be mitigated in terms of visual and noise impact.
- How much of the heating/hot water demand will be met by the proposed type of heat pump? If this cannot be met fully, how will this be supplemented?
- What is the Seasonal Coefficient of Performance (SCOP), the Seasonal Performance Factor (SFP) and Seasonal Energy Efficiency ratio (SEER) of the ASHP?

- Applications should demonstrate how they might take a demand-side response to reducing energy use. Has battery storage for the solar PV system been considered, or justify why this is not proposed.

3. Carbon Offset Contribution

A carbon shortfall of 1.75 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. Overall Sustainability

Policy DM21 of the Development Management Document requires developments to demonstrate sustainable design, layout and construction techniques. The Sustainability section in the report sets out the proposed measures to improve the sustainability of the scheme, including materials and waste, water consumption, biodiversity, energy, CO₂ emissions and landscape design.

Action:

- What electric vehicle charging points are proposed? This allows the future-proofing of the dwelling/development by ensuring the required power has been installed.

5. Conclusion

The development can be supported, subject to the proposed wording of planning conditions listed below.

Planning Obligations Heads of Terms

- Payment of carbon offset contribution prior to the above ground construction works, at £4,987.5 (indicative), based on £2,850 per tonne of carbon emissions.

Planning Conditions

Energy Strategy

The development hereby approved shall be constructed in accordance with the Energy & Sustainability Statement by the PES (dated 20/10/2022) delivering a minimum 76.54% improvement on carbon emissions over 2013 Building Regulations Part L, with SAP10 emission factors, high fabric efficiencies, air source heat pumps (ASHPs) and a minimum 11 kWp solar photovoltaic (PV) array.

(a) Prior to above ground construction, details of the Energy Strategy shall be re-submitted to and approved by the Local Planning Authority. This must include:

- *Confirmation of how this development will meet the zero-carbon policy requirement in line with the Energy Hierarchy;*
- *Confirmation of the necessary fabric efficiencies to achieve a minimum 10% reduction in SAP2012 carbon factors, including details to reduce thermal bridging;*
- *Location, specification and efficiency of the proposed ASHPs (Coefficient of Performance, Seasonal Coefficient of Performance, and the Seasonal Performance Factor), with plans showing the ASHP pipework and noise and visual mitigation measures;*
- *Details of the PV, demonstrating the roof area has been maximised, with the following details: a roof plan; the number, angle, orientation, type, and efficiency level of the PVs; how overheating of the panels will be minimised; their peak output (kWp)*
- *Specification of any additional equipment installed to reduce carbon emissions.*

The development shall be carried out strictly in accordance with the details so approved prior to first operation and shall be maintained and retained for the lifetime of the development. The solar PV array shall be installed with monitoring equipment prior to completion and shall be maintained at least annually thereafter.

(b) The solar PV arrays and air source heat pump must be installed and brought into use prior to first occupation of the relevant block. Six months following the first occupation of that block, evidence that the solar PV arrays have been installed correctly and are operational shall be submitted to and approved by the Local Planning Authority, including photographs of the solar array, installer confirmation, an energy generation statement for the period that the solar PV array has been installed, and a Microgeneration Certification Scheme certificate.

Reason: To ensure the development reduces its impact on climate change by reducing carbon emissions on site in compliance with the Energy Hierarchy, and in line with London Plan (2021) Policy SI2, and Local Plan (2017) Policies SP4 and DM22.

Water butts

No dwelling shall be occupied until details of the location of a water butt of at least 120L internal capacity to be installed to intercept rainwater draining from the roof of each dwelling has been submitted to and approved in writing by the Local Planning Authority and subsequently provided at each dwelling. The approved facilities shall be retained.

Reason: To reduce the risk of flooding and demand for water, increase the level of sustainability of the development and in line with Haringey Local Plan Policy SP5, DM21, DM24 and DM25.

Living Roofs/Walls (if proposing)

(a) Prior to the above ground commencement of development, details of the living roof(s) and/or living wall must be submitted to and approved in writing by the Local Planning Authority. Living roofs must be planted with flowering species that provide amenity and biodiversity value at different times of year. Plants must be grown and sourced from the UK and all soils and compost used must be peat-free, to reduce the impact on climate change. The submission shall include:

- i) A roof plan identifying where the living roofs will be located; AND/OR A ground floor plan identifying where the living walls will be rooted in the ground, if any;*
- ii) A section demonstrating settled substrate levels of no less than 120mm for extensive living roofs (varying depths of 120-180mm), and no less than 250mm for intensive living roofs (including planters on amenity roof terraces);*
- iii) Roof plans annotating details of the substrate: showing at least two substrate types across the roofs, annotating contours of the varying depths of substrate*
- iv) Details of the proposed type of invertebrate habitat structures with a minimum of one feature per 30m² of living roof: substrate mounds and 0.5m high sandy piles in areas with the greatest structural support to provide a variation in habitat; semi-buried log piles / flat stones for invertebrates with a minimum footprint of 1m², rope coils, pebble mounds of water trays;*
- v) Details on the range and seed spread of native species of (wild)flowers and herbs (minimum 10g/m²) and density of plug plants planted (minimum 20/m² with roof ball of plugs 25m³) to benefit native wildlife, suitable for the amount of direct sunshine/shading of the different living roof spaces. The living roofs will not rely on one species of plant life such as Sedum (which are not native);*
- vi) Roof plans and sections showing the relationship between the living roof areas and photovoltaic array; and*
- vii) Management and maintenance plan, including frequency of watering arrangements.*
- viii) A section showing the build-up of the blue roofs and confirmation of the water attenuation properties, and feasibility of collecting the rainwater and using this on site;*

(b) Prior to the occupation of 90% of the dwellings/of the development, evidence must be submitted to and approved by the Local Planning Authority that the living roof has/have been delivered in line with the details set out in point (a). This evidence shall include photographs demonstrating the measured depth of substrate, planting and biodiversity measures. If the Local Planning Authority finds that the living roofs has/have not been delivered to the approved standards, the applicant shall rectify this to ensure it complies with the condition. The living roofs shall be retained thereafter for the lifetime of the development in accordance with the approved management arrangements.

Reason: To ensure that the development provides the maximum provision towards the creation of habitats for biodiversity and supports the water retention on site during rainfall. In accordance with London Plan (2021) Policies G1, G5, G6, SI1 and SI2 and Local Plan (2017) Policies SP4, SP5, SP11 and SP13.