

Our ref: HGY/2021/2151
Contact: Roland Sheldon

Date: 19/08/2021

Town and Country Act 1990 (As amended)

Location: **109 Fortis Green N2 9HR**

Proposal: Full planning application for the demolition of all existing structures and redevelopment of the site to provide 10 residential units (use class C3) comprising of 6 x residential flats and 4 mews houses and 131m² flexible commercial space in ground/lower ground floor unit, basement car parking and other associated works.

Carbon Management Response 19/08/2021

In preparing this consultation response, we have reviewed:

- Energy Strategy (dated 11 November 2020), prepared by JAW Sustainability
- Overheating Assessment (dated 19 March 2021), prepared by JAW Sustainability
- Relevant supporting documents.

Summary

The development achieves a reduction of 67.3% carbon dioxide emissions on site, which is supported in principle. Some clarifications must be provided with regard to the energy strategy, overheating and sustainability. Planning conditions will be recommended once this information has been provided.

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. London Plan Policy SI2 also requires major development proposals to calculate and minimise unregulated carbon emissions, which is not covered by Building Regulations.

The overall predicted reduction in CO₂ emissions for the development shows an improvement of approximately 67.3% in carbon emissions with SAP10 carbon factors (assumed, TBC), from the Baseline development model (which is Part L 2013 compliant). This represents an annual saving of approximately 9.99 tonnes of CO₂ from a baseline of 14.84 tCO₂/year.

Actions:

- It is not clear which carbon factors have informed the energy modelling of this scheme. SAP10 carbon factors should be used for this scheme. The applicant should submit the GLA's Carbon Emission Reporting Spreadsheet, confirm the carbon factors used in the main body of the report, and if necessary, amend these to SAP10 factors.
- Please submit SAP sheets for a representative selection of dwellings (flats and houses).
- Please report calculated unregulated emissions.

Energy – Lean

The applicant has proposed a saving of 2.2 tCO₂ in carbon emissions (14.8%) through improved energy efficiency standards in key elements of the build, based on SAP2012 carbon factors. This goes beyond the minimum 10% reduction set in London Plan Policy SI2, so this is supported.

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

Floor u-value	0.12 W/m ² K
External wall u-value	0.14 W/m ² K
Roof u-value	0.13 W/m ² K
Door u-value	1.20 W/m ² K

Window u-value	1.20 W/m ² K
G-value	0.63
Air permeability rate	3 m ³ /hm ² @ 50Pa
Mechanical ventilation with heat recovery (efficiency; Specific Fan Power)	86% efficiency SPF of 0.6 W/l/s
Thermal bridging	0.08
Low energy lighting	100%
Heating system (efficiency / emitter)	89% efficient gas boilers with radiators; temperature zone control

The space heating requirement has not been reported kWh/m²/year. New dwellings should be close to the 15-20 kWh/m²/year target.

Actions:

- Provide the average space heating requirement in kWh/m²/year.
- Confirm the % improvement in the fabric energy efficiency (FEE).

Overheating is dealt with in more detail below.

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 this site.

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 7.8 tCO₂ (52.5%) reduction of emissions are proposed under Be Green measures.

The solar array peak output would be 12.5 kWp, with a minimum 20% efficiency. The array of 49 panels would be mounted at a 30/40° angle, facing south/south-east.

8.5kW ASHP (349% efficiency) will provide hot water and heating to the houses through underfloor heating.

Actions:

- Will individual ASHPs be proposed for the houses? Will they be 8.5kW each? Will this provide 100% of the demand?
- What space heating and hot water strategy is proposed for the flats?
- Please demonstrate with an annotated roof plan how the available roof space has been maximised to install solar PV.
- Please identify on the plans where the air source heat pumps will be located and how the units will be mitigated in terms of visual and noise impact.

Carbon Offset Contribution

A carbon shortfall of 4.85 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

(Emission factors TBC)	Residential	
	tCO ₂	%
Baseline emissions	14.84	
Be Lean savings	2.20	14.81%

Be Clean savings	0	0%
Be Green savings	7.79	52.51%
Cumulative savings	9.99	67.33%
Carbon shortfall to offset (tCO₂)	4.85	
Carbon offset contribution	£95 x 30 years x 4.85 tCO ₂ /year = £13,823	

Overheating

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.

In accordance with the Energy Assessment Guidance, the applicant has undertaken a dynamic thermal modelling assessment in line with CIBSE TM59 with TM49 weather files, and the cooling hierarchy has been followed in the design. Results are listed in the table below.

All rooms pass the overheating requirements for 2020s DSY1. In order to pass this, the following measures will be delivered built based on:

- Natural ventilation, with openable windows and doors
- Glazing g-value of 0.63
- MVHR

Proposed future mitigation measures in the report are to install internal blinds or curtains.

(London Gatwick files)	TM59 – criterion A (<3% hours of overheating)	TM59 – criterion B hours >26°C (pass <32 hours)	% of habitable rooms pass
DSY1 2020s	36/36	22/22	36/36
DSY2 2020s	30/36	11/22	20/36
DSY3 2020s	25/36	0/22	6/36
Total number of homes / habitable rooms / corridors modelled	10 homes (6 flats, 4 homes) 36 habitable rooms; 22 bedrooms 0 corridors		

Overheating Actions:

- Redo the overheating modelling with the Central London weather file, which will more accurately represent the urban heat island effect, and include modelling for the DSY1 2050s weather file. The future weather file, along with DSY2-3 should inform a future retrofit plan which should demonstrate how the results will be improved with the proposed future mitigation measures.
- What is the openable area of windows?
- Will the MVHR have a summer bypass?
- Confirm who will own the overheating risk.

Sustainability

Policy DM21 of the Development Management Document requires developments to demonstrate sustainable design, layout and construction techniques. No Sustainability Statement has been submitted as part of this application, which is not policy compliant.

Non-residential BREEAM

Policy SP4 requires all new non-residential developments to achieve a BREEAM rating 'Very Good' (or equivalent), although developments should aim to achieve 'Excellent' where achievable. No BREEAM Pre-Assessment has been submitted as part of this application.

Whole Life Carbon

Policy SI2 requires developments referable to the Mayor of London to submit a Circular Economy Statement and demonstrate actions undertaken to reduce life-cycle emissions. This application is

not required to submit a full statement, however no reference has been made to reducing whole-life carbon within the proposed development. The applicant is strongly encouraged to consider using low-carbon materials, sourced as local as possible. Digging a basement for the entire footprint of the site will increase the embodied carbon associated with the development, which is not supported.

Circular Economy

Policy SI7 requires applications referable to the Mayor of London to submit a Circular Economy Statement demonstrating how it promotes a circular economy within the design and aim to be net zero waste. Haringey Policy SP6 requires developments to seek to minimise waste creation and increase recycling rates, address waste as a resource and requires major applications to submit Site Waste Management Plans. This application is not required to submit a full statement, however no reference has been made to consider and integrate circular economy principles within the proposed development. The applicant is strongly encouraged to consider implementing circular economy principles, such as designing for disassembly and reuse.

Flood risk and drainage

This proposal presents the opportunity to reduce the impermeable area of the site. The current proposals cover the whole site with a basement and propose an attenuation tank beneath this, with a limited podium garden. It is not clear what type of landscaping is proposed or how the attenuation tank will be serviced/maintained.

Biodiversity measures

All development sites must incorporate urban greening within their fundamental design, in line with London Plan Policy G5. The proposed podium amenity area with soft landscaping is effectively an intensive living roof. This should incorporate a minimum 250mm substrate depth to enable plants and trees to grow effectively.

Transport

The development is proposing 8 car parking spaces, which is a high amount for this development. The three proposed electric vehicle charging points are supported. However, the cycle store is awkwardly located in the way to a plant room, which should be redesigned. Will the mews house residents need to park their bikes there too?

Actions:

- Submit a BREEAM Pre-Assessment (or equivalent)
- Improve the design of the cycle parking for all residents and commercial employees.
- Details on the biodiversity benefits that this scheme will bring (green infrastructure, bird boxes, bat boxes etc to connect to the green spaces around the site)
- Confirm the modelled substrate depth for the soft landscaping on the podium roof.
- Demonstrate how water demand will be reduced
- How surface water runoff will be reduced, that it will be separated from wastewater and not discharged into the sewer.

Conclusion

Overall, it is considered that the application could be supported from a carbon reduction point of view, but not from a sustainability point of view.

Planning Conditions

To be secured (with detailed wording TBC):

- Energy strategy
- Overheating
- Biodiversity measures
- Specification of electric vehicle charging points

Planning Obligations Heads of Terms

- Be Seen commitment to uploading energy data
- Carbon offset contribution (and associated obligations) of £13,823 (indicative), plus a 10% management fee