

		Our ref: HGY/2023/2596 Contact: Kwaku Bossman-Gyamera Date: 16/07/2024
Town and Country Act 1990 (As amended)		
Location:	Land to the rear of 104 and 106 Downhills Park Road (adjacent to 194 Higham Road), London N17 6PA	
Proposal:	Demolition of existing garage and outbuilding and the construction of a single storey building with pitched roof and dormer to front elevation, (facilitating one bedroom in the roofspace) roof lights and solar panels to the rear to form a two bedroom house.	

Carbon Management Response 11/04/2023

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by BAESENERGY (dated 29 Jan 2023)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 78% carbon dioxide emissions on site, which is supported in principle. Some clarifications must be provided with regard to the Energy and Sustainability 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 (2021)). 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 78% in carbon emissions, from the Baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 0.87 tonnes of CO₂ from a baseline of 1.12 tCO₂/year.

<i>Residential / Non-residential</i>			
	Total regulated emissions (Tonnes CO₂ / year)	CO₂ savings (Tonnes CO₂ / year)	Percentage savings (%)
Part L 2021 baseline	1.12		
Be Lean	Not reported	Not reported	Not reported
Be Clean	Not reported	Not reported	Not reported
Be Green	0.25	Not reported	Not reported
Cumulative savings		0.87	78%
Carbon shortfall to offset (tCO₂)	0.25		
Carbon offset contribution	£95 x 30 years x 0.25 tCO ₂ /year = £712.5		

Action:

- The summary table should include carbon savings for each scenario of the energy hierarchy. Please submit a revised energy statement including this.
- Please submit the GLA's Carbon Emission Reporting Spreadsheet.

Energy Use Intensity / Space Heating Demand

Applications are required to report on the total Energy Use Intensity and Space Heating Demand, in line with the GLA Energy Assessment Guidance (June 2022). The Energy Strategy should follow the reporting template set out in Table 5 of the guidance, including what methodology has been used.

EUI is a measure of the total energy consumed annually, but should exclude on-site renewable energy generation and energy use from electric vehicle charging.

	Proposed Development	GLA Benchmark
Building type	Residential	Residential/School/Office/Hotel/All other non-residential
EUI	Not reported	Compare with GLA benchmark of 35 kWh/m ² /year
SHD	Not reported	Compare with GLA benchmark of 15 kWh/m ² /year
Methodology used	Not reported	

Actions:

- What is the calculated Energy Use Intensity (excluding renewable energy)? How does this perform against GLA benchmarks, i.e. at 35 kWh/m²/year? Please submit the information in line with the GLA's reporting template.
- What is the calculated space heating demand? How does this perform against the GLA benchmark of 15 kWh/m²/year? Please submit the information in line with the GLA's reporting template.

Energy – Lean

The savings in carbon emissions through improved energy efficiency standards in key elements of the build is not reported. Therefore, it is not clear if the development achieved the energy efficiency targets in line with the energy hierarchy. The development is required to take a fabric first approach in line with London Plan Policy SI2 and Local Plan Policy SP4.

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

Floor u-value	0.11 W/m ² K
External wall u-value	0.16 W/m ² K
Roof u-value	0.13 W/m ² K
Door u-value	1.00 W/m ² K
Window u-value	1.20 W/m ² K
G-value	TBC
Air permeability rate	5 m ³ /hm ² @ 50Pa
Ventilation strategy	Natural ventilation with localised extract fans
Thermal bridging	Y-value of 0.05
Low energy lighting	100% with 90l/W
Heating system Be Lean only	Gas boiler with 92.30
Thermal mass	TBC

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.

Actions:

- The energy report should specify the heating and ventilation strategy assumed under Baseline and Be Lean.
 - o For residential application, this should be gas boiler and the notional efficiency figures (~89.5%) should be used for the modelling for both Baseline and Be Lean.
- What is the g-value and the thermal mass?
- What is the proportion of glazed area? Consider following the LETI Climate Emergency Design Guide principles in façade design.
- If the air tightness of the scheme is improved, mechanical ventilation with heat recovery could be proposed to further reduce heat losses.

- Demonstrate the cooling hierarchy has been followed, and specify which overheating mitigation measures are proposed to reduce the overheating risk within the proposed design:
 - Internal heat generation, i.e. heat distribution infrastructure
 - Heat entering building, i.e. shutters, trees, vegetation, blinds
 - Manage heat through thermal mass and high ceilings
 - Passive ventilation, i.e. openable windows, shallow floorplates, dual aspect, stack effect
 - Mechanical ventilation, i.e. free cooling from outside air in shade, by-pass for summer mode

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.

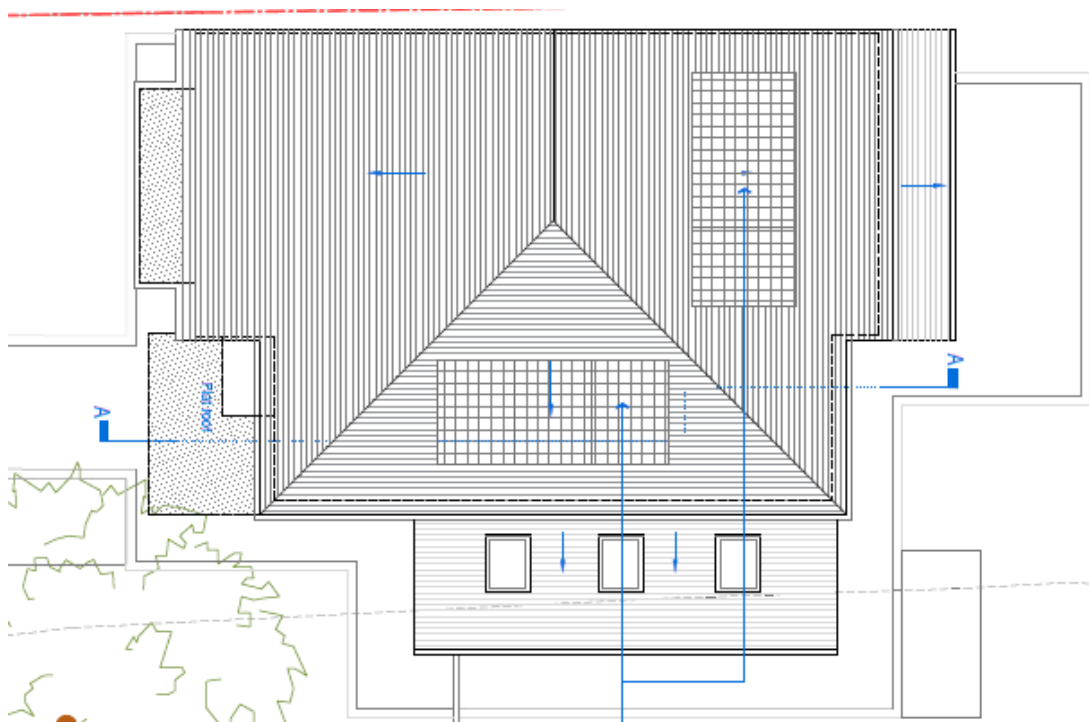
Energy – Green

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.

The individual air-to-water ASHP system with an efficiency of at least 300% will provide hot water and heating to the dwellings.

The solar array peak output would be 2.1 kWp, which is located as per the figure below:



Actions:

- Please provide some commentary on how the available roof space has been maximised to install solar PV. The westerly directed roof should be explored for solar panel installation, it is not clear why solar panel is not proposed for this part of the roof.

- The roof should be light coloured to reduce solar heat gains and to 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?
- 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 0.25tCO₂/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 should set out the proposed measures to improve the sustainability of the scheme, including transport, health and wellbeing, materials and waste, water consumption, flood risk and drainage, biodiversity, climate resilience, energy and CO₂ emissions and landscape design.

No Sustainability Statement is submitted as a part of this application.

Action:

- Set out what urban greening and biodiversity enhancement measures will be proposed (e.g. green infrastructure, bird boxes, bat boxes etc to connect to the green spaces around the site, living roofs, living walls, etc.)
- A target (%) for responsible sourced, low-impact materials used during construction.
- Set out how any demolition materials can be reused.
- Set out how water demand will be reduced, e.g. rainwater harvesting, grey water system.
- Set out how surface water runoff will be reduced, that it will be separated from wastewater and not discharged into the sewer.

5. Conclusion

Overall, it is considered that the application **cannot currently be supported** from a carbon management and sustainability point of view.

Planning Obligations Heads of Terms

- Payment of carbon offset contribution prior to the above ground construction works at £712.5, based on £2,850 per tonne of carbon emissions.

Planning Conditions

To be secured with amendments expected to the wording below once the revised information has been submitted.

Energy Strategy

The development hereby approved shall be constructed in accordance with the Energy Statement prepared by BAESENERGY (dated 29 Jan 2023) delivering a minimum 78% improvement on carbon emissions over 2021 Building Regulations Part L, with high fabric efficiencies, air source heat pumps (ASHPs) and a minimum 2.1 kWp solar photovoltaic (PV) array.

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

- *The summary table reporting the carbon savings for each scenario of the energy hierarchy;*
- *A duly filled GLA's Carbon Emission Reporting Spreadsheet including the Energy Use Intensity and Space Heating Demand;*
- *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, 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 by exploring the westerly facing roof for PV installation, 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.

Overheating

Prior to above ground construction, a statement shall be submitted to and approved by the Local Planning Authority to demonstrate how the overheating risk has been minimised and mitigated on site in line with the London Plan Cooling Hierarchy. Details and specification of the mitigation measures shall be provided in support of this statement.

Reason: In the interest of reducing the impacts of climate change and mitigation of overheating risk, in accordance with London Plan (2021) Policy SI4, and Local Plan (2017) Policies SP4 and DM21.

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.

Sustainability

Prior to above ground commencement of development, details of the sustainability strategy shall be submitted to and approved by the Local Planning Authority. This shall include specifications, plans and sections that demonstrate sustainable design, layout, construction techniques and proposed measures to improve the sustainability of the scheme including but not limited to sustainable transport, health and wellbeing, reduction of material use and waste, water consumption, and flood risk, drainage improvements, and biodiversity enhancement.

The report shall include:

- Urban greening and biodiversity enhancement measures;
- Details on electric vehicles charging points, cycle parking facilities;
- A target percentage for responsibly sourced, low-impact materials used during construction;
- Justification for the demolition of the existing buildings in terms of its impact on the whole life carbon of the development and the circular economy principles;

- Details on how any demolition materials can be reused;
- Details on how surface water runoff will be reduced and overall sustainable drainage strategy;
- Climate Change mitigation measures to be considered for the external spaces and the impact of the increase in severity and frequency of weather events on the building structures.

Reason: To ensure the development provides the maximum provision towards increasing the level of sustainability in line with London Plan (2021) policies G6, S17 and Haringey Local Plan Policy SP4, DM21, DM25, and DM29.

Carbon Management Response 16/07/2024

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by BAESENERGY (dated July 2024)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 84% carbon dioxide emissions on site, which is supported in principle. Some clarifications must be provided with regard to the Energy and Sustainability Strategy. This should be addressed prior to the determination of the application or should be addressed through planning conditions.

2. Energy – Overall

The revised carbon reduction summary is as follows:

<i>Residential / Non-residential</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2021 baseline	1.1		
Be Lean	0.9	0.1	11%
Be Clean	0.9	0	0%
Be Green	0.2	0.8	73%
Cumulative savings		0.9	84%
Carbon shortfall to offset (tCO ₂)	0.2		
Carbon offset contribution	£95 x 30 years x 0.2 tCO ₂ /year = £570		

Action:

- Please submit the GLA's Carbon Emission Reporting Spreadsheet.

Energy – Lean

The following g-values, thermal bridging and heating system are proposed:

G-value	0.5
Thermal bridging	Y-value of 0.04
Heating system Be Lean only	Gas boiler with 89.50

Energy – Green

The solar array peak output is revised at 2.4 kWp.

3. Carbon Offset Contribution

A carbon shortfall of 0.2tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. Conclusion

Overall, it is considered that the application **can be supported** from a carbon management and sustainability point of view.

Planning Obligations Heads of Terms

- Payment of carbon offset contribution prior to the above ground construction works at £570, based on £2,850 per tonne of carbon emissions.

Planning Conditions

To be secured with amendments expected to the wording below once the revised information has been submitted.

Energy Strategy

*The development hereby approved shall be constructed in accordance with the Energy Statement prepared by BAESENERGY (dated **July 2024**) delivering a minimum **84%** improvement on carbon emissions over 2021 Building Regulations Part L, with high fabric efficiencies, air source heat pumps (ASHPs) and a minimum **2.4 kWp** solar photovoltaic (PV) array.*

(a) Prior to above ground construction, details of the Energy Strategy shall be 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 **11%** reduction, including details to reduce thermal bridging;*
- *A duly filled GLA's Carbon Emission Reporting Spreadsheet including the Energy Use Intensity and Space Heating Demand;*
- *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 by exploring the westerly facing roof for PV installation, 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.*

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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.

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Prior to above ground commencement of development, details of the sustainability strategy shall be submitted to and approved by the Local Planning Authority. This shall include specifications, plans and sections that demonstrate sustainable design, layout, construction techniques and proposed measures to improve the sustainability of the scheme including but not limited to sustainable transport, health and wellbeing, reduction of material use and waste, water consumption, and flood risk, drainage improvements, and biodiversity enhancement.

The report shall include:

- *Urban greening and biodiversity enhancement measures;*
- *Details on electric vehicles charging points, cycle parking facilities;*
- *A target percentage for responsibly sourced, low-impact materials used during construction;*
- *Justification for the demolition of the existing buildings in terms of its impact on the whole life carbon of the development and the circular economy principles;*
- *Details on how any demolition materials can be reused;*
- *Details on how surface water runoff will be reduced and overall sustainable drainage strategy;*
- *Climate Change mitigation measures to be considered for the external spaces and the impact of the increase in severity and frequency of weather events on the building structures.*

Reason: To ensure the development provides the maximum provision towards increasing the level of sustainability in line with London Plan (2021) policies G6, SI7 and Haringey Local Plan Policy SP4, DM21, DM25, and DM29.