

		Our ref: HGY/2023/1601 Contact: Zara Seelig Date: 15/08/2024
Town and Country Act 1990 (As amended)		
Location:	Imperial House, 64 Willoughby Lane, Tottenham, London, N17 0SP	
Proposal:	Upward extension to allow for additional office space	

Carbon Management Response 07/06/2023

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Archieve Green (dated 9 May 2024)
- BREEAM Pre-Assessment prepared by Kent Sustainability (dated 13 May 2024)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 77% carbon dioxide emissions on site, which is supported in principle. Some clarifications must be provided with regard to the Energy Strategy and Sustainability Strategy. Appropriate planning conditions will be recommended once this information has been provided.

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 77% in carbon emissions, from the Baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 0.9 tonnes of CO₂ from a baseline of 1.1 tCO₂/year.

<i>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	0.2	21%
Be Clean	0.9	0.0	0%
Be Green	0.3	0.6	57%
Cumulative savings		0.3	77%
Carbon shortfall to offset (tCO₂)	0.3		
Carbon offset contribution	£95 x 30 years x 0.3 tCO ₂ /year = £855		

Action:

- Please confirm if all the proposed floorspace are modelled as 'heated'.

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/School/Office/Hotel/All other non-residential
EUI	___ kWh/m ² /year	Meets/Does not meet GLA benchmark of 55 kWh/m ² /year
SHD	___ kWh/m ² /year	Meets/Does not meet GLA benchmark of 15 kWh/m ² /year
Methodology used		

Actions:

- Please fill in the EUI and space heating demand table in the GLA's Carbon Emission Reporting Spreadsheet.
- What is the calculated Energy Use Intensity (excluding renewable energy)? How does this perform against GLA benchmarks, i.e. at 65 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 applicant has proposed a saving of 0.2tCO₂ in carbon emissions (21%) through improved energy efficiency standards in key elements of the build. This goes beyond the minimum 10% reduction set in London Plan Policy SI2 for major applications, so this is supported.

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

External wall u-value	0.15 W/m ² K
Flat Roof u-value	0.11 W/m ² K
Door u-value	1.20 W/m ² K
Window u-value	1.20 W/m ² K
G-value	TBC
Air permeability rate	3 m ³ /hm ² @ 50Pa
Ventilation strategy	Natural ventilation
Thermal bridging	Accredited Construction Details
Low energy lighting	100%
Heating system Be Lean only	Individual ASHP with heating efficiency of 2.64
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:

- What is the proportion of glazed area? Consider following the LETI Climate Emergency Design Guide principles in façade design.
- Demonstrate the cooling hierarchy has been followed, and specify which overheating mitigation measures are proposed to reduce the overheating risk within the proposed design:
 - o Internal heat generation, i.e. heat distribution infrastructure
 - o Heat entering building, i.e. shutters, trees, vegetation, blinds
 - o Manage heat through thermal mass and high ceilings
 - o 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. A total of 0.6 tCO₂ (57%) reduction of emissions are proposed under Be Green measures.

The proposed solar PV will have a peak output 5 kWp.

The individual air-to-water ASHP system(s) (min. SCOP of 4.5) will provide heating to the building and while the BRUKL sheets shows electric heaters will provide DHW.

Actions:

- Please provide some commentary on how the available roof space has been maximised to install solar PV. Has your feasibility shown that other roofs will not be viable / will they be used for other purposes?
- Please annotate the proposed Solar PV on the roof plans.
- 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 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.
- Please provide the detailed specifications of the proposed ASHP.
- 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?

3. Carbon Offset Contribution

An indicative carbon shortfall of 0.3 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 report does not set out 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.

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.)
- How will the development increase staff uptake of active travelling (through cycle facilities)
- 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.

Sustainability - Non-Domestic BREEAM Requirement

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.

The applicant has prepared a BREEAM Pre-Assessment Report for the commercial units. Based on this report, a score of 59.4% is expected to be achieved, equivalent to 'Very Good' rating.

Targeting such a low score will risk not achieving 'Very Good' as a very minimum and does not demonstrate the ambition to deliver a more sustainable development.

Actions:

- Please explore measures to improve the target score.
- A table should be submitted to demonstrate which credits will be met, how many are met out of the total available, under which category, which could be achieved, and which will not be met. This needs to include justification where targets are not met or 'potential' credits (where they are available under the Shell and Core assessment). This will enable better assessment of which credits.

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 £855, based on £2,850 per tonne of carbon emissions.

Planning Conditions

To be secured (with detailed wording TBC)

- Energy strategy
- BREEAM Certificate

Carbon Management Response 15/08/2024

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Archieve Green (dated 9 May 2024)
- BREEAM Pre-Assessment prepared by Kent Sustainability (dated 13 May 2024)
- Relevant supporting documents.

1. Summary

The revised energy strategy proposes a zero-carbon development with efficient fabric, ASHP and 40kWp of solar PV system.

Appropriate planning conditions are recommended to secure the benefit of this scheme.

2. Energy – Overall

The overall predicted reduction in CO₂ emissions for the development shows an improvement of approximately 359% in carbon emissions, from the Baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 4.2 tonnes of CO₂ from a baseline of 1.1 tCO₂/year.

<i>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	0.2	21%
Be Clean	0.9	0.0	0%
Be Green	-3.1	4.0	359%
Cumulative savings		4.2	380%
Carbon shortfall to offset (tCO ₂)	0		

Energy Use Intensity / Space Heating Demand

	Proposed Development	GLA Benchmark
Building type	Industrial	non-residential
EUI	101 kWh/m ² /year	Does not meet GLA benchmark of 55 kWh/m ² /year
SHD	3.9 kWh/m ² /year	Meets not meet GLA benchmark of 15 kWh/m ² /year
Methodology used	Part L2 - SBEM & none	

Actions:

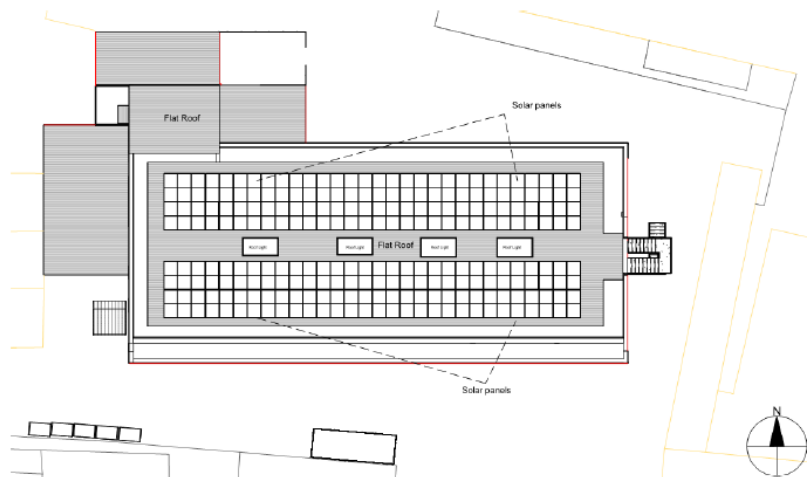
- The calculated Energy Use Intensity is higher than the GLA benchmark. Please justify this and explore measures to minimise the energy use intensity.

Energy – Green

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 revised proposed solar PV will have a peak output 40 kWp.

Roof plan showing solar panels:



The individual air-to-water ASHP system(s) (min. SCOP of 4.5) will provide heating to the building and while the BRUKL sheets shows electric heaters will provide DHW.

3. Carbon Offset Contribution

This is a zero-carbon development and there is no carbon shortfall.

4. Overall Sustainability

Sustainability - Non-Domestic BREEAM Requirement

The revised BREEAM Pre-Assessment Report for the commercial units shows, a score of 75.6 is expected to be achieved, equivalent to 'Excellent' rating. This is highly supported.

5. Conclusion

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

Planning Conditions

To be secured:

Energy Strategy

The development hereby approved shall be constructed in accordance with the Energy Statement prepared by Archieve Green (dated 9 May 2024) delivering a minimum 359% improvement on carbon emissions over 2021 Building Regulations Part L, with high fabric efficiencies, air source heat pumps (ASHPs) and a minimum 40 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 21% 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;*
- *Specification and efficiency of the proposed Mechanical Ventilation and Heat Recovery (MVHR), with plans showing the rigid MVHR ducting and location of the unit;*
- *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.

BREEAM

- Prior to commencement on site, a Design Stage Assessment and evidence that the relevant information has been submitted to the BRE for a design stage accreditation certificate must be submitted to the Local Planning Authority confirming that the development will achieve a BREEAM "Excellent" outcome in accordance with the BREEAM Pre-Assessment prepared by Kent Sustainability (dated 13 May 2024). This should be accompanied by a tracker demonstrating which credits are being targeted, and why other credits cannot be met on site.*
- Within 6 months of commencement on site, the Design Stage Accreditation Certificate must be submitted. The development shall then be constructed in strict accordance with the details so approved, shall achieve the agreed rating and shall be maintained as such thereafter for the lifetime of the development.*
- Prior to occupation, the Post-Construction Stage Assessment and tool, and evidence that this has been submitted to BRE should be submitted for approval, confirming that the development has achieved a BREEAM "Very Good" outcome (or equivalent), aiming for "Excellent", subject to certification by BRE.*
- Within 6 months of occupation, a Post-Construction certificate issued by the Building Research Establishment must be submitted to the local authority for approval, confirming this standard has been achieved.*

In the event that the development fails to achieve the agreed rating for the development, a full schedule and costings of remedial works required to achieve this rating shall be submitted for our written approval with 2 months of the submission of the post construction certificate. Thereafter the schedule of remedial works must be implemented on site within 3 months of the Local Authority's approval of the schedule, or the full costs and management fees given to the Council for offsite remedial actions.

Reason: In the interest of addressing climate change and securing sustainable development in accordance with London Plan (2021) Policies SI2, SI3 and SI4, and Local Plan (2017) Policies SP4 and DM21.