

		Our ref: HGY/2024/2279 Contact: Valerie Okeiyi Date: 20/11/2024
Town and Country Act 1990 (As amended)		
Location:	25-27 Clarendon Road Off Hornsey Park Road, Wood Green, London, N8 0DD	
Proposal:	Demolition of existing buildings and delivery of a new co-living development and affordable workspace, alongside public realm improvements, soft and hard landscaping, cycle parking, servicing and delivery details and refuse and recycling provision.	

Carbon Management Response 05/11/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement prepared by Integration (dated 26 July 2023)
- Overheating Analysis prepared by Integration (dated 26 July 2023)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 56.1% carbon dioxide emissions on site with communal air source heat pump and 35kWp Solar Panel system, which is supported in principle. However, the energy assessment does not properly represent all the end use of the spaces within the co-living part of the development and the overheating assessments fails to access the overheating risks in the amenity spaces, lacks future weather modelling and its mitigation measures.

Clarifications must be provided in relation to the Energy Strategy and Overheating Strategy as detailed below. This should be addressed prior to the determination of the application.

2. Energy Strategy

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 56.1% in carbon emissions with SAP10.2 carbon factors, from the Baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 66.8 tonnes of CO₂ from a baseline of 119.20 tCO₂/year.

London Plan Policy SI2 requires major development proposals to calculate and minimise unregulated carbon emissions, not covered by Building Regulations. The calculated unregulated emissions are: 64.3 tCO₂.

<i>Site-wide (SAP10.2 emission factors)</i>			
	Total regulated emissions (Tonnes CO₂ / year)	CO₂ savings (Tonnes CO₂ / year)	Percentage savings (%)
Part L 2021 baseline	119.2		
Be Lean	101.5	17.7	14.8%
Be Clean	101.5	0.0	0.0%
Be Green	52.3	49.2	41.3%
Cumulative savings		66.8	56.1%
Carbon shortfall to offset (tCO₂)	52.3		
Carbon offset contribution	£95 x 30 years x 52.3tCO ₂ /year = £149,055		

10% management fee	£14,905.50
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	Residential			Non=residential		
	Total regulated emissions (Tonnes CO2 / year)	CO2 savings (Tonnes CO2 / year)	Percentage savings (%)	Total regulated emissions (Tonnes CO2 / year)	CO2 savings (Tonnes CO2 / year)	Percentage savings (%)
Part L 2021 Baseline	112.3			6.85		
Be Lean	95.8	16.5	14.7%	5.68	1.17	17%
Be Clean	95.8	0.0	0.0%	5.68	0.0	0.0%
Be Green	50.1	45.7	40.7%	2.23	3.45	50.4%
Cumulative savings		62.2	55.4%		4.62	67.4%
Carbon shortfall to offset (tCO2)	50.1			2.23		

Actions:

- Please submit the GLA's Carbon Emission Reporting Spreadsheet in excel format.
- Please submit SAP and BRUKL sheets for a representative selection of the development for the Be Lean and Be Green scenarios including studios, types of amenity spaces, and commercial units.
- What is the calculated Primary Energy Factor?

Energy Use Intensity (EUI) / Space Heating Demand (SHD)

Applications are required to report on the total Energy Use Intensity (EUI) and Space Heating Demand (SHD), 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	Non-residential	Residential and all other non-residential
EUI	95 kWh/m ² /year	61.5 kWh/m ² /year	Does not meet GLA benchmark of 35/65/55 kWh/m ² /year
SHD	kWh/m ² /year		Does not meet GLA benchmark of 15 kWh/m ² /year
Methodology used	Bespoke calculation (provide details in column T) & CIBSE TM54		

Actions:

- The calculated Energy Use Intensity (excluding renewable energy) is very high than the GLA benchmark. Please explore measures to improve this.
- 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 site-wide saving of 17.7 tCO₂ in carbon emissions (14.8%) through improved energy efficiency standards in key elements of the build. This goes beyond the minimum 10% and 15% reduction for residential and non-residential respectively set in London Plan Policy SI2, so this is supported.

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

Floor u-value	0.11 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	1.0 W/m ² K
Window u-value	0.90 W/m ² K
G-value	0.40
Air permeability rate	3 m ³ /hm ² @ 50Pa
Ventilation strategy	Mechanical ventilation with heat recovery e.g. Domus AQH200-B
Thermal bridging	Accredited Construction Details
Low energy lighting	95lm/W
Heating system (efficiency / emitter)	Be Lean: Central gas-fired boiler (SEDBUK 89.5% efficient) (Be Green: air source heat pump SCOP 2.79)

Actions:

Commercial

- Submit the individual end use BER for specific end users in line w CIBSE Guide F.
- Justify the high cooling demand and explore measures to minimise this aiming to be within the notional cooling demand.

Overheating is dealt with in more detail below.

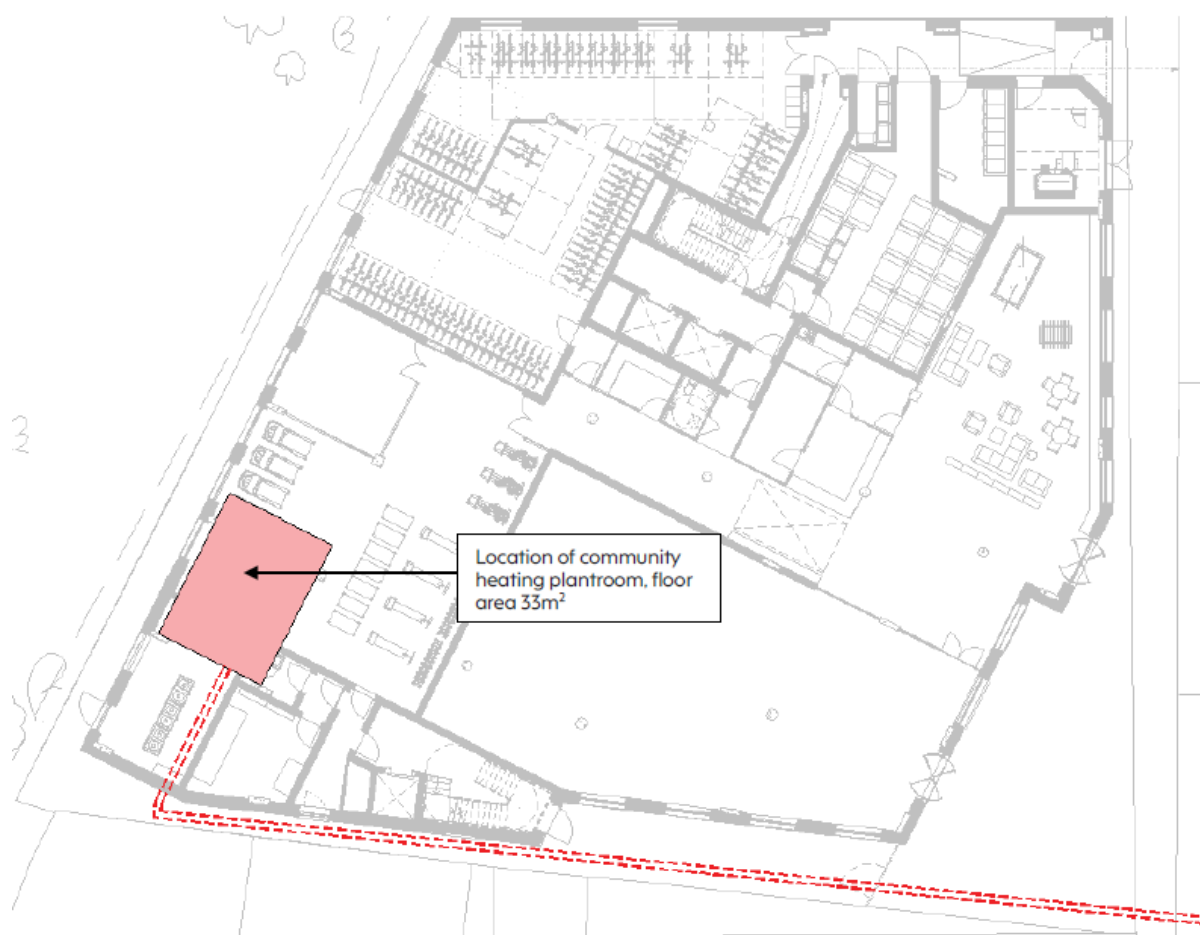
Energy – Clean

London Plan Policy SI3 calls for major development in Heat Network Priority Areas to have a communal low-temperature heating system, with the heat source selected from a hierarchy of options (with connecting to a local existing or planned heat network at the top). Policy DM22 of the Development Management Document supports proposals that contribute to the provision and use of Decentralised Energy Network (DEN) infrastructure. It requires developments incorporating site-wide communal energy systems to examine opportunities to extend these systems beyond the site boundary to supply energy to neighbouring existing and planned future developments. It requires developments to prioritise connection to existing or planned future DENs.

The development is within 500 meters of a planned future DEN, so the development is expected to be future proofed to secure connection subject to demonstration of technical feasibility and financial viability.

The Be Clean strategy to connect to the District Heat in Wood Green is generally acceptable.

A 33m² plantroom is proposed for the future district heating heat exchangers (twin transformer substation 2@66% peak heat demand). The applicant has submitted a site plan showing a single point connection at the edge of the site for future DEN connection as follows:



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 49.2 tCO₂ (41.3%) reduction of emissions are proposed under Be Green measures.

Solar photovoltaic (PV) panels	
Peak output	35 kWp
Renewable electricity produced per year	27,468 kWh/year (equivalent to a reduction of 3.7 tCO ₂ /year)
Orientation and angle	15 degrees
Battery storage capacity	N/A

Hot water and heating system	
Type	VRF heating and cooling system for commercial space. Centralised air source heat pump for hot water and domestic space heating.
Min. SCOP	2.79
SEER	4.68 (commercial)
Heat loss factor	5W/m

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 area will not be viable / will they be used for other purposes?

Energy – Be Seen

London Plan Policy SI2 requests all developments to ‘be seen’, to monitor, verify and report on energy performance. The GLA requires all major development proposals to report on their modelled and measured operational energy performance. This will improve transparency on energy usage on sites, reduce the performance gap between modelled and measured energy use, and provide the applicant, building managers and occupants clarity on the performance of the building, equipment and renewable energy technologies.

The applicant should install metering equipment on site, with sub-metering by dwelling and non-residential unit. A public display of energy usage and generation should also be provided in the main entrance area to raise awareness of residents/businesses.

Actions:

- What are the unregulated emissions and proposed demand-side response to reducing energy: smart grids, smart meters, battery storage?
- Demonstrate that the planning stage energy performance data has been submitted to the GLA webform for this development: (<https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/be-seen-energy-monitoring-guidance/be-seen-planning-stage-webform>)

3. Carbon Offset Contribution

A carbon shortfall of 52.3 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. 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 for residential units and CIBSE TM52 for commercial units, with TM49 weather files and the cooling hierarchy has been followed in the design. The report has modelled 29 studios from a representative sample of the worst-case units from the top two floors (7th and 8th floors) under the London Heathrow weather files.

Due to the noise constraints of this site being adjacent to the railway line, the TM59 criteria for predominantly mechanically ventilated dwellings apply (assuming windows need to remain closed at night) on the facades facing the railway link.

Results are listed in the table below.

Co-living: CIBSE TM59	Predominantly naturally ventilated		Predominantly mechanically ventilated	Number of corridors pass
	Criterion A (<3% hours)	Criterion B for bedrooms (less than 33 hours)	Number of habitable rooms pass (<3% hours)	
DSY1 2020s	29/29	29/29	11/11	0/0
DSY2 2020s	29/29	0/29		
DSY3 2020s	24/29	0/29		
DSY1 2050s				
DSY1 2080s				

Commercial: CIBSE TM52	Number of habitable spaces that pass at least 2 out of 3 criteria 1: hours of exceedance
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	2: daily weighted exceedance 3: upper limit temperature
DSY1 2020s	14/14
DSY2 2020s	
DSY3 2020s	
DSY1 2050s	
DSY1 2080s	

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

- Natural ventilation, with three opening types
 - o Type 1 – Ventilation panel – 0.96 m²
 - o Type 2 – Openable Window – 1.63 m² 100% openable areas, side hung to 90°
 - o Type 3 – Fixed Window – Fixed closed
- Glazing g-value of 0.40
- External horizontal and vertical shadings fins
- Large insulated openable panels
- MVHR with summer bypass (104l/s) for noise restricted units.
- No active cooling

No future mitigation measures proposed.

In addition, the applicant confirms providing an overheating guidance documents to occupants to help manage overheating that includes:

- Explaining daytime ventilation and use of blinds during the day e.g. when units are unoccupied.
- Promoting the use of local fans to create air movement to cool the skin, as well as low energy evaporative cooling fans to cool the air,
- The use of MVHR with summer bypass for additional background ventilation
- Encouraging the use of low energy/heat generating equipment.

Actions:

- Redo the overheating modelling with the Central London weather file, which will more accurately represent the urban heat island effect. Please follow the [Haringey Overheating Planning Guidance](#).
- Specify the technical specification of the external horizontal and vertical fins, and submit images, elevations and sections showing where these measures are proposed.
- Please confirm if the MVHR with summer bypass is proposed only for the units with noise restrictions? Submit the floorplans showing which habitable spaces will be predominantly naturally ventilated or mechanically ventilated.
- Undertake further modelling:
 - o Model DSY1 for the 2050s and 2080s. Ensure the design has incorporated as many mitigation measures to pass these more extreme and future weather files as far as feasible. Any remaining overheating risk should inform the future retrofit plan.
 - o Communal spaces like amenity spaces, garden room, private dining etc.
 - o Communal corridors, where pipework runs through.
- Specify the active cooling demand (space cooling, not energy used) on an area-weighted average in MJ/m² and MY/year? Please also confirm the efficiency of the equipment, whether the air is sourced from the coolest point / any renewable sources.
- Set out a retrofit plan for future and more extreme weather files, demonstrating how these measures can be installed, how they would reduce the overheating risk, what their lifecycle replacement will be, and who will be responsible for overheating risk.
- Demonstrate how the future mitigation measures will improve the overheating results.
- Identify communal spaces (indoor and outdoor) where residents can cool down if their flats are overheating.

5. 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 transport, health and wellbeing, materials and waste, water consumption, flood risk and drainage, biodiversity, climate resilience, energy and CO2 emissions and landscape design.

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 also prepared a multi-residential BREEAM Pre-Assessment Report for the commercial units. Based on this report, a score of 73.6 % is expected to be achieved, equivalent to 'Excellent' rating. A potential score of 89.1% could be achieved.

Urban Greening / Biodiversity

All development sites must incorporate urban greening within their fundamental design and submit an Urban Greening Factor Statement, in line with London Plan Policy G5. London Plan Policy G6 and Local Plan Policy DM21 require proposals to manage impacts on biodiversity and aim to secure a biodiversity net gain. Additional greening should be provided through high-quality, durable measures that contribute to London's biodiversity and mitigate the urban heat island impact. This should include tree planting, shrubs, hedges, living roofs, and urban food growing. Specifically, living roofs and walls are encouraged in the London Plan. Amongst other benefits, these will increase biodiversity and reduce surface water runoff.

The areas of different land use/habitats will consist of: (i) building (353m²); (ii) 564m² of biodiverse 'intensive' green roof (minimum of 150mm depth of substrate); (iii) 42m² of introduced shrub; (iv) 96m² of urban trees; (v) 398m² of permeable paving (Sustainable Urban Drainage). This results in a total net gain of 0.36 habitat units, which is supported.

An urban greening factor of 0.40 is proposed which is supported.

Actions:

- Please submit the biodiversity net-gain spreadsheet.

Living roofs

All development sites must incorporate urban greening within their fundamental design, in line with London Plan Policy G5.

The development is proposing living roofs in the development. All landscaping proposals and living roofs should stimulate a variety of planting species. Mat-based, sedum systems are discouraged as they retain less rainfall and deliver limited biodiversity advantages. The growing medium for extensive roofs must be 120-150mm deep, and at least 250mm deep for intensive roofs (these are often roof-level amenity spaces) to ensure most plant species can establish and thrive and can withstand periods of drought. Living walls should be rooted in the ground with sufficient substrate depth.

Living roofs are supported in principle, subject to detailed design. Details for living roofs and its relationship with Solar Panels will need to be submitted as part of a planning condition.

6. Planning Conditions

To be secured (with detailed wording TBC)

- Energy strategy
- Overheating
- BREEAM Certificate for "Excellent"
- Living roofs
- Biodiversity Net Gain
- Urban Greening Factor

7. Planning Obligations Heads of Terms

- Be Seen commitment to uploading energy data
- Energy Plan
- Sustainability Review
- Estimated carbon offset contribution (and associated obligations) of £149,055 (indicative), plus a 10% management fee; carbon offset contribution to be re-calculated at £2,850 per tCO₂ at the Energy Plan and Sustainability stages.
- A single point Future DEN connection (and associated obligations)

Carbon Management Response 20/11/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement Rev 02 prepared by Integration (dated 13 November 2024)
- Overheating Analysis Rev 02 prepared by Integration (dated 13 November 2024)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 55% carbon dioxide emissions on site with communal air source heat pump and 40kWp Solar Panel system, which is supported in principle. The updated energy assessment now represents the end use within the co-living spaces, i.e. co-living studios as residential use and amenity space as non-residential use. However, the modelling of commercial and amenity spaces has not been represented appropriately based on its end uses. The principle of energy strategy is supported, while further clarification is required in regard to the end-use modelling of commercial and amenity spaces. Appropriate conditions have been recommended to secure the benefits of this scheme.

2. Energy Strategy

The updated energy assessment shows an improvement of approximately 56.1% reduction in emissions for the development with SAP10.2 carbon factors, from the Baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 66.3 tonnes of CO₂ from a baseline of 119.8 tCO₂/year. The calculated unregulated emissions are: 66 tCO₂.

<i>Site-wide (SAP10.2 emission factors)</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2021 baseline	119.8		
Be Lean	102.1	17.7	15%
Be Clean	102.1	0.0	0%
Be Green	53.5	48.6	41%
Cumulative savings		66.3	55%
Carbon shortfall to offset (tCO ₂)	53.5		
Carbon offset contribution	£95 x 30 years x 53.5tCO ₂ /year = £ 152,475		
10% management fee	£ 15,247.50		

	Residential	Non-residential
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	Total regulated emissions (Tonnes CO2 / year)	CO2 savings (Tonnes CO2 / year)	Percentage savings (%)	Total regulated emissions (Tonnes CO2 / year)	CO2 savings (Tonnes CO2 / year)	Percentage savings (%)
Part L 2021 Baseline	112.3			7.5		
Be Lean	95.8	16.5	15%	6.3	1.2	16%
Be Clean	95.8	0.0	0%	6.3	0.0	0%
Be Green	50.1	45.7	41%	3.4	2.9	39%
Cumulative savings		62.2	55%		4.1	54%
Carbon shortfall to offset (tCO2)	50.1			3.4		

Actions:

- Please submit BRUKL sheets for a representative selection of the non-residential spaces of the development for the Be Lean and Be Green scenarios including different types of amenity spaces, and commercial units. This has been conditioned.

Energy Use Intensity (EUI) / Space Heating Demand (SHD)

	Proposed Development		GLA Benchmark
Building type	Co-living spaces	Non-residential	Residential and all other non-residential
EUI	87.12 kWh/m ² /year	60.53 kWh/m ² /year	Does not meet the new UK Net Zero Carbon Building Standard value of 75 kWh/m ² /year
SHD	7.80 kWh/m ² /year	14.98 kWh/m ² /year	Meets the GLA benchmark of 15 kWh/m ² /year
Methodology used	Bespoke calculation (provide details in column T) & CIBSE TM54		

The updated energy assessment shows an improvement in the report EUI, which is still higher than the GLA and UK Net zero Carbon Building benchmarks. It is acknowledged that co-living spaces is different from residential, therefore, the GLA target for residential shall not be appropriate to this scheme. The proposal still shows higher EUI than the new UK Net Zero Carbon Building Standard value of 75 kWh/m²/year for student accommodation (similar to co-living spaces). According to the report, this is because co-living spaces have additional equipment resulting higher EUI, however, the report fails to mention this specific equipment.

Actions:

- Please explore measures to further reduce the Energy Use Intensity of the proposed co-living spaces. This has been conditioned.

Energy – Lean

The applicant has proposed a site-wide saving of 17.7 tCO₂ in carbon emissions (14.8%) through improved energy efficiency standards in key elements of the build. This goes beyond the minimum 10% and 15% reduction for residential and non-residential respectively set in London Plan Policy SI2, so this is supported.

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

Floor u-value	0.11 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	1.0 W/m ² K

Window u-value	0.90 W/m ² K
G-value	0.40
Air permeability rate	3 m ³ /hm ² @ 50Pa
Ventilation strategy	Mechanical ventilation with heat recovery e.g. Domus AQH200-B
Thermal bridging	Accredited Construction Details
Low energy lighting	95lm/W
Heating system (efficiency / emitter)	Be Lean: Central gas-fired boiler (SEDBUK 89.5% efficient) (Be Green: air source heat pump SCOP 2.79)

Overheating is dealt with in more detail below.

Energy – Clean

No further comments.

Energy – Green

The applicant has added additional panels to the roof, resulting in an increase total output of 40kWp.

Energy – Be Seen

The scheme proposes the use of Demand Side Response to reduces peak energy demand by:

- The use of electrical equipment such as heat pumps which can be turned up/down.
- A large central energy store integrated into the centralised heat pumps system
- Additional energy storage capacity via exposed thermal mass.
- Limiting demand such as peak solar gains (refer to cooling and overheating section).
- The installation of smart meters and Be Seen Monitoring.
- The use of on-site generation, solar PV.

3. Carbon Offset Contribution

A carbon shortfall of 53.5 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. Overheating

The applicant has now updated the dynamic thermal modelling assessment with London Weather Centre files and have modelled future weather files (2050s & 2080s) as well.

The report has modelled three cases for co-living spaces:

Case 1: All spaces pass the CIBSE TM59 overheating standard with no opening restrictions. This shows that the scheme is well designed in line with the cooling hierarchy.

Case 2: Spaces with opening restrictions due to acoustic restrictions fail the CIBSE TM59 overheating standard due to restriction in openable area at night for natural ventilation.

Case 3: To overcome the reduced performance arising from acoustic restrictions, additional interventions in form of MVHR is introduced, with which, the noise restricted studios pass the TM59 overheating standard.

The final results are listed in the table below.

Co-living: CIBSE TM59	Predominantly naturally ventilated		Predominantly mechanically ventilated	Number of corridors pass
	Criterion A (<3% hours)	Criterion B for bedrooms (less than 33 hours)	Number of habitable rooms pass (<3% hours)	
DSY1 2020s	29/29	29/29	11/11	0/0
DSY2 2020s	29/29	0/29		
DSY3 2020s	24/29	0/29		
DSY1 2050s	27/29	0/29		
DSY1 2080s	22/29	0/29		

Commercial: CIBSE TM52	Number of habitable spaces that pass at least 2 out of 3 criteria 1: hours of exceedance 2: daily weighted exceedance 3: upper limit temperature
DSY1 2020s	14/14
DSY1 2050s	12/14
DSY1 2080s	1/14

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

Co-living spaces:

- Natural ventilation, with three opening types
 - o Type 1 – Ventilation panel – 0.96 m²
 - o Type 2 – Openable Window – 1.63 m² 100% openable areas, side hung to 90°
 - o Type 3 – Fixed Window – Fixed closed
- Glazing g-value of 0.40
- Heavy weight thermally massive structure
- External horizontal and vertical shadings fins
- Large insulated openable panels
- MVHR with summer bypass (105l/s) for noise restricted units.
- Active cooling ONLY for commercial units.

The future overheating risk mitigation measures include:

- Use of highly reflective blinds coving the fixed glazing.
- Residents to be informed of suitable product (or to be provided) that reduces overheating such as pedestal fans, fans with evaporative cooling and ceiling mounted fans.
- Supplementary ventilations and cooling depending on the extent of the change to future climate.

In addition, the applicant confirms providing an overheating guidance documents to occupants to help manage overheating that includes:

- Explaining daytime ventilation and use of blinds during the day e.g. when units are unoccupied.
- Promoting the use of local fans to create air movement to cool the skin, as well as low energy evaporative cooling fans to cool the air,
- The use of MVHR with summer bypass for additional background ventilation
- Encouraging the use of low energy/heat generating equipment.

Action:

- Provide more details on the working mechanism of the ventilation panels, does it also provide noise attenuation?

5. Sustainability

No further comments.

6. Planning Conditions

To be secured:

Energy strategy

(a) Prior to the commencement of development, a revised Energy Statement shall be submitted and approved by the Local Planning Authority. This shall be based on the submitted Energy & Sustainability Statement Rev 02 prepared by Integration (dated 13 November 2024), delivering a minimum site-wide carbon emission reduction of 55% from a Building Regulations 2021 Part L compliant building, with high fabric efficiencies, centralised air source heat pumps, a minimum of 40kWp solar photovoltaic (PV) array and a single point Future DEN connection. The revised strategy shall include the following:

- Confirmation of how this development will meet the zero-carbon policy requirement in line with the Energy Hierarchy;

- A minimum site-wide carbon reduction of 15% under Be Lean;
- Detailed BRUKL calculations for the individual end use (commercial, and types of amenity spaces) of non-residential element of the development;
- Details to reduce the 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); inverter capacity; and how the energy will be used on-site before exporting to the grid;
- Specification of any additional equipment installed to reduce carbon emissions, if relevant;
- A metering strategy

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.

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

(c) Within six months of first occupation, evidence shall be submitted to the Local Planning Authority that the development has been registered on the GLA's Be Seen energy monitoring platform.

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 occupation of the development, details of external blinds, ventilation panels, to all habitable rooms must be submitted for approval by the local planning authority. This should include the fixing mechanism, flow rates, specification of the blinds, shading coefficient, etc.

The following overheating measures must be installed prior to occupation and be retained for the lifetime of the development to reduce the risk of overheating in habitable rooms in line with the Overheating Analysis Rev 02 prepared by Integration (dated 13 November 2024):

- Natural ventilation, with three opening types
 - o Type 1 – Ventilation panel – 0.96 m²
 - o Type 2 – Openable Window – 1.63 m² 100% openable areas, side hung to 90°
 - o Type 3 – Fixed Window – Fixed closed
- Glazing g-value of 0.40
- Heavy weight thermally massive structure
- External horizontal and vertical shadings fins
- Large insulated openable panels
- MVHR with summer bypass (104l/s) for noise restricted units.
- Active cooling ONLY commercial

If the design of Blocks is amended, or the heat network pipes will result in higher heat losses and will impact on the overheating risk of any units, a revised Overheating Strategy must be submitted as part of the amendment application.

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.

BREEAM Certificate for “Excellent”

- a) Prior to commencement on site for the relevant non-residential unit, 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 (or equivalent). This should be accompanied by a tracker demonstrating which credits are being targeted, and why other credits cannot be met on site.
- b) 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.
- c) 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 “Excellent” outcome (or equivalent), aiming for “Excellent”, subject to certification by BRE.
- d) 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 “Excellent” 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.

Living roofs

- (a) Prior to the above ground commencement of development, details of the living roofs 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;
 - 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 root ball of plugs 25cm³) 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 development, evidence must be submitted to and approved by the Local Planning Authority that the living roof 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 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.

Biodiversity Net Gain

(a) Prior to the commencement of development, details of ecological enhancement measures and ecological protection measures shall be submitted to and approved in writing by the Council. This shall detail the biodiversity net gain of at least 0.36 habitat units, plans showing the proposed location of ecological enhancement measures, a sensitive lighting scheme, justification for the location and type of enhancement measures by a qualified ecologist, and how the development will support and protect local wildlife and natural habitats.

(b) Prior to the occupation of development, photographic evidence and a post-development ecological field survey and impact assessment shall be submitted to and approved by the Local Planning Authority to demonstrate the delivery of the ecological enhancement and protection measures is in accordance with the approved measures and in accordance with CIEEM standards.

Development shall accord with the details as approved and retained for the lifetime of the development.

Reason: To ensure that the development provides the maximum provision towards the creation of habitats for biodiversity and the mitigation and adaptation of climate change. In accordance with London Plan (2021) Policies G1, G5, G6, SI1 and SI2 and Local Plan (2017) Policies SP4, SP5, SP11 and SP13.

Urban Greening Factor

Prior to completion of the construction work, an Urban Greening Factor calculation should be submitted to and approved by the Local Planning Authority demonstrating a target factor of 0.40 has been met through greening measures.

Reason: To ensure that the development provides the maximum provision towards the urban greening of the local environment, creation of habitats for biodiversity and the mitigation and adaptation of climate change. In accordance with London Plan (2021) Policies G1, G5, G6, SI1 and SI2 and Local Plan (2017) Policies SP4, SP5, SP11 and SP13.

7. Planning Obligations Heads of Terms

- Be Seen commitment to uploading energy data
- Energy Plan
- Sustainability Review
- Estimated carbon offset contribution (and associated obligations) of £152,475 (indicative), plus a 10% management fee; carbon offset contribution to be re-calculated at £2,850 per tCO₂ at the Energy Plan and Sustainability stages.
- A single point Future DEN connection (and associated obligations)