

		Our ref: HGY/2024/0466 Contact: Valerie Okeiyi Date: 20/09/2024
Town and Country Act 1990 (As amended)		
Location:	157-159, Hornsey Park Road, London, N8 0JX	
Proposal:	Demolition of existing structures and erection of two buildings to provide residential units and Class E floorspace; and provision of associated landscaping, a new pedestrian route, car and cycle parking, and refuse and recycling facilities.	

Carbon Management Response 13/06/2024

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Irvineering (dated 19 February 2024)
- Preliminary Ecological Appraisal and Biodiversity Net Gain Assessment prepared by The Ecology Partnership (dated February 2024)
- BREEAM Pre-Assessment prepared by Trinity International Properties Ltd. (dated February 2024)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 88% carbon dioxide emissions on site, which is supported in principle. Some clarifications must be provided with regard to the Energy, Sustainability and Overheating Strategy. Appropriate planning conditions will be recommended once this information has been provided.

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 78% 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 26.0 tonnes of CO₂ from a baseline of 29.5 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: 10.3 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	29.5		
Be Lean	26.5	2.9	10%
Be Clean	26.5	0	0%
Be Green	3.5	23.1	78%
Cumulative savings		26.0	88%
Carbon shortfall to offset (tCO₂)	3.7		
Carbon offset contribution	£95 x 30 years x 3.7 tCO ₂ /year = £10,545		
10% management fee	£1,054.5		

	Residential			Non-residential		
<i>(SAP10 emission factors)</i>	Total regulated emissions (tCO ₂ /year)	CO ₂ savings (tCO ₂ /year)	Percentage savings (%)	Total regulated emissions (tCO ₂ /year)	CO ₂ savings (tCO ₂ /year)	Percentage savings (%)
Part L 2021 Baseline	28.7			0.8		
Be Lean savings	25.9	2.8	10%	0.6	0.1	17%
Be Clean savings	25.9	0	0%	0.6	0	0%
Be Green savings	2.9	23	80%	0.6	0.1	7%
Cumulative savings		25.8	90%		0.2	24%
Carbon shortfall to offset (tCO₂)	2.9			0.8		

Actions:

- Please submit the full GLA's Carbon Emission Reporting Spreadsheet (in excel format). The link to the spreadsheet is <https://www.london.gov.uk/media/99154/download?attachment>
- Please submit SAP sheets for a representative selection of dwellings for the Baseline, Be Lean and Be Green scenarios.
- COMMERCIAL ONLY - Please model all proposed floorspace as 'heated'.

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/ All other non-residential
EUI	___ kWh/m ² /year	Meets/Does not meet GLA benchmark of 35/65/55 kWh/m ² /year
SHD	___ kWh/m ² /year	Meets/Does not meet GLA benchmark of 15 kWh/m ² /year
Methodology used	TBC	

Actions:

- What is the calculated Energy Use Intensity (excluding renewable energy)? How does this perform against GLA benchmarks, i.e. at 35 and 55 kWh/m²/year for residential and non-residential respectively? 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 site-wide saving of 2.9 tCO₂ in carbon emissions (10%) through improved energy efficiency standards in key elements of the build, based on SAP10.2 carbon factors. This is equivalent to the minimum 10% reduction set in London Plan Policy SI2, so this is supported. However, it is recommended to explore further measures to increase on-site reduction using fabric first approach.

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

Floor u-value	0.10 W/m ² K
External wall u-value	0.15 W/m ² K
Roof u-value	0.10 W/m ² K
Door u-value	1.00 W/m ² K
Window u-value	1.20 W/m ² K
G-value	0.45 (resi) and 0.20 (non-resi)
Air permeability rate	3 m ³ /hm ² @ 50Pa
Ventilation strategy - Residential	Residential: MVHR Nuaire MRXBOXAB-Eco3 or equivalent Supply and extract duct to and from exterior has to be insulated with 25mm insulation if less than 2m long or 50mm thickness for ducts over 2m long. Commercial: MVHR with SFP 1.0 W/l.s and 80% heat recovery efficiency; demand control depending on CO2 sensors
Thermal bridging	Accredited Construction Details
Low energy lighting	Residential: Lighting power 2.3 W/m ² or less; Efficacy of all fixed lighting = 80 lm/W or higher Lighting Commercial: Luminaire efficacy 120 lm/W, constant illuminance, photoelectric control, occupancy sensors; metering with 'out of range' alarm Power
Heating system (efficiency / emitter)	Residential: Gas boiler, SEDBUK efficiency 89.5%, radiators, time and temperature zone control Commercial: ASHP with heating SCoP of 2.64; cooling SEER 7.0
Thermal mass	TBC

Actions:

- Please specify the heating strategy and ventilation system assumed under the Baseline and Be Lean scenarios (including the gross efficiency figure(s)).
 - o For residential applications the baseline should be a gas boiler with notional efficiency of 89.5%. Currently, 90-92% is modelled, please amend.
- Please identify on a plan where the MVHR units will be located within the development. The units should be less than 2m away from external walls. This detail can also be conditioned.
- How is lighting energy demand improved? Should consider daylight control and occupancy sensors for communal areas.
- What is the proportion of glazed area? Consider following the LETI Climate Emergency Design Guide principles in façade design.
- The fabric efficiencies and thermal bridging should be improved upon to reduce heat losses.
- If the air tightness of the scheme is improved, mechanical ventilation with heat recovery could be proposed to further reduce heat losses.
- Set out how the scheme's thermal bridging will be reduced. No measures are proposed to reduce heat loss from junction details, and it does not set out the what the proposed Psi (Ψ) value is.
- What is the construction of the building and what is the assumed thermal mass?

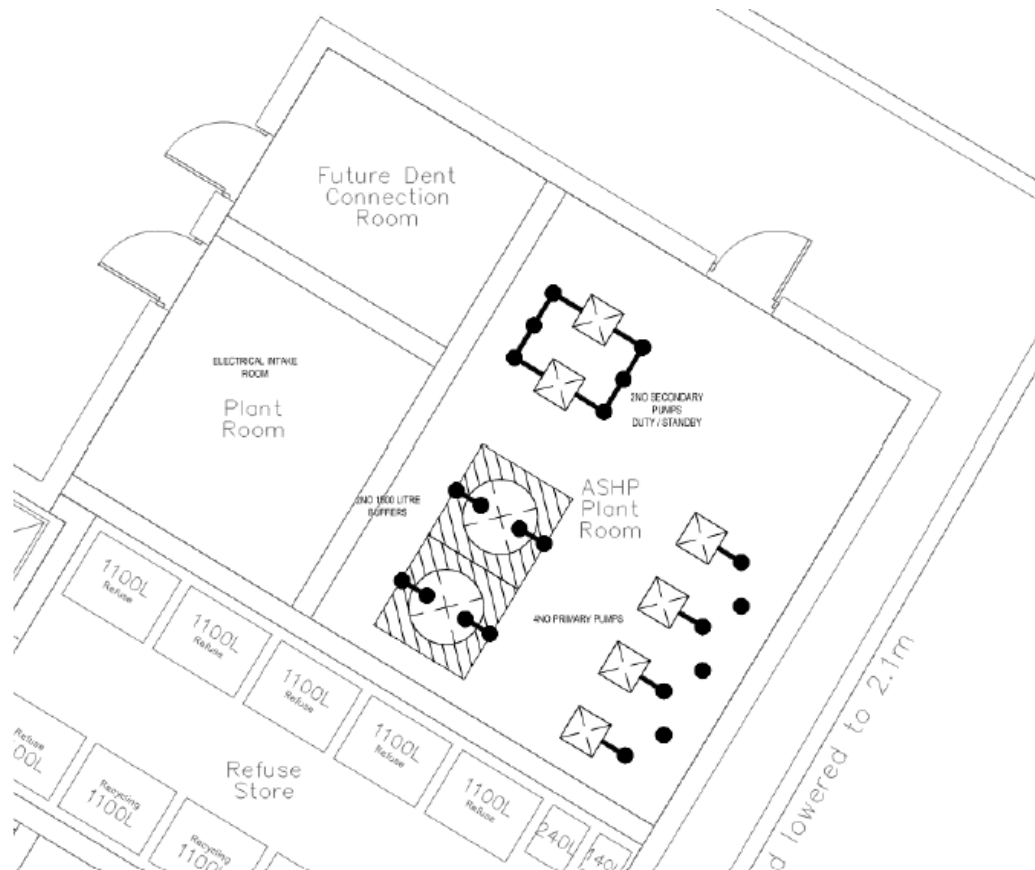
Overheating is dealt with in more detail below.

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 Be Clean strategy to connect to the DEN in as there is an energy centre with planned heat network proposed on the adjacent site. The communal heating pipework is proposed to be designed and installed to allow for future DEN connections. Some evidence should be provided that the DEN system was inputted into the SAP model and that the plant room is adequately sized for a substation.



Details to come from Energy Infrastructure Manager.

Actions:

- Please provide a Connection to the DEN scenario that shows the carbon reduction following the Energy Hierarchy, and state what carbon factor has been used.
- Please submit a site plan showing the connection point at the edge of the site, location of a pipe between the connection point and plant room, and plant room layout and schematics.

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 23.1 tCO₂ (78%) reduction of emissions are proposed under Be Green measures.

The solar array peak output would be 25kWp, the array of panels would be mounted on a roof area of 220 m², at a 15° angle, facing.

The ASHP systems (min. SCOP of 4.0) will provide hot water and heating to the residential part of the development while ASHP system will provide heating and Instantaneous electric water heaters will provide the hot water to the non-residential part of the development.

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?
- What is the peak output of the PV array, how much of the roof area will be covered approximately, what is the assumed efficiency, angle and orientation of the panels?
- How will the solar energy be used on site (before surplus is exported onto the grid)?
- 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 air source heat pumps will be located and how the units will be mitigated in terms of visual and noise impact.
- What is the Seasonal Coefficient of Performance (SCOP), the Seasonal Performance Factor (SFP) and Seasonal Energy Efficiency ratio (SEER) of the ASHP?

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 commercial unit. A public display of energy usage and generation should also be provided in the main entrance area to raise awareness of residents and businesses.

- Please confirm that sub-metering will be implemented for residential and commercial units.
- 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

An indicative carbon shortfall of 3.7 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 with TM49 weather files. The report has modelled 13 habitable rooms, and 8 KLD spaces under the London Weather Centre files.

Results are listed in the table below.

Domestic: CIBSE TM59	Predominantly naturally ventilated	
	Criterion A (<3% hours)	Criterion B for bedrooms (less than 33 hours)
DSY1 2020s	8/8	13/13
DSY2 2020s		
DSY3 2020s		
DSY1 2050s		
DSY1 2080s		

All 21 modelled rooms and spaces pass the overheating requirements for 2020s DSY1. In order to pass this, the following measures will be built:

- Natural ventilation, with tilt and turn openings for GF providing at least 15cm gap
- Glazing g-value of 0.45 for residential
- MVHR with summerbypass 0.5ach
- No active cooling

No future mitigation measures are proposed.

The submitted overheating strategy needs further details.

Actions:

- It is unclear which weather files is used for the assessment. Please confirm if Central London weather files and if not please remodel with the LWC weather files, which will more accurately represent the urban heat island effect. Please follow the guidelines as per [the Haringey's Key Overheating Planning Application Requirements](#).
- Please follow the cooling hierarchy in order and step by step, and first implement all passive measures to reduce the overheating risk and the cooling demand before introducing any mechanical form of cooling.
- External shading features such as overhangs, Brise Soleil, etc) should be explored and proposed to reduce the cooling demand as much as possible.
 - o Specify the shading strategy, including technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed. Provide the technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed.
- Internal blinds cannot be used to pass the weather files but can form part of the delivered strategy to reduce overheating risk for occupants (as long as it does not compromise any ventilation requirements).
- Submit an annotated plan specifying the ventilation strategy and overheating risk mitigation strategy.
- Confirm that the habitable rooms facing the main road are not subject to adverse noise or air pollution. Specify the strategy to overcome any risk of crime or adverse air/noise pollution that will impact whether occupants can rely on natural ventilation, in line with the [AVO Residential Design Guide](#)). This should include specification of adapted windows and elevations demonstrating where these will be installed.
- Include images indicating which sample development were modelled and floorplans showing the modelled internal layout of development.
- Undertake further modelling:
 - o Model the 2020s DSY 2 and 3 and 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 All single-aspect rooms facing west, east, and south;
 - o At least 50% of rooms on the top floor;
 - o 75% of all modelled rooms facing South or South/West;
 - o Rooms closest to any significant noise and / or air pollution source, with windows closed at all times (with cross reference to the Noise and the Air Quality

Assessments to demonstrate the most sensitive receptors and the [AVO Residential Design Guide](#));

- Habitable communal spaces (e.g. communal living/dining rooms in care homes);
- Communal corridors, where pipework runs through;
- Also undertake thermal dynamic modelling for the non-residential part of the development in line with TM52 with TM49 weather files.
- 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.
- Identify communal spaces (indoor and outdoor) where residents can cool down if their flats are overheating.
- Confirm who will own the overheating risk when the building is occupied (not the residents).
- This development should have a heatwave plan / building user guide to mitigate overheating risk for occupants.

5. Sustainability

Policy DM21 of the Development Management Document requires developments to demonstrate sustainable design, layout and construction techniques. No Sustainability statement is submitted to 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.)
- What electric vehicle charging points are proposed? This allows the future-proofing of the development by ensuring the required power has been installed.
- How will the development increase staff uptake of active travelling (through cycle facilities)
- Specify the location and number of safe and accessible cycle parking spaces.
- A target (%) for responsibly 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.
- Climate change mitigation should also be considered for the external spaces (shading, etc) and the impact of the increase in severity and frequency of weather events on the building structures.

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 57.66% 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.

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 Biodiversity Net Gain calculation shows a net gain of 164%, which is above the 10% requirement as set out in the Environment Act 2021.

Actions:

- Please submit the Urban Greening Factor

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 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
- Living roofs
- Biodiversity

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 £10,545 (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.
- DEN connection (and associated obligations)
- Heating strategy fall-back option if not connecting to the DEN

Carbon Management Response 13/08/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement prepared by Irvineering (dated 10 July 2024)
- BREEAM Pre-Assessment prepared by Trinity International Properties Ltd. (dated 21 June 2024)
- Relevant supporting documents.

1. Summary

The development now achieves a reduction of 68% carbon dioxide emissions on site, which is lower than proposed earlier. Some amendments are required in the energy modelling and clarifications must be provided with regards to Sustainability and Overheating Strategy.

This should be addressed prior to the determination of the application.

2. Energy Strategy

The overall predicted reduction in CO₂ emissions for the development shows an improvement of approximately 68% in carbon emissions with SAP10.2 carbon factors, from the Baseline development model (which is Part L 2021 compliant). This is lower to the previously proposed carbon reduction.

The reported carbon reduction is very high under Be Clean (80%) and emissions increases instead under Be Green (-25%). This is because DEN is modelled under Be Clean and ASHP under Be Green with its respective carbon factors. The applicant is required to submit a separate ASHP scenario and a DEN scenario.

<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	29.2		
Be Lean	25.3	3.9	13%
Be Clean	1.9	23.4	80%
Be Green	9.3	-7.4	-25%
Cumulative savings	-	19.9	68%
Carbon shortfall to offset (tCO ₂)	9.3		
Carbon offset contribution	£95 x 30 years x 3.7 tCO ₂ /year = £26,505		
10% management fee	£2,650.50		

	Residential			Non-residential		
<i>(SAP10 emission factors)</i>	Total regulated emissions (tCO ₂ /year)	CO ₂ savings (tCO ₂ / year)	Percentage savings (%)	Total regulated emissions (tCO ₂ /year)	CO ₂ savings (tCO ₂ /year)	Percentage savings (%)
Part L 2021 Baseline	28.4			0.8		
Be Lean savings	24.7	3.7	13%	0.6	0.1	17%
Be Clean savings	1.3	23.4	82%	0.6	0	0%
Be Green savings	8.8	-7.5	-26%	0.6	0.1	7%
Cumulative savings		19.7	69%		0.2	24%
Carbon shortfall to offset (tCO ₂)	8.8			0.6		

Actions:

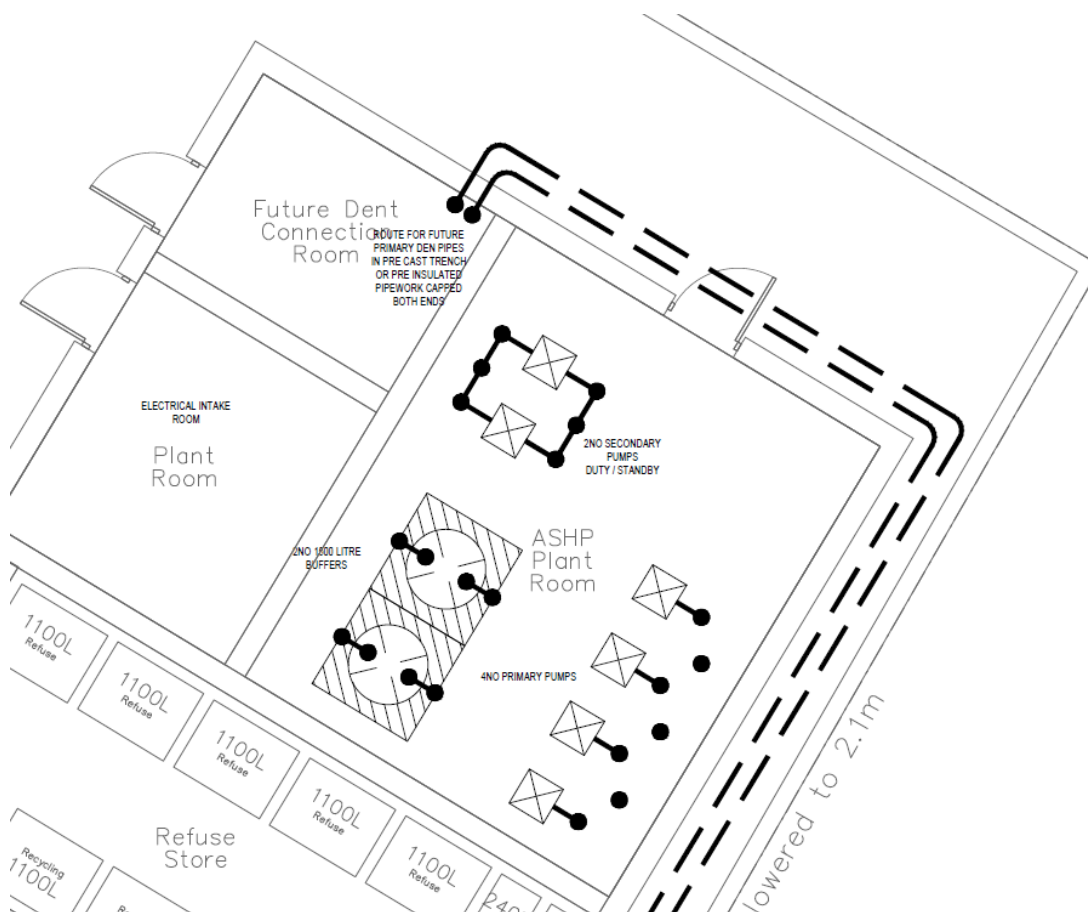
- Please submit a separate DEN scenario and a ASHP scenarios results.
 - o DEN Scenario: DEN should be modelled under Be Clean, and with Solar PV under Be Clean scenarios.
 - o ASHP Scenario: ASHP should be modelled under Be Green scenario with Sola PV.
- Please re-submit two full GLA's Carbon Emission Reporting Spreadsheet (in excel format) for DEN Scenario and ASHP Scenario.
- Please submit two sets of SAP sheets for a representative selection of dwellings for the Baseline, Be Lean and Be Green scenarios. (DEN and ASHP scenario)
- Please submit two sets of BRUKL sheets for the commercial units for the Be Lean, Be Clean and Be Green scenarios (DEN and ASHP scenario)

Energy – Lean

The proportion of glazed area to external wall is proposed to be 20% for Block A and 16.5% for Block B. This includes the glazing in communal circulation areas and the commercial element on Block B.

Energy – Clean

The applicant has submitted a site plan showing the connection point at the edge of the site for future DEN connection.



Energy – Be Seen

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

- Please confirm that sub-metering will be implemented for residential and commercial units.

- 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

An indicative carbon shortfall of 9.3 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. Overheating

The revised report has modelled 13 habitable rooms, 8 KLD spaces and 2 corridors under the London Weather Centre files. Results are listed in the table below.

Domestic: CIBSE TM59	Predominantly naturally ventilated		Corridors
	Criterion A (<3% hours)	Criterion B for bedrooms (less than 33 hours)	
DSY1 2020s	8/8	13/13	2/2
DSY2 2020s	8/8	4/13	2/2
DSY3 2020s	8/8	7/13	2/2
DSY1 2050s	8/8	4/13	2/2
DSY1 2080s	8/8	0/13	1/2

All 21 modelled rooms and spaces pass the overheating requirements for 2020s DSY1. In order to pass this, the following measures will be built:

- Natural ventilation, with tilt and turn openings for GF providing at least 15cm gap
- Glazing g-value of 0.45 for residential and 0.20 for commercial
- MVHR with summerbypass 0.5ach
- No active cooling

The proposed future mitigation measures are as follows:

- Internal blinds
- External blinds or other forms of shading
- Hybrid cooling systems

Actions:

- External shading features such as overhangs, Brise Soleil, etc) should be explored and proposed to reduce the cooling demand as much as possible.
 - o Specify the shading strategy, including technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed. Provide the technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed.
- Also, undertake thermal dynamic modelling for the non-residential part of the development in line with TM52 with TM49 weather files for DSY1,2, 3 2020s, and DSY 1 for 2050s and 2080s.

5. Sustainability

The report fails to 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.)

- What electric vehicle charging points are proposed? This allows the future-proofing of the development by ensuring the required power has been installed.
- How will the development increase staff uptake of active travelling (through cycle facilities)
- Specify the location and number of safe and accessible cycle parking spaces.
- 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.
- Climate change mitigation should also be considered for the external spaces (shading, etc) and the impact of the increase in severity and frequency of weather events on the building structures.

Non-Domestic BREEAM Requirement

The applicant has revised the BREEAM Pre-Assessment Report for the commercial units. Based on this report, an improved score of 60.47% is expected to be achieved, equivalent to 'Very Good' rating, which is supported.

Urban Greening / Biodiversity

The Urban Greening Factor statement is missing.

Actions:

- Please submit the Urban Greening Factor

6. Planning Conditions

To be secured (with detailed wording TBC)

- Energy strategy
- Overheating
- BREEAM Certificate
- Living roofs
- Biodiversity

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 £26,505 (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.
- DEN connection (and associated obligations)
- Heating strategy fall-back option if not connecting to the DEN

Carbon Management Response 30/8/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement – Rev F prepared by Irvineering (dated 19 Aug 2024)
- BREEAM Pre-Assessment prepared by Trinity International Properties Ltd. (dated 21 June 2024)
- Landscape Statement prepared by Turkington martin (dated January 2024)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 93% (DEN scenario), or 68% (heat pump scenario) in carbon dioxide emissions on site. Some clarifications are pending which were raised in the earlier response and must be addressed prior to the determination of the application.

2. Energy Strategy

The overall predicted reduction in CO₂ emissions for the development shows an improvement of approximately 93% (DEN scenario), or 68% (heat pump scenario) in carbon emissions, from the Baseline development model (which is Part L 2021 compliant).

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 21.3 tCO₂.

Site-wide	DEN scenario			ASHP scenario		
	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 (%)
Baseline	29.2			29.2		
Be Lean	25.3	3.9	13%	25.3	3.9	13%
Be Clean	25.3	0.0	0%	25.3	0.0	0%
Be Green	2.1	23.3	80%	9.3	16.0	55%
Cumulative savings		27.2	93%	-	19.9	68%
Carbon shortfall to offset (tCO2)	2.1			9.3		
Carbon Offset Contribution	£95 x 2.1 x 30 = £5,985			£95 x 9.3 x 30 = £26,505		

Residential	DEN scenario			ASHP scenario		
	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 (%)
Baseline	28.4			28.4		
Be Lean	24.7	3.7	13%	24.7	3.7	13%
Be Clean	24.7	0.0	0%	24.7	0.0	0%
Be Green	1.5	23.2	82%	8.8	15.9	56%
Cumulative savings		27.0	95%		19.7	69%
Carbon shortfall to offset (tCO2)	1.5			8.8		

Non-Residential	DEN scenario			ASHP scenario		
	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 (%)
Baseline	0.8			0.8		
Be Lean	0.6	0.1	17%	0.6	0.1	17%
Be Clean	0.6	0.0	0%	0.6	0.0	0%
Be Green	0.6	0.1	7%	0.6	0.1	7%
Cumulative savings		0.2	24%		0.2	24%
Carbon shortfall to offset (tCO2)	0.6			0.6		

Actions:

- The carbon reduction reported under DEN scenario should be in line with the Energy Assessment guidance, i.e. Be Lean – reduction with improvement in building fabrics, Be Clean – reduction with additional improvement due to DEN and Be Clean – additional reduction with Solar PV. Please re-submit the energy report:
 - For DEN Scenario: DEN should be modelled under Be Clean, and not Be Green. And then Solar PV (along with DEN) should be modelled under Be Clean stage.
 - Please re-submit the GLA's Carbon Emission Reporting Spreadsheet (in excel format) for DEN Scenario with carbon reduction under correct energy hierarchy stage i.e. Be Clean – reduction with DEN, Be Clean – reduction with DEN and Solar PV.
- Please submit two sets of SAP sheets for a representative selection of dwellings for the Baseline, Be Lean, Be Clean and Be Green scenarios. (DEN and ASHP scenario)
- Please submit two sets of BRUKL sheets for the commercial units for the Be Lean, Be Clean and Be Green scenarios (DEN and ASHP scenario)

Energy – Be Seen

The development proposes sub-metering of energy for both residential and commercial units and low unregulated energy consumption will be incentivised by smart electricity meters, including Sol-Share or equivalent PV distribution system.

3. Carbon Offset Contribution

A deferred carbon offset contribution mechanism will apply to this scheme as it is expected to connect to the DEN when this has been built.

- Scenario 1: Connection to the DEN scenario (residual tCO₂ over 30 years)
- Scenario 2: Heat pump (residual tCO₂ over 30 years)

Two carbon offset payments will be calculated. The carbon offset contribution for scenario 1 will be due at the commencement of development and the difference in the offset contribution between the first and second scenarios will be deferred for 10 years and indexed accordingly.

1. Payment for the residual emissions in the DEN scenario (Scenario 1) would be due at commencement of development.
2. A deferred carbon offset contribution is calculated through the difference in the offset contribution: Scenario 2 – Scenario 1 = Deferred Payment.
3. If, after 10 years the development has not connected to the DEN, the deferred payment (+indexation) is due.
4. If, after 10 years the development has connected to the DEN, the deferred payment would not be due but this amount would be available as a connection charge to the DEN.

	Carbon Offsetting Contribution (Alternative Heating Strategy scenario; tCO2)	Carbon Offsetting Contribution (Connection to DEN scenario; tCO2)
Shortfall to offset	2.1	9.3
Carbon offset payment due for scenario	$£95 \times 2.1 \times 30 = £5,985$	$£95 \times 9.3 \times 30 = £26,505$
Carbon Offsetting Contribution payment due at commencement of development		£5,985
Deferred Carbon Offsetting Contribution (+indexation) payment due if not connecting to the DEN		$£26,505 - £5,985 = £20,520$

4. Overheating

Previous actions are pending copied below:

Actions:

- External shading features such as overhangs, Brise Soleil, etc should be explored and proposed to reduce the cooling demand as much as possible.
 - o Specify the shading strategy, including technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed. Provide the technical specification and images of the proposed shading feature, elevations and sections showing where these measures are proposed.
- Also, undertake thermal dynamic modelling for the non-residential part of the development in line with TM52 with TM49 weather files for DSY1,2, 3 2020s, and DSY 1 for 2050s and 2080s.

5. Sustainability

Previous actions are pending copied below:

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.)
- What electric vehicle charging points are proposed? This allows the future-proofing of the development by ensuring the required power has been installed.
- How will the development increase staff uptake of active travelling (through cycle facilities)
- Specify the location and number of safe and accessible cycle parking spaces.
- 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.
- Climate change mitigation should also be considered for the external spaces (shading, etc) and the impact of the increase in severity and frequency of weather events on the building structures.

Urban Greening / Biodiversity

The proposed development is estimated to have 0.405 urban greening factor, which is supported.

6. Planning Conditions

To be secured (with detailed wording TBC)

- Energy strategy
- Overheating
- BREEAM Certificate
- Living roofs

- Biodiversity

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 £26,505 (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.
- DEN connection (and associated obligations)
- Heating strategy fall-back option if not connecting to the DEN

Carbon Management Response 20/09/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement – Rev G prepared by Irvineering (dated 5 Sep 2024)
- Applicant response dated (10 Sep 2024)
- Relevant supporting documents.

1. Summary

The revised energy and sustainability have amended the carbon reduction reported under DEN scenario which is now in line with the Energy Assessment guidance. The revised overheating assessment now includes TM52 modelling for the non-residential part of the development.

Appropriate planning condition have been recommended to secure the benefit of this development.

2. Energy Strategy

Revised carbon reduction as below:

Site-wide	DEN scenario			ASHP scenario		
	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 (%)
Baseline	29.2			29.2		
Be Lean	25.3	3.9	13%	25.3	3.9	13%
Be Clean	1.9	23.4	80%	25.3	0.0	0%
Be Green	2.1	-0.1	0%	9.3	16.0	55%
Cumulative savings	-	27.2	93%	-	19.9	68%
Carbon shortfall to offset (tCO2)	2.1			9.3		
Carbon Offset Contribution	£95 x 2.1 x 30 = £5,985			£95 x 9.3 x 30 = £26,505		

Residential	DEN scenario			ASHP scenario		
	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 (%)
Baseline	28.4			28.4		
Be Lean	24.7	3.7	13%	24.7	3.7	13%
Be Clean	1.3	23.4	82%	24.7	0.0	0%
Be Green	1.5	-0.2	-1%	8.8	15.9	56%
Cumulative savings		27.0	95%		19.7	69%
Carbon shortfall to offset (tCO2)	1.5			8.8		

Non-Residential	DEN scenario			ASHP scenario		
	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 (%)
Baseline	0.8			0.8		
Be Lean	0.6	0.1	17%	0.6	0.1	17%

Be Clean	0.6	0.0	0%	0.6	0.0	0%
Be Green	0.6	0.1	7%	0.6	0.1	7%
Cumulative savings	-	0.2	24%		0.2	24%
Carbon shortfall to offset (tCO2)	0.6			0.6		

3. Carbon Offset Contribution

A deferred carbon offset contribution mechanism will apply to this scheme as it is expected to connect to the DEN when this has been built as mentioned in the previous response.

4. Overheating

The revised overheating assessment have undertaken thermal dynamic modelling for the non-residential part of the development in line with TM52 with TM49 weather files for DSY1, 2,4 2020s and DSY 1 for 2050s and 2080s as below:

Weather data	2020 DSY1		2020 DSY2		2020 DSY3		2050 DSY1		2080 DSY1	
Zone	PMV	PPD	PMV	PPD	PMV	PPD	PMV	PPD	PMV	PPD
Commercial B-0-U1	-0.20	8.59	-0.21	9.21	-0.24	8.56	-0.10	6.56	-0.03	5.66
Commercial B-0-U2	-0.19	7.84	-0.22	8.90	-0.24	8.34	-0.09	6.05	-0.03	5.36
Building average	-0.20	8.22	-0.21	9.05	-0.24	8.45	-0.10	6.30	-0.03	5.51
Pass / Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

All 21 modelled rooms and spaces pass the overheating requirements for 2020s DSY1. In order to pass this, the following measures will be built:

- Natural ventilation, with tilt and turn openings for GF providing at least 15cm gap
- Glazing g-value of 0.45 for residential and 0.20 for commercial
- MVHR with summerbypass 0.5ach
- No active cooling

The proposed future mitigation measures are as follows:

- Internal blinds
- External blinds or other forms of shading
- Hybrid cooling systems

External blinds and other forms of shading are proposed as future mitigation measures, while this is one of the high priority passive mitigation measures as per the Cooling hierarchy. Therefore, it is recommended that this is incorporated in the design at the earliest stage rather than as a retrofitting mechanism.

5. Sustainability

The Energy and Sustainability statement is required to be revised to include measures to 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. This is conditioned.

6. Planning Conditions

To be secured:

Energy strategy

~~The development hereby approved shall be constructed in accordance with the Energy & Sustainability Statement – Rev G prepared by Irvineering (dated 5 Sep 2024) delivering a minimum 93% improvement on carbon emissions over 2021 Building Regulations Part L, with high fabric efficiencies, single point connection for a future heat network, and a minimum 25 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 13% reduction;
- Details to reduce thermal bridging;
- Measures to improve the Energy Use Intensity and space heating demand;
- the 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.

DEN connection

Prior to the above ground commencement of construction work, details relating to the future connection to the DEN must be submitted to and approved by the local planning authority. This shall include:

- Further detail of how the developer will ensure the performance of the DEN system will be safeguarded through later stages of design (e.g. value engineering proposals by installers), construction and commissioning including provision of key information on system performance required by CoP1 (e.g. joint weld and HIU commissioning certificates, CoP1 checklists, etc.);
- Peak heat load calculations in accordance with CIBSE CP1 Heat Networks: Code of Practice for the UK (2020) taking account of diversification.
- Detail of the pipe design, pipe sizes and lengths (taking account of flow and return temperatures and diversification), insulation and calculated heat loss from the pipes in Watts, demonstrating heat losses have been minimised together with analysis of stress/expansion;
- A before and after floor plan showing how the plant room can accommodate a heat substation for future DEN connection. The heat substation shall be sized to meet the peak heat load of the site. The drawings should cover details of the phasing including any plant that needs to be removed or relocated and access routes for installation of the heat substation;
- Details of the route for the primary pipework from the energy centre to a point of connection at the site boundary including evidence that the point of connection is accessible by the area wide DEN, detailed proposals for installation for the route that shall be coordinated with

existing and services, and plans and sections showing the route for three 100mm-diameter communications ducts;

- Details of the location for building entry including dimensions, isolation points, coordination with existing services and detail of flushing/seals;
- Details of the location for the set down of a temporary plant to provide heat to the development in case of an interruption to the DEN supply including confirmation that the structural load bearing of the temporary boiler location is adequate for the temporary plant and identify the area/route available for a flue;
- Details of a future pipework route from the temporary boiler location to the plant room.

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 SI3, and Local Plan (2017) Policies SP4 and DM22.

Overheating

Prior to occupation of the development, details of external/internal blinds to all habitable rooms must be submitted for approval by the local planning authority. This should include the fixing mechanism, specification of the blinds, shading coefficient, etc. Occupiers must retain internal blinds for the lifetime of the development or replace the blinds with equivalent or better shading coefficient specifications.

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 reported within the Energy & Sustainability Statement—Rev G prepared by Irvineering (dated 5 Sep 2024):

- Internal blinds to all habitable rooms;
- Natural ventilation, with tilt and turn openings for GF providing at least 15cm gap
- Glazing g-value of 0.45 for residential and 0.20 for commercial
- MVHR with summerbypass 0.5ach
- Hot water pipes insulated to high standards with maximum heat losses as modelled;
- No active cooling

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.

Living roofs

(a) Prior to the above-ground commencement of development, details of the living roof 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 dwellings of the development, evidence must be submitted to and approved by the Local Planning Authority that the living roofs 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, S11 and S12 and Local Plan (2017) Policies SP4, SP5, SP11 and SP13.

Biodiversity

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, 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 GIEEM 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, S11 and S12 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 0.405 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, S11 and S12 and Local Plan (2017) Policies SP4, SP5, SP11 and SP13.

Sustainable design and construction

Prior to the commencement of development, a Sustainable Design and Construction Strategy must be submitted to and approved by the Local Planning Authority to demonstrate that the development promotes a circular economy, reduces the whole life carbon of the development with sustainable construction and materials, reduces the environmental impact of the construction process and delivers biodiversity net gain and urban greening benefits.

Reasons: In the interest of addressing climate change and securing sustainable development in accordance with London Plan (2021) Policies SI2, and SI7, and Local Plan (2017) Policies SP4 and DM21.

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 £26,505 (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.
- DEN connection (and associated obligations)
- Heating strategy fall-back option if not connecting to the DEN

Carbon Management Response 27/09/2024

Summary:

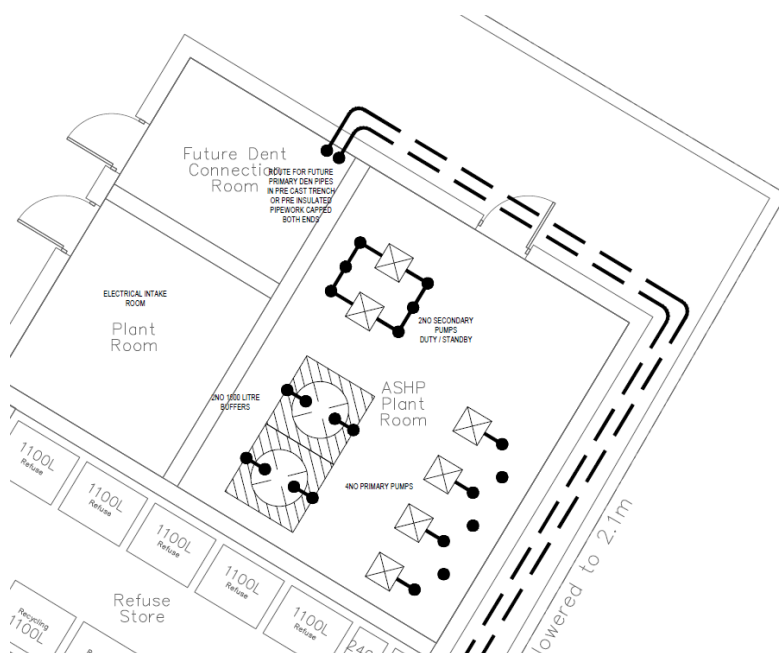
Some of the planning conditions and Head of Terms are reworded as per the applicant request and to secure the benefit of the scheme.

Energy – Be Clean

The energy strategy does not clearly state that there is a single site wide heating system for the scheme. This is a requirement. The commercial unit does not need to be connected but a spur should be available to the commercial unit and occupants should have the option of connecting if they wish.

The proposed DEN connection point (snippet below) is located next to the ASHP plant room which makes sense. However, it is also at the farthest point from the entrance to the site and the route for the pipes between Block B and the rear of adjoining properties appears to be severely constrained given the likelihood of foundations, rainwater pipes, etc.

However, it is assumed that the connection can be routed through the building above ground or in accessible below ground trenches to emerge from the building near the entrance to Block B/Block B bin store. A route can be agreed through conditions and pipework should be installed and safeguarded from corrosion via nitrogen fill.



Carbon Management Response 09/10/2024

In preparing this consultation response, we have reviewed:

- Energy & Sustainability Statement – Rev H prepared by Irvineering (dated 3 Oct 2024)
- Applicant response dated (3 Oct 2024)
- Relevant supporting documents.

Summary:

The applicant has re-submitted the energy and sustainability statement with minor amendments in the carbon reduction summary and proposed u-value. These changes have been incorporated in the recommended conditions below.

Planning Conditions:

To secure:

Energy strategy

The development hereby approved shall be constructed in accordance with the Energy & Sustainability Statement – Rev H prepared by Irvineering (dated 5 Sep 2024) delivering a minimum 93% improvement (DEN connection scenario) and 68% improvement (ASHP scenario), on carbon emissions over 2021 Building Regulations Part L, with high fabric efficiencies and communal ASHP as well as a single point site-wide connection for a future heat network, and a minimum 25 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 13% reduction;*
- *Details to reduce thermal bridging ;*
- *Measures to improve the Energy Use Intensity and space heating demand;*
- *the 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.

DEN connection

Prior to commencement of construction work, details relating to the future connection to the DEN must be submitted to and approved by the local planning authority. This shall include:

- Detail of the site wide heat network including pipe design, pipe sizes and lengths (taking account of flow and return temperatures and diversification), insulation and calculated heat loss from the pipes in Watts, demonstrating heat losses have been minimised;*
- Further detail of how the developer will ensure the performance of the site wide heating system will be safeguarded through later stages of design (e.g. value engineering proposals by installers), construction and commissioning including provision of key information on system performance required by CoP1 (e.g. joint weld and HIU commissioning certificates, CoP1 checklists, etc.);*
- Peak heat load calculations in accordance with CIBSE CP1 Heat Networks: Code of Practice for the UK (2020) taking account of diversification.*
- A before and after floor plan showing how the plant room can accommodate a heat substation for future DEN connection. The heat substation shall be sized to meet the peak heat load of the site. The drawings should cover details of the phasing including any plant that needs to be removed or relocated and access routes for installation of the heat substation;*
- Details of the design for the primary DEN pipework from the energy centre to a point of connection at the site boundary including details of leak detection system, plans and sections showing the route for three 100mm diameter communications ducts and evidence that expansion/stress analysis has been undertaken, the route is fully coordinated with all other buried services and the point of connection is accessible by the area wide DEN,*
- Details for the installation for the primary DEN pipework including testing of welds, pigging and drying of the pipe, how the pipework will be charged with nitrogen and how nitrogen levels and leaks will be monitored for a period of 5yrs.;*
- Details of the location for building entry including dimensions, isolation points, coordination with existing services and detail of flushing/seals;*
- Details of the location for the set down of a containerised boiler plant capable of meeting the peak heat load to provide heat to the development in case of an interruption to the DEN supply including confirmation that the structural load bearing of the temporary boiler location is adequate for the temporary plant and identify the area/route available for a flue;*
- Details of a how the containerised boiler can connect to the heat substation location .*

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 SI3, and Local Plan (2017) Policies SP4 and DM22.

Overheating

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 reported within the Energy & Sustainability Statement – Rev H prepared by Irvineering (dated 5 Sep 2024):

- Natural ventilation, with tilt and turn openings for GF providing at least 15cm gap*
- Glazing g-value of 0.45 for residential and 0.20 for commercial*
- MVHR with summerbypass 0.5ach*
- Hot water pipes insulated to high standards with maximum heat losses as modelled;*
- No active cooling*

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.

Living roofs

(a) Prior to the commencement of the development above ground floor slab level (excluding demolition), details of the living roof 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 dwellings/of the development, evidence must be submitted to and approved by the Local Planning Authority that the living roofs 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

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, 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 0.405 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.

~~Sustainable design and construction~~

~~Prior to the commencement of development, a Sustainable Design and Construction Strategy must be submitted to and approved by the Local Planning Authority to demonstrate that the development promotes a circular economy, reduces the whole life carbon of the development with sustainable construction and materials, reduces the environmental impact of the construction process and delivers biodiversity net gain and urban greening benefits.~~

~~Reasons: In the interest of addressing climate change and securing sustainable development in accordance with London Plan (2021) Policies SI2, and SI7, and Local Plan (2017) Policies SP4 and DM21.~~

8. Planning Obligations Heads of Terms

- Be Seen commitment to uploading energy data
- Energy Plan
- Sustainability Review
- Estimated carbon offset contribution (and associated obligations) of £26,505 (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
- Future DEN connection (and associated obligations) for the site when the DEN network becomes available, and the DEN provider has made an offer within 10 years.
- Low Carbon Heating Plan (preferred strategy)