

		Our ref: HGY/2022/4319 Contact: Gareth Prosser Date: 16/06/2025
Town and Country Act 1990 (As amended)		
Location:	Edmansons Close, Bruce Grove, London, N17 6XD	
Proposal:	Full planning application for the demolition of existing laundry building and 1970s infill building; alterations and extensions to 44 existing almshouses to create 8 x 1 bed, 12 x 2 bed and 6 x 3 bed units; alterations to existing Gatehouse to provide 1 x 2 bed unit; construction of 1 x new build 3 bed almshouse to replace 1970s infill building; construction of a new apartment building comprising 7 x studio units and 9 x 1 bed units; construction of 4 x new build 2 bed units within two new pavilions (2 units in each pavilion, 4 units in total); with landscaping; improvements to access; car parking; and ancillary development thereto.	

Carbon Management Response 22/05/2023

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Hodkinson (dated 8 September 2022)
- Dynamic Overheating Report prepared by Hodkinson (dated 24 August 2022)
- Sustainability Statement prepared by Hodkinson (dated 9 September 2022)
- Relevant supporting documents.

1. Summary

The development achieves a reduction of 31.47% carbon dioxide emissions on site, which is below the minimum requirement and therefore cannot be supported. The applicant should explore more options to improve the fabric energy efficiency of the refurbished building and improve on-site reduction under Be Green scenario, balancing heritage considerations with the climate emergency in line with London Plan Policy SI2, of the development. In addition, the overheating strategy needs to be modelled with the correct weather file.

Some further clarifications must be provided on the energy strategy, overheating assessment (detailed below) which need to be resolved before this application can be supported. 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 2013). 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 31.47% in carbon emissions with SAP10.2 carbon factors, from the Baseline development model (which is Part L 2013 compliant). This represents an annual saving of approximately 38.9 tonnes of CO₂ from a baseline of 157.9 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 emission for the new build is 5.9 tCO₂.

<i>Site-wide (SAP10.2 emission factors)</i>			
	Total regulated emissions (Tonnes CO₂ / year)	CO₂ savings (Tonnes CO₂ / year)	Percentage savings (%)
Part L 2013 baseline	157.9		
Be Lean	119	38.9	24.63%

Be Clean	119	0	0%
Be Green	108.2	10.8	6.83%
Cumulative savings		49.7	31.47%
Carbon shortfall to offset (tCO ₂)	108.2		
Carbon offset contribution	£95 x 30 years x 108.2tCO ₂ /year = £ 308,370		
10% management fee	£30,837		
Total	£339,207		

<i>Residential New Build (SAP10.2)</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2013 baseline	21.4		
Be Lean	16.9	4.5	21%
Be Clean	16.9	0.0	0%
Be Green	6.1	10.8	50%
Cumulative savings		15.3	71%
Carbon shortfall to offset (tCO ₂)	6.1		

<i>Residential Refurbished Building (SAP10.2 emission factors)</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2013 baseline	136.5		
Be Lean	102.1	34.4	25.2%
Be Clean	102.1	0	0%
Be Green	102.1	0	0%
Cumulative savings		34.4	25.2%
Carbon shortfall to offset (tCO ₂)	102.1		

Actions:

- The Energy Strategy should include the site-wide carbon dioxide emissions and savings, and should report on the calculated unregulated emissions for the refurbished building.
- The current site-wide reduction of 31% falls below the minimum on-site carbon reduction requirement of 35% which is not acceptable.
- Please submit the GLA's Carbon Emission Reporting Spreadsheet.

Energy Use Intensity / Space Heating Demand

Applications are required to report on the total Energy Use Intensity and Space Heating Demand, in line with the GLA Energy Assessment Guidance (June 2022). The Energy Strategy should follow the reporting template set out in Table 5 of the guidance, including what methodology has been used. EUI is a measure of the total energy consumed annually but should exclude on-site renewable energy generation and energy use from electric vehicle charging.

Building type	EUI (kWh/m ² /year)	Space Heating Demand (kWh/m ² /year)	Methodology used

Actions:

- What is the calculated Energy Use Intensity (excluding renewable energy)? How does this perform against GLA benchmarks, i.e. at 35 kWh/m²/year? Please submit the information in line with the GLA's reporting template for both the new and retained buildings.
- 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 for both the new and retained buildings.

Energy – Lean

The applicant has proposed a saving of 38.9 tCO₂ in carbon emissions (24.63%) through improved energy efficiency standards in key elements of the build, based on SAP10.2 carbon factors. Whilst this goes beyond the minimum 10% reduction respectively set in London Plan Policy SI2, the overall carbon reduction for the refurbished element of the scheme does not go far enough.

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

	New Build	Refurbishment
Floor u-value	0.13 W/m ² K	0.50-0.70 W/m ² K
External wall u-value	0.18 W/m ² K	2.10 W/m ² K
Roof u-value	0.10 W/m ² K	0.11 W/m ² K
Door u-value	TBC	3.00 W/m ² K
Window u-value	0.90 W/m ² K	Rear elevation part to be 1.40 W/m ² K Existing single glazed windows to be added with secondary glazing providing 2.5 to 2.9 W/m ² K
G-value	0.40	0.85
Air permeability rate	3 m ³ /hm ² @ 50Pa	15 m ³ /hm ² @ 50Pa
Ventilation strategy	Mechanical ventilation with heat recovery (MVHR 90% efficiency; <0.58 W/l/s Specific Fan Power)	Natural ventilation with extract fans
Thermal bridging	Accredited Construction Details	
Low energy lighting	100%	Provided in all fittings where possible.
Heating system – Be Lean (efficiency / emitter)	Gas boiler with 89.5% efficiency	Gas Boiler with 89.5% efficiency
Thermal mass	Medium	Medium
Improvement from the target fabric energy efficiency (TFEE)	TBC	TBC

Actions:

New Build

- Please identify on a plan where the MVHR units will be located within the dwellings. The units should be less than 2m away from external walls. This detail can also be conditioned.
- What is the proportion of glazed area? Consider following the LETI Climate Emergency Design Guide principles in façade design.
- Provide the average % improvement on the FEES.

Refurbishments

- Provide an estimate of the existing performance in un-refurbished condition. Outline the source of this data or assumptions, such as a building condition survey, energy use, an Energy Performance Certificate (EPC). Please also state clearly what figures have been used for the modelling, i.e. current conditions with evidence or the Building Regulations Part L notional figures?
- The air permeability should be measured; the application should provide air tightness testing results and a strategy to improve air tightness. This will be conditioned. However, for current modelling, the notional air tightness figures of Part L should be used. This information was already requested at pre-application stage.

- It is recommended to explore more options to improve the energy efficiency of the existing building fabric with internal wall insulation, floor insulation for e.g.: using thin insulation with 'breathable' hygroscopic properties and double glazing – slim profile double glazing. The proposed approach to use secondary glazing will not provide enough improvement to the existing fabric from a climate emergency point of view as mentioned in the pre-app advice.
- If the air tightness of the refurbished build is improved, mechanical ventilation with heat recovery could be proposed to further reduce heat losses and address the condensation risk identified in the report.
- Provide the average % improvement on the FEES.
- More emphasis needs to be placed on reducing the energy demand from control systems, and outline where it would be possible and where not (and why), like lighting (aim for 100% low energy in all fittings), ventilation, equipment, and appliances.
- It is not clear whether advanced lighting/space conditioning control or smart metering is proposed for the listed building.

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 seen to be 500 meters of a proposed DEN (Upper Lee Valley Heat Network). However, the applicant is not proposing site-wide communal energy system with reasons associated with costs, distance, and small size of the development.

Energy – Green

As part of the Be Green carbon reductions, all new developments must achieve a minimum reduction of 20% from on-site renewable energy generation to comply with Policy SP4.

The application has reviewed the installation of various renewable technologies. The report concludes that air source heat pumps (ASHPs) and solar photovoltaic (PV) panels are the most viable options to deliver the Be Green requirement for new build. A total of 10.8 tCO₂ (6.83%) reduction of emissions are proposed under Be Green measures.

Refurb

The applicant is not proposing ASHP for the refurbished build due to limited improvements on the fabric performance of the buildings and the visual impact on the character of the listed building in presence of ASHP's external unit. However, opportunities may exist to include solar PV on the rear of the properties, and with solar PV materials that integrate within the roof.

For refurbished build, installing solar photovoltaic panels and air source heat pumps may be appropriate where these are unobtrusively inserted on and around the historic building and avoid the front so to mitigate impact on the original facades and on the character and appearance of the Conservation Area, if any. Unobtrusive siting, modest proportions and a minimalist appearance are key to successful equipment integration with historic buildings and places.

During pre-app discussions the applicant noted that some gas boilers had recently been replaced but not all. No analysis has been submitted to demonstrate what the best replacement heating solution is, in terms of carbon emissions and its life cycle.

New build

The solar array peak output would be 5kWp. The array of panels would be mounted on the roof positioned at an angle of 5-10° facing south-west. The individual air-to-water ASHP systems (min. SCOP of 3.00) will provide hot water and heating to the new build apartment and houses.

Actions:

- Provide details of the existing heating system (both electric and gas boiler) including efficiency, estimated lifecycle, planned replacement when gas-boiler are banned and water storage capacity where relevant.
- This application is proposing a gas boiler system for the retained building. All applications should demonstrate how they maximise on-site carbon emission reductions. It is strongly encouraged to replace the gas boiler strategy with a heat pump strategy instead to ensure the proposed dwelling is future-proofed and will not have any on-site fossil fuel combustion. It would enable this development to align with expectations in mitigating the climate emergency.
- Please provide some commentary on how the available roof space has been maximised to install solar PV. Have you considered using the rear roof for solar installation? Has your feasibility shown that other roofs will not be viable?
- How much of the roof area will be covered approximately and what is the assumed efficiency of the panels?
- How will the solar energy be used on site?
- 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.
- How much of the heating/hot water demand will be met by the proposed types of heat pumps? If this cannot be met fully, how will this be supplemented?

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

- Please confirm that sub-metering will be implemented for residential 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

A carbon shortfall of 102.1 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

An indicative offset contribution has been calculated; however, it is expected that further emissions are reduced for this development to be policy compliant.

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 5 habitable rooms, 4 homes/spaces and 0 corridors under the London Heathrow Weather files.

Due to the noise constraints of this site being adjacent to the Bruce Grove Road, the TM59 criteria for predominantly mechanically ventilated dwellings apply (assuming windows need to remain closed).

Results are listed in the table below.

	TM59 – criterion A (<3% hours of overheating)	TM59 – criterion B hours >26°C (pass <33 hours)	Number of habitable rooms pass TM59	Number of spaces pass TM52	Number of corridors pass
DSY1 2020s	9/9	5/5	5/5	4/4	0/0
DSY2 2020s	9/9	0/5	0/5	4/4	0/0
DSY3 2020s	8/9	05	0/5	3/4	0/0

All rooms pass including two marginal passes against the overheating requirements for 2020s DSY1.

Overheating mitigation strategy for new dwellings

- Glazing g-value of 0.4 (frame factor of 0.8)
- Energy efficient design of building services
- Concrete floor slab between dwellings in apartment blocks
- External shading provided by balcony overhangs with reveal depths of 250mm.
- Enhanced mechanical ventilation rates of 2ach.

Overheating mitigation strategy for refurbished dwellings:

- Internal blinds;
- Energy efficient lighting;
- Concrete floor slab between dwellings in apartment blocks;
- Openable windows (not allowed for parts of the dwelling adjacent to Bruce Grove including House Type 1 and Type 4 - Gatehouse);
- Dual aspect units allowing cross-ventilation;
- Trickle vents subjected to confirmation from heritage consultants.

The submitted overheating strategy is considered acceptable.

Overheating Actions:

- Redo the overheating modelling with the Central London weather file, which will more accurately represent the urban heat island effect. This was already requested at pre-application stage.
- Include floorplans showing which habitable spaces will be predominantly naturally ventilated or mechanically ventilated due to noise constraints and specify MVHR and window opening areas.
- Specify the strategy to overcome any risk of crime and 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.
- Undertake further modelling:
 - 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 Bruce Grove (noise and 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](#));

- The applicant should also outline a strategy for residents to cope in extreme weather events, e.g. use of fans.
- 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.
- 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. The sustainability report sets out the proposed measures to improve the sustainability of the scheme, including transport, health and wellbeing, materials and waste, water consumption, waste and recycling, flood risk and drainage, biodiversity, Inclusive access, climate resilience, energy and CO2 emissions and landscape design.

Actions:

- Include the number and location of safe and accessible cycle parking spaces for residents and visitors.
- Set a target (%) for responsible sourced, low-impact materials used during construction.
- 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.
- Suitability of proposed materials within the listed buildings should be negotiated, and applicants should carefully consider their hygrothermal properties.

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 development achieves an Urban Greening Factor of 0.4, which complies with the interim minimum target of 0.4 for predominantly residential developments in London Plan Policy G5.

Action:

- Please submit the Biodiversity Net Gain Calculation.

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 roofs are supported in principle, subject to detailed design. Details for living roofs will need to be submitted as part of a planning condition.

Carbon Management Response 07/12/2023

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Hodkinson (dated 2 October 2023)
- GLA Carbon Emission reporting spreadsheet
- Relevant supporting documents.

1. Summary

The applicant has not explored more options to improve the fabric efficiency of the refurbished building as requested previously during pre-application discussions and our formal response to the application. The submission lacks proper evidence on the existing condition of the building and the parameters used for energy modelling. Also, the details of the existing heating system are missing including but not limited to the number of gas boilers, electric boilers, and their estimated life cycle. We expect all the older heating systems to be decarbonised and the most efficient system is prioritised.

Furthermore, in regard to overheating requirements, it was requested to take into account the noise constraints of this site being adjacent to Bruce Grove Road and apply the TM59 criteria for predominantly mechanically ventilated dwellings (assuming windows need to remain closed). This has not been addressed at all. The provided overheating assessment fails to adequately assess the overheating risks throughout the development as it does not model the existing buildings and modelling against future weather files is missing.

We therefore object to this application as the development does not currently meet:

- London Plan Policy SI2: Be Green – The development does not adequately minimise greenhouse gas emissions and or maximise opportunities for renewable energy by producing, storing, and using renewable energy on-site;
- Local Plan Policy SP4: the development does not meet the 20% carbon dioxide emission reduction from on-site renewable energy generation; and
- London Plan SI4 and Local Plan Policy DM21: insufficient dynamic thermal modelling was undertaken to adequately assess the overheating risk throughout the development, mitigate the risk and reduce the impact on the urban heat island.

2. Energy Strategy

The revised energy statement proposes an overall site-wide reduction of 48.25% in CO₂ emissions with SAP10.2 carbon factors, from the baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 29 tonnes of CO₂ from a baseline of 60.1 tCO₂/year.

The calculated unregulated emission for the new build is 16 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	60.1		
Be Lean	39.4	20.7	34.3%
Be Clean	39.4	0	0%
Be Green	31.1	8.3	13.8%
Cumulative savings		29	48.25%
Carbon shortfall to offset (tCO₂)	31.1		
Carbon offset contribution	£95 x 30 years x 31.1 tCO ₂ /year = £88,635		
10% management fee	£8,863.5		
Total	£97,498.5		

<i>Residential New Build (SAP10.2)</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2021 baseline	17.1		
Be Lean	13.9	3.2	19%
Be Clean	13.9	0	0%
Be Green	5.6	8.3	49%
Cumulative savings		11.5	67%
Carbon shortfall to offset (tCO ₂)	5.6		

<i>Residential Refurbished Buildings (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	43		
Be Lean	25.5	17.5	41%
Be Clean	25.5	0	0%
Be Green	25.5	0	0%
Cumulative savings		17.5	41%
Carbon shortfall to offset (tCO ₂)	25.5		

Actions:

- Please submit sample SAP sheets for Baseline scenario.

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

The EUI and space heating demand has been reported as per the following table:

Building type	EUI (kWh/m ² /year)	Space Heating Demand (kWh/m ² /year)	Methodology used	Explanatory Notes
New Build	77.1	9.6	SAP 10.2 for both regulated and unregulated	The unregulated energy estimates from SAP exceed the baseline alone, and it is challenging to reduce this within the assumptions. The refurbishment heating demands are high due to the limited improvements that can be made on the
Refurbishment	145.4	74.6		

The EUI of the new build is more than double of the GLA benchmark of 35 kWh/m²/year. Similarly, for the refurbishment, the EUI is more than 4 times higher and SHD is about 5 times higher than the GLA benchmark of 35 and 15 respectively. This must be addressed.

Actions:

- The high energy use intensity suggests higher energy bills for occupants. Please provide commentary on how this will be reduced to address the energy security issues raised by this.
- Please provide the breakdown values of the EUI for both the new build and refurbishment.

Energy – Lean

The applicant has proposed a saving of 20.7 tCO₂ in carbon emissions (34.4%) through improved energy efficiency standards in key elements of the build, based on SAP10.2 carbon factors.

New Build:

The MHVR units is expected to be located within the utility cupboards and exact details to be confirmed at detailed design stage. The following table summarises the glazed area for each of the new build areas of the proposed development:

New Build Item	Proportion of glazing area to façade area (%)
Pavilions	15.3%
House Type 5	10.7%
Apartment Building	15.7%

Refurbishment:

A visual survey of the site has dated the buildings to the 1800s, and has assumed there is no insulation existing within the envelope. The fabric parameters are assumed from SAP 9.92 for Band A in property. This is not supported, current condition figures with proper evidence such as condition survey, energy use, an EPC, or the Building Regulations Part L notional figures for existing dwellings should be used.

The applicant has confirmed an air tightness test will be completed upon completion of the refurbishment aiming for 8 m³/hm² @ 50Pa. This will be achieved by improvement measures such as draught proofing, repairing cracks, and sealing edges.

The air permeability of the current condition should be tested and used in the baseline calculations. Currently, it is unclear what figures have been used for the Baseline calculations. Please conduct air tightness test of the existing dwelling and use the accredited figures for baseline calculations.

Actions:

Refurbishments

- Please use the figures of the current conditions with proper evidence or the Building Regulations Part L notional figures. Please refer to the GLA energy assessment guidance.
- The air permeability of the existing dwelling should be measured; the application should provide air tightness testing results before and after the refurbishment. This will be conditioned. However, for current modelling, the notional air tightness figures of Part L should be used for baseline and be lean scenarios.
- Pre-commencement air tightness test will be conditioned.
- It is strongly recommended to explore more options to improve the energy efficiency of the existing building fabric with internal wall insulation, floor insulation for e.g.: using thin insulation with 'breathable' hygroscopic properties and double glazing – slim profile double glazing. The proposed approach to use secondary glazing will not provide enough improvement to the existing fabric from a climate emergency point of view as mentioned in the pre-app advice, especially when wider works are being undertaken and the disruption to occupants can be minimised by taking a whole-house approach
Please carry out a building condition survey and provide a refurbishment plan based on the results of the survey.

Energy – Clean

No further comments.

Energy – Green

The applicant confirms that 30% of the existing buildings have an electric water heating system, with the remaining supplied by gas heating.

Refurbishments:

As mentioned in our previous response, installing solar PV panels and ASHP may be appropriate where these are unobtrusively inserted on and around the historic building and avoid the front so to mitigate impact on the original facades and on the character and appearance of the Conservation Area, if any. Unobtrusive siting, modest proportions and a minimalist appearance are key to successful equipment integration with historic buildings and places.

A heat pump system is not proposed for existing buildings. According to the applicant this is due to the estimated high running costs because of the limit to fabric improvements. Possible opportunities to include solar PV on the rear of the existing properties and with solar PV materials that integrate within the roof has not been explored. Furthermore, solar PV installation on the other roofs across the new build Pavilion and apartment building are not explored. This is regrettable and is resulting in scheme not complying with Policy SP4: 20% on-site renewable energy generation.

Actions:

- Provide complete details of the existing heating system (both electric and gas boiler) including number, efficiency, estimated lifecycle, planned replacement when gas boilers are banned, and water storage capacity where relevant.
- This application is proposing gas boiler systems for the retained homes. All applications should demonstrate how they maximise on-site carbon emission reductions. It is strongly encouraged to replace the gas boiler strategy with a low-carbon strategy instead to ensure the proposed dwelling is future-proofed and will not have any on-site fossil fuel combustion. It would enable this development to align with expectations in mitigating the climate emergency.
- Please provide some commentary on how the available roof space has been maximised to install solar PV.
 - o Refurb: Have you considered using the rear roof of the existing building for solar installation? This would be less visible and allows the development to actually maximise its on-site generation.
 - o New build: Has your feasibility shown that other roofs across pavilions, apartment buildings will not be viable? Solar panels should be installed on all new build roofs to maximise on-site renewable energy generation as the development does not currently comply with Policies SI2 and SP4.
- Please provide the percentage of roof coverage against the available roof space for all buildings and annotate it on roof plans.
- How will the solar energy be used on site?
- A living roof along with solar panels should be installed on flat rooftops.

Energy – Be Seen

The applicant proposed metering to be installed for all residential units, and smart metering to be provided to all dwelling to encourage occupant's monitor their energy usage. The applicant still hasn't demonstrated that the development has been registered on the GLA webform.

Action:

- Demonstrate that the planning stage energy performance data has been submitted to the GLA webform for this development.

3. Carbon Offset Contribution

A carbon shortfall of 31.1 tCO₂/year remains. The remaining carbon emissions will need to be offset at £95/tCO₂ over 30 years.

4. Overheating

The applicant has remodelled the overheating analysis using the London Weather Centre (for central London) weather files. The revised report has modelled 19 dwellings including 22 habitable rooms, 13 homes/spaces and 0 corridors.

It was requested to take into account the noise constraints of this site being adjacent to the Bruce Grove Road and apply the TM59 criteria for predominantly mechanically ventilated dwellings (assuming windows need to remain closed). This has still not been addressed.

Results are listed in the table below.

	TM59 – criterion A (<3% hours of overheating)	TM59 – criterion B hours >26°C (pass <33 hours)	TM59 Mech Vent Criterion: Hours of exceedance (pass ≤ 3 %)	Number of habitable rooms pass TM59

DSY1 2020s	35/35	16/22		29/35
DSY1 2020s	27/27	14/14	8/8	35/35
DSY2 2020s				
DSY3 2020s				

29 out of 35 rooms and spaces passes against the overheating requirements for 2020s DSY1. The rooms with windows opening constraints due to security risks passed the TM49 when remodelled under the mechanically ventilated criteria.

Overheating mitigation strategy for new dwellings:

- Energy efficient fabric and internal building services
- Glazing g-value of 0.35
- External shading provided by balconies to some apartments, as per design proposals
- External shading provided by an increase external reveal depth of 250mm
- Mechanical ventilation provided to all new dwellings through MVHR summer bypass mode – providing background ventilation at minimum Part F ventilation rates, with a boost mode up to 3 air changes per hour.

Future mitigation strategies:

- The occupants will be provided with a Home User Guide to be prepared for distribution to residents at handover
- Installation of reflective blinds to further mitigate solar gains
- Use of plug-in fans to increase air-flow
- Utility cupboards and MVHR units to be designed to include air tempering cooling boil-on units as future mitigation measure.

The submitted overheating strategy is not considered acceptable.

Actions:

Re-modelling:

- Undertake modelling of both new and existing buildings for DSY1, DSY2, and DSY 3 2020s with the London Weather Centre files.
- Undertake further modelling for both new and existing buildings:
 - 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 Bruce Grove Road (noise and 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](#));
- Include images indicating which sample dwellings were modelled and floorplans showing the modelled internal layout of dwellings.

Mitigation measures:

- Revise the ventilation strategy for the ground floor dwellings, incorporating night-time natural ventilation with security features to meet the Part O requirements. Re-model those dwellings accordingly.
- Specify the ventilation strategy, including floorplans showing which habitable spaces will be predominantly naturally ventilated or mechanically ventilated, specification of the proposed mechanical ventilation (efficiency and air changes), window opening areas.
- Please demonstrate the cooling hierarchy has been followed meaningfully by incorporating the installation of further passive measures, particularly solar shading (overhangs, external shutters, brise soleil) throughout the development. This is especially important for the top floor dwellings, south-facing window openings and single-aspect dwellings.
- Specify the shading strategy, including technical specification and images of the proposed shading feature (e.g. overhangs, Brise Soleil, and external shutters).
- Provide the elevations and sections plans to show where these measures are proposed.

Future weather file modelling:

- The applicant has not modelled DSY 1 for the 2050s and 2080s. Please also model these and ensure the design has incorporated as many mitigation measures to pass

these as feasible. Any remaining overheating risk should inform the future retrofit plan.

- The applicant must demonstrate that the risk of overheating has been reduced as far as practical and that all passive measures have been explored, including reduced glazing and increased external shading. The applicant should also outline a strategy for residents to cope in extreme weather events, e.g. use of fans.

Retrofit plan:

- Set out a retrofit plan for future and more extreme weather files, demonstrating how these measures can be installed at a later date within the proposed design, 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).

5. Sustainability

The scheme provides 81 residential cycle parking spaces and 2 visitor spaces. Cycling for the houses is proposed to be accommodated within secure sheds or facilities within their back gardens. The apartment block to have a separate secure cycle store.

In line with the GLA's circular economy guidelines, a target of 20% recycled content is proposed.

Urban Greening / Biodiversity

Biodiversity net gain calculation is missing.

Action:

- Please submit the Biodiversity Net Gain Calculation.

Living roofs

No further comments.

Conclusion

Detailed conditions will be recommended once the applicant addresses the objections and concerns raised above.

Carbon Management Response 22/03/2024

In preparing this consultation response, we have reviewed:

- Email response dated 15 December 2023
- Condition Survey
- Relevant supporting documents.

1. Summary

The applicant must explore more options to improve the fabric efficiency of the refurbished building, installation of ASHP and Solar PV in the development to maximise carbon reduction on-site in line with Policy SI2, SI4, DM21 and SP4.

The energy assessment lacks proper evidence on the parameters used for energy modelling for baseline scenario. In addition, the proposed fabric parameters for the refurbishment are worse than the limiting parameters for existing dwellings. The energy assessment must follow the standard procedure and use notional figures for existing building as per the Energy Assessment Guidance 2022 and Approved Document L.

Furthermore, regarding overheating requirements, the previously raised issues have not been addressed at all.

We therefore object to this application.

2. Energy Strategy

Energy – Lean

Refurbishment:

The submitted document has dated the building to the mid-Victorian period which underwent internal refurbishment during the 1970s-1980s. It is currently unclear if the assumed fabric parameters take account of this refurbishment. The current baseline parameter is worse than the notional specification for existing building as per the Energy Assessment Guidance 2022. The applicant is required to use baseline figures based on detailed condition survey, actual energy performance for eg: EPC, or Building Regulation Part L notional figures for existing dwellings.

The proposed fabric parameters are worse than the limiting u-values for existing dwelling (ref. Part L). The submitted reports states the interiors exhibits a modern appearance and finishes. Therefore, it is strongly recommended to explore more options to improve the energy efficiency of the existing building fabric with internal insulations.

	Residential Notional Specs for existing Building (Energy Assessment Guidance 2022)	Refurbishment Baseline	Proposed Specs for Refurbishment (Be Lean)
Floor u-value	0.25 W/m ² K	0.50-0.70 W/m ² K	0.50-0.70 W/m ² K
External wall u-value	0.30-0.55 W/m ² K	2.10 W/m ² K	2.10 W/m ² K
Roof u-value	0.16 W/m ² K	2.3 W/m ² K	0.11 W/m ² K
Door u-value	1.60 W/m ² K	3.00 W/m ² K	1.40 W/m ² K (rear elevation)
Window u-value	1.60 W/m ² K	4.8 W/m ² K	Rear elevation part to be 1.40 W/m ² K Existing single glazed windows to be added with secondary glazing providing 2.5 to 2.9 W/m ² K
G-value	0.63	0.85	0.85

Air permeability rate	Default – determined by fabric element types	15 m ³ /hm ² @ 50Pa	15 m ³ /hm ² @ 50Pa
Thermal bridging	Default		
Low energy lighting	100%	Provided in all fittings where possible.	Provided in all fittings where possible.
Heating system – Be Lean (efficiency / emitter)	Notional specs of the existing heating system as per Section 6 of the Approved Document L1	Gas Boiler with 89.5% efficiency	Gas Boiler with 89.5% efficiency

All previous actions are to be addressed.

Energy – Green

Refurbishments:

It is strongly encouraged to replace the gas boiler strategy with a heat pump strategy instead to ensure the proposed dwelling is future-proofed and will not have any on-site fossil fuel combustion. The ASHP should be installed at the rear side of the dwellings with unobtrusive siting, modest proportions and a minimalist appearance to mitigate impact on the original facades and on the character and appearance of the Conservation area.

It is recommended to explore opportunities of installing Solar PV on the rear roof of the existing buildings subject to assessment to heritage impact and discussion with conservation officers.

New Build:

The possibility of installing solar PV on other roofs across the new build Pavilion and apartment building must be explored to maximise on-site carbon reduction.

All previous actions are to be addressed.

3. Overheating

The overheating assessment (dated 8 September 2022) assumes windows to open at night if bedroom temperature exceeds 23°C (Table 1 and section 4.3). It is currently unclear how the assessment incorporates the selective windows opening strategy.

The revised overheating strategy (Overheating section of the Energy statement dated 2 Oct 2023) has remodelled the overheating analysis using the LWC weather files for DSY1 2020s, while the modelling of more extreme files and future weather files are missing.

Please undertake modelling for both new and existing building to assess the overheating risks throughout the development. London Plan Policy SI 4 requires all major development proposals to undertake dynamic overheating modelling in line with the relevant CIBSE guidance. CIBSE's Design Methodology for the Assessment of Overheating Risk in Homes (TM59: 2017) aims to provide a standardised approach to predicting overheating risk for residential building designs (new-build or major refurbishment) using dynamic thermal analysis. Please refer to Energy Assessment Guidance 2022 Section 8.6 & 8.8.

The submitted overheating strategy is not considered acceptable. All previous actions are to be addressed.

Conclusion

Detailed conditions will be recommended once the applicant addresses the objections and concerns raised previously.

Carbon Management Response 18/06/2024

In preparing this consultation response, we have reviewed:

- Proposed Energy Strategy Note prepared by Hodkinson (dated 13 May 2024)
- Relevant supporting documents.

1. Summary

The applicant has proposed internal wall insulation on the external walls of the refurbishment, which is supported. However, it is recommended to explore more options to improve the fabric efficiency of the refurbished building.

An energy assessment must be carried out with the new proposed fabric parameters and with proper evidence on used parameters for baseline scenario. The energy assessment must follow the standard procedure and use notional figures for existing building as per the Energy Assessment Guidance 2022 and Approved Document L. In addition, it should be noted that the proposed fabric parameters for the refurbishment are still worse than the limiting parameters for existing dwellings.

Furthermore, regarding overheating requirements, the previously raised issues have not been addressed at all.

We therefore object to this application.

2. Energy Strategy

Energy – Lean

Refurbishment:

No insulation is proposed to the floors due to the existing nature of the floors and the need to provide 150mm gap beneath the floor for adequate ventilation as per the note. The note also highlights having significant damage for marginal gain in energy performance and difficulty in maintaining the floor levels, however, further clarification is required to address this claim.

The applicant has proposed internal wall insulation (insulated plasterboard) on the external walls of almshouses to improve the thermal performance reducing the U-value to 0.55 W/m²K. This is supported. However, the proposed U-value will not result in improvement against the notional u-value of external wall of an existing building (ref. to the table below).

	Residential Notional Specs for existing Building (Energy Assessment Guidance 2022)	Refurbishment Baseline	Proposed Specs for Refurbishment (Be Lean)
Floor u-value	0.25 W/m ² K	0.50-0.70 W/m ² K	0.50-0.70 W/m ² K
External wall u-value	0.30-0.55 W/m ² K	2.10 W/m ² K	0.55 W/m ² K
Window u-value	1.60 W/m ² K	4.8 W/m ² K	Rear elevation part to be 1.40 W/m ² K Existing single glazed windows to be added with secondary glazing providing 2.5 to 2.9 W/m ² K
G-value	0.63	0.85	0.85

All previous actions are to be addressed.

Energy – Green

Refurbishments:

For one bed almshouses unit, an electric heating or modern gas boiler is proposed.

For two and three bed units, the preferred option proposed is modern gas boiler, while the secondary option is to install ASHP if deemed appropriate for the proposed building fabric energy performance.

The applicant has explored opportunities to install Solar PV on the roof of the existing building. In line with the heritage and conservation considerations, the roof which are not visible from the road are deemed viable for solar PV installation, however as per the report these roofs are mostly oriented towards the north, which is less efficient orientation, therefore Solar PVs are not proposed as part of the refurbishment. Energy saving trust suggests east-west facing roofs to produce 15-20% less energy than directly south facing roofs, and as the almshouses roof is facing north-east, solar panel installation is recommended.

New Build:

As previously mentioned, the possibility of installing solar PV on other roofs across the new build Pavilion and apartment building must be explored to maximise on-site carbon reduction.

All other previous actions are to be addressed from response dated 7 Dec 2023.

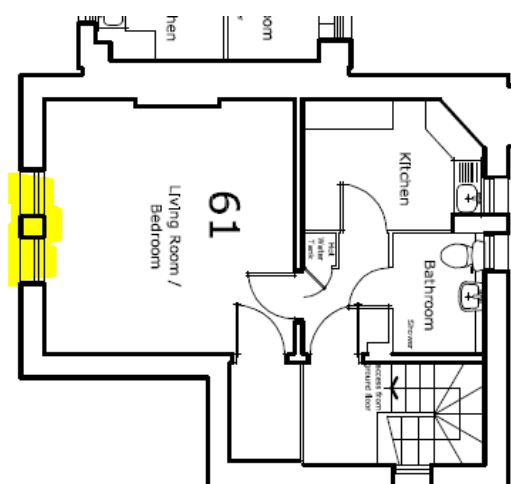
3. Overheating

As mentioned in the earlier response, the revised overheating strategy (Overheating section of the Energy statement dated 2 Oct 2023) has remodelled the overheating analysis using the LWC weather files for DSY1 2020s, while the modelling of more extreme files and future weather files are missing.

It is acknowledged that the modelled for DSY2 and DSY3 was carried out in the overheating assessment dated 8 Sep 2022, however, the assessment was carried out with London Heathrow Weather files. Therefore, the modelling of more extreme files and future weather files are required using the London Weather Centre files.

The energy note claims all bedrooms to have a secondary window not facing Bruce Grove that could be opened to provide natural ventilation. The below floor plan is an example of some single aspect bedrooms with only one window facing the Bruce Grove Road. Therefore, please assess the development taking into account the noise consideration under predominantly mechanically ventilated criteria.

All other previous actions are to be addressed from response dated 7 Dec 2023 and 22 March 2024.



Conclusion

Detailed conditions will be recommended once the applicant addresses the objections and concerns raised previously.

Carbon Management Response 15/04/2025

In preparing this consultation response, we have reviewed:

- Energy Statement prepared by Hodkinson (dated 27 Feb 2025)
- Dynamic Overheating Report prepared by Hodkinson (dated September 2024)
- Relevant supporting documents.

1. Summary

The applicant has updated the energy statement which now proposes a site-wide carbon reduction of 65% (New Build – 75% and refurbishment 62%). This is achieved with efficient fabric elements, individual air-source heat pumps, direct electric heating (for small 1-bed almshouses) and 16kWp Solar Photovoltaic system.

Although, there has been an improvement in the proposed building fabric specification of the refurbished almshouses, the very high Energy Use Intensity (EUI) and Space Heating Demand (SHD) is alarming, which results in high energy costs for the future occupants. The submitted Life Cycle costs analysis of the heating system for new build and refurbishment shows, the heating system's operational costs for refurbished almshouses is almost 2.5 times than that for new build.

Acknowledging the heritage and conservation constraints in the existing dwelling, the applicant is required to maximise all opportunities to improve the energy efficiency of the existing dwelling and minimise the EUI and SHD for better energy security of the occupants.

Planning conditions have been recommended to secure the benefits of the scheme.

2. Energy Strategy

An updated energy assessment has been carried out with the proposed fabric parameters and the assessment for the refurbishment now is based on the notional figures for existing building in line with the Energy Assessment Guidance 2022 and Approved Document L.

The revised energy statement proposes an overall site-wide reduction of 65% in CO₂ emissions with SAP10.2 carbon factors, from the baseline development model (which is Part L 2021 compliant). This represents an annual saving of approximately 59.4 tonnes of CO₂ from a baseline of 91.9 tCO₂/year.

The calculated unregulated emission for the development is 57.5 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	91.9		
Be Lean	67.4	24.5	27%
Be Clean	67.4	0.0	0%
Be Green	32.5	34.9	38%
Cumulative savings		59.4	65%
Carbon shortfall to offset (tCO ₂)	32.5		
Carbon offset contribution	£95 x 30 years x 32.5 tCO ₂ /year = £92,625		
10% management fee	£9,262.5		
Total	£101,887.5		

<i>Residential New Build (SAP10.2)</i>			
	Total regulated emissions (Tonnes CO ₂ / year)	CO ₂ savings (Tonnes CO ₂ / year)	Percentage savings (%)
Part L 2021 baseline	17.1		

Be Lean	13.9	3.2	19%
Be Clean	13.9	0	0%
Be Green	4.3	9.6	56%
Cumulative savings		12.8	75%
Carbon shortfall to offset (tCO₂)	4.3		

<i>Residential Refurbished Buildings (SAP10.2 emission factors)</i>			
	Total regulated emissions (Tonnes CO₂ / year)	CO₂ savings (Tonnes CO₂ / year)	Percentage savings (%)
Part L 2021 baseline	74.8		
Be Lean	53.5	21.3	28%
Be Clean	53.5	0.0	0%
Be Green	28.2	25.3	34%
Cumulative savings		46.5	62%
Carbon shortfall to offset (tCO₂)	28.2		

Energy – Lean

Refurbishment:

The applicant is proposing an improvement to the external walls with a U-value to 0.55 W/m²K subject to consideration of condensation, vapour management and overall health of the building envelope. The report suggests this can be achieved with the following measures:

- 37.5mm high performance PIR insulated plasterboard (12.5mm plasterboard included and integrated AVCL).
- Cellulose insulation blown behind existing plaster lining (e.g. if lath and plaster present)
- 10mm Aerogel blanket applied to inner face and plastered or 26mm Aerogel lined Magnesium Oxide board.
- 50mm natural fibre (wood, hemp, cellulose, mineral wool) between timber drylining, with 12.5mm plasterboard.

This is supported. However, the proposed U-value will not result in improvement against the notional u-value of external wall of an existing building (ref. to the table below). Therefore, it is recommended to aim for a u-value of 0.55 W/m²K or better and not to reduce it which will worsen the energy efficiency of the building fabric.

	Residential Notional Specs for existing Building (Energy Assessment Guidance 2022)	Refurbishment Baseline	Proposed Specs for Refurbishment (Be Lean)
Floor u-value	0.25 W/m ² K	0.25 W/m ² K	0.40/45 W/m ² K (GF) 0.11 W/m ² K (1 st & GF)
External wall u-value	0.30-0.55 W/m ² K	0.55 W/m ² K	0.55 W/m ² K
Roof u-value	0.16 W/m ² K	0.16 W/m ² K	0.11 W/m ² K
Door u-value	1.60 W/m ² K	3.00 W/m ² K	3.00 W/m ² K (front door) 1.40 W/m ² K (rear door)
Window u-value	1.60 W/m ² K	1.5 W/m ² K	Existing single glazed windows to be added with secondary glazing providing 2.5 to 2.9 W/m ² K
Air permeability rate	Default – determined by fabric element types	15 m ³ /hm ² @ 50Pa	8 m ³ /hm ² @ 50Pa

Heating system – Be Lean (efficiency / emitter)	Notional specs of the existing heating system as per Section 6 of the Approved Document L1	Gas Boiler with 89.5% efficiency 100%	Gas Boiler with 89.5% efficiency
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Energy Use Intensity / Space Heating Demand

The reported Energy Use Intensity (EUI) and Space Heating Demand (SHD) for the new build and refurbishment part of the proposed scheme are as follows:

Building type	EUI (kWh/m ² /year)	Space Heating Demand (kWh/m ² /year)	Methodology used
New Build	55.8	22	SAP 10.2 for regulated, PHPP for unregulated
Refurbishment	100.9	105.3	

It can be noted that the EUI is very high than the GLA benchmark 35 kWh/m²/year and is almost three times higher for the refurbishment. Similarly, the SHD for refurbishment is seven times higher than the GLA benchmark, which raises several concerns including the costs of energy bills for the future occupants. **The applicant is required to explore all possible measures to minimise both EUI and SHD, as much as possible.** The energy costs are also evidenced by the life cycle cost analysis presented in the report (ref. appendix E, shared below).

Heating Operational Costs	Individual ASHPs – New Build	Individual Electric Boilers - Refurb	Individual ASHPs - Refurb
Cost of Heat (£/year)	£380	£1,649	£2,226
Dwelling Plan Maintenance (£/year)	£276	£276	£195
Dwelling Plant Replacement (£/year)	£339	£339	£137
Total (£/year)	£995	£2,264	£2,558

Energy – Green

Refurbishments:

The applicant is proposed a full electric heating solution for the scheme including:

- Individual direct electric heating for one bed almshouses unit,
- Individual air source heat pumps for 2 and 3 beds almshouses and new build.

The applicant has explored opportunities to install Solar PV on the roof of the existing building. In line with the heritage and conservation considerations, the roof which are not visible from the road are deemed viable for solar PV installation, however as per the report these roofs are mostly oriented towards the north, which is less efficient orientation, therefore Solar PVs are not proposed as part of the refurbishment.

New Build:

The applicant is now proposing Solar PV system in all available new build roof spaces. A 16kWp solar PV system is proposed with 47 panels of 350W each at an angle of 5-10 degrees towards southerly direction. In line with the London Plan SI2, the applicant must maximise the opportunity of on-site energy generation and therefore, are required to provide evidence of maximising solar PV coverage on the available new build roof space at later stages.

3. Overheating

The applicant has remodelled the overheating analysis using the LWC weather files for DSY1-3 2020s. Fourteen representative dwelling units from the new proposed dwelling on site have been assessed. All dwellings pass the CIBSE TM59 criteria when assessed assuming no usability constraints in opening of the windows, which indicated the passive design measures have been maximised.

However, when applying the windows opening constraints during sleeping hours in the accessible units within the apartment blocks, a number of spaces fail the CIBSE TM59 criteria B – showing overheating risks. To mitigate this residual risk of overheating, it is proposed to install an ‘air tempering’ (also known as ‘peak lopping’) cooling coil bolt-on to the MVHR system within the affected dwellings. The air tempering system modelled is assumed to supply 0.97kW and 70l/s per dwelling.

The final overheating mitigation strategy for new dwellings are as follows:

- Natural ventilation with openable windows
- Solar control glazing with g-value of 0.40
- External shading provided by balconies to some apartments, as per design proposals
- External shading provided by an increase external reveal depth of 250mm
- External louvres sliding screens on south façade of the apartment building
- Enhanced mechanical ventilation rates of 2ach in bedrooms

Future mitigation strategies:

- The occupants will be provided with a Home User Guide to be prepared for distribution to residents at handover
- Installation of reflective blinds to further mitigate solar gains
- Use of plug-in fans to increase air-flow
- Utility cupboards and MVHR units to be designed to include air tempering cooling coil-on units as future mitigation measure.

The applicant has also undertaken a CIBSE TM59 analysis of the existing dwellings and the results show an increase from 7% to 100% passing of criteria A while all rooms fail Criteria B. Although bedrooms still fail, the number of nights exceeding the criteria has decrease from 31 nights annually to 7 nights.

For refurbished dwellings, the overheating mitigation measures are as follows:

- Improving glazing specifications
- Incorporating internal blinds
- Standing fans

4. Planning Obligations Heads of Terms

- Be Seen commitment to uploading energy data
- Energy Plan
- Sustainability Review
- Estimated carbon offset contribution (and associated obligations) of £92,625(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.

5. Planning Conditions

To be secured:

Energy strategy

The development hereby approved shall be constructed in accordance with the Energy Statement prepared by Hodkinson (dated 27 Feb 2025) delivering a minimum 65% site-wide improvement on carbon emissions over 2021 Building Regulations Part L (75% for new build and 62% for refurbishment) with high fabric efficiencies, individual air source heat pumps (ASHPs), direct electric heating (one bed almshouses) and a minimum 16kWp 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 fabric efficiencies of the new build to achieve a minimum of 19% reduction;*

- Confirmation of the fabric efficiencies of the refurbishment will meet the following standards achieving a minimum of 28% reduction;
 - Floor U-value 0.11 W/m²K
 - Ground Floor U-value 0.40 W/m²K
 - External wall and internal partition U-value: 0.55 W/m²K or better
 - Roof U-value: 0.11 W/m²K
 - Front Door U-value: 3.0 W/m²K
 - Rear Door U-value: 1.40 W/m²K
 - Window U-value (with Secondary glazing): 2.40 W/m²K
 - Air permeability rate: 8 m³/hm² @50Pa
- Evidenced effort to reduce the Energy Use Intensity and Space Heating Demand to the GLA targets, limiting the development's heating demand to a maximum of 35 kWh/m²/year;
- Details how thermal bridging will be reduced;
- Location, specification and efficiency of the proposed ASHPs & direct electric heating systems (Coefficient of Performance, Seasonal Coefficient of Performance, and the Seasonal Performance Factor), with plans showing the 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) and annual energy generation (kWh/year); 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 pumps 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.

Whole-House Retrofit Strategy and Monitoring

Prior to commencement of development a whole-house retrofit strategy detailing how the insulation will be installed to avoid damage to the fabric of the listed building, proposed monitoring arrangement shall be submitted and approved by the Local Planning Authority and all works will be required to conform with this strategy.

This shall include but is not limited to:

- Confirmation of the insulation proposed to meet the fabric efficiency requirements achieving a minimum of 28% carbon reduction;
- Details of the Vapour Control Layer proposed for the building envelope;
- Analysis of effectiveness and impacts of proposed insulation strategy;
- Hygrothermal analysis to key build-up with internal insulation and where necessary;

- Submission of all thermal bridging junctions with plans showing how these are most optimally reduced;
- Dew point analysis of the building envelope with internal insulation, thermal bridging junctions, and a strategy to mitigate any condensation risk and reduce the thermal bridging;
- Provide details of technical specification of insulation materials (prioritising natural, breathable materials where possible);
- Plans and sections should show what elements will be thermally improved, thickness and where;
- Confirmation of air tightness delivery strategy;
- The proposed ventilation strategy (including how indoor air quality will be dealt with);
- Monitoring, management, and mitigation plan for all potential points within the building that may be impacted by damp, condensation or mould, including the locations of all points;
- Installation strategy that delivers quality assurance of thermal performance through the installation process and effected rooms of the moisture mitigation strategy and monitoring points installation;

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, SI3, and Local Plan Policy SP4 and DM22 and DM49 of the Development Management

Overheating

Prior to the above ground commencement of the development, an updated Overheating Report shall be submitted to and approved by the Local Planning Authority. The submission shall assess the overheating risk, confirm the mitigation measures, and propose a retrofit plan. This assessment shall be based on the Dynamic Overheating Report prepared by Hodkinson (dated September 2024) as a starting point, taking into account the outstanding requirements at application stage.

This report shall include:

- Revised modelling of units modelled based on CIBSE TM59, using the CIBSE TM49 London Weather Centre files for the DSY1-3 (2020s) and DSY1 2050s and 2080s, high emissions, 50% percentile with openable and closed window scenarios;
- Demonstrating the mandatory pass for DSY1 2020s can be achieved following the Cooling Hierarchy and in compliance with Building Regulations Part O, demonstrating that any risk of crime, noise and air quality issues are mitigated appropriately evidenced by the proposed location and specification of measures by following the Cooling Hierarchy;
- Modelling of mitigation measures required to pass current and future weather files, clearly setting out which measures will be delivered before occupation and which measures will form part of the retrofit plan;
- Confirmation that the retrofit measures can be integrated within the design (e.g., if there is space for pipework to allow the retrofitting of cooling and ventilation equipment), setting out mitigation measures in line with the Cooling Hierarchy;
- Confirmation who will be responsible to mitigate the overheating risk once the development is occupied.

(b) Prior to occupation of the development, details of 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.

(c) Prior to occupation, the development must be built in accordance with the approved overheating measures and retained thereafter for the lifetime of the development:

- Openable windows;
- Fixed internal blinds with white backing;
- Solar control glazing with g-value of 0.40
- External shading provided by balconies to some apartments, as per design proposals
- External shading provided by an increase external reveal depth of 250mm
- External louvres sliding screens on south façade of the apartment building
- Enhanced mechanical ventilation rates of 2ach in bedrooms

- Any further mitigation measures as approved by or superseded by the latest approved Overheating Strategy.

If the design of Blocks is amended, 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, to enable the Local Planning Authority to assess overheating risk and to ensure that any necessary mitigation measures are implemented prior to construction, and maintained, 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 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 dwellings 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, a Biodiversity Gain Plan shall be submitted to and approved in writing by the Local Planning Authority. This shall include the details of ecological enhancement measures and ecological protection measures, 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. A biodiversity net gain of 10% must be achieved.*

(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 0.3 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.