

Energy & Sustainability Statement

Mondial House, Mondial Way, Harlington, Hayes, UB3 5AR
RG Airspace Ltd

August 2026

Contents

Executive Summary.....3

Introduction 4

Planning Requirements 4

 National Policy – NPPF 4

 Greater London Authority - London Plan - 2021 5

 London Borough of Hillingdon Local Plan – London Plan (2021) 5

Energy Hierarchy.....7

 Be Lean 7

 Be Clean 7

 Be Green 7

Energy Proposals.....7

 Be Lean – Energy Efficiency Standards 7

 Fabric Measures.....7

 Thermal Bridging.....7

 Windows.....7

 Air Tightness 7

 Lighting.....8

 Ventilation.....8

 Heating, Cooling and Hot Water 8

 Be Clean – Supply Energy Efficiency 8

 Consideration of Connection to Local Heat Networks.....8

 Exploration of Local and Secondary Energy Sources 8

 Assessment of Combined Heat and Power (CHP) Options.....8

 Be Green – Low Carbon/ Renewable Technology Consideration.....9

 Feasible Renewable Energy Technology 9

 Ground Source Heating Pumps:.....9

 Air Source Heat Pumps (ASHPS): 9

 Solar Photovoltaics (PV) 10

Solar Thermal 10

Wind Turbines 10

Selected Technology.....10

Sustainability 11

 Water Conservation and Water Efficiency 11

 Sustainable Materials Selection 11

 Health and Wellbeing 11

 Construction Waste Management and Diversion from Landfill.....11

 Operational Waste Management and Diversion from Landfill.....11

 Ecology and Biodiversity 12

 Sustainable Modes of Transportation 12

 Climate Change Adaptation, Overheating and Resilience.....12

 Flood Risk and Sustainable Drainage (SuDS) 12

Conclusion 13

Executive Summary

Consult Sustainability Limited has been appointed to prepare an Energy & Sustainability Statement for the proposed development at **Mondial Way, Harlington, Greater London, UB3 5AR**. This report has been prepared to outline the energy and sustainability strategy for the development and demonstrate compliance with relevant national, regional and local planning policy requirements.

The development is located within the jurisdiction of the **London Borough of Hillingdon** and is therefore subject to the requirements of the Hillingdon Local Plan and the London Plan. These policies require development proposals to minimise energy demand, reduce carbon emissions and incorporate low and zero carbon technologies through the application of the London Energy Hierarchy. Policy DMEI 2 of the Hillingdon Local Plan seeks to reduce carbon emissions in accordance with London Plan objectives, whilst Policy DMEI 3 requires the consideration of decentralised energy opportunities where feasible.

This Energy & Sustainability Statement has been prepared in support of a full planning application for the construction of a two-storey rooftop extension to the existing building, providing 28 Apart-hotel units (Use Class C1).

Energy

Energy demand and CO₂ emission figures are based on design stage energy modelling undertaken using IES VE Compliance software. The development has been assessed against the current requirements of Approved Document L Volume 2: Buildings Other Than Dwellings (2021 Edition).

Following the energy hierarchy, this development will adopt the following strategy:

Be lean: *Use less energy and manage demand during operation through a fabric-first approach incorporating high-performance insulation, reduced thermal bridging, improved airtightness, high-performance glazing, efficient lighting and energy-efficient building services. These measures will minimise energy demand before the introduction of low-carbon technologies.*

Be clean: *Exploit local energy resources and supply energy efficiently and cleanly through consideration of existing and planned heat network infrastructure together with the specification of efficient building services and controls. Opportunities for connection to decentralised energy networks have been reviewed in accordance with local planning policy requirements.*

Be green: *Maximise opportunities for renewable energy through the consideration and implementation of low and zero carbon technologies. The proposed strategy includes highly efficient electric heating and cooling systems serving guest accommodation, together with the assessment of renewable energy technologies capable of reducing operational carbon emissions.*

Sustainability

The proposed development adopts a comprehensive sustainability-led approach aligned with the objectives of the Hillingdon Local Plan and the London Plan. Policy DMEI 10 supports sustainable water management measures, whilst wider Hillingdon policies encourage environmental enhancement and sustainable infrastructure. The strategy seeks to reduce environmental impact whilst creating comfortable, efficient and resilient hotel accommodation.

Water-efficient fittings and fixtures will be incorporated throughout the development to reduce potable water demand and support responsible resource use. Materials will be selected with consideration given to durability, embodied carbon, responsible sourcing and lifecycle performance.

Occupant health and wellbeing form an important part of the proposed strategy through the provision of appropriate daylight levels, thermal comfort, indoor air quality and acoustic performance.

Climate resilience measures, including overheating mitigation, will be integrated into the design to ensure the development remains comfortable and efficient throughout its operational life. The proximity to

The development will also promote sustainable travel opportunities through its location within Greater London and its accessibility to existing public transport infrastructure. Biodiversity and urban greening opportunities will be incorporated where practical and proportionate to the scale of the development..

SUMMARY

THE DEVELOPMENT WILL FOLLOW THE ENERGY HIERARCHY AND SEEK TO ACHIEVE:

- A REDUCTION IN REGULATED CARBON EMISSIONS THROUGH FABRIC-FIRST ENERGY EFFICIENCY MEASURES.
- THE PROPOSED STRATEGY INCORPORATES AIR SOURCE HEAT PUMPS (ASHPs) PROVIDING SPACE HEATING, COOLING AND DOMESTIC HOT WATER THROUGHOUT THE DEVELOPMENT. WASTE WATER HEAT RECOVERY (WWHR) SYSTEMS ARE PROPOSED TO ALL SHOWER INSTALLATIONS IN ORDER TO REDUCE DOMESTIC HOT WATER ENERGY DEMAND.
- RENEWABLE GENERATION IN THE FORM OF PHOTOVOLTAICS HAS BEEN INCLUDED IN THE STRATEGY TO FURTHER REDUCE THE ENERGY DEMAND AND CARBON INTENSITY OF THE DEVELOPMENT.

FURTHERMORE, THE DEVELOPMENT DELIVERS A ROBUST AND POLICY-COMPLIANT SUSTAINABILITY STRATEGY, INCORPORATING WATER-EFFICIENT DESIGN, RESPONSIBLE MATERIAL SELECTION, BIODIVERSITY ENHANCEMENT, CLIMATE RESILIENCE MEASURES, AND A STRONG FOCUS ON OCCUPANT HEALTH AND WELLBEING, APPROPRIATE TO ITS PROPOSED EDUCATIONAL USE.

Introduction

Consult Sustainability Limited has prepared an Energy & Sustainability Statement for the proposed development at Mondial Way, Harlington, Greater London, UB3 5AR.

The purpose of this document is to present the project's approach to energy efficiency, carbon reduction and sustainable development in support of the proposed construction of a two-storey rooftop extension providing 28 additional Apart-hotel rooms (Use Class C1). The report demonstrates how the development responds to the sustainability objectives of the London Borough of Hillingdon, the London Plan and the National Planning Policy Framework (NPPF).

The site is located within the London Borough of Hillingdon, where planning policy seeks to promote sustainable development through the reduction of carbon emissions, efficient use of resources, enhancement of environmental performance and adaptation to climate change. The London Plan further requires development proposals to follow the energy hierarchy, prioritising energy demand reduction, efficient energy supply and the incorporation of renewable energy technologies where feasible. Policies DME1 2 and DME1 3 of the Hillingdon Local Plan support measures to reduce carbon emissions and encourage consideration of decentralised energy opportunities.

This report has been reviewed by Mr S Luker who is a Director of Consult Sustain, who has 10+ years of experience in Sustainability, Energy modelling, BREEAM and Environmental Assessments.

Projected energy consumption and carbon outputs are based on calculations carried out with IES VE Compliance SBEM software, referencing the requirements of the 2021 Building Regulations in force at the time of assessment.

The sustainability statement outlines the project's sustainable design strategies, highlighting how the design could minimise environmental impact while enhancing occupant wellbeing and operational efficiency. It details efforts such as energy-efficient systems, use of renewable energy, biodiversity, flood prevention, and indoor environmental quality enhancements.

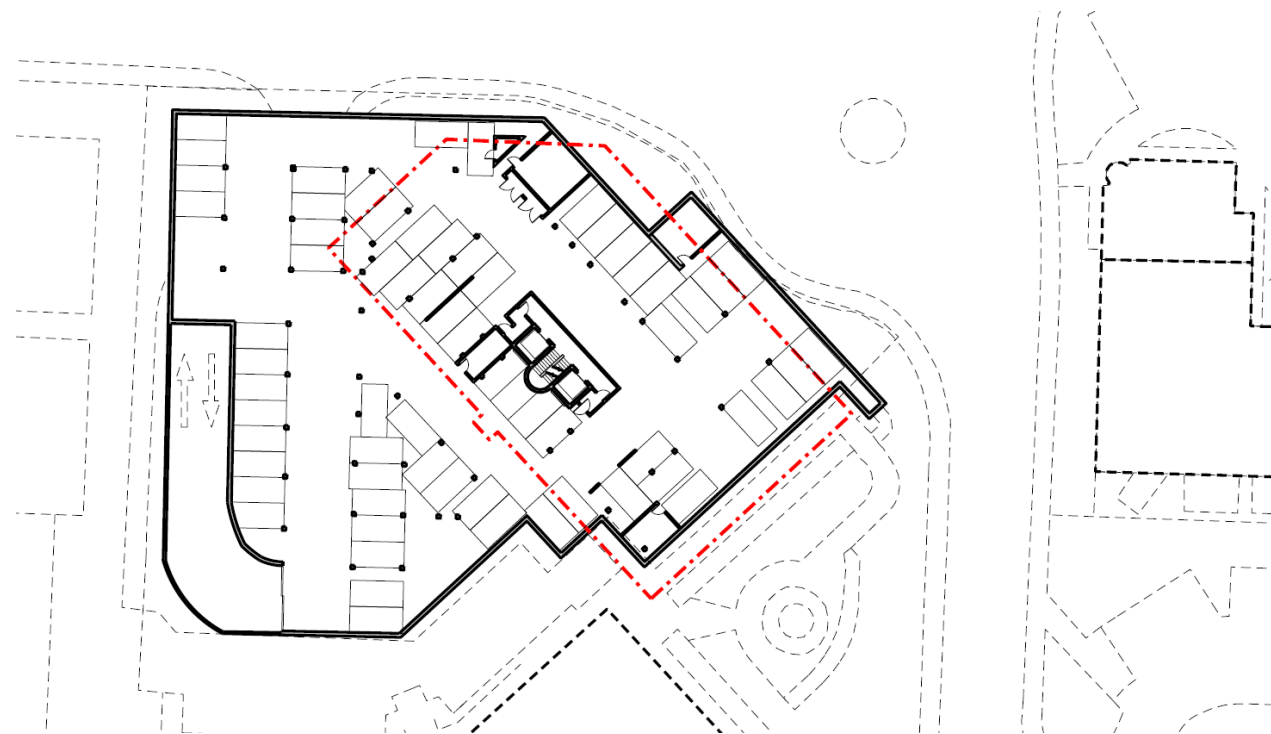


FIGURE 1: SITE LOCATION PLAN – MONDIAL WAY, HARLINGTON, GREATER LONDON, UB3 5AR.

Planning Requirements

National Policy – NPPF

At national level, National Planning Policy Framework (2024) sets out the Governments planning policies for England, identifying how the planning system should support the transition to net zero by 2050 and take account of all climate impacts including overheating, water scarcity, storm and flood risks and coastal change. The NPPF should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure. Local planning authorities must take a proactive approach to mitigating and adapting to climate change, considering the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures in line with the objectives and provisions of the Climate Change Act 2008.

Proposed development should be planned for in ways that:

- avoid increased vulnerability to the range of impacts arising from climate change. When a new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and
- can help to reduce greenhouse gas emissions, such as through its location, orientation, and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- provide a positive strategy for energy from these sources, which maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts).
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- identify opportunities for development to draw its energy supply from decentralised, renewable, or low carbon energy supply systems and for co-locating potential heat customers and suppliers

Local planning authorities should support community-led initiatives for renewable and low carbon energy. This should include developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.

In determining planning applications, local planning authorities should expect new development to:

- comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- take account of landform, layout, building orientation, massing, and landscaping to minimise energy consumption.

When determining planning applications for renewable and low carbon development, local planning authorities should:

- not require applicants to demonstrate the overall need for renewable or low carbon energy, and give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future
- recognise that small-scale and community-led projects provide a valuable contribution to cutting greenhouse gas emissions.
- in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site.

Greater London Authority - London Plan - 2021

London Plan Policy SI 2 – Minimising Greenhouse Gas Emissions

1. Major development proposals should be net zero-carbon and demonstrate how the energy hierarchy has been followed:
 - a. Be Lean – use less energy through energy efficient design and construction.
 - b. Be Clean – supply energy efficiently.
 - c. Be Green – use renewable energy generation.
2. Development proposals should calculate and minimise regulated and unregulated carbon emissions.
3. Where on-site carbon reductions do not achieve required targets, a carbon offset contribution may be required.
4. Energy strategies should demonstrate high fabric performance, efficient services, low carbon heating and renewable energy technologies.

London Plan Policy SI 4 – Managing Heat Risk

1. Development proposals should minimise adverse impacts from the urban heat island effect and reduce overheating risk.
2. The cooling hierarchy should be followed:
 - a. reduce internal heat gains
 - b. minimise solar gains
 - c. use passive ventilation
 - d. maximise thermal mass
 - e. provide mechanical ventilation where required
 - f. use active cooling only where necessary

London Plan Policy SI 5 – Water Infrastructure

1. Development should minimise use of mains water through water efficient design, fittings and appliances.
2. Proposals should integrate sustainable drainage measures and manage water as close to source as possible.
3. Development should reduce surface water runoff rates and volumes and avoid increasing flood risk elsewhere.
4. Rainwater harvesting, greywater recycling and efficient irrigation should be considered where feasible.

London Borough of Hillingdon Local Plan – London Plan (2021)

Policy EM1: Climate Change Adaptation and Mitigation

1. Development should address climate change mitigation and adaptation at all stages of the design process.
2. Development should promote the use of decentralised energy and low-carbon strategies where feasible.
3. Renewable energy technologies should be incorporated to assist in meeting London Plan carbon reduction targets.
4. Passive design measures should be utilised to reduce energy demand and mitigate overheating risks.
5. Major developments should consider the whole water cycle, including water efficiency, drainage and flood risk management

Policy BE1: Built Environment

1. Development should achieve reductions in carbon dioxide emissions through energy-efficient design and the effective use of low and zero carbon technologies.
2. Sustainable design and construction principles should be incorporated into all development proposals.
3. Development should make efficient use of natural resources and minimise environmental impacts.
4. Sustainable drainage, water efficiency and resource efficiency measures should be incorporated where appropriate.

Policy E3: Heathrow Opportunity Area

1. Development within the Heathrow Opportunity Area should contribute towards sustainable economic growth whilst minimising environmental impacts.
2. Climate change mitigation and adaptation measures should form part of new development proposals.
3. Development should support improvements to local environmental quality, including air quality.
4. Growth should be supported by sustainable infrastructure and low-carbon development principles.

Policy DMEI 2: Reducing Carbon Emissions

1. Development proposals should reduce carbon emissions through energy-efficient design and construction.
2. Carbon reduction measures should be implemented in accordance with the London Plan Energy Hierarchy.
3. Low and zero carbon technologies should be considered where feasible to minimise operational carbon emissions.

Policy DMEI 3: Decentralised Energy

1. Major developments should investigate opportunities to connect to existing or planned decentralised energy networks.
2. Where connection is not feasible, alternative low-carbon energy strategies should be demonstrated.

Policy DMEI 10: Water Management, Efficiency and Quality

1. Development should incorporate measures to improve water efficiency and reduce potable water consumption.

2. Sustainable drainage measures should be incorporated where feasible.
3. Development should contribute to the sustainable management of water resources.

Policy DMEI 14: Air Quality

1. Development should minimise impacts upon local air quality and seek to achieve air quality neutral outcomes where possible.
2. Development should support the reduction of emissions through low-carbon design and sustainable transport measures.

London Plan Policy SI 2: Minimising Greenhouse Gas Emissions

1. Development proposals should follow the London Energy Hierarchy:
 - Be Lean
 - Be Clean
 - Be Green.
2. Energy demand should be reduced through high-performance building fabric and efficient building services.
3. Opportunities for renewable and low-carbon technologies should be maximised where feasible

London Plan Policy SI 3: Energy Infrastructure

1. Development proposals should investigate opportunities to connect to existing or planned heat networks where feasible.
2. Energy infrastructure should support long-term carbon reduction and improved energy efficiency.

London Plan Policy SI 5: Water Infrastructure

1. Development should minimise water consumption through efficient design and specification.
2. Water efficiency measures should be incorporated to support sustainable water resource management

London Plan Policy G5: Urban Greening

1. Development should incorporate urban greening measures where appropriate.
2. Landscaping and biodiversity enhancements should contribute positively to local environmental quality and climate resilience.

PLANNING SUMMARY

THE PROPOSED DEVELOPMENT IS LOCATED WITHIN THE LONDON BOROUGH OF HILLINGDON AND COMPRISES A TWO-STORY ROOFTOP EXTENSION PROVIDING 28 ADDITIONAL APART-HOTEL ROOMS (USE CLASS C1). THE DEVELOPMENT IS THEREFORE SUBJECT TO THE REQUIREMENTS OF THE HILLINGDON LOCAL PLAN, INCLUDING POLICIES EM1, BE1, E3, DMEI 2, DMEI 3, DMEI 10 AND DMEI 14, TOGETHER WITH THE LONDON PLAN ENERGY AND SUSTAINABILITY POLICIES. THESE POLICIES SEEK TO REDUCE CARBON EMISSIONS THROUGH ENERGY-EFFICIENT DESIGN, SUSTAINABLE CONSTRUCTION, DECENTRALISED ENERGY CONSIDERATION, IMPROVED WATER EFFICIENCY AND THE INCORPORATION OF LOW AND ZERO CARBON TECHNOLOGIES.

THE PROPOSED DEVELOPMENT ADOPTS A FABRIC-FIRST APPROACH, CONSIDERS OPPORTUNITIES FOR EFFICIENT ENERGY SUPPLY, INCORPORATES HIGH-EFFICIENCY BUILDING SERVICES AND ASSESSES RENEWABLE ENERGY TECHNOLOGIES IN ACCORDANCE WITH THE LONDON ENERGY HIERARCHY, WHILST SUPPORTING THE WIDER SUSTAINABILITY OBJECTIVES OF THE HEATHROW OPPORTUNITY AREA.

Energy Hierarchy

Be Lean

Fabric First: Energy Efficiency Standards - Use less energy and manage demand during operation through fabric and servicing improvements and the incorporation of flexibility measures. Demand reduction measures specific to the scheme are encouraged at the earliest design stage of a development and aim to reduce to demand of energy.

Measures typically include passive design: both architectural and building fabric measures, and active design: energy efficient services. It is possible to exceed 2021 Building Regulations requirements through demand reduction (Be Lean) measures alone.

Improving the envelope performance beyond the minimum Building Regulations standards can help to reduce the annual CO₂ emissions associated with the dwellings' heating demand, by limiting the heat loss through the buildings' fabric.

After assessing the contribution of the passive elements to the overall energy balance, the aim is to further reduce CO₂ emissions by selecting efficient mechanical and electrical systems and efficient controls to manage the energy used during operation.

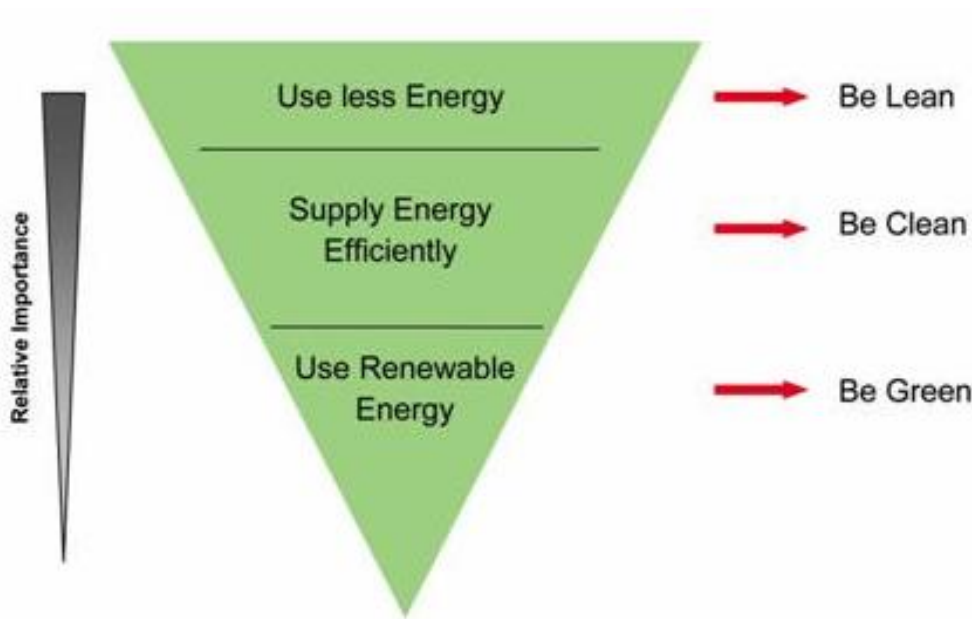
Be Clean

Supply Energy Efficiently - Exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly by connecting to district heating networks. A 'clean' energy supply refers to the energy efficiency of heating, cooling, and power systems.

Be Green

Low Carbon/ Renewable Technologies - Maximise opportunities for renewable energy by producing, storing and using renewable energy on-site. Use of renewable energy in developments is encouraged at the 'Be Green' third stage. Each renewable energy technology technically feasible and each should be considered in the Energy Assessment.

FIGURE 2: ENERGY HIERARCHY



Energy Proposals

Be Lean – Energy Efficiency Standards

Fabric Measures

The development will adopt a fabric first approach. Energy efficiency measures for the building are proposed to be incorporated to reduce the energy demand and CO₂ emissions of the development.

The building envelope will incorporate high-performance insulation, thermally efficient glazing, reduced thermal bridging and enhanced airtightness standards to minimise heat losses and improve operational efficiency. By reducing space conditioning loads through improved fabric performance, the development can significantly reduce operational energy demand whilst improving occupant comfort throughout the year.

The proposed extension will be designed to meet or exceed the elemental standards contained within Approved Document L Volume 2 for new buildings.

TABLE 1 - PROPOSED FABRIC MEASURES FOR NEW BUILD ELEMENTS

	Non-Domestic (New or Replacements) - Approved Document L2 2021		
	A	B	C
Element	ADO L2A 2021 Limiting Fabric U-Values (W/m²K)	Proposed U-Values (W/m²K)	Improvement (%)
External Walls	0.26	0.15	35%
Party Walls	0.20	0.00	100%
Roofs	0.16	0.10	38%
Floors	0.18	0.10	44%
Windows/Doors	1.60	1.20	25%
Air tightness m³/hr/m²	8.00	3.00	63%

Thermal Bridging

In addition to the enhanced building-fabric standards, the development will be designed to minimise heat loss through thermal bridging. All junctions will be detailed in accordance with established industry guidance, such as Recognised Construction Details (RCDs) or equivalent accredited schemes.

Windows

The contractor will endeavour to install windows with a BFRC or BSI certification to ensure robustness of performance data. The amount of solar radiation entering the building will be balanced against the aim to achieve good daylight levels, by selecting glass with high light transmission but limited solar transmission.

Consideration has been given to the glazing g-value to mitigate the potential risk of overheating. A window **G-value of 0.40** will be included in the energy modelling in line with the overheating mitigation strategy.

Air Tightness

Good site quality standards will be adhered to, to achieve a high-performance building with a low air permeability rate to Passivhaus standards. The buildings will not exceed **3.00m³/hr/m² at 50 Pascals** or less, against the AD L target of 8.00m³/hr/m².

Low air permeability will be achieved through ensuring diligence during construction and making sure all punctures through the building envelope are adequately sealed.

Lighting

Installing efficient low energy light fittings internally and externally can significantly reduce a building's overall lighting load hence lowering its annual CO₂ emissions. To reduce the energy consumption associated with artificial lighting, energy-efficient fittings will be specified for 100% of internal and external lighting. Lighting throughout will achieve the following minimum lumens per circuit watt: LED **120lm/W**.

Ventilation

The ventilation strategy will be designed to provide appropriate levels of fresh air whilst minimising energy consumption.

Mechanical ventilation systems will be specified in accordance with current Building Regulation requirements and hotel operational needs, ensuring a comfortable indoor environment is maintained for guests and staff. An Air Handling Unit is proposed with individual Fan Coil Units in each apartment.

Where appropriate, energy-efficient ventilation systems incorporating heat recovery technology will be considered to further reduce heating demand and improve operational performance. The ventilation strategy will help maintain indoor air quality and occupant comfort whilst contributing to overall energy efficiency.

Heating, Cooling and Hot Water

The proposed development will incorporate highly efficient Air Source Heat Pumps (ASHPs) providing space heating, cooling and domestic hot water throughout the building.

ASHP technology transfers heat energy from the external environment and is capable of delivering significant reductions in operational carbon emissions when compared with conventional fossil-fuel based systems. The proposed system provides an all-electric heating and cooling solution consistent with London Plan carbon reduction objectives.

Given the high domestic hot water demand associated with hotel accommodation, Waste Water Heat Recovery (WWHR) systems will be incorporated within all shower installations. WWHR systems recover thermal energy from wastewater leaving showers and transfer this energy to incoming cold-water supplies, reducing the energy required to generate domestic hot water.

BE LEAN SUMMARY

THE PROPOSED DEVELOPMENT ADOPTS A FABRIC-FIRST APPROACH THROUGH THE INCORPORATION OF HIGHLY EFFICIENT BUILDING FABRIC, ENHANCED AIRTIGHTNESS, IMPROVED GLAZING PERFORMANCE, ENERGY-EFFICIENT LIGHTING AND EFFICIENT MECHANICAL AND ELECTRICAL BUILDING SERVICES.

THESE MEASURES WILL MINIMISE ENERGY DEMAND AND OPERATIONAL CARBON EMISSIONS BEFORE THE INTRODUCTION OF RENEWABLE OR LOW-CARBON TECHNOLOGIES, ENSURING THAT THE DEVELOPMENT FOLLOWS THE PRINCIPLES OF THE LONDON ENERGY HIERARCHY AND SUPPORTS THE CLIMATE CHANGE OBJECTIVES OF THE LONDON BOROUGH OF HILLINGDON AND THE LONDON PLAN.

THE PROPOSED SCHEME WILL ACHIEVE A **16%** REDUCTION IN EMISSIONS OVER THE 2021 PART L BASELINE REGULATIONS AT THE **BE LEAN STAGE** THROUGH THE USE OF HIGHLY EFFICIENT BUILDING FABRIC.

Be Clean – Supply Energy Efficiency

Consideration of Connection to Local Heat Networks

As part of the energy strategy for the proposed development, careful consideration has been given to the potential for connection to an existing or planned district heat network. Heat networks can provide a highly efficient and cost-effective means of supplying heating and hot water, leveraging centralized energy generation and distribution to multiple buildings or developments. Utilising such networks also supports broader sustainability objectives by maximizing energy efficiency and enabling the integration of low-carbon heat sources.

A review of available information has been undertaken to identify any existing or planned heat networks within the vicinity of the site. Based on this review, no operational district heat networks are present within a reasonable distance of the site, and no planned networks have been identified that would make connection feasible at this time. As such, connection to a district heat network is not considered viable for the proposed development.

Exploration of Local and Secondary Energy Sources

The potential to exploit locally available, secondary or renewable energy sources has also been systematically evaluated, with the aim of maximizing sustainability and minimizing both primary energy consumption and associated carbon emissions. This assessment has encompassed consideration of energy sources such as:

- On-site renewable generation (e.g. solar photovoltaics, solar thermal, wind energy)
- Ground or air source heat pumps
- Waste heat recovery from nearby industrial or commercial activities
- Hydrothermal or geothermal resources, where available

Given the proposed rooftop extension and the availability of roof space, highly efficient electric heating and cooling systems combined with renewable electricity generation are considered to offer the greatest potential for reducing operational carbon emissions.

Assessment of Combined Heat and Power (CHP) Options

The use of low-emission combined heat and power (CHP) systems has also been considered as an alternative means of achieving high energy efficiency and reduced carbon emissions. CHP, in principle, offers the advantage of simultaneously generating heat and electricity from a single fuel source, thereby improving overall fuel use efficiency.

However, the installation of a CHP system is not deemed to be economically viable as larger, centralized installations can paradoxically result in increased carbon emissions per unit of electricity generated. Furthermore, contemporary policy guidance and best practice are moving away from fossil fuel-based CHP systems, particularly those reliant on gas engines, due to growing concerns about their impact on local air quality (notably in relation to nitrogen dioxide (NO₂) and particulate emissions), as well as the evolving carbon intensity of grid electricity.

For these reasons economic, environmental, and regulatory, the incorporation of a conventional gas-engine CHP system has been discounted.

BE CLEAN SUMMARY

THE DEVELOPMENT WILL THEREFORE RELY UPON HIGHLY EFFICIENT AIR SOURCE HEAT PUMP TECHNOLOGY AND WASTE WATER HEAT RECOVERY SYSTEMS TO MINIMISE OPERATIONAL CARBON EMISSIONS AND SUPPORT THE OBJECTIVES OF THE LONDON ENERGY HIERARCHY.

Be Green – Low Carbon/ Renewable Technology Consideration

Feasible Renewable Energy Technology

A reduction in carbon emissions using on-site renewable energy may be achieved through several technologies to generate heat or power. In deciding the most suitable technology consideration has been given to:

Carbon Reduction

This criterion assesses the estimated decrease in carbon dioxide (CO₂) emissions achieved through the adoption of a specific technology within the proposed development. It involves a quantitative evaluation of how effectively the technology contributes to meeting national or local carbon reduction targets. The assessment should compare predicted CO₂ emissions with and without the installation of the technology, using recognized calculation methodologies such as SAP (for residential) or SBEM (for commercial). Technologies that enable significant CO₂ savings (e.g., photovoltaics, heat pumps, high-efficiency boilers) will be rated more favourably, while those with marginal impacts may be deprioritized.

Cost Feasibility

Cost feasibility considers the capital outlay required for procurement and installation of the technology, set against the overall budget for the development. This assessment considers the upfront investment, potential for long-term operational savings, and available financial incentives or grants. A technology must demonstrate not only value for money but also an acceptable payback period within the context of project financing. Technologies that require disproportionately high expenditure, with limited return on investment or excessive payback times, may not be considered viable for inclusion.

Practicality

The practicality criterion evaluates the technical and logistical feasibility of deploying the technology at the proposed site. This encompasses:

- The spatial requirements for equipment and associated infrastructure
- The ease of integration with existing building systems or fabric
- Suitability against the anticipated use and occupancy patterns

For instance, technologies requiring substantial plant space or significant structural adaptations may encounter practical limitations, especially in constrained urban settings or in retrofit projects.

Planning Restrictions

Certain locations are subject to planning constraints, such as conservation areas or properties that are Listed (i.e., protected for their historic or architectural value). These constraints may limit or outright prohibit visible changes to the exterior, noise, structural alterations, or the use of certain materials. Thus, the assessment must confirm whether proposed technologies (e.g., external heat pumps, rooftop solar panels, or flue terminals) require planning consent and whether the likelihood of approval is high or subject to significant risk of refusal due to local planning policies or heritage protections.

Site-Related Constraints

This criterion investigates whether specific characteristics of the site (layout, orientation, topography, shading, available utility connections, etc.) could prevent the optimal function or even installation of a technology. Examples include:

- Heavy shading from adjacent structures or trees decreasing PV output
- Limited roof area
- Ground conditions unsuitable for ground-source heat pump arrays
- Inadequate ventilation for biomass boilers

The assessment should identify these site-specific constraints early in the decision-making process to prevent specification of unworkable solutions.

Operating Noise Consideration

Some low-carbon technologies, particularly HVAC equipment (e.g., air source heat pumps, fans, CHP engines), generate varying levels of operational noise. This is a key concern where the development is in close proximity to residential dwellings or other noise-sensitive uses, as excessive noise can lead to disturbance and may breach statutory requirements for noise pollution.

The final location of equipment will be determined at the detailed design stage, considering the specification and location of equipment to ensure residential amenity of residents is protected in respect of noise.

Ground Source Heating Pumps:

CO₂ reduction effectiveness:	Estimated potential 60-70% reduction in CO ₂ emissions.
Cost feasibility:	High.
Practicality:	Practical for new buildings with high fabric efficiency standards and low energy demand.
Planning restrictions:	No abnormal planning restrictions.
Site related constraints:	Insufficient space exists within the development boundaries for the incorporation of horizontal 'Slinky's'. Thermogeological assessment of ground conditions plus identification of underground services would need to be established to determine the suitability for bore holes.
Operating noise:	Low.
Ongoing maintenance:	Medium - None to boreholes, annual maintenance requirement for heat pumps.
Overall Feasibility:	Not considered feasible for this development due to the high cost of installation.

Air Source Heat Pumps (ASHPS):

CO₂ reduction effectiveness:	Estimated potential 40-60% reduction in CO ₂ emissions.
Cost feasibility:	Medium - dependent on detailed design.
Practicality:	The technology is particularly suitable for hotel accommodation where simultaneous heating, cooling and domestic hot water demands exist.
Planning restrictions:	Consideration of location of internal and/or externally mounted plant & equipment and operating noise. ASHPs would need to be located externally, in proximity to the dwellings, either disguised or discreetly hidden to reduce their visual impact.
Site related constraints:	None.
Operating noise:	Low - consideration will be required to the siting of the heat pumps to ensure disturbance is not caused to the occupiers or neighbouring properties.
Ongoing maintenance:	Medium - Annual maintenance requirement for heat pumps.
Overall Feasibility:	Considered feasible for this development.

Solar Photovoltaics (PV)

CO₂ reduction effectiveness:	Significant % reductions available, limited only by available roof area. Unlikely to reach planning CO ₂ emission targets alone.
Cost feasibility:	Low – Circa £1k-1.5k/kWp.
Practicality:	PV easy to install and can be fed to building providing a reduction in the energy demand, fuel bills and CO ₂ emissions. Due to limited roof space there is an opportunity for a small amount of PV.
Planning restrictions:	Consideration of externally mounted panels.
Site related constraints:	None.
Operating noise:	None.
Ongoing maintenance:	Low – Annual cleaning of panels.
Overall Feasibility:	Considered feasible for this development.

Solar Thermal

CO₂ reduction effectiveness:	Reduction in CO ₂ emissions is limited by available roof space and demand for hot water. Estimated potential 5-10% reduction in CO ₂ emissions.
Cost feasibility:	Medium.
Practicality:	Panels are easy to install, and heat generated can be fed to the building to provide a reduction in the hot water energy demand, fuel bills and CO ₂ emissions. Due to limited roof space there is an opportunity for a small amount of panels.
Planning restrictions:	Consideration of externally mounted panels.
Site related constraints:	None.
Operating noise:	Negligible.
Ongoing maintenance:	Medium – Annual maintenance requirements of mechanical plant.
Overall Feasibility:	Not considered feasible for this development.

Wind Turbines

CO₂ reduction effectiveness:	Estimated potential 3-5% reduction in CO ₂ emissions
Cost feasibility:	Medium – High.
Practicality:	The standalone wind turbine would require sufficient open space on the site to locate the turbine and be far enough away from buildings to be able to work effectively. Building mounted wind turbines have not been shown to be highly effective.
Planning restrictions:	Consideration of higher impact externally mounted plant and effect on neighbouring properties.
Site related constraints:	Limitations on available roof space, wind speed and efficiency of this technology.
Operating noise:	Medium-High
Ongoing maintenance:	High – Annual maintenance of motors.
Overall Feasibility:	Not considered feasible for this development.

Selected Technology

Following the assessment of potential low and zero carbon technologies, it is considered that a combination of Air Source Heat Pump (ASHP) systems and Solar Photovoltaic (PV) panels represents the most appropriate solution for the proposed development. The proposed energy strategy has been developed in accordance with the London Energy Hierarchy and the requirements of the London Borough of Hillingdon Local Plan, seeking to minimise operational energy demand before addressing residual emissions through low and zero carbon technologies.

Role of ASHPs in combination with Photovoltaics

Core Technology: ASHP systems are highly efficient electrically powered heating and cooling systems capable of serving multiple occupiable spaces from a central outdoor unit and distributed indoor fan coil units. The system is particularly well-suited to hotel developments where occupancy patterns vary throughout the day and where individual room temperature control is required to maintain occupant comfort.

Policy Support: The proposed technology strategy supports:

- London Plan Policy SI 2 – Minimising Greenhouse Gas Emissions.
- London Plan Policy SI 3 – Energy Infrastructure.
- Hillingdon Local Plan Policy EM1 – Climate Change Adaptation and Mitigation.
- Hillingdon Local Plan Policy BE1 – Built Environment.
- Hillingdon Local Plan Policy DMEI 2 – Reducing Carbon Emissions.

The strategy follows the principles of the London Energy Hierarchy by first reducing energy demand through a fabric-first approach before incorporating low and zero carbon technologies to minimise residual emissions.

Efficiency and Impact: By displacing traditional gas or oil boilers, ASHPs offer a lower-carbon alternative and contribute toward reduced emissions in line with strategic climate goals. PV panels generate renewable electricity on-site at high efficiency, reducing reliance on grid electricity and directly lowering operational carbon emissions associated with the development. The inclusion of ASHPs and PV at the 'Be Green' stage means they are implemented only after energy demand has been minimized, ensuring their deployment is both impactful and cost-effective.

Implementation Considerations:

ASHPs are especially supported in new developments and major refurbishments, where their integration can be planned from the outset. The implementation of PV panels requires suitable unshaded roof areas, appropriate structural capacity, and provision for safe installation and maintenance access to ensure optimal performance and long-term reliability. Planning authorities may encourage or require performance standards for renewable technologies, and grant permission for ASHP installations if there are no significant adverse impacts on local amenities or the environment.

BE GREEN SUMMARY

ASHPs AND PV ARE DEEMED THE MOST FEASIBLE ZERO CARBON TECHNOLOGIES AND WILL PROVIDE A SIGNIFICANT PERCENTAGE OF ON-SITE RENEWABLE ENERGY. THE PROPOSED PV ARRAY IS SHOWN IN APPENDIX C.

THE PROPOSED SCHEME WILL ACHIEVE A FURTHER **30% REDUCTION** IN BUILDING EMISSIONS OVER PART L 2021 REGULATIONS AT THE **BE GREEN STAGE** AS A RESULT OF THE INCLUSION OF AN ASHP FOR SPACE CONDITIONING AND DHW, AND PV FOR ON-SITE ENERGY PROJECTION.

Sustainability

The proposed development has been designed to incorporate a range of sustainability measures intended to reduce environmental impacts, support resource efficiency and provide comfortable accommodation for future occupants. The sustainability strategy complements the energy hierarchy approach outlined within this report and responds to the objectives of the London Borough of Hillingdon Local Plan, the London Plan and the National Planning Policy Framework.

The development seeks to balance operational efficiency, environmental responsibility and occupant wellbeing through the incorporation of sustainable design principles throughout the design and construction process.

Water Conservation and Water Efficiency

The efficient use of water resources forms an important part of the sustainability strategy. Water-efficient sanitaryware and fittings will be specified throughout the development to minimise potable water consumption. Measures may include:

Policy context:

- Policy EM1 (Climate Change Adaptation and Mitigation)
- Policy EM8 (Land, Water, Air and Noise)
- Policy DME1 10 (Water Management, Efficiency and Quality)

Strategy

The proposed development will incorporate a range of water conservation measures including low-flow sanitaryware, dual-flush WC systems, low-flow taps and efficient shower fittings. These measures will assist in reducing potable water consumption and contribute towards the sustainable management of local water resources.

Where feasible, opportunities for leak detection and efficient water management systems will be incorporated within the detailed design to further reduce unnecessary water consumption throughout the operational life of the development.

Targets:

- Internal water use: $\leq 125l/p/d$
- External potable water use: Minimised through planting strategy

Sustainable Materials Selection

Policy context:

- Policy BE1 (Built Environment)

The proposed development will seek to utilise responsibly sourced materials with consideration given to durability, lifecycle performance and environmental impact. Where practicable, materials with recycled content, Environmental Product Declarations (EPDs) and recognised sustainability credentials will be specified.

Material selection will seek to balance environmental performance, operational durability and long-term maintenance requirements, ensuring that the development remains robust and resource efficient throughout its lifespan.

Low VOC paints, adhesives, sealants and finishes will be specified where possible to improve indoor air quality and support occupant wellbeing.

Indicative commitments:

- FSC/PEFC timber: 100% where timber is used

- Low-VOC internal finishes: Specified throughout

Health and Wellbeing

Policy context:

- Policy BE1 (Built Environment)

Policy BE1 promotes the delivery of high-quality development that creates healthy, comfortable and sustainable environments for occupants.

The proposed development seeks to provide high levels of occupant comfort through:

- Appropriate levels of natural daylight.
- Good indoor air quality.
- Effective acoustic performance, subject to acoustic report results
- Efficient heating and cooling systems.
- Individual room environmental controls.

The accommodation will benefit from the proposed high-performance building fabric and efficient ASHP heating and cooling systems, helping to maintain comfortable internal conditions throughout the year whilst reducing operational energy demand.

Construction Waste Management and Diversion from Landfill

Policy context:

- Policy BE1 (Built Environment)

Construction waste will be managed in accordance with the waste hierarchy. A proportionate Site Waste Management Plan (SWMP) will be implemented by the contractor, focusing on waste minimisation, segregation, and recycling.

Design efficiency, accurate material ordering, and off-site fabrication (where feasible) will be used to reduce waste generation. Segregated waste streams will be provided on site, and licensed contractors will be used to ensure compliance.

Targets:

- Non-hazardous construction waste diverted from landfill: $\geq 95\%$
- Excavated material reused on site (where feasible): Target $\geq 50\%$

Operational Waste Management and Diversion from Landfill

Policy context:

- Policy BE1 (Built Environment)

The development provides adequate internal and external waste storage facilities to support Hillingdon Council's collection requirements. Clearly defined and accessible storage areas are provided for residual waste and dry mixed recycling, enabling high participation rates.

The waste strategy is designed to be simple, legible, and proportionate to the scale of the scheme, ensuring long-term usability and compliance with local authority requirements.

The design of the apartments includes provision for clear waste segregation areas and energy sub-metering, enabling future occupants to monitor and manage their own environmental performance.

Targets:

- Segregated storage for operational and recyclable waste
- Space allocation compliant with Hillingdon Council waste guidance

Ecology and Biodiversity

Policy context:

- Policy EM7 (Biodiversity and Geological Conservation)
- Policy DMEI 1 (Living Walls and Roofs and Onsite Vegetation)
- London Plan Policy G5 (Urban Greening)

The development will seek to protect and enhance biodiversity wherever opportunities arise through site improvements and landscaping proposals associated with the change of use.

Where appropriate, planting schemes will utilise native and pollinator-friendly species to support local biodiversity and strengthen ecological value. Existing vegetation and landscape features will be retained where practicable and integrated into the overall site design.

The scheme will seek to deliver biodiversity enhancements proportionate to the scale and nature of the development while contributing positively to the local environment.

Sustainable Modes of Transportation

Policy context:

- Policy EM1, Policy T1 (Accessible Local Destinations)
- London Plan sustainable transport objectives.

Policy EM1, Policy T1 (Accessible Local Destinations) and London Plan transport policies encourage developments to promote sustainable travel opportunities and reduce reliance on private vehicle use. The site benefits from access to existing public transport infrastructure and established pedestrian routes. The development therefore supports the use of:

- Walking.
- Cycling.
- Public transport.
- Low-emission transport options.

Where required by the Local Planning Authority, EV charging infrastructure will be incorporated to support the transition towards lower-emission transport.

The promotion of sustainable transport modes will help reduce transport-related emissions associated with the operation of the educational facility.

Climate Change Adaptation, Overheating and Resilience

Policy context:

- Policy EM1 (Climate Change Adaptation and Mitigation)

The development incorporates measures to improve resilience to future climate conditions, including rising temperatures and more frequent extreme weather events.

A fabric-first approach will improve the thermal performance of the building and help regulate internal temperatures throughout the year. Existing and replacement glazing will be selected to balance daylight provision with solar gain control, helping to manage overheating risk within teaching spaces.

Overheating has been considered and will consider the results of the acoustic report, determining whether natural ventilation can be maximised, due to the use class of the development, occupancy comfort expectations are elevated and usage of active cooling measures is expected.

Flood Risk and Sustainable Drainage (SuDS)

Policy context:

- Policy EM1 (Climate Change Adaptation and Mitigation)
- Policy EM6 (Flood Risk Management)
- Policy DMEI 10 (Water Management, Efficiency and Quality)

The site does not fall within any flood zone and is considered to be at very low risk of both fluvial and surface water flooding. The development will incorporate SuDS strategies to manage surface water runoff and reduce flood risk both on and off site. Runoff rates will be restricted to pre-development rates or better where feasible.

These measures improve surface water management, enhance site resilience to extreme rainfall events, and contribute to wider climate adaptation objectives.

Indicative targets:

- Surface water runoff: pre-development or better
- SuDS features: Integrated within hard and soft landscaping

Conclusion

This Energy and Sustainability Statement has been prepared in support of the proposed development at Mondial Way, Harlington, Greater London, UB3 5AR, comprising a two-storey rooftop extension providing 28 additional hotel rooms (Use Class C1).

Fabric First Approach

The development adopts a fabric-first strategy through the incorporation of high-performance building fabric, improved air tightness, thermally efficient glazing, reduced thermal bridging and energy-efficient lighting.

These measures minimise operational energy demand before the implementation of low and zero carbon technologies, ensuring the development follows the requirements of the London Energy Hierarchy and supports long-term operational efficiency.

The proposed fabric standards will improve occupant comfort whilst reducing heating and cooling loads throughout the life of the building.

Low and Zero Carbon Technologies

A combination of highly efficient ASHP systems and Solar Photovoltaic (PV) panels has been identified as the most appropriate strategy for the development, providing renewable energy generation and supporting reductions in regulated carbon emissions.

Sustainability

The development delivers a policy-compliant sustainability strategy incorporating water-efficient design, responsible low-carbon material selection, and high standards of occupant health and wellbeing. Construction and operational waste are managed in line with the waste hierarchy with high levels of diversion from landfill. Biodiversity and urban greening are enhanced through integrated green infrastructure, while sustainable transport is prioritised through excellent public transport access, cycle provision, minimising reliance on private car use.

Summary & Policy Compliance

The measures outlined will enable the development to significantly reduce energy consumption and carbon emissions, going well beyond typical expectations and demonstrating a strong commitment to energy reduction. The 46% reduction in CO₂ emissions against a Part L 2021 baseline far exceeds the requirements for developments of this nature.

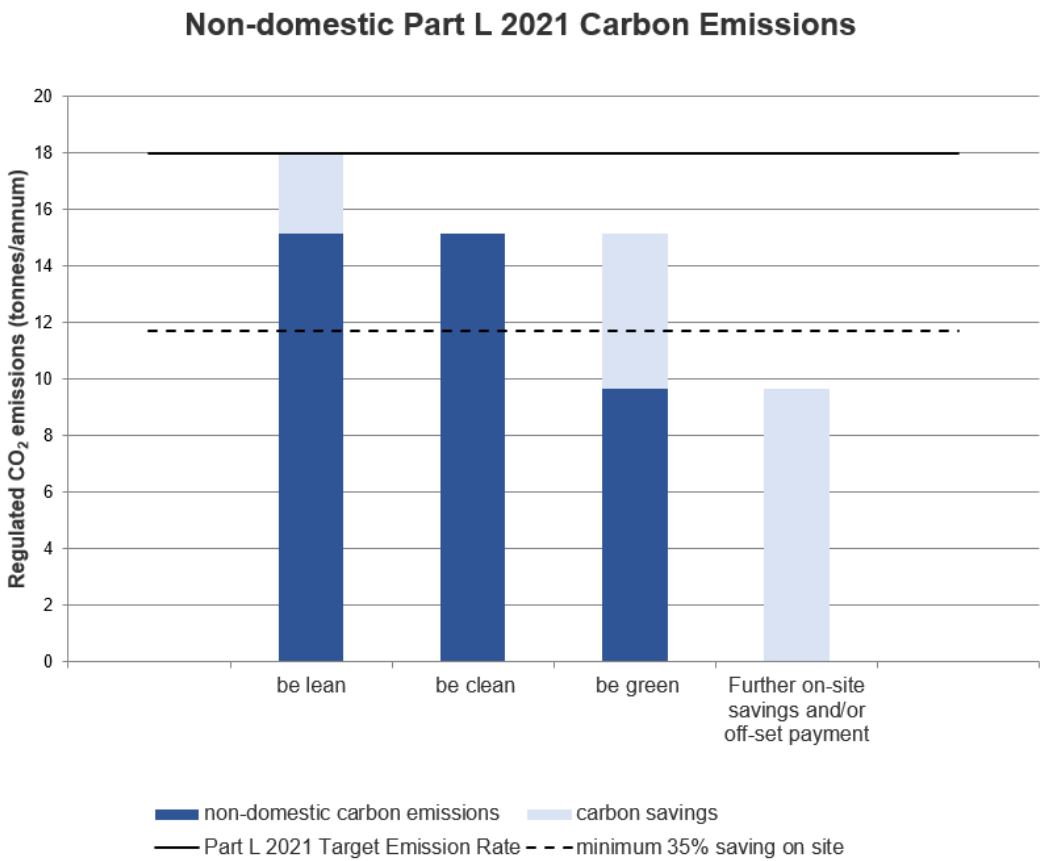
STRATEGY SUMMARY

THE DEVELOPMENT ADOPTS A FABRIC-FIRST, LOW-CARBON STRATEGY, INCORPORATING HIGHLY INSULATED AND AIRTIGHT BUILDINGS, HIGH-PERFORMANCE GLAZING, AND LED LIGHTING TO MINIMISE ENERGY DEMAND AND REDUCE OPERATIONAL CARBON EMISSIONS. HEATING AND HOT WATER WILL BE DELIVERED VIA AIR SOURCE HEAT PUMPS SUPPORTED WITH PV. COMBINED; THESE HIERARCHICAL MEASURES ARE ESTIMATED TO ACHIEVE A **46% REDUCTION** IN REGULATED CO₂ EMISSIONS.

THE DEVELOPMENT DELIVERS A POLICY-EXCEEDING SUSTAINABILITY STRATEGY INCORPORATING WATER-EFFICIENT DESIGN, RESPONSIBLE LOW-CARBON MATERIAL SELECTION, AND HIGH STANDARDS OF OCCUPANT HEALTH AND WELLBEING.

TABLE 2 & FIGURE 3: REGULATED CARBON DIOXIDE SAVINGS FROM EACH STAGE OF THE ENERGY HIERARCHY

	Regulated non-residential carbon dioxide savings	
	(Tonnes CO ₂ per annum)	(%)
Be lean: savings from energy demand reduction	2.9	16%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	5.5	30%
Total Cumulative Savings	8.3	46%
Annual savings from off-set payment	9.7	-
	(Tonnes CO ₂)	
Cumulative savings for off-set payment	290	-
Cash in-lieu contribution (£)	27,564	



Appendix A - London GLA Template

NON-RESIDENTIAL CO ₂ ANALYSIS (PART L2)																							
				Baseline		'Be Lean'	'Be Clean'	'Be Green'					Baseline		'Be Lean'			'Be Clean'			'Be Green'		
Building Use	Model Area	Number of units	Total area represented by model	BRUKL TER	BRUKL Displaced electricity (-)	BRUKL BER	BRUKL BER	BRUKL BER					Part L 2021 CO ₂ emissions	Energy saving/generation technologies	Part L 2021 CO ₂ emissions	Part L 2021 CO ₂ emissions with Notional PV savings Included	'Be Lean' savings	Part L 2021 CO ₂ emissions	Part L 2021 CO ₂ emissions with Notional PV savings Included	'Be Clean' savings	Part L 2021 CO ₂ emissions	'Be Green' savings	
	(m ²)		(m ²)	(kgCO ₂ / m ²)	(kWh / m ²)	(kgCO ₂ / m ²)	(kgCO ₂ / m ²)	(kgCO ₂ / m ²)					(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	(kgCO ₂ p.a.)	
Hotel	1150	1	1150	15.66	0.00	13.16	13.16	8.41					18.009	0.00	15.134.00	15.134	2.875	15.134	15.134	0	9.672	5.463	
Sum				1	1,150	15.7	0.0	13.2	13.2	8.4			18.009	0	15.134	15.134	2.875	15.134	15.134	0	9.672	5.463	
SITE-WIDE ENERGY CONSUMPTION AND CO ₂ ANALYSIS																							
Total Sum				1,150	-	-	-	-	-					18.009	0	15.134	15.134	2.875	15.134	15.134	0	9.672	5.463

Appendix D- Lean & Green BRULKs

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Mondial Way - Lean Stage

As designed

Date: Thu Aug 20 09:29:46 2026

Administrative information

Building Details

Address: Harlington, Greater London, London, UB3 5AR

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.2

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.31

BRUKL compliance module version: v6.1.e.1

Certifier details

Name: Oliver Butler

Telephone number: 07984796826

Address: Old Town Hall, 30 Tweedy Road, Bromley,
London, BR1 3FE

Foundation area [m²]: 573.45

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m²annum	15.66
Building CO ₂ emission rate (BER), kgCO ₂ /m²annum	13.16
Target primary energy rate (TPER), kWh _{pe} /m²annum	169.9
Building primary energy rate (BPER), kWh _{pe} /m²annum	142.66
Do the building's emission and primary energy rates exceed the targets?	BER <= TER BPER <= TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.15	0.15	MW000003_W5_A0
Floors	0.18	0.13	1.09	MW00004E_F_A1
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.1	0.1	MW000000_C
Windows** and roof windows	1.6	1.2	1.2	MW000000_W1_O0
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
U _a -Limit = Limiting area-weighted average U-values [W/(m²K)] U _a -Calc = Calculated area-weighted average U-values [W/(m²K)] U _i -Calc = Calculated maximum individual element U-values [W/(m²K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m²K NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Mondial Way - Green Stage

As designed

Date: Tue Aug 25 09:02:57 2026

Administrative information

Building Details

Address: Harlington, Greater London, London, UB3 5AR

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.2

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.31

BRUKL compliance module version: v6.1.e.1

Certifier details

Name: Oliver Butler

Telephone number: 07984796826

Address: Old Town Hall, 30 Tweedy Road, Bromley,
London, BR1 3FE

Foundation area [m²]: 573.45

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m²annum	15.66
Building CO ₂ emission rate (BER), kgCO ₂ /m²annum	8.41
Target primary energy rate (TPER), kWh _{pe} /m²annum	169.9
Building primary energy rate (BPER), kWh _{pe} /m²annum	90.21
Do the building's emission and primary energy rates exceed the targets?	BER <= TER BPER <= TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.15	0.15	MW000003_W5_A0
Floors	0.18	0.13	1.09	MW00004E_F_A1
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.1	0.1	MW000000_C
Windows** and roof windows	1.6	1.2	1.2	MW000000_W1_O0
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
U _a -Limit = Limiting area-weighted average U-values [W/(m²K)] U _a -Calc = Calculated area-weighted average U-values [W/(m²K)] U _i -Calc = Calculated maximum individual element U-values [W/(m²K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m²K NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3



Building a brighter, more sustainable environment.



Consult Sustainability Ltd
Clockwise, Old Town Hall
30 Tweedy Road
Bromley, Kent
BR1 3FE

☎ 01689 497 852
✉ info@consultsustain.co.uk
www.consultsustain.co.uk
Company number 13524795
Trading as Consult Sustain

