



**FORMER JOHN LEWIS DEPOT, LETCOMBE STREET, READING
(ALSO KNOWN AS JLP MILL LANE)**

ENERGY STATEMENT

JULY 2025

Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	27/06/2025	Updated scheme	V. Petrone	J. Drane	M. Barnes
02	03/07/2025	Final Issue	V. Petrone	J. Drane	M. Barnes

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Executive summary.

This document has been prepared on behalf of John Lewis Partnership BTR Ltd, hereafter referred to as the 'Applicant', in support of the planning application for John Lewis, Letcombe Street, Reading, RG1 2HN, hereafter referred to as the 'Proposed Development'.

This strategy summarises the regulatory and planning policies applicable to the Proposed Development and benchmarks the performance of the Proposed Development in terms of energy and overheating against these targets.

Proposed development

The current live planning application has been subject to consultation and detailed engagement with RBC planning officers / members, statutory consultees, neighbours and local residents. In response to the feedback received, the design of the proposed development has been amended and revised plans and additional information is submitted for determination as part of the current planning application. The additional information submitted should be read in conjunction with information previously submitted in August 2024.

The Proposed Development seeks the *"Demolition of the existing building and redevelopment of the site comprising erection of a new building for up to 170 build to rent residential dwellings (Use Class C3) together with flexible community space (Use Class F1/F2), residents' facilities, landscaping, public realm, amenity space and cycle parking"*.

The development will provide high-quality new homes owned and managed by the Applicant. This proposes a mix of homes, including affordable housing and a high proportion of family homes, within an attractive and sustainable residential environment. The amenities will include flexible co-working space, gym/fitness studio, communal lounge and dining areas, and a publicly accessible landscaped garden space. The Proposed Development has high sustainability ambitions, including low carbon design and operation.

Approach to energy

The Energy Strategy has been developed using a 'fabric first' approach through the 'be lean', 'be clean', 'be green' energy hierarchy.

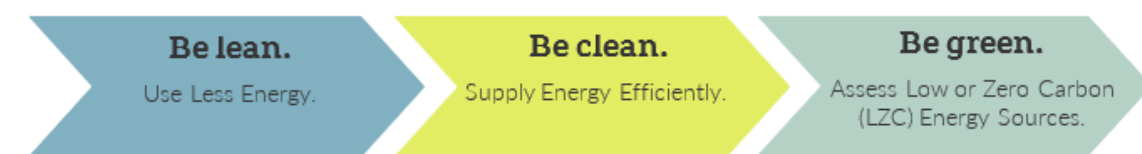


Figure 1: Energy hierarchy.

As part of the proposed updates, the energy strategy has shifted from a centralised Air Source Heat Pump (ASHP) network to individual in-dwelling Exhaust Air Heat Pumps (EAHPs). This change has improved Part L1 performance, with higher SCOP values and elimination of distribution losses. Additionally, removing the centralised system enhances compliance with Part O and reduces overall energy costs for residents.

Be Lean – Passive Design and Energy Efficiency

The following passive design and energy efficiency measures have been incorporated into the design:

- Highly insulated building fabric with careful attention to optimise glazing ratios.
- Airtight construction (i.e. low air permeability) in the development.
- Highly efficient mechanical and electrical systems.

Be Clean – Supplying Energy Efficiently

Since 2022, RBC and its partners have been exploring the potential for a district heat network across the borough and they now engaged in Detailed Project Development for an initial phase of the proposed network.

The project team has engaged with Ben Burfoot, Sustainability Manager at RBC, to discuss the potential integration of the Reading District Heating scheme. The scheme offers a long-term opportunity for decarbonised heat supply through technologies such as water source, ground source and air source heat pumps. However, due to the scheme's extended implementation timeline, uncertainty around connection infrastructure and costs and the misalignment between the project's delivery programme and the anticipated rollout of the district network, there is a requirement for our scheme to move forward with our proposed heating solution. Correspondence on these discussions is provided in Appendix B.

It is therefore not proposed to connect to external district energy networks or make provision for a future connection.

On-site Combined Heat and Power (CHP) is not proposed due to limited carbon reduction potential in light of recent grid decarbonisation and the adverse impact on air quality from flue emissions. Therefore, no additional carbon reductions are anticipated at the clean stage.

Be Green – Low and Zero (LZC) Technologies

The heating and cooling energy for the Proposed Development will be generated via an 'all electric / combustion-free' engineered solution utilising Exhaust Air Heat Pumps (EAHPs) serving each individual dwellings heating and hot water. In addition, the provision of solar photovoltaic (PV) panels will be provided on available roof space with 100m² allocated to the Amenity L2 calculation.

Both heat pumps and PV are a form of low and zero carbon technology, therefore the output from these form part of the third stage of the energy hierarchy.

Site Wide Energy assessment outcome

The Proposed Development has been assessed for CO₂ emissions using Building Regulations Part L 2021 compliant software and methodology. Regulated emissions were determined for the site and savings are depicted in the figure below. This shows a site total percentage reduction in regulated emissions of 69.3% after incorporation of heat pumps and PV.

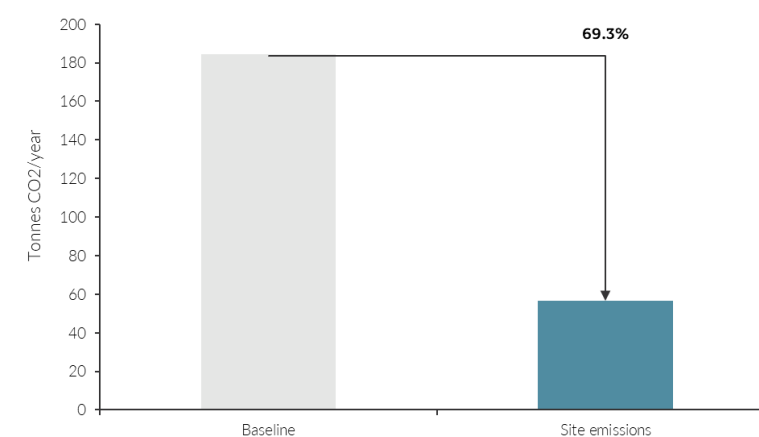


Figure 2: Site wide (Domestic and Non-Domestic) energy assessment results.

Approach to overheating

The Proposed Development has been assessed in line with Building Regulations Part O (2021) to reduce potential overheating risk and reliance on air conditioning systems. A 'cooling hierarchy' was used to inform the design to minimise heat gain and overheating risk.

All of the sample dwellings tested comply with the Part O criteria and will be provided with mechanical ventilation with heat recovery with a boost operation mode and a cooling coil to provide trim cooling through tempered air. In addition, residents will be provided with guidance on how to reduce the overheating risk within their homes.

1. Introduction.

1.1 Purpose of the report

This document has been prepared on behalf of John Lewis Partnership BTR Ltd, hereafter referred to as the ‘Applicant’, in support of the planning application for John Lewis, Letcombe Street, hereafter referred to as the ‘Proposed Development’.

This energy statement has been prepared to demonstrate how the energy related aspects of the Proposed Development meet the requirements of pertinent national and local planning policy. Consideration has been given to the following in line with Reading planning policy requirements:

- Energy efficiency of the building;
- Baseline annual predicted energy demand of the development (regulated and unregulated);
- Baseline annual predicted carbon emissions of the development (regulated and unregulated), The Target Emission Rate (TER);
- The contribution of each proposed renewable energy technology;
- Cost information of technically feasible low or zero carbon renewable technologies, including additional insulation, low carbon decentralised energy, heat pumps etc;
- Feasibility of district or community heating;
- Summary of the benefits of various energy technologies;
- The total estimated reduction in the development’s baseline carbon and/or energy emissions.

The statement includes a summary of the overheating assessment work undertaken to ensure occupant thermal comfort is achieved within dwellings and overheating risk minimised.

1.2 Description of development

The Proposed Development comprises demolition of the existing building and redevelopment of the site comprising erection of a new building for up to 170 build to rent residential dwellings (Use Class C3) together with flexible community space (Use Class F1/F2), residents’ facilities, landscaping, public realm, amenity space and cycle parking.

The Proposed Development has high sustainability ambitions, including low carbon design and operation, improved sustainable travel provision, and increased landscaping to improve local biodiversity.

1.3 Site location

The site is located on the edge of the town centre in Central Reading within close proximity of key local services and facilities including The Oracle shopping centre opposite, the Premier Inn hotel adjacent to the west and Reading railway station located approximately 1 km to the north.

The site itself is bound by Mill Lane and the A329 to the north, Letcombe Street to the south-west and Crossland Road to the south-east, from which the Site is accessed. The site currently comprises the now vacant John Lewis building with associated car parking and servicing areas to the north-east and south-west of the building. Please refer to Figure 3 for further site context.

1.4 Proposed change to the Energy Strategy (from the previous scheme).

As part of the proposed updates, the energy strategy has shifted from a centralised Air Source Heat Pump (ASHP) network to individual in-dwelling Exhaust Air Heat Pumps (EAHPs). This change has improved Part L1 performance, with higher SCOP values and elimination of distribution losses. Additionally, removing the centralised system enhances compliance with Part O and reduces overall energy costs for residents.

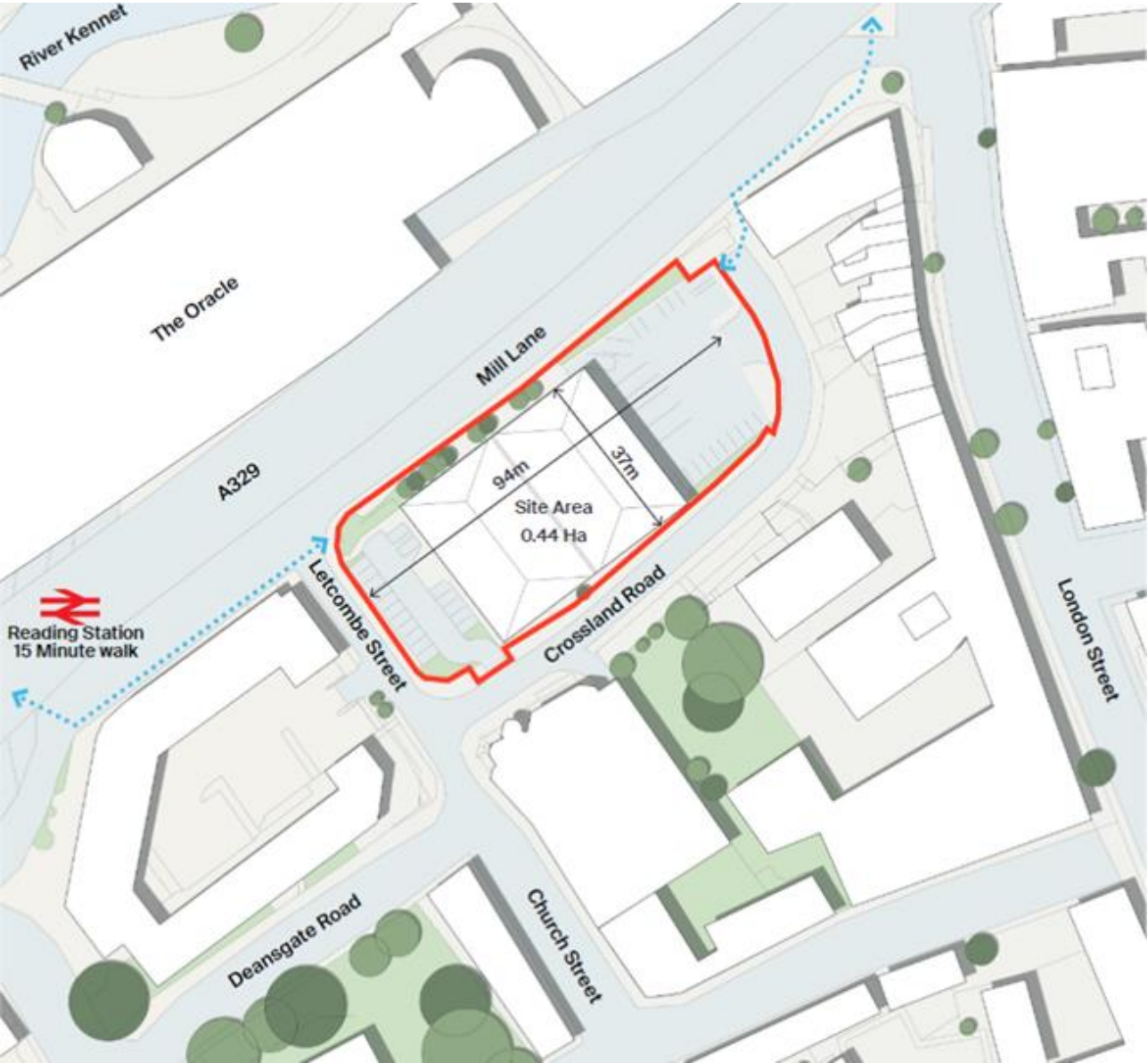


Figure 3: Site location.

The table below sets out the floor areas modelled and site total GIA. Modelled floor areas include apartment NIA and heated/occupied spaces only.

Table 1: Area Summary.

	Floor Area m ² (GIA)
Dwellings	13,405
Amenity areas	444
Site Total	15,119

2. Policy context and drivers.

The strategy will respond first and foremost to the Universal Challenges of the Climate Emergency. National and local policy will shape the baseline of performance alongside the Applicant's own sustainability aspirations which will be relied on to set key focus areas and commitments which meet and/or exceed local policy requirements. The John Lewis Partnership's 'Responsible Property Framework' is based around the five themes of climate change, health & wellbeing, nature & biodiversity, socio-economic, and resource use, and the UK Green Building Council philosophy: *A built environment that enables people and planet to thrive.*

2.1 National policy

National Planning Policy Framework

The National Planning Policy Framework (December 2024) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other developments can be produced.

Building Regulations: Approved Document Part L (2021)

Approved Document Part L (2021, England edition), (ADL 2021), is the part of the Building Regulations relating to the conservation of fuel and power in buildings. ADL 2021 has two parts, Part L1 relates to dwellings and Part L2 relates to buildings other than dwellings.

Part L of the Building Regulations is the mechanism by which government is driving reductions in the regulated CO₂ emissions from refurbished, change of use and new buildings. For new buildings ADL 2021 has four performance metrics as follows:

- Primary energy target;
- CO₂ emissions target;
- Fabric Energy Efficiency (FEE) target;
- Minimum standards for fabric and fixed building services.

Building Regulations: Approved Document Part O (2021)

Approved Document O (introduced in December 2021) addressed overheating risk within dwellings. It sets out the requirement for overheating to be considered in all new residential buildings in England in line with the CIBSE TM59 methodology. The key requirements are as follows:

- Reasonable provision must be made to limit unwanted solar gains in summer and provide an adequate means to remove heat from the indoor environment.
- Mechanical cooling may only be used where insufficient heat is capable of being removed from the indoor environment without it.
- Internal blinds cannot be used to help achieve compliance as part of the dynamic assessment.
- Information must be provided to the building owner/user at handover to allow them to use the overheating mitigation strategy effectively.

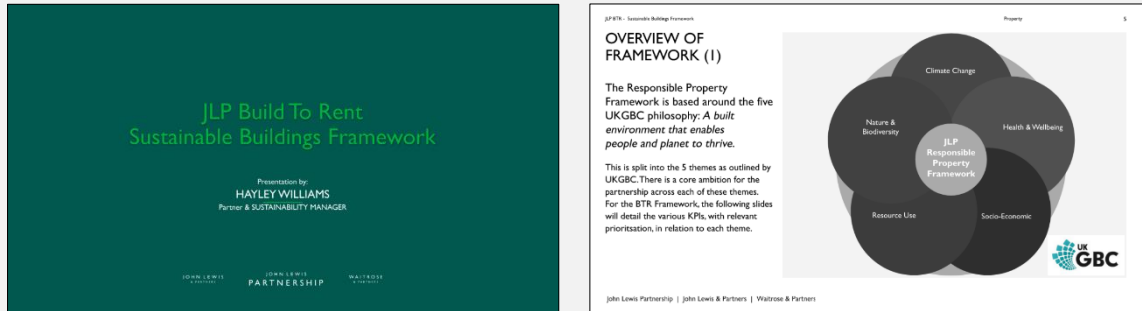
NATIONAL POLICY



LOCAL POLICY



APPLICANT'S FRAMEWORK



2.2 Local policy

Reading Borough Council Local Plan

The Reading Borough Local Plan was adopted in November 2019 and provides planning policies for development in Reading up to 2036. The Local Plan replaces previous development plans, the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document, which no longer apply. The relevant policy requirements to the Proposed Development's energy strategy have been summarised in the list below:

– CC1: Presumption in favour of sustainable development

A positive approach to considering development proposals will be taken that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework (NPPF). Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise and that accord with the policies in the development plan.

– CC2: Sustainable design and construction

Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials, and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

– CC3: Adaptation to climate change

All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into development:

- Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements.
- Proposals involving both new and existing buildings shall demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls, etc;
- Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions; and
- All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change

– CC4: Decentralised energy

Developments of the sizes set out below shall demonstrate how consideration has been given to securing energy for the development from a decentralised energy source.

Any development of more than 20 dwellings shall consider the inclusion of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision.

– H5: Standards for new homes

New build housing should be built to the following standards, unless it can be clearly demonstrated that this would render a development unviable:

- All major new-build residential development should be designed to achieve zero carbon homes.
- If homes are not designed to be carbon neutral, they must at least achieve a 35% improvement in dwelling emission rates compared to the 2013 Building Regulations. Additionally, developers will be required to contribute £1,800 per tonne for carbon offsetting in Reading, based on a rate of £60 per tonne over 30 years.
- All other housing should meet a standard equivalent to a 19% improvement in dwelling emission rates over the target emission rate, aligning with the former Code for Sustainable Homes Level 4. In cases where this 19% reduction is not achievable onsite, carbon offsetting through planning contributions might be permitted, with further details to be specified in the Local Plan.

Reading Sustainable Design and Construction SPD (2019)

The Reading Council Sustainable Design and Construction Supplementary Planning Document is intended to guide developers and decision-makers on the implementation of key sustainability policies set out in the Reading Local Plan, namely CC2-CC5, EN18 and H5. It brings together relevant national guidance and provides practical advice on forms of sustainable design and construction, as well as waste minimisation that will meet these policy requirements.

The SPD requires an Energy Statement to be submitted with all major developments. Energy Statements should:

- Demonstrate how the energy related aspects of the proposed development actually meet the requirement of policies CC2, CC4 and H5.
- Provide the specification for meeting the required energy targets including a calculation of the carbon emissions for a development. These shall be calculated as detailed in part L of the building regulations and the relevant BREEAM Standard or Zero Carbon Homes, where required.
- Explain how the carbon dioxide reductions will be achieved and importantly, which renewable energy technologies/low carbon energy sources have been considered and dismissed, clearly explaining the reasons for this.
- State the S106 contribution required to achieve zero carbon homes in line with the stated calculation.

The sustainable design checklist for residential developments for 'Energy and carbon' is as follows.

Aim: To conserve energy, in particular carbon dioxide emissions and maximise the use of energy efficient techniques.

1. How has the development been designed to optimise the use of the energy from the sun and limit heat losses?
2. How has the development been designed to optimise natural daylighting, energy efficient lighting, external lighting and natural ventilation?
3. How will the design of the building make efficient use of energy? (e.g. use of thermally massive materials, levels of insulation, energy efficient white goods and use of green/ brown roofs etc.).
4. Has local energy generation from renewables and/or decentralised energy been considered as part of the scheme?
5. How have cycle storage facilities been considered?
6. Does the development meet the requirements of policies H5? Is this clearly illustrated?
7. Is a Section 106 contribution required? If so, what amount?

2.3 JLP Responsible Property Framework

The Applicant's Responsible Property Framework is based around the UKGBC philosophy: *A built environment that enables people and planet to thrive*. The framework sets out a series of sustainability aspirations against which new developments are monitored to maximise the sustainability principles of the build to rent schemes.

An overview of the framework has been provided in *Figure 4*. This is split into the 5 themes as outlined by the UKGBC. The approach will be embraced for the development as far as practical as it promotes a holistic, interdisciplinary approach to sustainability.

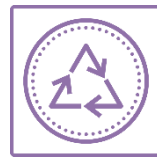
Of the 5 core themes, the most pertinent to the Proposed Development's approach to energy are within the "Climate Change" and "Resource Use" theme. These have been detailed further below.



Climate Change.

Reduce our carbon emissions, both operational and inherent carbon in the fabric of our buildings.

- All developments will be designed and operate as zero carbon. Low & zero carbon technologies will be utilised to heat and power the development, with a non-combustion approach to improve local air quality.
- Energy consumption will be minimised through efficient fabric and systems, with Energy Use Intensity predicted and tracked throughout the design stage.
- Lessons learnt should be shared between projects maximising efficiency and reducing overall impact of the portfolio.



Resource Use.

Reduce our requirement for raw materials, reviewing our material selection and opportunities for recycling and reuse.

- The developments will support the transition to a low and resource efficient future.
- Durability and designing for resilience should also be key considerations in any material choices.
- Water will be used efficiently through all developments, protecting local water resources, and reducing the risk of flooding and drought.

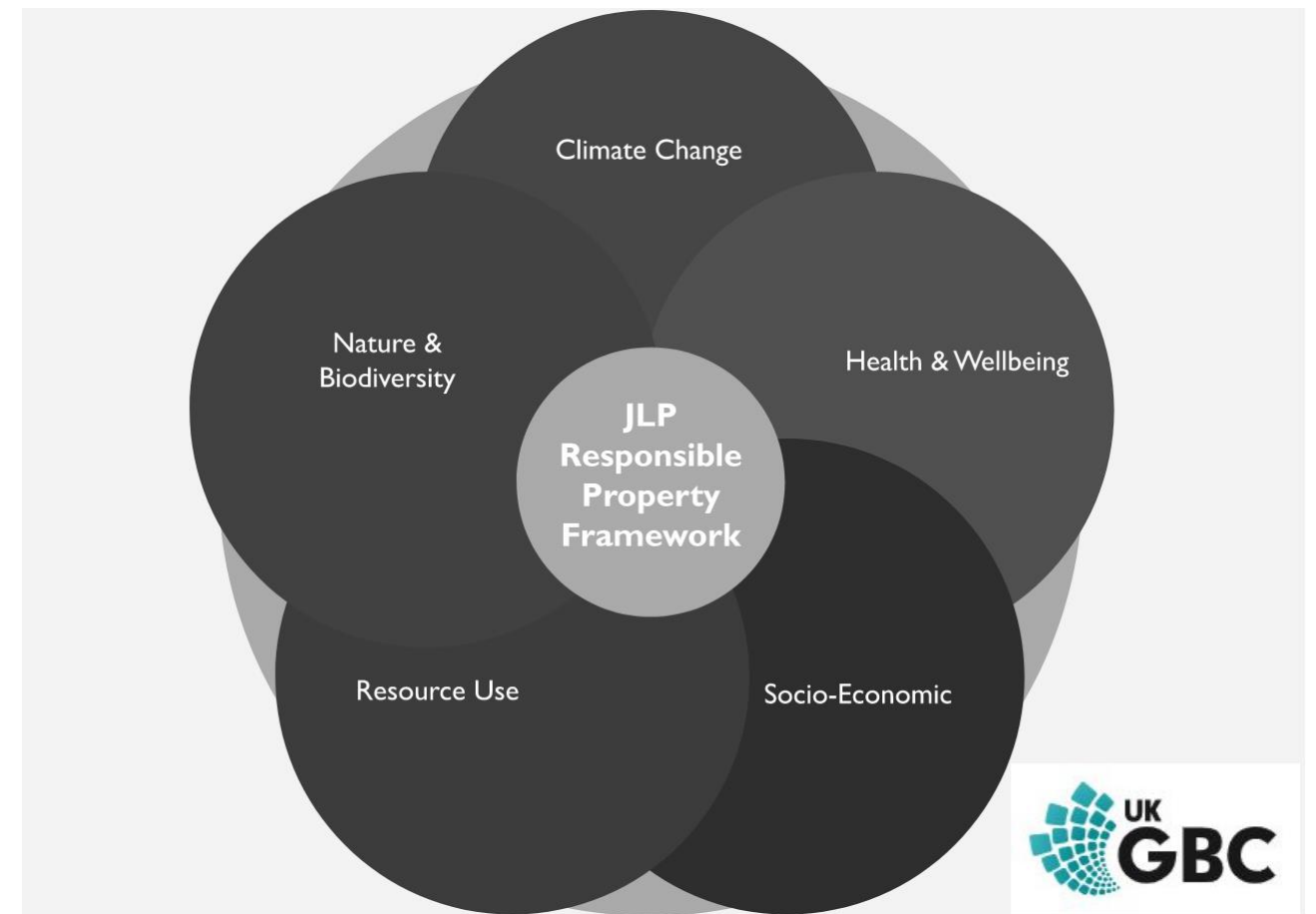


Figure 4: JLP Responsible Property Framework, in alignment with UK GBC

3. Approach to energy.

3.1 The Energy Hierarchy

The energy strategy for the Proposed Development has adopted the energy hierarchy approach to reduce demand for energy prior to the consideration of integrating Low or Zero Carbon (LZC) technologies, since controlling demand is the most effective way of reducing energy requirements and CO₂ emissions.

Lean measures are adopted first, ensuring energy demand is minimised through good fabric performance, orientation, optimised glazing ratios and efficient services provision. Opportunities to connect to district heat network or community heating and cooling is then explored. Finally, the feasibility of low or zero carbon technologies are investigated, and appropriate technologies adopted for the Proposed Development.

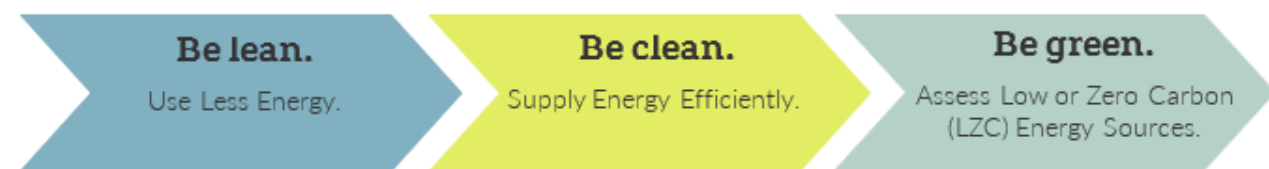


Figure 5: Energy Hierarchy Process

The following sections detail the passive design and energy efficiency measures that have been considered, and those that will be implemented at the Proposed Development. The effectiveness of the adopted measures have been assessed against a Building Regulations compliant baseline referred to as the notional dwelling or notional building. The percentage reduction for each stage is reported for regulated energy.

Currently, unregulated energy is not included within the Part L assessments but can form a significant part of overall energy consumption and CO₂ emissions from developments.

Reductions in unregulated energy use will be implemented where possible, with focus especially on the laundry white goods, which are expected to account for the largest contribution to these.

Further, the Proposed Development will endeavour to include the use of energy efficient appliances such as:

- A / A+ and above rated white goods in the Production Office Buildings and Reception / Admin building (EU Energy Efficiency Labelling Scheme)
- Energy star rated small power equipment
- Energy efficient lifts
- Voltage optimisation and power factor correction.

3.2 Definitions

The following definitions should be understood throughout this strategy:

- Energy demand – the ‘room-side’ amount of energy which must be input to a space to achieve comfortable conditions. In the context of space heating, this is the amount of heat which is emitted by a radiator, or other heat delivery mechanism.
- Energy consumption – the ‘system-side’ requirement for energy (fuel). In the context of a space heating system using a gas boiler, this is the amount of energy combusted (e.g. gas) to generate useful heat (i.e. the energy demand).
- Regulated CO₂ emissions – the CO₂ emissions emitted as a result of the combustion of fuel, or ‘consumption’ of electricity from the grid, associated with regulated sources (those controlled by Part L of the Building Regulations).
- Unregulated energy includes small power electricity use (computers, plug in devices) and catering energy consumption.

3.3 Disclaimer

The appraisals within this statement are based on Part L calculation methodology and should not be understood as a predictive assessment of likely future energy requirements or otherwise. Occupants may operate their systems differently, and / or the weather may be different from the assumptions made by Part L approved calculation methods, leading to differing energy consumption in practice.

3.4 Modelling Sample.

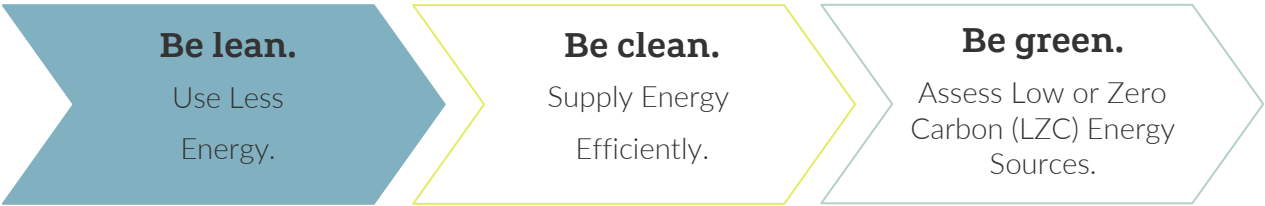
The set of sample dwellings for the SAP and Overheating modelling is provided in Appendix A.

All of the non-residential area has been modelled to assess compliance with Part L2.

4. Be lean.

Passive design and energy efficiency measures form the basis for the reduction in overall energy demand and CO₂ emissions for the Proposed Development. This energy strategy aims to reduce the energy demand initially by optimising the envelope and building services within the development.

These are the most robust and effective measures for reducing CO₂ emissions as the performance of the solutions, such as wall insulation, is unlikely to deteriorate significantly with time, or be subject to change by future property owners. In this sense, it is possible to have confidence that the benefits these measures provide will continue at a similar level for the duration of their installation.



4.1 Residential

4.1.1 Passive design

Passive Design measures are those which reduce the demand for energy within buildings, without consuming energy in the process.

	Fabric performance. A ‘fabric first’ approach has been taken in order to reduce the energy demand and CO₂ emissions from the Proposed Development. Passive design measures are those which reduce the demand for energy within buildings, without consuming energy in the process. These are the most robust and effective measures for reducing CO₂ emissions as the performance of the solutions, such as wall insulation, is unlikely to deteriorate significantly with time, or be subject to change by future property owners. In this sense, it is possible to have confidence that the benefits these measures will continue at a similar level for the duration of their installation.
	Natural daylight and lighting. The development will be provided with low-energy, efficient LED light fittings throughout. The lighting specification for the Proposed Development will be carried out in conjunction with lighting control systems, as appropriate on a zone-by-zone basis. External lighting will also be energy efficient and will be linked to daylight sensors and / or presence detectors to prevent unnecessary use. As well as reduced energy requirement that will be achieved by implementing these strategies, the contribution to the cooling requirements and internal heat gains will be reduced. This will further reduce the total energy requirements and CO₂ emissions of the Proposed Development.

Table 2: Building fabric parameters for the Proposed Development- Dwellings.

Building fabric element	Unit	Parameter
Roof U-value	W/(m²K)	0.10
Ground/exposed floor U-value	W/(m²K)	0.12
External opaque wall U-value	W/(m²K)	0.15
Sheltered wall	W/(m²K)	0.15
Window U-value, including framing, glazing and spacers.	W/(m²K)	1.20
Window g-value		0.35
Window frame factor		18%
Door U-value (non-glazed entrance doors and spandrel panels)	W/(m²K)	1.00
Air Permeability	m³/h/m²@50Pa	2.50
Thermal Bridging γ-value	Notional (2021) psi values	

4.1.2 Building services efficiency measures

	Space heating and cooling Exhaust Air Heat Pumps (EAHPs) have been considered serving each individual dwellings heating and hot water. Trim cooling will be provided for Part O compliance via Vent Axia Sentinel Econiq.
	Mechanical ventilation. All dwelling areas will be provided with flow rates in line with HQM requirements. All fresh air requirements for ventilation will be via mechanical means to enable incorporation of high efficiency heat recovery via Vent Axia Sentinel Econiq. Openable windows are also provided for purge ventilation for use at occupants’ discretion. Providing fresh air minimises the risk of stale air and limits the risk of condensation and mould growth. Coupled to a heat exchanger, the warmth in extracted air can be recovered and delivered to the supply air. Thus, mechanical ventilation with heat recovery reduces space heating demand.
	Domestic hot water (DHW). All spaces will include the use of water-efficient fixtures and fittings including WCs with low flush volume, flow restrictors in the taps of wash hand basins, and aerated shower heads to limit overall water consumption in line with Building Regulations Part G and to meet 8 credits of HQM criteria ‘8.1 Water Efficiency’.

Table 3: Building services parameters for the Proposed Development - Dwellings.

Building services element	Unit	Parameter
<i>Ventilation</i>		
Mechanical ventilation present?		Yes – MVHR – located within heated envelope
Mechanical ventilation data type		Balanced mechanical ventilation with heat recovery
Specific Fan Power	W/(l/s)	0.65
MVHR Efficiency		90%
Ducts insulation		Rigid insulation
No. Fans		no additional fans to that integral to the MVHR
<i>Cooling</i>		
Cooling present?		Yes- cooling module fitted on the MVHR unit
<i>Lighting</i>		
no. fittings		varies
Power	W	7
Capacity	lm	630
Efficacy	lm/W	90
<i>Space heating</i>		
Individual or communal?		Individual
Heating controls		2210 – Programmer, room thermostat and TRVs
Source		EAHP Ecodan 4kW.
Efficiency		As per specification document.
<i>Renewables</i>		
PV		no - PV allowance for the residential element.
Orientation		n/a
Elevation		n/a
Overshading		n/a
<i>Water and DHW</i>		
Water use	l/p/day	≤125
Shower flow rate	l/min	8
DHW Heat source		Same as space heating
Waste Water Heat Recovery		Excluded

4.2 Non-residential

4.2.1 Passive design

Passive Design measures are those which reduce the demand for energy within buildings, without consuming energy in the process.

	Fabric performance. A ‘fabric first’ approach has been taken in order to reduce the energy demand and CO₂ emissions from the Proposed Development. Passive design measures are those which reduce the demand for energy within buildings, without consuming energy in the process. These are the most robust and effective measures for reducing CO₂ emissions as the performance of the solutions, such as wall insulation, is unlikely to deteriorate significantly with time, or be subject to change by future property owners. In this sense, it is possible to have confidence that the benefits these measures will continue at a similar level for the duration of their installation.
	Natural daylight and lighting. The development will be provided with low-energy, efficient LED light fittings throughout. The lighting specification for the Proposed Development will be carried out in conjunction with lighting control systems, as appropriate on a zone-by-zone basis. External lighting will also be energy efficient and will be linked to daylight sensors and / or presence detectors to prevent unnecessary use. As well as reduced energy requirement that will be achieved by implementing these strategies, the contribution to the cooling requirements and internal heat gains will be reduced. This will further reduce the total energy requirements and CO₂ emissions of the Proposed Development.

Table 4: Building fabric parameters for the Proposed Development – Non-residential.

Building fabric element	Unit	Parameter
Roof U-value	W/(m²K)	0.10
Ground/exposed floor U-value	W/(m²K)	0.12
External opaque wall U-value	W/(m²K)	0.15
Window U-value, including framing, glazing and spacers.	W/(m²K)	1.20
Window g-value		0.35
Window frame factor		10%
Door U-value (non-glazed entrance doors and spandrel panels)	W/(m²K)	1.00
Air Permeability	m³/h/m²@50Pa	2.50
Thermal Bridging	%	25%

4.2.2 Building services efficiency measures

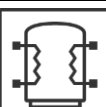
	Space heating and cooling Variable Refrigerant Flow (VRF) system will be serving the main front of the house rooms (office, lounge, gym, wellness, community...) that will be heated and cooled. WCs, perimeter corridors on ground floors will be heated through direct electric panels. All other areas will not be heating/cooled.
	Mechanical ventilation. MVHR systems will provide fresh air requirements to all front of the house rooms and to WCs areas. The rooms heat will be recovered to reduce the heating demand through heat exchangers (recuperators). Furthermore the system will be able to provide free cooling to reduce the cooling demand during summer-time.
	Domestic hot water (DHW). All spaces will be served by direct electric heaters.

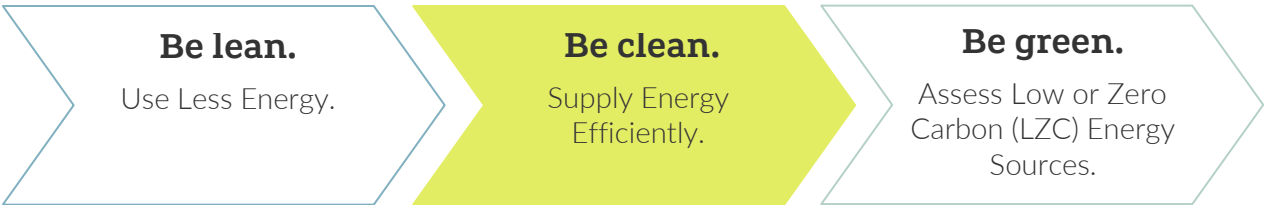
Table 5: Building services parameters for the Proposed Development – Non-residential area.

Building services element	Unit	Parameter
Ventilation		
Mechanical ventilation present?		Yes – MVHR within front of the house spaces and bathrooms
Mechanical ventilation		Zonal system with remote fan
Specific Fan Power	W/(l/s)	1.6 (front of the house room) 1.2 (WCs)
MVHR		Plate heat exchanger (recuperator)
MVHR Efficiency		85%
Local fans	W/(l/s)	FCU: 0.3
Cooling		
Cooling present?		Yes – VRF within front of the house spaces
Cooling system		Air source heat pump (VRF)
SEER		4.5
Lighting		
Light typology		LED
Light efficacy	Lm/W	≥120
Lighting control		AUTO-ON-OFF (WCs, toilets, stores, circulation) MAN-ON-AUTO-OFF (Offices) None (plant rooms, gym, wellness, lounge)
Photoelectric option		Daylight dimming – standalone sensor – from of the house rooms with access to daylight

Building services element	Unit	Parameter
		None – circulation, storage, plant, WCs
Parasitic power		≤0.1 W/m²
Space heating		
Heating present?		Yes, within front of the house rooms, WCs, perimeter ground floor circulation areas
Heating systems		VRF (ASHP) – front of the house Direct electric heating - WCs, perimeter ground floor circulation areas
Source		Electric
Efficiency		VRF (ASHP): 4.0 Direct electric heating: 1.0
Renewables		
PV	m²	100m² total array size, allocated to amenity areas
Orientation	°	127° clockwise from North
Elevation	°	30°
Efficiency	%	20%
Rated power (from IESVE)	kWdc	22.85
Overshading		None
Water and DHW		
DHW Heat source		Direct electric
Waste Water Heat Recovery		Excluded
Delivery efficiency	%	20

5. Be clean.

This stage of the energy hierarchy refers to the use of heat networks or on-site Combined Heat and Power (CHP) in order to provide energy and reducing consumption from the national grid and gas networks, through the generation of electricity, heating and cooling on-site.



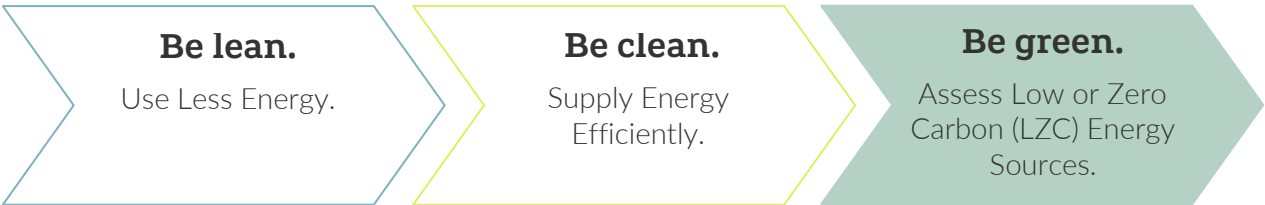
5.1 Network and technologies

In line with policy aspirations, the following sections summarise the considerations of the low-carbon energy supply measures that have been considered.

	Heat and energy networks.
	Offsite heating network Since 2022, RBC and its partners have been exploring the potential for a district heat network across the borough and they now engaged in Detailed Project Development for an initial phase of the proposed network. The project team has engaged with Ben Burfoot, Sustainability Manager at RBC, to discuss the potential integration of the Reading District Heating scheme. The scheme offers a long-term opportunity for decarbonised heat supply through technologies such as water source, ground source and air source heat pumps. However, due to the scheme’s extended implementation timeline, uncertainty around connection infrastructure and costs and the misalignment between the project’s delivery programme and the anticipated rollout of the district network, there is a requirement for our scheme to move forward with our proposed heating solution. More details are provided in Appendix B. Furthermore, district heating systems can result in significant distribution losses via the buried infrastructure associated with energy distribution (i.e. below ground pipework). Therefore, distributing heating energy over large distances is often less efficient in terms of carbon reduction than providing an efficient on-site generation strategy. It is therefore not proposed to connect to external district energy networks or make provision for a future connection.

6. Be green.

The ‘Be Green’ step of the energy hierarchy explores the feasibility of Low and Zero Carbon (LZC) technologies to allow for the production of renewable energy onsite in order to meet the remaining energy demand through LZC technologies as far as possible.



6.1 Domestic

6.1.1 Low and zero carbon (LZC) technology assessment.

Renewable or zero carbon technologies harness energy from the environment and convert this to a useful form. Many renewable technologies are available, however, not all of these are commercially viable or suitable.

	Photovoltaics. Photovoltaic (PV) panels harness energy from daylight and convert it into useful energy in the form of electricity. A PV system requires viable roof space in order for the array to be installed and function effectively. PV array is proposed on the development however it is being applied to the non-domestic element of the scheme to assist with compliance against Part L2.
	Solar thermal. Solar Thermal Panels are similar to PV Panels in that they harness energy from solar irradiation. This technology however converts solar into thermal energy that can offset the demand on hot water generation systems. Solar thermal systems are not proposed for the Development as preference will be to assign available roof space to a photovoltaic array.
	Heat pumps. Air source heat pumps (ASHP) use thermodynamic principles to convert heat from the air into useable heat within the building. Unlike some other sources of renewable energy, heat pumps do require energy (typically electricity or gas) to pump and compress refrigerant through the system. However, under the Renewable Energy Directive 2009/28/EC they are classified as renewable technologies provided that the final energy output significantly exceeds the primary energy input required to drive the heat pump. ASHP need to be located externally with access to the ambient air, typically at roof level. The viability and technical performance of ASHP are not currently considered as advantageous as the Exhaust Air Heat Pump solution for the development, therefore ASHP are not currently being proposed for the development.

	Exhaust air source heat pumps An exhaust air source heat pump (EAHP) is a system which absorbs heat from the waste air (or exhaust air) leaving a building. Heat is extracted from the exhaust air and is upgraded into useful heat energy for space heating and domestic hot water. This system requires a dwelling with low heat demand. EAHPs are considered an appropriate technology for the development.
	Wind turbine. Wind turbines provide high efficiency and capacity of electricity generation. However are not generally considered appropriate for town centre applications due to noise which may be a nuisance to neighbouring properties. Further. small wind turbines are known to provide only limited carbon reductions in reality, and this technology is best suited to large, stand-alone wind farm proposals. Considering the impacts described and the visual impact of wind turbines on the character and appearance of the area, the use of wind turbines will not be proposed for the development.
	Biomass. Biomass boilers burn wood fuel or other bio-fuel sources to generate heat. These boilers can operate at high efficiencies, comparable to condensing gas boilers. However, they require a large fuel store to maintain continuous operation during the winter months. As such, area take for such plant is high. Furthermore, security of fuel supply is an important consideration. As this technology would lead to in an increase of local NOx emissions from the Proposed Development, resulting in a reduction in the local air quality, together with compromising the all-electric scheme aspirations, the use of biomass boilers at the Proposed Development is considered to be unsuitable.

6.2 Non-domestic

6.2.1 Low and zero carbon (LZC) technology assessment.

Renewable or zero carbon technologies harness energy from the environment and convert this to a useful form. Many renewable technologies are available, however, not all of these are commercially viable or suitable.

	Photovoltaics. Photovoltaic (PV) panels harness energy from daylight and convert it into useful energy in the form of electricity. A PV system requires viable roof space in order for the array to be installed and function effectively. The Proposed Development will look to maximise PV on the roof space as far as possible, with an array size of 100m² proposed to be incorporated into the design.
	Solar thermal. Solar Thermal Panels are similar to PV Panels in that they harness energy from solar irradiation. This technology however converts solar into thermal energy that can offset the demand on hot water generation systems. Solar thermal systems are not proposed for the Development as preference will be to assign available roof space to a photovoltaic array.

	Heat pumps. Air source heat pumps (ASHP) use thermodynamic principles to convert heat from the air into useable heat within the building. Unlike some other sources of renewable energy, heat pumps do require energy (typically electricity or gas) to pump and compress refrigerant through the system. However, under the Renewable Energy Directive 2009/28/EC they are classified as renewable technologies provided that the final energy output significantly exceeds the primary energy input required to drive the heat pump. ASHP need to be located externally with access to the ambient air, typically at roof level. ASHP (VRF) are proposed for the non-domestic element of the development.
	Wind turbine. Wind turbines provide high efficiency and capacity of electricity generation. However are not generally considered appropriate for town centre applications due to noise which may be a nuisance to neighbouring properties. Further, small wind turbines are known to provide only limited carbon reductions in reality, and this technology is best suited to large, stand-alone wind farm proposals. Considering the impacts described and the visual impact of wind turbines on the character and appearance of the area, the use of wind turbines will not be proposed for the development.
	Biomass. Biomass boilers burn wood fuel or other bio-fuel sources to generate heat. These boilers can operate at high efficiencies, comparable to condensing gas boilers. However, they require a large fuel store to maintain continuous operation during the winter months. As such, area take for such plant is high. Furthermore, security of fuel supply is an important consideration. As this technology would lead to in an increase of local NOx emissions from the Proposed Development, resulting in a reduction in the local air quality, together with compromising the all-electric scheme aspirations, the use of biomass boilers at the Proposed Development is considered to be unsuitable.

7. Energy strategy and CO₂ emissions assessment.

Implementing the energy strategy outlined in this report will enhance the efficiency of the Proposed Development, leading to significantly reduced carbon emissions. These emissions will continue to decline over time, corresponding with the ongoing decarbonisation of the UK's power grid.

The Reading policy target for major new build residential is *Zero Carbon (or if unachievable, a minimum 35% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations and planning contribution to offset remaining carbon emissions to zero)*.

7.1 New build residential regulated CO₂ emissions assessment.

Regulated CO₂ emissions have been assessed in SAP.10. The results are reported in the table below, demonstrating significant site overall savings against the baseline notional compliant development emissions. An overall reduction in regulated CO₂ emissions of 72% is achieved over a notional baseline. Remaining offset requirement is for 50 tCO₂, estimated at £89,280 offset payment to be secured through S106 agreement.

Table 6: Part L 2021 results for Regulated Emissions

	Annual Emissions Rate, (kgCO ₂ e/m ² /year)	Total Annual Emissions (tCO ₂ e/year)	Reduction
	Residential Dwellings	Residential Dwellings	
Baseline (TER)	13.1	176.0	
Be Green (DER/BER)	3.7	49.6	71.8%
RBC policy target			100%
Offset Payment			£89,280 (28.2%)

*Offset payment has been estimated based on £1,800/tCO₂e to be agreed through S106 agreement.

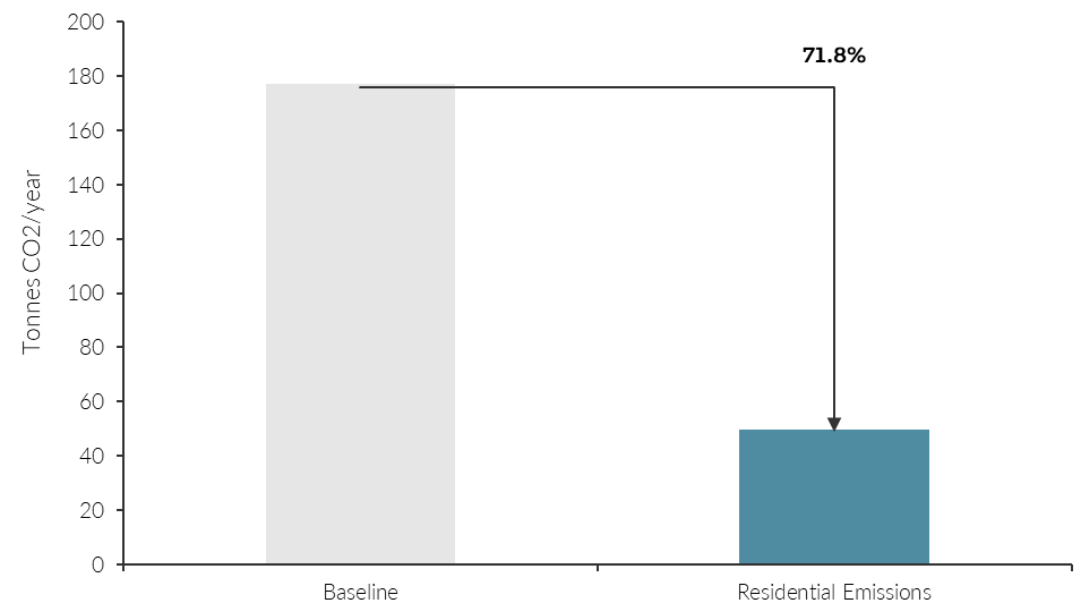


Figure 6: Dwellings -regulated CO₂ emissions results.

7.2 Regulated Energy Assessment

Regulated energy consumption has been assessed in SAP.10 for dwellings and IES VE Compliance using the NCM methodology for the amenity spaces. The results are reported in the table below, demonstrating significant site overall savings against the baseline notional compliant development consumption.

Table 7: Part L 2021 results for Regulated Energy

	Annual Regulated Energy Rate (kWh/m²/year)			Annual Regulated Energy (kWh/year)			% reduction
	Residential Dwellings	Residential Amenity	Site total	Residential Dwellings	Residential Amenity	Site total	
Baseline	58.2	18.1	50.4	785,913	61,801	847,714	
Proposed	24.3	19.4	23.3	83,314	66,455	149,769	82%

The summary of the SAP modelling results is provided in Appendix C, and the summary of the BRUKL report is provided in Appendix D.

7.3 Unregulated Energy & CO₂ Emissions

Baseline unregulated energy has been estimated using SAP 10 methodology for dwellings. For the amenity areas the ‘equipment’ figure within the BRUKL report has been used.

An overall target energy consumption for the dwellings has been set at 50kWh/m²/year for both regulated and unregulated energy consumption. Whilst the landlord (applicant) has set an aspirational target and has provided low energy appliances and smart metering to enable low energy consumption, the final consumption will be down to occupants within the dwellings and their use of small power which falls outside the control of the building landlord.

Table 8: Part L 2021 results for Regulated Energy

	Dwelling Unregulated Energy	Amenity Unregulated Energy	Site Total	Dwelling CO ₂ emissions	Amenity CO ₂ emissions	Site Total
	kWh/m²/year			kgCO ₂ e/m²/year		
Baseline	32.8	41.26	34.5	4.5	5.6	4.7
Predicted Target	25.7	41.26	28.8	3.5	5.6	3.9

8. Approach to overheating.

Dwellings that overheat cause significant discomfort and stress to the occupants and reduce sleep quality. There are several reasons for the increase in overheating risk in dwellings. Contributing factors include the increase in single aspect building forms (that don't allow sufficient cross-flow ventilation), the trend towards larger areas of glazing, climate change, the urban heat island effect and inadequate means of ventilation.

Increased overheating in newer building stock led to the introduction of Building Regulations Approved Document O 2021. All dwellings must comply with the regulations to demonstrate that the risk of overheating has been dealt with.

8.1 Cooling hierarchy

The 'cooling hierarchy' sets out prioritised measures for minimising overheating risk, illustrated in the figure below. The design response for the Proposed Development against each of the hierarchy items are summarised in table opposite.

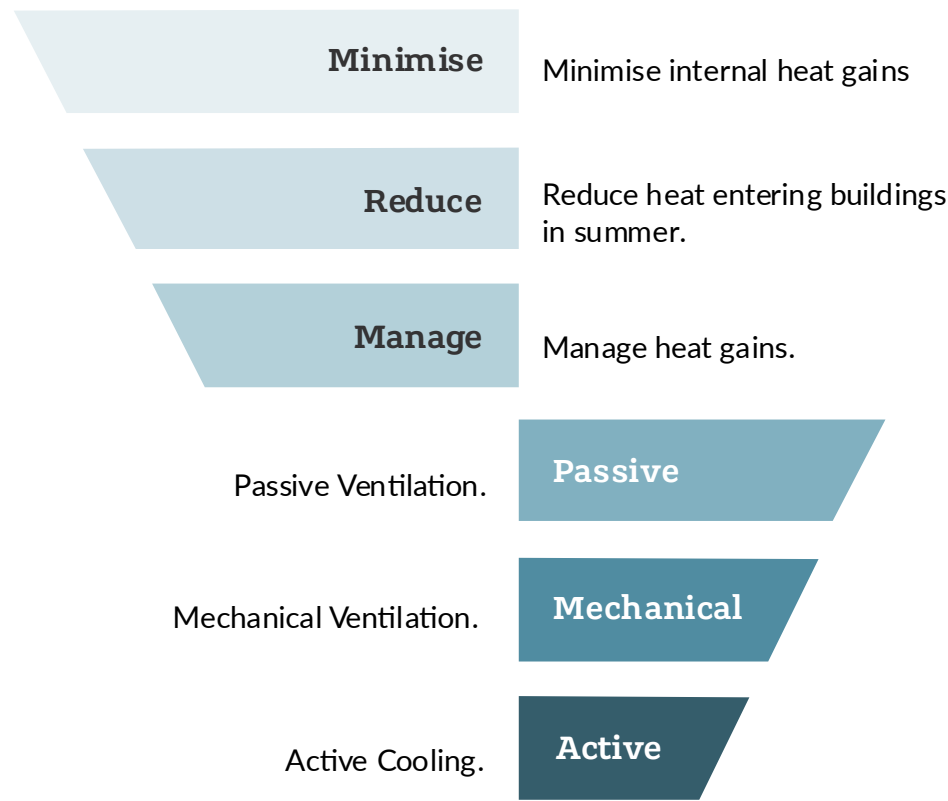


Figure 7: Cooling hierarchy.

Table 9: Cooling Hierarchy Design Responses

Cooling Hierarchy	Design Response
Minimise Internal Heat gains	Specification of efficient lighting All pipework will be fully insulated to prevent heat gains.
Reduce heat entering buildings in summer	Provision of balconies where possible providing shade on southernly aspects.
Manage heat gains	Layout of internal rooms configured to balance occupancy with the peak solar gains, for example where possible south facing bedroom windows are avoided, or window areas minimised. Individual dwelling heating systems therefore there are no heat gains from communal pipework. Heat gains modelled in line with CIBSE TM59.
Mechanical Ventilation	MVHR Boost option up to 110 l/s. MVHRs have summer bypass. The MVHR will enter boost mode once the room temperature is ≥22° C.
Active Cooling	Since passive ventilation cannot be relied upon due noise constraints the dwellings have been shown to overheat and therefore additional measures are required. The design solution is to use a MVHR unit fitted with a cooling module to temper the incoming air when required. The chilled water flow to the cooling coil will be activated once the room temperature is ≥21° C, thus avoiding the trim cooling being used for comfort cooling.

In summary, all dwellings will be provided with mechanical ventilation with heat recovery with a boost operation mode and trim cooling in the form of a cooling module fitted on the MVHR unit. In addition, residents will be provided with guidance on how to reduce the overheating risk within their homes. The need for these measures was established through carrying out an Overheating Risk Assessment in line with CIBSE TM59 methodology, the assessment results are described below.

8.2 Overheating Assessment.

An Overheating Risk Assessment has been undertaken on a sample of dwellings of the Proposed Development. The dwellings were selected to be representative for variation in orientation, glazing ratio, layout and floor level.

The sample dwellings assessed are provided in Appendix A. The overheating assessment has been undertaken following guidance in CIBSE TM59 2017: Design Methodology for the Assessment of Overheating Risk in Homes to demonstrate compliance with Building Regulations Part O 2021.

The CIBSE TM59 guidance stipulates that modelling must be undertaken with the weather file most appropriate to the location for the project, for the 2020s, high emissions scenario 50th percentile, in this instance the London Heathrow design summer year (DSY1) weather files have been used.

8.3 Compliance criteria.

The table below provides a summary of the overheating risk criteria applicable to the Proposed Development.

Table 10: Summary of TM59 assessment criteria.

CIBSE residential overheating criteria	
Predominantly Mechanically Ventilated Dwellings (i.e. where opportunities to open windows may be limited due to acoustic or air quality constraints):	
Fixed Criterion:	For living rooms, kitchens, and bedrooms: Internal temperatures should not exceed 26°C for more than 3% of annual occupied hours (Jan – Dec).

8.4 Overheating Assessment Inputs.

The tables below provide a summary of the inputs and results of the overheating assessment demonstrating how the development achieves full compliance against the mechanically ventilated criteria.

A full breakdown of the results is presented in Appendix E.

Table 15: Overheating inputs and assumptions.

Overheating assessment inputs		
Blinds	No blinds modelled in line with Part O requirements.	
Occupancy	Bedrooms: 24/7 Living room/Kitchen: 9am-10pm	
Max. occupancy density	1 Bed – 2 People, 2 Bed – 4 People, 3 Bed – 5 People	
Internal gains	Unit	Value
Occupancy heat gains (Sensible)	W/person	75
Occupancy heat gains (Latent)	W/person	55
Communal corridor internal gains	W/m²	0 (based on Exhaust Air Heat Pumps (EAHPs) in individual dwellings)
Lighting gains	W/m²	2
Max. equipment gains – kitchen & living	W	450 (as per CIBSE TM59)
Max. equipment gains – bedroom	W	80 (as per CIBSE TM59)

Cooling	MVHR with tempered air	MVHR with hybrid cooling provide tempered fresh air. When room air temperature is lower than 22°C the ventilation reduces to a minimum 30% of the maximum supplied flow rate, then it ramps up to 100% when the room air temperature reaches 26°C or higher.					
Mechanical Ventilation	Flow Rate (l/s)		Bedroom	Living Room	Kitchen	Living room/Kitchen	Dwelling Total
		1B1P	30	40	40	-	110
		1B2P	20			60	80
		2B3P	20			40	80
		2B3P	25			60	110
		2B4P	20			40	80
		2B4P	25			60	110
		3B5P	10-15			45	80
		3B5P	15-20-30			50	110
	Summer Bypass	Yes					
	Operation	Boosted vent rates when internal temperature exceeds 22°C					
Natural Ventilation - Windows	Opening degree	Windows assumed always closed					
	Opening Area %						
	Opening Profile						
Natural Ventilation – Internal doors within dwellings	Opening degree	90°					
	Opening Area %	90%					
	Opening Profile	Open 8am to 11pm					

8.5 Overheating Assessment Results.

Table 15– Mechanical Ventilation with Tempered Air CIBSE TM59 Results

13no Sample Dwellings	TM59 Mechanical ventilation criteria Pass	Full Compliance %
26 No. Bedroom zones	26	100%
14 No. Livingroom/kitchen zones	14	100%

Table 15– Mechanical Ventilation with Tempered Air CIBSE TM59 Results – Communal corridors

Communal corridors	TM59 Mechanical ventilation criteria Pass	Full Compliance %
14 No. Communal corridors	14	100%

8.6 Overheating Conclusion.

All of the sample dwellings tested comply with the Part O criteria and will be provided with mechanical ventilation with heat recovery with a boost operation mode and a cooling coil to provide trim cooling through tempered air. In addition, residents will be provided with guidance on how to reduce the overheating risk within their homes.

Appendix A – SAP (Part L1 2021) Sample dwellings.



Figure 8: SAP Sample dwellings - Ground floor



Figure 9: SAP Sample dwellings - First floor



Figure 10: SAP Sample dwellings - Second floor



Figure 11: SAP Sample dwellings - Fifth floor



Figure 12: SAP Sample dwellings - Seventh floor

Appendix B – District heating network correspondence.

Drane, Jo

From:

Barnes, Matt

Sent:

16 May 2025 11:17

To:

Burfoot, Ben

Cc:

Rob Large; Imogen Tyrrell; katherine@km-dc.co.uk; Drane, Jo; David Rothwell; Wilkinson, Mark

Subject:

RE: FW: Reading Heat Network - John Lewis Customer Collection Point, Mill Lane, RG1 2HT

Attachments:

John Lewis Customer Collection Point - Reading Heat Network Introduction Letter.docx

Dear Ben,

Further to the below correspondence and the attached letter introducing the Reading heat network, and the subsequent meeting held with yourself and the District heating team from Aecom on Wednesday 7th May 2025, John Lewis Partnership and associated Consultant design team have been reviewing suitability of the proposed district heating network for our scheme on Mill Lane. Below is a summary of the key considerations:

1.

John Lewis Partnership's intention is this will be there first BTR development in the UK and are planning to move forward at pace for a start on site next year.

2.

The development has been designed and coordinated with the wider project design team based on utilising dwelling self-contained Exhaust Air Heat Pump solutions (utilising efficient heat pump technology, without the space & massing challenges that come with a central Air Source Heat Pump approach). We therefore do not have a building heat network linking the dwellings that could potentially facilitate the introduction of a district heating supply in the future.

3.

To enable any future possibility of linking into a district heat network, the development would need to be redesigned to accommodate the two different energy strategies. This would require introduction of additional ground floor plant space and distribution rises to be designed in at this stage, for a system that may or may not be delivered in years to come. This would have a huge impact on building efficiency, build costs, project viability and programme, requiring a redesign of the whole building.

4.

The proposed timing for the Reading heat network to potentially come online (we understand this is a minimum of 5 years if all goes to plan), and uncertainty as to which parts of the network will be installed / commissioned at one time, means there remains a great deal of uncertainty around delivery and timing. From our discussions it seemed that Minster Quarter was the priority with other areas of the network, to follow. The programme for our development, does not allow for further optioneering. Once the planning permission has been achieved, John Lewis Partnership will instruct the design team to proceed with RIBA stage 3 & 4 design to form our tender documentation for the procurement & subsequent onsite implementation of the building. The team (including Hoare Lea) will be progressing with the design proposals and implement the detailed design to achieve the design programme and a coordinated solution for tendering.

5.

You and your team did outline the intention would be to have fair / reasonable pricing for the energy that customers take from the network, however we appreciate energy costs are difficult to confirm at such an early stage of the feasibility work. Therefore, a lack of any guarantee around energy pricing provides a huge element of uncertainty for JLP and the future residents, at a time when energy costs are such a priority for residents.

6.

The energy strategy that has been developed is policy compliant and provides an energy efficient solution for the residents. It's worth noting that one of the benefits of dwelling self-contained solutions, is that there will not be the maintenance costs and distribution inefficiencies associated with a building wide network, with central generation plant. Within the energy strategy document that will be submitted for planning, it records the different technical solutions investigated and outlines the performance (from an energy & CO2 perspective) of our proposed solution.

7.

The overheating assessment for the development is being finalised in accordance with Part O of the Building Regulations. The introduction of a building heat network would mean achieving Part O compliance more challenging with more passive / active treatment required to achieve compliance.

1

In summary, in light of the above we do not foresee that connecting to, and relying on the proposed district heating scheme is appropriate for our project, at this time. The timing and impact to the overall design and layouts of the building would be significant to incorporate, it puts increasing pressure on Part O compliance and potentially longer-term energy costs for residents.

Kind Regards

Matt Barnes

Director

Tel

+44 1202 654 600

Mob

+44 7896 942 069

Email

matthewbarnes@hoarelealea.com

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(H.)

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From:

Burfoot, Ben <Ben.Burfoot@reading.gov.uk>

Sent:

16 April 2025 14:46

To:

Barnes, Matt <MatthewBarnes@hoarelealea.com>

Cc:

Wilkinson, Mark <MarkWilkinson@hoarelealea.com>; Drane, Jo <JoDrane@hoarelealea.com>; rob.large@waitrose.co.uk; David Rothwell <David@milliganltd.com>; katherine.russell@johnlewis.co.uk; nikita.chebotarevskiy@aecom.com; Michael J King <kingmichael0504@gmail.com>; Martin Crane <martin@carbonalternatives.com>

Subject:

Re: Reading Heat Network - John Lewis Customer Collection Point, Mill Lane, RG1 2HT

⚠ CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Good afternoon Matt,

Thanks so much for you reply. Apologies as I've just come back from leave and so your email hadn't been passed to the Heat Network team yet.

I am copying Nik in from Aecom who is leading the technical team who are dealing with the information gathering as well as Michael and Martin who are managing the project.

Nik, please could you arrange a meeting with Matt and his team?

Thanks

Ben

2

Ben Burfoot CEnv

Sustainability Manager

Directorate of Economic Growth and Neighbourhood Services

Reading Borough Council

Civic Offices, Bridge Street, Reading, RG1 2LU

Please note I work reduced hours on Mondays.

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Reading
Borough Council
Working better with you

From: Barnes, Matt

Sent: Wednesday, April 16, 2025 1:30 PM

To: Burfoot, Ben

Cc: Wilkinson, Mark; Drane, Jo; rob.large@waitrose.co.uk; David Rothwell; katherine.russell@johnlewis.co.uk

Subject: RE: Reading Heat Network - John Lewis Customer Collection Point, Mill Lane, RG1 2HT

Warning!

For the attention of RBC, BFC Staff and Councillors

This mail is from an external sender - please do not click any links or open any attachments unless you trust this sender, and know the content is safe

Good Afternoon Ben,

Further to my email below, just a quick follow up to see if you had managed to review the information provided, and if we could get a meeting in the diaries to discuss further?

3

Regards

Matt Barnes

Director

Tel +44 1202 654 600

Mob +44 7896 942 069

Email mailtomatthewbarnes@hoarelealea.commatthewbarnes@hoarelealea.com

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From: Barnes, Matt

Sent: 03 April 2025 13:31

To: Ben.Burfoot@reading.gov.ukBen.Burfoot@reading.gov.uk

Cc: Wilkinson, Mark MarkWilkinson@hoarelealea.com; Drane, Jo JoDrane@hoarelealea.com; rob.large@waitrose.co.uk; David Rothwell David@milliganltd.com; katherine.russell@johnlewis.co.ukkatherine.russell@johnlewis.co.uk

Subject: RE: Reading Heat Network - John Lewis Customer Collection Point, Mill Lane, RG1 2HT

Dear Ben,

Further to your email below to members of the John Lewis project team, please find attached the completed request for information template for the proposed scheme.

Given where we are at with the project, it would seem prudent to have a call to talk this through together.

We would be happy to host a meeting with you in our Reading office in Thames Tower, or happy to have an initial Teams call if that's preferable. Please let us know your thoughts and we can get something set up.

Kind Regards

Matt Barnes

Director

4

HOARE LEA



Tel +44 1202 654 600
Mob +44 7896 942 069
Email matthewbarnes@hoarelea.com

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From: "Burfoot, Ben" <Ben.Burfoot@reading.gov.uk>
Date: 21 March 2025 at 8:37:45 PM GMT
To: PBrown@savills.com, David Rothwell <David@milliganltd.com>, katherine.russell@johnlewis.co.uk
Subject: Fw: Reading Heat Network - John Lewis Customer Collection Point, Mill Lane, RG1 2HT

Dear Philip, David and Katherine,

Please see the attached letter and information regarding the Reading Heat Network. I hope you will find this of interest and that you will be able to help us with this exciting opportunity for Reading by completing the attached request for information?

Best regards

Ben

Ben Burfoot CEnv

Sustainability Manager

Directorate of Economic Growth and Neighbourhood Services

5

Reading Borough Council

Civic Offices, Bridge Street, Reading, RG1 2LU

Please note I work part time Tuesday to Friday with reduced hours on Thurs and school holidays.

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Appendix C – SAP Summary Results.

Table 11: Detailed summary of SAP results for each sample dwelling tested

Unit	Block	Dwelling Type Reference	GIA	Multiplier	Total area	CO2 emissions			Primary Energy			Fabric energy efficiency			Overall compliance	SAP Rating	EPC Rating
						Target Emissions Rate (TER)	Dwelling Emission Rate (DER)	Variance	Target Primary Energy Rate (TPER)	Dwelling Primary Energy Rate (DPER)	Variance	Target Fabric Energy Efficiency (TFEE)	Dwelling Fabric Energy Efficiency (DFEE)	Variance			
-	-	-	m²	-	m²	kgCO ₂ /m²/yr.	kgCO ₂ /m²/yr.	%	kWh/m²/yr	kWh/m²/yr	%	kWh/m²/yr	kWh/m²/yr	%	-		-
Unit 1	Block 1	3B5P (WA)	106.81	3	320.43	16.94	4.05	76.09%	90.55	42.41	53.16%	58.16	58.01	0.26%	YES	82	B
Unit 2	Block 1	2B4P	75.5	1	75.5	18.24	4.67	74.40%	97.85	48.95	49.97%	56.6	57.48	-1.55%	NO	81	B
Unit 3	Block 1	2B4P	75.5	4	302	11.63	4.3	63.03%	62.24	45.15	27.46%	26.74	26.13	2.28%	YES	83	B
Unit 4	Block 1	1B2P	57.21	2	114.42	13.87	4.01	71.09%	74.83	42.59	43.08%	29.85	29.62	0.77%	YES	86	B
Unit 5	Block 1	2B3P	67.14	5	335.7	12.32	3.46	71.92%	66.61	36.87	44.65%	25.66	24.76	3.51%	YES	87	B
Unit 6	Block 1	3B5P (WA)	106.81	3	320.43	10.53	2.78	73.60%	55.98	29.39	47.50%	29.42	29.13	0.99%	YES	88	B
Unit 7	Block 1	3B5P	92.57	1	92.57	12.92	3.46	73.22%	68.8	36.44	47.03%	37.45	36.07	3.68%	YES	85	B
Unit 8	Block 1	1B2P	57.21	6	343.26	11.73	3.31	71.78%	63.34	35.44	44.05%	19.79	19.41	1.92%	YES	88	B
Unit 9	Block 1	2B4P (WA)	86.4	2	172.8	11.44	3.18	72.20%	60.83	33.71	44.58%	29.47	27.66	6.14%	YES	87	B
Unit 10	Block 1	2B4P	75.5	1	75.5	14.46	3.95	72.68%	77.45	41.62	46.26%	39.61	39.15	1.16%	YES	84	B
Unit 11	Block 1	2B4P	75.32	1	75.32	13.5	3.78	72.00%	72.02	39.9	44.60%	35.83	35.59	0.67%	YES	85	B
Unit 12	Block 1	2B4P	71.25	1	71.25	15.3	4.15	72.88%	82.34	43.73	46.89%	41.23	40.11	2.72%	YES	84	B
Unit 13	Block 1	2B3P	65.08	2	130.16	16.91	4.61	72.74%	91.16	48.48	46.82%	46.64	44.06	5.53%	YES	83	B
Block compliance				32	2429.34	13.18	3.68	72.06%	70.67	38.91	44.94%	33.96	33.29	1.97%	YES		

Appendix D – Part L2 results.

BRUKL Output Document

 HM Government

Compliance with England Building Regulations Part L 2021

Project name

John Lewis

As designed

Date: Thu Jun 26 15:29:18 2025

Administrative information

Building Details

Address: Letcombe street, Reading, RG1

Certifier details

Name: Hoare Lea

Telephone number: +44 1202 654600

Address: Enterprise House Old School Close, Bournemouth, BH22 9UN

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.26

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.26

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

Foundation area [m²]: 685.44

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

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	2.18
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	1.99
Target primary energy rate (TPER), kWh _e /m ² annum	23.56
Building primary energy rate (BPER), kWh _e /m ² annum	21.21
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 _{Limit}	U _{Calc}	U _{Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	L0000090-Surf[0]
Floors	0.18	0.12	0.12	L00000A3-Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.1	0.1	L0000085-Surf[1]
Windows** and roof windows	1.6	1.12	1.2	L0000090-Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors ^Δ	1.6	1	1	L0000089-Surf[5]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	1.2	1.2	L0000090-Surf[13]
U _{Limit} = Limiting area-weighted average U-values [W/(m ² K)] U _{Calc} = Calculated area-weighted average U-values [W/(m ² K)] * 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. ^Δ For fire doors, limiting U-value is 1.8 W/m ² K 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		
m ³ /(h.m ²) at 50 Pa	8	2.5		

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	3422	3422
External area [m ²]	3517.9	3517.9
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	1096.03	1071.13
Average U-value [W/m ² K]	0.31	0.3
Alpha value* [%]	25.52	10

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
9	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
52	Residential Spaces
36	Non-residential Institutions: Community Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
3	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	2.12	1.14
Cooling	1.06	0.62
Auxiliary	4.35	4.04
Lighting	7.2	8.7
Hot water	4.69	3.56
Equipment*	41.26	41.26
TOTAL**	19.42	18.06

* Energy used by equipment does not count towards the total for consumption or calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	5.11	2.12
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	5.11	2.12

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	25.8	19.3
Primary energy [kWh _e /m ²]	21.21	23.56
Total emissions [kg/m ²]	1.99	2.18

Appendix E – Part O overheating model results.

Table 12: TM59 Results Summary for the mechanically ventilated scenario

Room	Criteria: % annual hours above 26°C	Compliance
	Target: ≤3%	
U01-L00-3B5P-Double Bedroom 1	1.10%	Pass
U01-L00-3B5P-Double Bedroom 2	2.50%	Pass
U01-L00-3B5P-Double Bedroom 3	2.80%	Pass
U01-L00-3B5P-Kitchen/Living	2.80%	Pass
U02-L01-2B3P-Double Bedroom 1	0.50%	Pass
U02-L01-2B3P-Double Bedroom 2	0.40%	Pass
U02-L01-2B3P-Kitchen/Living	0.70%	Pass
U03-L01-3B5P-Double Bedroom 1	0.90%	Pass
U03-L01-3B5P-Double Bedroom 2	0.40%	Pass
U03-L01-3B5P-Double Bedroom 3	0.20%	Pass
U03-L01-3B5P-Kitchen/Living	1.50%	Pass
U04-L05-2B4P-Double Bedroom 1	0.30%	Pass
U04-L05-2B4P-Double Bedroom 2	0.70%	Pass
U04-L05-2B4P-Kitchen/Living	1.50%	Pass
U05-L05-3B5P-Double Bedroom 1	2.40%	Pass
U05-L05-3B5P-Double Bedroom 2	2.60%	Pass
U05-L05-3B5P-Double Bedroom 3	3.00%	Pass
U05-L05-3B5P-Kitchen/Living	2.00%	Pass
U06-L05-1B2P-Double Bedroom 1	1.40%	Pass
U06-L05-1B2P-Kitchen/Living	1.30%	Pass
U07-L06-1B1P-Double Bedroom 1	1.20%	Pass
U07-L06-1B1P-Kitchen	2.80%	Pass
U07-L06-1B1P-Living	1.80%	Pass
U08-L01-2B4P-Double Bedroom 1	0.50%	Pass
U08-L01-2B4P-Double Bedroom 2	0.50%	Pass
U08-L01-2B4P-Kitchen/Living	1.60%	Pass
U09-L07-2B3P-Double Bedroom 1	1.60%	Pass
U09-L07-2B3P-Double Bedroom 2	0.60%	Pass
U09-L07-2B3P-Kitchen/Living	1.90%	Pass

Room	Criteria: % annual hours above 26°C	Compliance
	Target: ≤3%	
U10-L07-2B3P-Double Bedroom 1	0.70%	Pass
U10-L07-2B3P-Double Bedroom 2	0.40%	Pass
U10-L07-2B3P-Kitchen/Living	2.80%	Pass
U11-L07-1B2P-Double Bedroom 1	2.20%	Pass
U11-L07-1B2P-Kitchen/Living	1.20%	Pass
U12-L07-2B3P-Double Bedroom 1	1.70%	Pass
U12-L07-2B3P-Double Bedroom 2	0.80%	Pass
U12-L07-2B3P-Kitchen/Living	2.00%	Pass
U13-L07-2B3P-Double Bedroom 1	0.90%	Pass
U13-L07-2B3P-Double Bedroom 2	0.60%	Pass
U13-L07-2B3P-Kitchen/Living	3.00%	Pass

Table 13: TM59 Results Summary for the mechanically ventilated scenario – Communal corridors.

Room	Criteria: % annual hours above 28°C	Overheating risk
	Target : ≤3%	
L00-Corridor 01	0.0	No
L00-Corridor 02	0.0	No
L01-Corridor 01	0.0	No
L01-Corridor 02	0.4	No
L01-Corridor 03	0.0	No
L05-Corridor 01	0.2	No
L05-Corridor 02	0.7	No
L05-Corridor 03	0.2	No
L07-Corridor 02	0.9	No
L07-Corridor 02	0.4	No
L07-Corridor 03	2.0	No
L07-Corridor 04	0.9	No
L07-Corridor 04	0.7	No
L07-Corridor 06	1.1	No



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