

Sustainability Statement - Ridgeway School

Reading SEN Schools



Reading
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Executive Summary.

This Sustainability Statement has been prepared by RCDC on behalf of Reading Borough Council (RBC) in support of the planning application for new parking, landscaping, and boundary treatment at the site to facilitate a new SEN school at the site. The project includes refurbishment and new extensions (total of 1,595 m² and 348 m² respectively) which do not form part of the planning application. The extensions are being considered separately through a Lawful Development Certificate but have been considered as part of this Sustainability Statement to demonstrate that sustainability is at the heart of the project.

The sustainability strategy has been developed in response to the requirements and aspirations of the Reading Borough Local Plan, Sustainable Design and Construction SPD and RBC's School Development Sustainability Strategy, alongside relevant Building Regulations and recognised industry guidance. The approach seeks to balance RBC's ambition for low-carbon design, Operational Net Zero Carbon and resilient development in line with the Reading Climate Emergency Strategy 2020-25, and other relevant strategies with the practical constraints associated with refurbishment of an existing operational school.

The strategy prioritises reducing energy demand through building fabric and passive design measures, supported by efficient building services and renewable energy generation. For the new build elements, enhanced fabric performance, improved airtightness, natural ventilation and daylighting have been incorporated from the outset. For the refurbishment works, opportunities to improve the existing fabric have been considered proportionately, with roof insulation identified as a key intervention.

The proposed building services strategy combines retention and optimisation of existing infrastructure within the refurbished areas with predominantly electric systems for the new build elements. Heat recovery ventilation is proposed across occupied spaces to support indoor air quality and thermal comfort, while efficient VRF/VRV systems will provide heating and limited cooling within the new build areas. The approach also considers the future decarbonisation of the existing heating system, including the potential for future heat pump integration.

Daylight, ventilation and thermal comfort have been considered as important aspects of the design, particularly given the specific requirements of SEN users. Daylight assessment of the new build areas has informed design refinements to the location and extent of rooflights, improving daylight distribution across the assessed spaces. Solar control, natural ventilation and efficient servicing strategies will further support occupant comfort and climate resilience.

On-site renewable energy generation shall be explored through additional Solar PV provision on the roof of the new build. The PV strategy seeks to maximise renewable generation within the available roof area while recognising the operational characteristics of a school and the existing PV provision on site. While the potential PV installation has the ability to contribute towards reducing operational carbon emissions, it is not anticipated to achieve a net zero carbon balance independently.

Water efficiency measures, including low-flow sanitary fittings, are proposed to reduce potable water consumption. Opportunities for rainwater harvesting and greywater recycling have also been considered, although rainwater harvesting has not been progressed at this stage due to site and plant space constraints. Further opportunities for water efficiency and resource management will be considered as the design develops.

The strategy also considers embodied carbon principles. For the refurbishment works, retaining and reusing existing building elements is prioritised wherever feasible, reducing the need for new materials and associated embodied carbon. For the new build elements, material efficiency, avoidance of unnecessary construction

layers, responsible sourcing, recycled content and the use of lower-impact materials will be considered during detailed design and procurement.

Additional measures addressing sustainable transport, biodiversity and climate resilience, acoustic performance, EV charging, energy monitoring and post-occupancy performance have also been identified. These measures are intended to support the wider sustainability objectives of the development and improve the long-term resilience and usability of the school environment.

Overall, the proposed development represents a proportionate response to RBC's sustainability objectives, recognising the different opportunities available within the refurbishment and new build elements. The strategy seeks to improve energy efficiency, reduce carbon emissions, enhance occupant wellbeing, minimise resource consumption and improve resilience to future climate conditions, while retaining existing building fabric and infrastructure wherever practicable.

The measures outlined within this Statement are based on the current stage of design development and will be subject to further refinement during detailed design, statutory approvals and procurement.

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List of Abbreviations.

ASHP – Air Source Heat Pump

BB101 – Building Bulletin 101

BMS – Building Management System

BREEAM – Building Research Establishment Environmental Assessment Method

BS (EN) – British Standard (European)

DfE – Department for Education

DHW – Domestic Hot Water

EC – Embodied Carbon

ENE – Abbreviation for BREEAM Credits in the Energy Category

EPD – Environmental Product Declaration

EV – Electric Vehicle

HEA – Abbreviation for BREEAM Credits in the Health and Wellbeing Category

HRV – Heat Recovery Ventilation

LED – Light-Emitting Diode

LETI – London Energy Transformation Initiative

LST - Low Surface Temperature

LTHW – Low Temperature Hot Water

MEP – Mechanical, Electrical, and Plumbing

MVHR – Mechanical Ventilation with Heat Recovery

POE – Post Occupancy Evaluation

PV – Photovoltaic

RBC – Reading Borough Council

RIBA – Royal Institute of British Architects

sDA - Spatial Daylight Autonomy

SEND – Special Educational Needs and Disabilities

TER – Target Emission Rate

UFH – Underfloor Heating

UDI - Useful Daylight Illuminance:

VRF – Variable Refrigerant Flow

VRV – Variable Refrigerant Volume

WAT – Abbreviation for BREEAM Credits in the Water Category

WC – Water Closet

1. Introduction.

This Sustainability statement has been prepared by RCDC on behalf of Reading Borough Council (RBC) in support of the planning application for the SEN alterations programme at Ridgeway Primary School. The application is submitted in full to the Reading Borough Council.

The Proposed Development is for new parking, landscaping, and boundary treatment at the site to facilitate a new SEN school at the site. The project also includes the following which has been considered as part of this Sustainability Statement:

- Refurbishment works to part of the existing building to support SEN provision (approx. 1595m²)
- Extensions to deliver SEN facilities (not part of the planning application but considered separately through a Lawful Development Certificate) (approx. 348m²).

The strategies outlined within this report are based on the current stage of design development and remain subject to further refinement as the project progresses through detailed design, statutory approvals, and procurement.

1.1. Site Commentary

Ridgeway Primary School is located at the south side of Reading city centre, at about 4 miles from Reading Train Station.

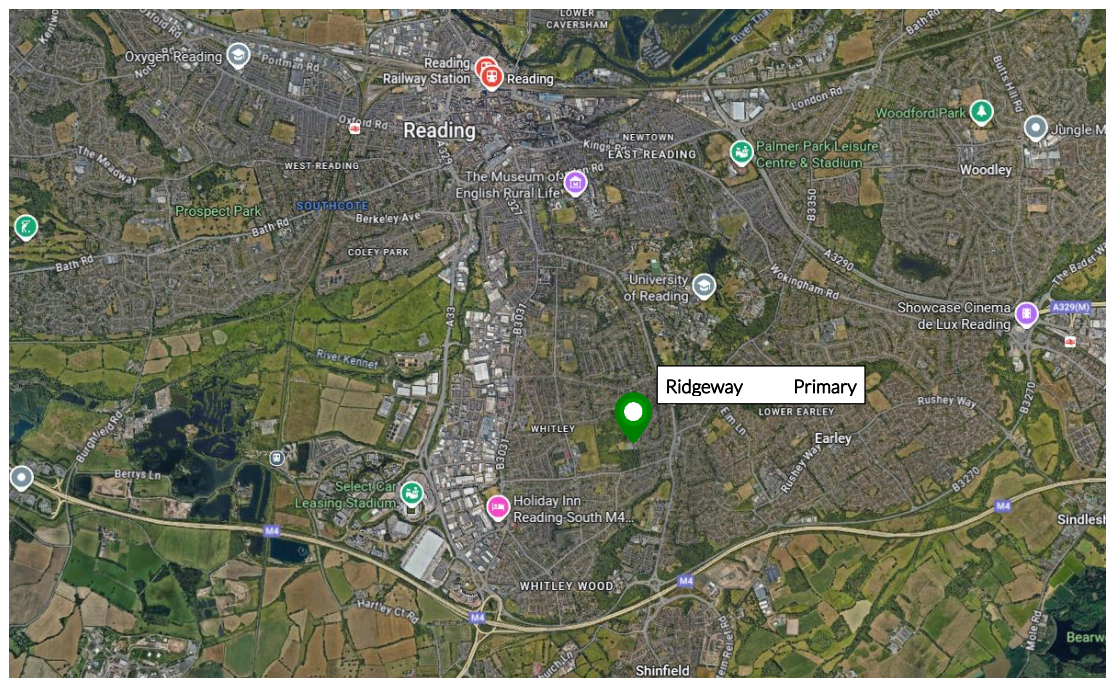


Figure 1-1 Location of new SEN school in Reading



Figure 1-2: School Site of Ridgeway Primary School

The site is very much suburban in nature with no major roads within close vicinity. Noise and air pollution are not believed to be major issues for the site, with a majority of classrooms being naturally ventilated. The screenprint below shows the PM2.5 data from a local air quality sensor, see screenprint of map showing exact location. The data can be found here : https://www.airqualityengland.co.uk/site/exceedence?site_id=RRKL

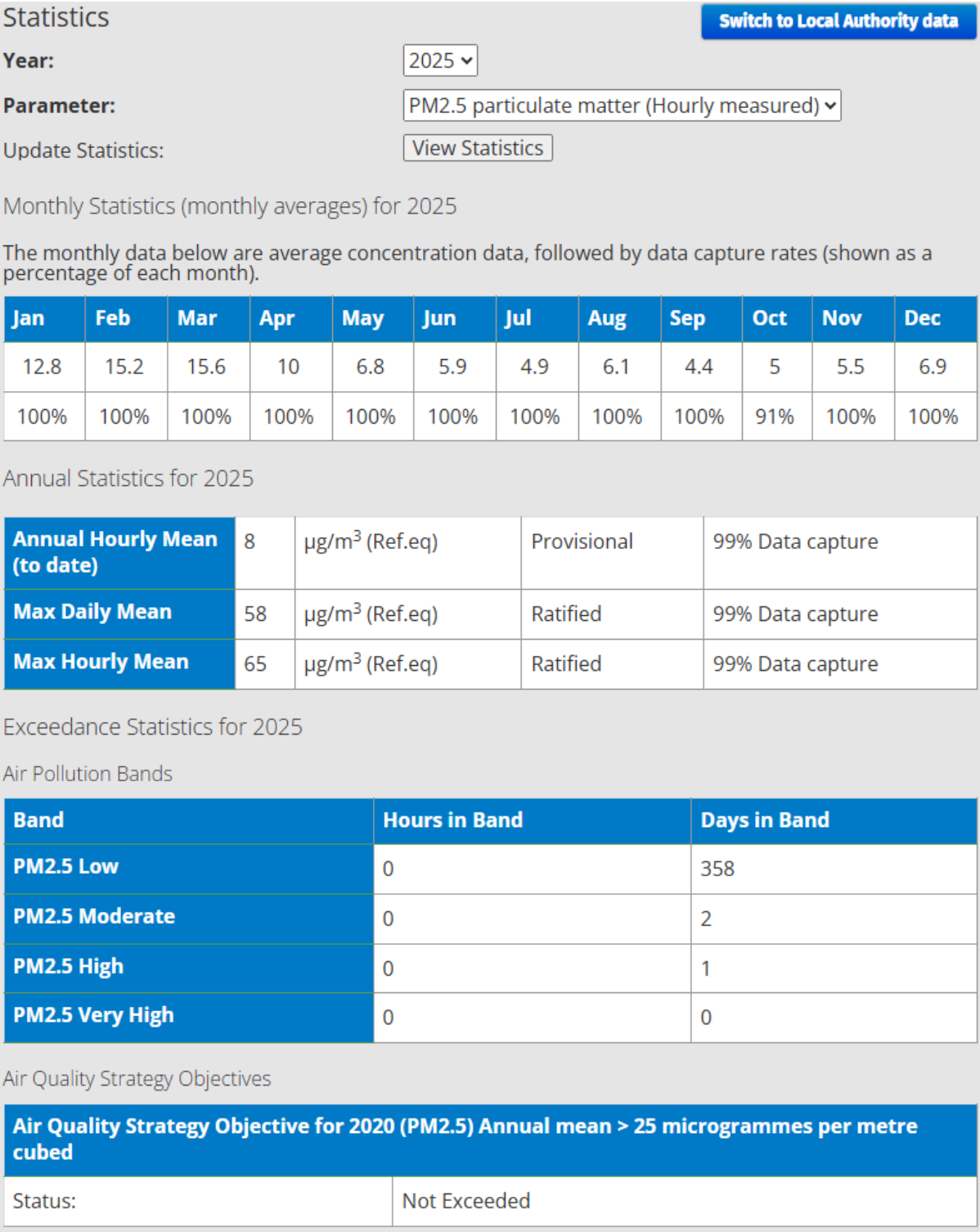


Figure 1-3 Screenshot showing air quality data collected from a local sensor



Figure 1-4. Location of the sensor (1) where the data has been collected.

The data shows that exceedance of PM is very rare and that generally the status for the location is seen as ‘not exceeded’, showing that air quality is generally acceptable within the local area. This is only data for PM2.5, however, for other air quality factors, e.g. NOx, the data reviewed showed that air quality was generally not of significant concern.

1.2. Objectives of the report

This statement sets out the overarching sustainability strategy for the proposed development. The key objectives are to:

- Outline how the proposed works respond to relevant sustainability policies and aspirations set by RBC
- Identify key opportunities and constraints at an early design stage to inform the ongoing development of sustainable design strategies
- Summarise the anticipated performance of the scheme against relevant benchmarks, including alignment with BREEAM principles where applicable.

2. Legislations and Regulations.

This section of the report outlines the key national and local regulations and legislation that will be relevant to the project. Other key documents which provide context to the project are also described.

2.1. Local Panning Policy

2.1.1. The Reading Borough Local Plan, 2019

Reading Borough Local Plan was adopted on 4th November 2019. It sets out the vision for how the borough will develop up to 2036 and how the Council aims to protect and enhance the quality of life enjoyed in the area. The Plan forms part of the Council's development framework and, in accordance with planning law, development within the borough should comply with the Local Plan unless otherwise receive other direction.

The wider Reading 2050 Vision envisages Reading as an internationally recognised and economically successful city region. Low carbon living will be the norm and the built-environment, technology and innovation shall have been combined to create a smart, dynamic and sustainable city, with a high quality of life and equal opportunity for all.

RBC has set an aim to contribute towards achieving a net zero carbon Reading by 2030. The council is currently preparing a Partial Update to the adopted Local Plan. The Partial Update has not yet been adopted and therefore its policies do not currently form part of the adopted development plan. However, it provides the Council's emerging policy direction and has been considered in the development of this sustainability strategy.

The adopted Local Plan, through Policy CC2: Sustainable Design and Construction, requires all major non-residential developments to meet the most up-to-date BREEAM 'Excellent' standard and all minor non-residential developments to meet the most up-to-date BREEAM 'Very Good' standard as a minimum. These requirements therefore form part of the adopted Local Plan Policy framework applicable to the Proposed Development.

In addition, the emerging Partial Update proposes amendments to Policy CC2, and introduces a more detailed energy hierarchy and specific operational energy targets. These include requirements for developments to:

- Minimise and manage operational energy demand through building design, fabric performance and servicing measures
- Use local low carbon energy resources (such as secondary heat) where possible to meet residual demands
- Meet remaining residual energy demands by producing, storing and using renewable energy on-site and monitor and report on energy performance.

The emerging amended Policy CC2 also proposes that non-residential development should:

- Generate at least the same amount of renewable electricity on-site as they demand over the course of the year.

- Achieve a site average space heating demand of 15-20 kWh/m²-yr
- Achieve a site average total energy demand of 70 kWh/m²-yr
- Ensure that no unit exceeds a total energy demand of 90 kWh/m²-yr, irrespective of the amount of on-site renewable energy generation.

These energy targets and requirements are drawn from the emerging Partial Update to Policy CC2 and are not currently adopted Local Plan requirements. They have nevertheless been considered as part of the Council's emerging policy direction and used to inform the development of the energy strategy.

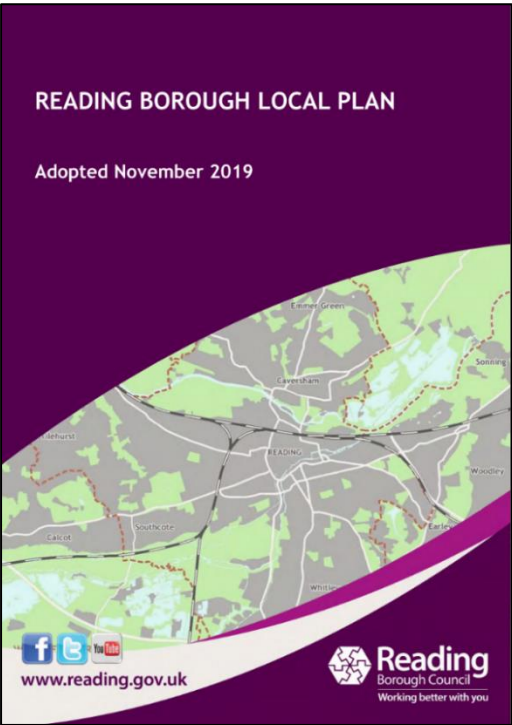
While these targets provide a useful benchmark, achieving full compliance across the whole scheme is expected to be challenging due to the predominantly refurbishment led nature of the project and the practical constraints associated with upgrading an existing operational school building. The targets have nevertheless been used to inform the development of the energy strategy, with opportunities to reduce energy demand and carbon emissions considered wherever feasible.

2.1.2. Sustainable Design and Construction SPD

The RBC Sustainable Design and Construction SPD (2019) provide guidance to support the implementation of Local Plan policies relating to energy, climate change, water, and waste. It promotes a holistic approach to sustainability, requiring developments to minimise energy demand through a fabric-first approach, incorporate efficient building services, and utilise renewable and low carbon technologies where feasible.

The SPD also emphasises the need for climate change adaptation, including measures such as solar shading, thermal mass, natural ventilation, and resilient landscaping. It sets expectations for water efficiency, including reduced consumption and the use of SuDS, and promotes waste minimisation through reuse, recycling, and responsible material selection. Developments are expected to demonstrate compliance through Sustainability and Energy Statements, and for non-residential schemes, alignment with BREEAM standards where applicable.

Overall, the SPD seeks to ensure that new development in Reading is designed to be energy efficient, low carbon, resource efficient, and resilient to future climate conditions.



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2.2. Building Regulations

2.2.1. Part F

Part F of the Building Regulations deals with ventilation. It sets of specific requirements for ventilating different types of building. It also references a number of other documents which are to be referenced in relation to typology specific guidance, specifically Building Bulletin 101 (BB101) for schools.

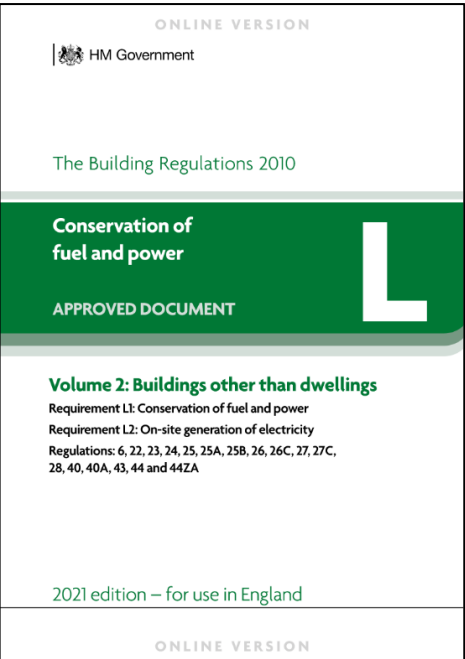
2.2.2. Part L

Approved Document Part L of the Building Regulations sets out the requirements for the conservation of fuel and power within buildings. The project falls under the scope of Approved Document Part L, Volume 2: Buildings Other Than Dwellings.

All the relevant requirements of Part L will apply to the Proposed Development’s building fabric and building services.

An updated Part L for non-domestic buildings was published in March 2026, which will come into effect in March 2027. This could impact the design of the building and therefore needs to be taken into consideration. The following has been published in terms of when the new regulations come into effect, with the following exceptions:

'a building notice, an initial notice, or an application for building control approval with full plans has been given to the relevant authority in respect of that building before 24 March 2027, provided that the building work to which the notice or application relates is commenced (as defined) on the relevant building before 24 March 2028.'



2.2.3. Part S

Part S of the Building Regulations addresses the infrastructure of the charging of electric vehicles. It sets requirements of the charging points and cable routes.

3. Sustainability Strategies.

3.1. Sustainability Principles, Planning and Guidelines

The design of the SEN School has been developed in accordance with RBC's requirements, including the Council's School Development Sustainability Strategy, Reading Climate Emergency Strategy 2020-25, alongside relevant industry best practice guidance. These have been used to inform design decisions from an early stage and to establish a consistent framework for the development of the sustainability strategy. Key references include:

- RIBA 2030 Climate Challenge;
- LETI Climate Emergency Design Guide;
- The London Plan Energy Hierarchy.

Although the development is not subject to the London Plan, the London Plan energy hierarchy has been adopted as a recognised and robust framework to structure the energy strategy. The principles of *Be Lean*, *Be Clean*, *Be Green* and *Be Seen* align with RBC's requirements and guidance and hence have been used to guide the approach, with particular emphasis placed on reducing energy demand through passive design measures, followed by efficient system selection and incorporation of renewable energy where feasible.

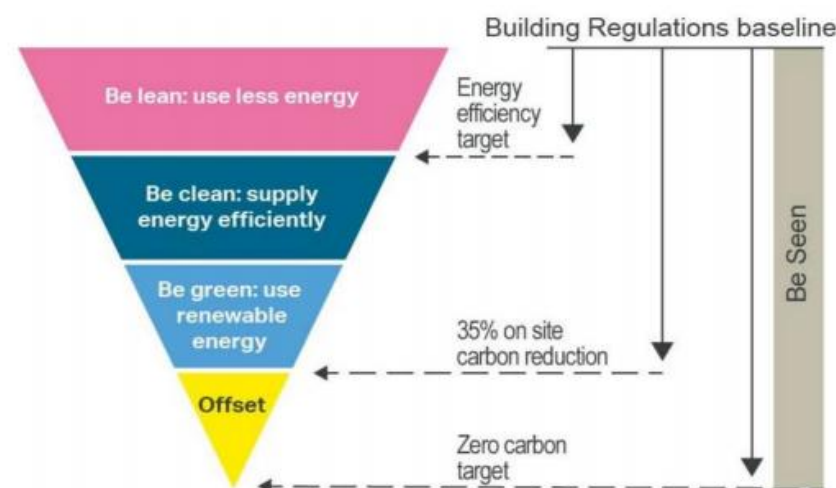


Figure 3-1: Zero carbon operation strategy, Be Lean, Be Clean and Be Green, with Offset

Given the nature of the project, which comprises both refurbishment of existing buildings and new build extensions, different assessment frameworks have been referenced to ensure that appropriate benchmarks are applied to each component of the works. The following BREEAM guidance documents have been considered:

- BREEAM UK Refurbishment and Fit Out 2014 – applied to refurbishment works
- BREEAM UK New Construction Version 7 – applied to new build elements

A formal BREEAM certification is not being pursued for the development, reflecting the scale and nature of the project and client requirements. However, the principles, benchmarks, and credit requirements within the above guidance documents have been used where applicable to inform design decisions across energy, water, materials, and operational performance. This approach enables the project to align with recognised

sustainability standards, whilst maintaining flexibility appropriate to the current stage of design development and the constraints associated with refurbishment works.

3.2. Sustainability Design Strategies

The project adopts a fabric-first approach, wherever feasible, as the primary means of reducing operational energy demand, in line with RBC guidance and the 'Be Lean' principle of the energy hierarchy. Alongside this, a range of passive design strategies have been considered at an early stage to support both energy efficiency and climate resilience. These include the incorporation of solar shading, utilisation of thermal mass where appropriate, and optimisation of heating and ventilation strategies to respond to the specific requirements of the building and its users. The extent to which these measures can be implemented varies across the different phases of the project and remains subject to further development.

Given that the scheme comprises both refurbishment and new build elements, the application of this principle varies across the two phases depending on the level of intervention possible.

3.2.1. New Build Strategy

For the new build elements, there is greater opportunity to optimise building form and orientation to reduce energy demand. The proposed building form has been arranged broadly along an east-west axis. The building orientation seeks to balance beneficial solar gains with the need to limit excessive solar exposure and associated overheating risk.

This passive design approach supports reduced heating demand and aligns with the intent of BREEAM NC ENE 04 Low Carbon Design.

3.2.2. Fabric Performance Strategy

For the refurbished spaces, targeted upgrades to the existing building fabric have been considered including potential upgrades to the roof insulation, and replacement of existing windows. A high-level assessment was undertaken to understand the potential energy benefits associated with different fabric and servicing interventions. Whilst fabric improvements can contribute to reduced energy demand, the extent of upgrades achievable within the refurbishment is constrained by the existing building, scope of works, and practical requirements associated with delivering the SEN alterations. Roof insulation was therefore considered to represent the most appropriate fabric intervention at this stage.

For new build elements, enhanced fabric performance has been prioritised. Target fabric performance values have been informed by a combination of Part L requirements and LETI guidance and are summarised below.

Table 3-1 Building Fabric Performance

Building Elements	Design Values (W/m ² K)
External Wall (New build)	0.18
Roof (Refurbishment and New build)	0.12
Floor (ground-contacting) (New build)	0.18
Door U-value (Refurbishment and new build)	1.6
Window U-value (New build)	1.1
Window g-value (New build)	0.4
Rooflight U-value (New build)	1.6
Rooflight g-value (New build)	0.4
Airtightness (m ³ /h.m ² @50Pa) (Refurbishment) (Assumed)	8
Airtightness (m ³ /h.m ² @50Pa) (New build)	3

These targets are considered appropriate at this stage and remain subject to further refinement during detailed design.

The proposed fabric performance is expected to contribute to improved energy efficiency and aligns with the intent of BREEAM ENE 01 Energy and Carbon Emissions Reduction.

3.2.3. Natural Ventilation Strategy

In all the new build occupied spaces, openable windows and rooflights have also been incorporated to facilitate natural ventilation, wherever feasible. The strategy supports reduced reliance on mechanical systems where appropriate and hence reduce the energy demand. This aligns with the ‘Be Lean’ principle which focuses on adopting passive measures in the design. Additionally, it also aligned with the intent of low carbon design strategies within BREEAM guidance.

3.2.4. Daylighting Strategy

Daylighting has been incorporated across the majority of occupied spaces, wherever feasible both in refurbished and new build areas. All the new build teaching and regularly occupied areas are proposed with openable windows, with rooflights introduced where appropriate to supplement daylight penetration. This aligns well with the intent of BREEAM HEA 01 Visual comfort credit.

Ancillary spaces, including WCs and circulation areas, are also provided with rooflights where feasible.

Daylight assessment was done for the occupied spaces in the new build areas. The assessment was undertaken to review daylight performance within the proposed occupied spaces and to identify any design refinements required to achieve good daylighting conditions in accordance with relevant guidance and policy requirements. Relevant daylight guidance by Department for Education (DfE) – Technical Manual – Employer’s requirements was referred to which requires the following performance criteria:

- Spatial Daylight Autonomy (sDA300/50%): Percentage of the task plane receiving at least 300 lux for a minimum of 50% of annual occupied hours. A minimum value of 50% is required.
- Useful Daylight Illuminance (UDI-a 100–3000 lux): Percentage of occupied hours during which illuminance levels remain between 100 lux and 3000 lux. An average value of 80% or greater is required across each space.

The daylight assessment was undertaken using IESVE software and follows the CBDM methodology. The approach involves the use of annual weather data to evaluate daylight performance throughout the year.

In accordance with DfE guidance, the following occupied spaces were assessed:

- Parents room,
- Meeting room
- Head teacher’s room
- Interview room
- Practical room
- Staff room, and
- Classroom

The table below summarises that all the occupied spaces exceed the requirements in both cases – sDA and UDI. Additionally average lux levels during occupied hours were also analysed which remained in the required 100-3000 lux levels ensuring high daylight performance in all the spaces.

Table 3-2 Daylight assessment results summary

Spaces	sDA (50% >300 Lux)	UDI (100-3000lux)	Average lux (occupied hours)
00_N01 Parents room	95%	82%	1,541
00_N02 Meeting room	96%	84%	1,274
00_N04 Head teachers office	100%	83%	623
00_N06 Interview room	100%	88%	1,213
00_N15 Practical room	100%	82%	1,884
00_N17_Staff room	100%	84%	1,803
00_N20 Classroom	100%	89%	1,252

3.2.5. Lighting Strategy

LED lighting has been proposed across both refurbished and new build spaces to reduce operational energy consumption. The lighting strategy aligns with:

- BREEAM RFO HEA 01 Visual Comfort for refurbishment works;
- BREEAM NC HEA 02 Indoor Environmental Quality for new build elements.

Lighting controls will be incorporated where appropriate to further enhance energy efficiency.

3.2.6. Water Efficiency Strategy

Water efficiency measures have been incorporated through the specification of low-flow sanitary fittings, in accordance with:

- BREEAM WAT 04 Water Efficient Equipment;
- Table 2.2 of Part G of the Building Regulations.

The design adopts a fittings-first approach to reduce potable water consumption.

To support water neutrality, both greywater recycling and rainwater harvesting were considered at an early stage. However, rainwater harvesting has been discounted due to internal plant space constraints and limited availability of suitable storage locations within the site.

Further consideration of alternative water reduction measures will be undertaken as the design develops.

3.3. Sustainable Building Services Strategies

Apart from the above-mentioned passive measures, the design and selection of building services for the Proposed Development have been defined with the aim of minimizing operational energy demand. The servicing strategy for the proposed SEN School has therefore focused on the incorporation of energy efficient and low carbon systems, in line with the 'Be Clean' principle of the energy hierarchy. The approach has been informed by relevant regulatory requirements, including Approved Document Part L and BB101, alongside industry best practice guidance.

The strategy aligns with the intent of BREEAM NC ENE 04 Low Carbon Design, which promotes the integration of low and zero carbon technologies where feasible.

3.3.1. Ventilation Strategy – Refurbishment and New Build

For both refurbishment, and new build spaces, a mixed-mode ventilation strategy has been adopted. In teaching and regularly occupied spaces, Heat Recovery Ventilation (HRV) units are proposed to provide mechanical ventilation, operating alongside openable windows. This approach supports indoor air quality in line with BB101 requirements, reduces reliance on fully mechanical systems, and provides tempered supply air to maintain a comfortable internal environment for SEN users. The HRV units are intended to operate throughout the year, providing both ventilation and, where required, supplementary heating through integrated heating coils.

In ancillary and non-occupied spaces, such as WCs, storage areas, and other internal or landlocked rooms, Mechanical Ventilation with Heat Recovery (MVHR) systems are proposed. These are typically roof-mounted and provide continuous background ventilation to maintain appropriate air quality levels.

The combined approach aims to balance energy efficiency, user comfort, and operational flexibility. The ventilation and cooling strategy has also been developed to support thermal comfort during periods of elevated external temperatures.

3.3.2. Heating Strategy – Refurbishment

Heating for the existing buildings undergoing refurbishment is currently provided via a centralised boiler system located within the main plant room, serving the wider school site. The proposed strategy is to retain and utilise this existing system, with heating distributed through the existing network. This approach has been adopted to:

- Maximise use of existing infrastructure;
- Minimise additional embodied carbon associated with replacement systems;
- Reduce disruption to the operational school environment.

Existing radiators are proposed to be replaced with Low Surface Temperature (LST) radiators to meet the safety and comfort requirements associated with SEN provision.

In addition, HRV units serving classrooms are proposed to incorporate heating coils, enabling the supply of tempered air and providing supplementary heat input where required. This supports improved thermal comfort and allows the existing heating system to be supplemented without significant system upgrades.

Consideration has been given to the future decarbonisation of the heating system, including potential connection to a reversible Air Source Heat Pump (ASHP). The proposed system has been designed to work with lower temperature heating systems enabling a potential connection in the future. The reversible ASHP has the ability to provide cooling to the space, if and when required. This has not been implemented at this stage but remains a potential future strategy, subject to further design development and infrastructure constraints.

3.3.3. Heating Strategy – New Build

For the new build spaces, a predominantly electric-based servicing strategy has been adopted, reflecting the opportunity to implement lower carbon systems within the new build elements. Heating and cooling are proposed to be provided through a combination of:

- Variable Refrigerant Flow (VRF/VRV) systems
- Low Temperature Hot Water (LTHW) LST radiators
- Electric radiators or radiant panels in smaller spaces.

VRF/VRV systems are proposed for primary occupied areas, including:

- Teaching spaces
- Meeting rooms
- Offices
- Group rooms
- Kitchen and servery areas.

The use of VRF/VRV systems allows for efficient electric heating, supporting long-term decarbonisation as the grid carbon factor reduces. Its potential to provide cooling to maintain thermal comfort, particularly for SEN users is a huge advantage. It also allows for zoned control to respond to varying occupancy and operational requirements.

Cooling functionality within the VRF system is intended to be controlled centrally, with the aim of limiting operation to periods of elevated external temperatures (e.g. heatwave conditions), rather than for continuous comfort cooling.

Intermittently occupied spaces, such as stores and WCs, are proposed to be served by electric radiators or radiant panels. Further review will be undertaken at the next stage to assess whether these spaces could instead be connected to an LTHW system, depending on system configuration and overall efficiency considerations.

3.4. Renewable Opportunities On-site

In line with RBC's policy requirement, ambition of achieving Operational Net Zero Carbon as mentioned in the Reading Climate Emergency Strategy 2020-25 and the 'Be Green' principle of the London Plan Energy Hierarchy, opportunities for on-site renewable energy generation have been explored to offset residual energy demand following the implementation of demand reduction and energy efficiency measures.

The PV strategy has been developed with reference to a range of policy and guidance documents. This includes alignment with the aspirations of the RBC's Local Plan, which promotes the use of on-site renewable energy to offset operational demand, with the ambition of achieving a net zero carbon balance. In parallel, the approach has also considered the RBC School Development Sustainability Strategy, which highlights limitations of PV systems within school environments due to the mismatch between peak solar generation and building occupancy patterns. Furthermore, compliance with Part L of the Building Regulations has been taken into account, where on-site renewable generation contributes towards achieving improvements over the Target Emission Rate (TER).

Taking into account these differing requirements and guidance, the proposed PV strategy seeks to balance policy aspirations, operational constraints, and regulatory compliance, resulting in a proportionate and coordinated approach.

There are existing Solar PV systems in place at the school, which currently contribute towards reducing operational carbon emissions across the site. The development of the new SEN facilities presents an opportunity to further build upon this provision and support a longer-term transition towards lower carbon operation.

As part of new build works, additional Solar PV installations shall be explored. The extent of PV installation shall be developed taking into account the available roof area, building form, and orientation, with the aim of maximising on-site renewable generation where feasible. The final specification, layout, and capacity of the PV system will be developed further at the next stage of design, in coordination with the overall energy strategy.

As such, whilst the potential PV installation contributes positively towards reducing operational energy demand and carbon emissions, it is not anticipated that on-site renewable generation alone will be sufficient to achieve a net zero carbon balance in operation.

3.5. Embodied Carbon Strategy

There is currently no specific regulatory requirement for embodied carbon assessment for developments of this nature. However, the project has considered embodied carbon reduction as a key component of its wider sustainability strategy. The approach focuses on improving material efficiency and reducing whole-life carbon impacts associated with construction products, in line with emerging best practice and circular economy principles.

3.5.1. Refurbishment Strategy

The primary strategy for the spaces undergoing refurbishment is to retain and reuse existing building elements wherever feasible. This approach avoids the carbon emissions associated with the manufacture, transport, and installation of new materials, and represents a significant opportunity for reducing embodied carbon at a project level.

Where interventions to existing elements are required, material selection will seek to minimise embodied carbon impacts. A significant proportion of the works involves upgrades to internal wall linings. Internal finishes will be minimised where feasible to reduce material use and associated embodied carbon. Where finishes are

required, low emission materials such as synthetic gypsum board, plywood, hemp-based panels, cork panels, and clay plasters are under consideration. These materials have been considered for their potential environmental benefits, alongside their suitability for the functional and sensory requirements of SEN users.

Natural insulation materials, such as wool fibre or hemp-based insulation, will be considered where appropriate, taking into account performance requirements and buildability constraints.

3.5.2. New Build Strategy

The design approach for the new build areas also seeks to reduce embodied carbon through:

- Efficient use of materials and avoidance of over-specification
- Reduction of unnecessary material layers and build-ups
- Coordination of design to minimise construction waste.

Material selection will be informed by whole-life carbon considerations, including:

- Embodied carbon associated with product manufacture and transport
- Durability and maintenance requirements
- End-of-life potential, including reuse or recyclability.

Where feasible, preference will be given to materials with lower embodied carbon, supported by Environmental Product Declarations (EPDs), and those demonstrating responsible sourcing and high recycled content.

In line with the refurbishment strategy, internal finishes will be rationalised, and low emission materials will be specified where required. Bio-based and lower impact materials, including timber-based products, cork, hemp-based panels, clay plasters, and natural insulation materials, will be considered where appropriate.

3.6. Further Sustainability Strategies

Several additional sustainability strategies have been considered for the SEN School, addressing wider environmental performance, occupant wellbeing, and sustainable transport.

- Provision of cycle storage for students and staff is proposed, along with associated staff facilities such as lockers and changing areas, to encourage active travel and support sustainable modes of transport.
- Electric Vehicle (EV) charging infrastructure is proposed within the school parking area. Out of the 32 total parking spaces in the South Carpark, 4 have been proposed with EV charging facility. This is in line with the Policy TR5 of the Reading Borough Local Plan 2019 which requires 10% of the spaces to be provided with active charging point. Passive cable duct has been proposed for 20% of the remaining spaces in compliance with Building Regulations Part S.
- In line with the 'Be Seen' principle of the London Plan Energy Hierarchy, the existing Building Management System (BMS) shall be enabled for effective monitoring and control of building energy performance.
- In addition, Post Occupancy Evaluation (POE) is to be considered to assess real-world energy performance and inform potential operational improvements.

These measures complement the energy and environmental strategies outlined in the preceding sections and will be developed further as the design progresses.

4. Conclusion.

This Sustainability Statement set out the sustainability approach adopted for the project to facilitate a new SEN school at Ridgeway Primary School. The Proposed Development is for new parking, landscaping and boundary treatment at the site to facilitate a new SEN school at the site. The project includes refurbishment and new extensions (total of 1,595 m² and 348 m² respectively) which do not form part of the planning application (the extensions are being considered separately through a Lawful Development Certificate) but have been considered as part of this Sustainability Statement to demonstrate that sustainability is at the heart of the project. The sustainability strategy has been developed to respond to the different opportunities and constraints associated with each element of the works.

The strategy has been informed by the Reading Borough Local Plan, the Sustainable Design and Construction SPD, RBC's School Development Sustainability Strategy, Reading Climate Emergency Strategy 2020-25 and other relevant industry guidance. These establish a direction for the development in Reading, including the reduction of operational energy demand, the use of efficient and low carbon building design, maximisation of on-site renewable energy, improved resource efficiency, and adaptation to future climate.

The Proposed Development presents different opportunities and constraints across its refurbishment and new build components. The existing building limits the extent to which its form, orientation, and fabric can be altered, and the sustainability strategy for the refurbishment therefore focuses on proportionate improvements while retaining and making effective use of existing building elements and services. The new build elements provide greater opportunities to incorporate enhanced fabric performance, improved airtightness, passive design measures and efficient building systems from the outset.

In line with the 'Be Clean' principle, the servicing strategy combines retention and optimisation of existing systems within refurbished spaces with the introduction of efficient and predominantly electric systems within the new build spaces, supporting improved operational performance while responding to site and refurbishment constraints.

In line with the 'Be Green' principle, on-site renewable energy generation has been incorporated through Solar PV systems, which have been maximised within the constraints of the site. Whilst these contribute towards reducing operational carbon emissions, it is recognised that they are not sufficient to achieve a net zero carbon balance in isolation.

In line with the 'Be Seen' principle of the London Plan Energy Hierarchy, measures are proposed to support monitoring and verification of building performance. The existing BMS shall be utilised to enable effective energy monitoring, and POE is to be considered to assess real-world performance and inform future improvements.

The embodied carbon strategy focuses on retention and reuse of existing structures, efficient material use, and the selection of lower impact materials, supporting circular economy principles and reducing lifecycle impacts.

Overall, the proposed development represents a proportionate and considered response to the sustainability objectives of Reading Borough Council, balancing policy aspirations with practical, operational, and site-specific constraints.

The proposals outlined within this report are based on the current stage of design development and will continue to be refined as the project progresses.