JANUARY 2026

Sustainability & Energy Statement

Land at LVS Hassocks, London Road, Sayers Common, West Sussex

Iceni Projects Limited on behalf of
Wates Developments Limited and
the Licensed Trade Charity (LTC)

January 2026

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Sustainability & Energy Statement

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1. EXECUTIVE SUMMARY

1.1 Iceni Projects Ltd has been commissioned by Wates Developments Limited and the Licensed Trade Charity (LTC) to produce a Sustainability & Energy Statement to accompany the hybrid planning application for the proposed development of the Land at LVS Hassocks, London Road, Sayers Common, West Sussex.

1.2 This hybrid planning application proposes the development of the north western part of the Land at LVS Hassocks so as to accommodate a new SEN School, the conversion of the existing chapel to deliver community uses, and the development of the rest of the land at LVS Hassocks so as to accommodate up to 210 dwellinghouses, alongside access, car parking, landscaping, informal outdoor space and drainage works.

1.3 Sustainability is a core consideration of the application and has been incorporated from the project outset. Energy and water efficiency have been maximised, whilst the production of waste and pollution is to be minimised, thus ensuring the impact of the proposals on its immediate surroundings and the environment as a whole is minimised.

1.4 Consideration has been given to Chapter 14 of the National Planning Policy Framework (NPPF), the Mid Sussex District Plan 2014 – 2031, as well as the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications) in the overall formulation of this strategy, with two key elements proposed for the approach to the scheme's sustainability proposals, as follow:

- The overall development has been assessed using the Mid Sussex District Plan 2014 – 2031, as well as the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications), to demonstrate that the proposed development will maximise resource efficiency, minimise the generation of waste and pollution, and ensure the risk of flooding on-site is mitigated during both construction and in operation, to provide a new SEN school and dwellings that meet the recommended standards for well-being of future occupants; and

- The carbon dioxide (CO_2) emissions reduction strategy for the proposals is based on the energy hierarchy to provide a rigorous methodology, which aims to reduce the carbon dioxide emissions from the development as far as possible. This is intended to be achieved through the employment of highly efficient building fabric components to reduce energy demand, and the potential inclusion of renewable and low carbon energy technologies to deliver further carbon dioxide emissions reductions. It is anticipated that the proposed carbon dioxide emissions reduction

strategy will facilitate significant carbon dioxide emissions savings compared to the Part L:2021 baseline, aiming to significantly exceed the current requirements of Mid Sussex District Council and to align with the draft policies set out within the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications).

1.5 The proposed strategy has been based around Strategic Objectives 1 and 6 and Policies DP39 and DP42 of the Mid Sussex District Plan 2014 – 2031 and the Strategic Objectives and Policies DPS1, DPS2, DPS5, DPS5 and DPSC17 of the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications). In summary, based on this strategy, the proposed development will:

- make efficient use of land;
- retain the existing chapel building on-site to deliver community uses;
- promote the use of sustainable and active modes of transport;
- reduce the risk of flooding on-site and in the surrounding area;
- minimise internal water consumption to 100 litres per person per day;
- incorporate low-impact materials, in consideration of the BRE Green Guide to Specification;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
- mitigate the risk of overheating;
- incorporate measures to improve site biodiversity, including biodiverse planting;
- ensure air, noise, ground, light and water pollution are minimised as far as possible;
- minimise energy demand through the specification of low U-values, low air permeability and low thermal bridging to reduce heat loss;
- be fossil fuel free, utilising electric-only systems, such as air source heat pumps (ASHPs) to serve the space and water heating demands of the proposed buildings;
- utilise renewable technology, where possible, such as rooftop photovoltaic panels, to generate carbon-free electricity; and
- achieve a significant reduction in CO_2 emissions for the proposed buildings, following the Energy Hierarchy methodology.

1.6 Overall, the proposals constitute sustainable development in accordance with national and local policy requirements and will provide a development that seeks to promote these principles in operation.

2. INTRODUCTION

2.1 Iceni Projects Ltd has been commissioned by Wates Developments Limited and the Licensed Trade Charity (LTC) to produce a Sustainability & Energy Statement to accompany the hybrid planning application for the proposed development of the Land at LVS Hassocks, London Road, Sayers Common, West Sussex.

Report Objective

2.2 This document details the sustainable design and construction measures adopted by the proposed development and gives an overview of the design proposals that will ensure the development operates in a sustainable manner over the lifespan of the scheme. The Sustainability & Energy Statement report headlines will provide a framework for the project team to operate consistently within sustainability guidelines set out by Mid Sussex District Council.

2.3 The report is structured to meet these guidelines as follows:

- Section 3 discusses the planning context and policies which are relevant to sustainability;
- Section 4 discusses the development response to the policy drivers for sustainability;
- Section 5 sets out the development's energy strategy to minimise CO_2 emissions; and
- Section 6 summarises the development's design response.

Site and Surroundings

2.4 The application site (Appendix A1) is located to the west of the B2118, immediately to the northwest of the village of Sayers Common, Mid Sussex. The site is bound by the B2118 and housing to the east, a woodland area is present along the southern boundary, beyond which are a number of dwellings facing onto Nuthatch Lane. The northern and western boundaries of the site are formed by open fields The closest town, Burgess Hill, is situated approximately 5km to the east.

2.5 The application site itself comprises predominantly grassland bounded by hedgerows and treelines, with the existing school buildings, hardstanding and parking areas associated with the LVS Hassocks – Independent SEN school present within the central area. The surrounding area is predominantly residential to the south and east, with the site located at the northwestern edge of Sayers Common. The wider surrounds of the site are rural in nature, with a number of villages, including Twineham, Hurstpierpoint, Hurst Wickham, Hassocks, Hickstead, Wineham and Blackstone also present. As noted above, the town of Burgess Hill is located to the east, and the town of Haywards Heath is located to the northeast. The location of the proposed development site is shown in Figure 2.1 below.

Figure 2.1 The site

Approximate site boundary

The Proposed Development

2.6 The description of development is as follows:

> *"Hybrid application for separate and severable elements comprising:*
>
> *Demolition of all existing buildings bar the chapel, to retained for use within Use Class F and:*
>
> *a) Full planning permission for the development of the north western part of the Land at LVS Hassocks so as to accommodate a new SEN School with associated access from London Road, car parking, landscaping and drainage works; and*
>
> *b) Outline planning permission (Appearance, Landscaping, Layout and Scale Reserved) for the development of the rest of the land at LVS Hassocks so as to accommodate up to 210 dwellinghouses (including affordable housing) with associated access, car parking, landscaping, play areas, informal outdoor space and drainage works".*

2.7 The illustrative masterplan is shown in Figure 2.2 below, whilst the red line boundary of the site is displayed in Appendix A1.

Figure 2.2 Illustrative Masterplan

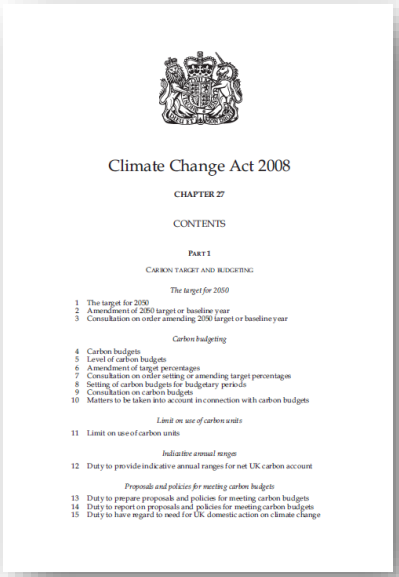
3. PLANNING POLICY FRAMEWORK

3.1 Built environment sustainability is incorporated within policy and regulation at a national and local level, as set out below.

National

Climate Change Act 2008 (November 2008)

3.2 On 26th November 2008, the UK Government published the Climate Change Act 2008; the world's first long-term legally binding framework to mitigate against climate change. Within this framework, the Act sets legally binding targets to increase greenhouse gas emission reductions through action in the UK and abroad from the 60% target set out in the Energy White Paper, to 80% by 2050.



Climate Change Act 2008

CHAPTER 27

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PART 1

CARBON TARGET AND BUDGETING

The target for 2050

1 The target for 2050
2 Amendment of 2050 target or baseline year
3 Consultation on order amending 2050 target or baseline year

Carbon budgeting

4 Carbon budgets
5 Level of carbon budgets
6 Amendment of target percentages
7 Consultation on order setting or amending target percentages
8 Setting of carbon budgets for budgetary periods
9 Consultation on carbon budgets
10 Matters to be taken into account in connection with carbon budgets

Limit on use of carbon units

11 Limit on use of carbon units

Indicative annual ranges

12 Duty to provide indicative annual ranges for net UK carbon account

Proposals and policies for meeting carbon budgets

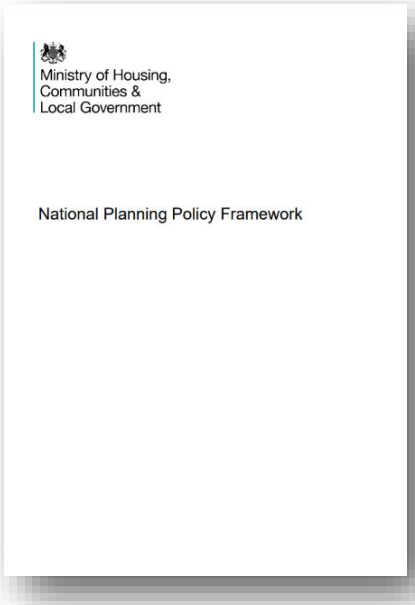
13 Duty to prepare proposals and policies for meeting carbon budgets
14 Duty to report on proposals and policies for meeting carbon budgets
15 Duty to have regard to need for UK domestic action on climate change

3.3 As required under Section 34 of the Climate Change Act, the Sixth Annual Carbon Budget was accepted by the Government in April 2021. This sets out a budget for UK emissions for the period 2033 – 2037.

3.4 Following a commitment in June 2019, the Climate Change Act has been amended to target net zero carbon emissions by 2050.

National Planning Policy Framework (December 2023)

3.5 The Ministry of Housing, Communities & Local Government determines national policies on different aspects of planning and the rules that govern the operation of the system. Accordingly, the National Planning Policy Framework (NPPF), which came into force in March 2012 and was updated in February 2019, aims to strengthen local decision making. Additional updates have since been made through the latter half of 2020 and in January and July 2021 to reflect changes related to use classes, permitted development rights, the calculation of housing need, and requirements to achieve beauty alongside sustainability. Further updates were made in September and December 2023 with respect to



Ministry of Housing, Communities & Local Government

National Planning Policy Framework

onshore wind development, and beauty, design, infrastructure, neighbourhood and the environment, respectively.

3.6 Paragraphs 10 and 11 of the NPPF confirm that at the heart of this document is a "*presumption in favour of sustainable development*", and that development proposals that accord with an up-to-date development plan should be approved without delay.

3.7 Paragraph 7 states that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

3.8 Achieving sustainable development means that the planning system has three overarching activities, which are interdependent and need to be pursued in mutually supportive ways, so that opportunities can be taken to secure net gains across each of the different objectives:

- **An Economic Role –** ensuring the provision of land and infrastructure needed to help build a *strong, responsive and competitive economy.*

- **A Social Role –** supplying the required amount of housing while at the same time ensuring and building *strong, vibrant and healthy communities.* Ensuring that the built environment is sited around accessible local services which help support a community's *health, social and cultural well-being.*

- **An Environmental Role –** ensuring development contributes to the protection and enhancement of the *natural, built and historic environment* through the improvement of biodiversity, minimising the use of natural resources and production of pollution / waste, and guaranteeing sufficient adaptation to climate change.

Future Homes Standard (March 2019)

3.9 Within the Spring Statement 2019, the Chancellor announced the future introduction of the Future Homes Standard 2025. The Standard will mandate the end of fossil fuel heating systems in new homes from 2026 and target "world-leading levels of energy efficiency". In doing this, the Standard aims to utilise green technology to reduce environmental impacts, as well as reducing consumer energy bills.

3.10 This Standard is expected to build on the Prime Minister's Clean Growth Grand Challenge mission, which aims to at least halve the energy usage of new build properties by 2030. It also looks to halve the costs of renovating existing buildings to achieve a similar standard of energy efficiency as new buildings, whilst improving their quality and safety.

Future Buildings Standard (January 2021)

3.11 On 19th January 2021, the government announced the future introduction of the Future Buildings Standard. The Standard will deliver new non-domestic buildings that are zero-carbon ready from 2026 onward, which use low-carbon heat, and which have the best fabric standards possible. As the electricity grid continues to decarbonise, buildings built to the Standard will become net zero carbon over time, with no need for further energy efficiency retrofit work as they will not rely on fossil fuels for heating and hot water.

3.12 This Standard is expected to build on the Prime Minister's Clean Growth Grand Challenge missions, which aims to at least halve the energy usage of new buildings by 2030. It also looks to halve the costs of renovating existing buildings to achieve a similar standard of energy efficiency as new buildings, whilst improving their quality and safety.

Part L:2021 of the Building Regulations (June 2022)

3.13 Part L of the Building Regulations relates to the conservation of fuel and power, and applies to both new and existing buildings. The current edition covers the energy efficiency requirements of the building regulations as set out in Part L of Schedule 1 to the Building Regulations. Technical guidance is contained in two Part L Approved Documents.

3.14 The documents of relevance to this scheme include:

- **Approved Document L Volume 1: Dwellings.** This provides the methodology for new build, domestic buildings to meet current energy efficiency standards, including backstop U-values, carbon dioxide emissions calculations and minimising the risk of overheating. Carbon dioxide emissions reductions are prescribed for 'regulated' emissions only, and relate to heating, hot water, lighting, auxiliary and cooling (where specified). Emissions from domestic appliances (cooking, for example) are considered to be unregulated emissions, and are excluded from the analysis.

- **Approved Document L Volume 2: Buildings other than dwellings.** This provides the methodology for new build, non-domestic buildings to meet current energy efficiency standards, including backstop U-values, carbon dioxide emissions calculations and minimising the risk of overheating. Carbon dioxide emissions reductions are prescribed for 'regulated' emissions only, and relate to heating, hot water, lighting, auxiliary and cooling (where specified). Emissions from other equipment (computers, for example) are considered to be unregulated emissions, and are excluded from the analysis.

Local

3.15 In determining the local context, the Mid Sussex District Plan 2014 – 2031 (March 2018) sets out policy relevant to sustainability.

Mid Sussex District Plan 2014 – 2031 (March 2018)

3.16 The Mid Sussex District Plan sets out broad guidance on the distribution and quality of development in the form of 'higher level' strategic policies. The following policies are considered of great relevance to this proposal:

- **Strategic Objective 1** seeks to promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change.
- **Strategic Objective 6** seeks to ensure that development is accompanied by the necessary infrastructure in the right place at the right time that supports development and sustainable communities. This includes the provision of efficient and sustainable transport networks.
- **Policy DP39: Sustainable Design and Construction** states that all development proposals must seek to improve the sustainability of development and should, where appropriate and feasible according to the type and size of development and location, incorporate the following measures:
    - Minimise energy use through the design and layout of the scheme, including through the use of natural lighting and ventilation;
    - Explore opportunities for efficient energy supply through the use of communal heating networks where viable and feasible;
    - Use renewable sources of energy;
    - Maximise efficient use of resources, including minimising waste and maximising recycling/re-use of materials through both construction and occupation;
    - Limit water use to 110 litres/person/day in accordance with Policy DP42: Water Infrastructure and the Water Environment;

- Demonstrate how the risks associated with future climate change have been planned for as part of the layout of the scheme and design of its buildings to ensure its longer term resilience.

- **Policy DP42: Water Infrastructure and the Water Environment** states that new development proposals must be in accordance with the objectives of the Water Framework Directive, and accord with the findings of the Gatwick Sub Region Water Cycle Study with respect to water quality, water supply and wastewater treatment and consequently the optional requirement under Building Regulations – Part G applies to all new residential development in the District. Development must meet the following water consumption standards:

  - Residential units should meet a water consumption standard of 110 litres per person per day (excluding external water use).

  - Non-residential buildings should meet the equivalent of a 'Good' standard, as a minimum, with regard to the BREEAM water consumption targets for the development type.

  Development proposals which increase the demand for off-site service infrastructure will be permitted where the applicant can demonstrate;

  - that sufficient capacity already exists off-site for foul and surface water provision. Where capacity off-site is not available, plans must set out how appropriate infrastructure improvements approved by the statutory undertaker will be completed ahead of the development's occupation; and

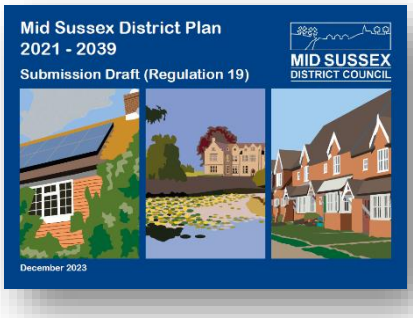
  - that there is adequate water supply to serve the development. environment.

  Planning conditions will be used to secure necessary infrastructure provision.

  Development should connect to a public sewage treatment works. If this is not feasible, proposals should be supported by sufficient information to understand the potential implications for the water.

  The development or expansion of water supply or sewerage/sewage treatment facilities will normally be permitted, either where needed to serve existing or proposed new development, or in the interests of long term water supply and waste water management, provided that the need for such facilities outweighs any adverse land use or environmental impacts and that any such adverse impact is minimised.

Mid Sussex District Plan 2021 – 2039 (Regulation 19; December 2023; with Main Modifications July 2024)



3.17 The draft District Plan 2021 – 2039 comprises an updated vision, strategy, set of site allocations and policies that will supersede the adopted Mid Sussed District Plan 2014 – 2031. Whilst not yet formally adopted, when accounting for the Schedule of Main Modifications set out in July 2024, the policies of relevance to the proposed development detailed within the draft District Plan 2021 – 2039 include:

- **Strategic Objectives: Environment** seeks to protect and enhance the natural, built and historic environment by:
    - Creating and maintaining easily accessible high quality green and blue infrastructure in the right places to encourage active travel, improve physical and mental health, support biodiversity, and address climate change mitigation and adaptation.
    - Promoting development that embodies the 20-minute neighbourhood principles and makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change.
    - Promoting well located and designed development that reflects the District's distinctive towns and villages, retains their separate identity and character and prevents coalescence.
    - Conserving and enhancing valued landscapes for their visual, historical and biodiversity qualities.
    - Protecting valued characteristics of the built environment for their historical and visual qualities.
    - Ensuring that development is accompanied by the necessary infrastructure in the right place at the right time that supports development and sustainable communities. This includes as a priority the provision of efficient and sustainable transport networks.
    - Protecting and enhancing the natural environment, achieving net gains in biodiversity, nature recovery and tree cover.
- **Policy DPS1: Climate Change** states that the Council will take an integrated and holistic approach to address the causes of climate change and to increase resilience to the effects of climate change. This will be achieved by:

Reducing carbon emissions

1. Development will be required to demonstrate that measures have been taken to reduce carbon emissions, including improvements in energy efficiency and in the design and construction of buildings. This includes new buildings and the conversions of existing buildings. Detailed requirements are set out in Policies DPS2: Sustainable Design and Construction, DPS3: Renewable and Low Carbon Energy Schemes, and the Mid Sussex Design Guide SPD.

2. The Council will support renewable and low carbon energy schemes in line with the requirements set out in Policy DPS3: Renewable and Low Carbon Energy Schemes.

3. Development should embed the principles of the 20-minute neighbourhood and local living and prioritise active travel such as walking and cycling and sustainable transport such as public transport to reduce reliance on private modes of transport and to facilitate healthy lifestyles. Detailed requirements are set out in Policies DPT1: Placemaking and Connectivity; DPT3: Active and Sustainable Travel; and DPB1: Character and Design.

4. Development likely to be sources of other greenhouse gas emissions (methane, nitrous oxide and fluorinated gases) will be required to demonstrate that opportunities have been taken to reduce these emissions. This includes proposals that may use these other greenhouse gases in their design and operation, for example, refrigerants and air conditioning systems.

Maximising carbon sequestration

5. Development will be required to protect existing trees, woodland, hedgerows and their soils and seek opportunities to plant new hedgerows and appropriate species of trees in appropriate places, including street trees. Detailed policy requirements are set out in Policy DPN4: Trees, Woodland and Hedgerows.

6. Development will be required to protect existing carbon sinks and stores and take opportunities to provide nature-based solutions for carbon capture and sequestration.

7. Development will be required to take opportunities to improve soil health and minimise disturbance to soils in order to protect soil biodiversity and carbon storage. Detailed policy requirements are set out in Policy DPN1: Biodiversity, Geodiversity and Nature Recovery.

Climate change adaptation and mitigation

8. Development must be designed to minimise vulnerability from the effects of climate change particularly in terms of overheating, food security, flood risk and water supply. Detailed policy

requirements are set out in Policies DPS2: Sustainable Design and Construction and DPS4: Flood Risk and Drainage.

9. Development will be required to incorporate green and blue infrastructure and nature-based solutions to moderate surface and air temperatures, increase biodiversity and as part of sustainable drainage systems. Detailed requirements are set out in Policies DPB1: Character and Design; DPS4: Flood Risk and Drainage; and DPN3: Green and Blue Infrastructure.

10. Development will be required to achieve a net gain in biodiversity and contribute to ecological networks and the Local Nature Recovery Strategy. Detailed policy requirements are set out in Policies DPN1: Biodiversity, Geodiversity and Nature Recovery, and DPN2: Biodiversity Net Gain.

11. The Council will seek adaptation and mitigation measures that improve resilience to climate change and allow communities, businesses, buildings, infrastructure and ecology to adapt to the impacts of climate change.

- **Policy DPS2: Sustainable Design and Construction** states that all development must submit a proportionate Sustainability Statement to demonstrate how through its design, construction, operation and use it will contribute to the reduction of greenhouse gas emissions, increase resilience to the impacts of climate change and improve sustainability and includes incorporation of measures set out at Principle DG37 of the Mid Sussex Design Guide SPD.

  Zero carbon development

  Unless it can be demonstrated that doing so is not technically feasible or unviable, using a fabric first approach, all new build development must achieve zero operational GHG emissions by reducing heat and power demand and then supplying all (regulated and unregulated) operational energy through on-site renewables.

  Energy Use

  The carbon reduction requirements for achieving net zero development must be met by using a fabric first approach following the energy hierarchy:

  i. Minimise the demand for energy.

  ii. Maximise energy efficiency.

  iii. Utilise renewable energy.

  All developments must include decentralised, renewable or low carbon energy provision. Residential and non-residential renewables such as solar panels (including ground mounted)

and associated infrastructure, will be supported in principle but should seek to minimise the visual impact wherever possible

Heating to all new build developments and major refurbishments shall be provided using renewable energy (not fossil fuels).

Residential new build: Until superseded by higher national standards, development must achieve a 100% emissions reduction against the Target Emissions Rate (TER) on all new build dwellings. Compliance shall be demonstrated via the Standard Assessment Procedure (SAP) calculations and detailed submitted as part of an Energy Statement.

Development is encouraged to exceed this standard where feasible and viable, and alternative routes such as Passivhaus standards will be supported where evidence is provided. Passivhaus compliance shall be evidenced by submitting full Passivhaus Planning Package outputs demonstrating that Passivhaus certification is achievable.

Non-residential new build: Major development must achieve maximum credits in the “Energy performance”, and “Prediction of operational energy consumption” and “Beyond zero net regulated carbon” categories of BREEAM (or equivalent) to demonstrate that the development has surpassed net zero regulated emissions.

All minor new build developments have the option to demonstrate achievement of zero operational GHG emissions through the Part L of Building Regulations rather than a BREEAM assessment.

Evidence must be provided to demonstrate every feasible and viable option has been explored to fully achieve the net zero target on-site. Only in exceptional circumstances, where any shortfall is identified, appropriate mitigation should be formally agreed with the Council.

Assessment frameworks

BREEAM Technical Standards: Planning applications of a scale and nature defined in the table below, must be accompanied by a pre-assessment, demonstrating how the BREEAM Technical Standards and/or any future replacement standards, will be met.

Evidence demonstrating the project has been registered with BRE during the design stage shall be submitted with any application and conditions/ requirements will be imposed to secure appropriate final (post-construction/ post-refurbishment stage) certification to demonstrate compliance with this policy.

Where Passivhaus certification is being sought, a ‘preconstruction compliance check’ completed by a Passivhaus certifier will be required; secured by condition and upon completion, a Quality Approved Passivhaus certification for each dwelling/building will be required.

Development, as defined below, will be required to meet the relevant minimum defined standards until they are superseded by higher national standards.

Development Type	Scale of Development	Minimum Standard
Non-residential and mixed-use new build	Major	BREEAM Excellent
Non-residential Refurbishment and/or extension	Major	BREEAM Excellent – Refurbishment and Fit Out Technical Standards

Post-occupancy monitoring: All major non-residential new build developments must achieve a credit for POE in the category Man 05 Aftercare under the relevant BREEAM scheme.

Developers should share their POE information with the built environment sector to ensure transparency and inform wider lesson learning.

Embodied Carbon

Development proposals must prioritise retention and retrofit of existing buildings or structures to capture the embodied carbon associated with the building's original construction; unless it can be demonstrated to be unviable to do so.

Major new build developments: Major new build developments must undertake a whole life-cycle (WLC) carbon assessment using a nationally recognised assessment methodology. Relevant credits in BREEAM, or equivalent, shall be achieved to demonstrate reasonable endeavours have been made to minimise embodied carbon.

The use of sustainably sourced wood in construction, particularly from local sources, is strongly encouraged.

Householder development

Proposals for householder development must demonstrate that they have been designed to be as energy efficient and sustainable as possible through good design and by:

1. Increasing the energy efficiency of the proposed new elements, and

2. Increasing the energy efficiency of other parts of the building.

All measure should be set out in a proportionate Sustainability Statement.

Prevent overheating

All new development must demonstrate how design measures have been incorporated to:

3. Minimise potential overheating such as through the layout, orientation and design of buildings.

4. Maximise passive cooling through natural ventilation and other passive means. Reliance on air conditioning systems should be avoided. Green and blue infrastructure incorporated in line with Policy DPN3: Green Infrastructure to provide natural cooling and shading

Water resources and water efficiency

New development proposals must accord with the findings of the Gatwick Sub Region Water Cycle Study with respect to water resources, water quality, water supply and wastewater treatment.

All residential new build: Development must meet a maximum water consumption standard of 85 litres per person per day to minimise the impact of the development on water resources and water quality.

Major non-residential new build: Development must achieve 3 credits in BREEAM category Wat 01 and demonstrate reasonable endeavours to achieve an 'Outstanding' rating overall.

All development will be required to meet the relevant minimum standards set out above until they are superseded by higher national standards.

Sustainable water consumption rates can be achieved through incorporation of measures to reduce water use and reuse water including:

- Water efficient fittings and appliances.
- Rainwater harvesting, including incorporation of rainwater butts.
- Greywater recycling.

Minimise waste

In accordance with relevant policies in the West Sussex Waste Local Plan, all development must support the circular economy by minimising construction, demolition and excavation waste disposed of in landfill and follow the waste hierarchy to maximise recycling and re-use of material.

New development must be designed with adequate and easily accessible storage space that supports separate collection of dry recyclables and food waste, as well as residual waste taking account of guidance in the Mid Sussex Design Guide SPD.

- **Policy DPS6: Health and Wellbeing** states that, to enable and support healthy lifestyles and address health and wellbeing needs in Mid Sussex, all new development must be designed to achieve healthy, inclusive and safe places by embedding the principles of the 20-minute neighbourhood and 'local living'.

  In order to maximise opportunities to enable healthy lifestyles, all new development must address all of the following (where applicable for the type of development proposed):

  1. Be of high quality in its design and construction and be set within an attractive environment.
  2. Be well-designed to ensure legibility of layout and the public realm including through the use of materials.
  3. Meet the needs of the community through accessible, inclusive and safe design including incorporating measures to reduce opportunities for crime.
  4. Prioritise active travel such as walking and cycling and sustainable transport such as public transport, and take opportunities to enhance recreational routes and public rights of way.
  5. Incorporate green and blue infrastructure and biodiversity enhancements.
  6. Provide high quality private outdoor space and publicly accessible open and green space.
  7. Support and facilitate healthy eating including through the provision, where possible, of local and domestic food production such as allotments, community growing spaces and community orchards.
  8. Take opportunities to increase community connectivity and social inclusion such as by providing spaces for the community to gather, exercise, socialise and interact.
  9. Take opportunities to improve the factors that can contribute to poor health and social inequalities such as noise, air quality, crime, access to education and employment, local amenity, and access to open space and the countryside.
  10. Incorporate measures to provide resilience against the effects of climate change including overheating, flood risk and drought.

- **Policy DPSC7: Land at LVS Hassocks, London Road, Sayers Common** lists the following policy requirements:

  1. Demonstrate a coordinated approach and collaboration with other housing allocations in the Plan within Sayers Common to deliver high-quality placemaking which supports the 20-minute neighbourhood principles, with direct enhanced active/sustainable transport connections, and includes enabling the viability of new public transport services.

2. Prioritise pedestrian and cycle access throughout the development and integrate and enhance the existing PRoW which crosses the site.

3. Provide any necessary upgrades to the existing access onto B2118.

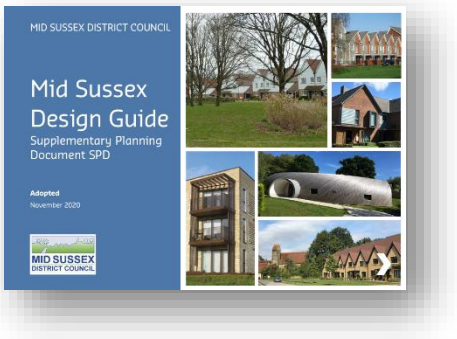
4. Redevelopment proposals shall provide evidence that demonstrates how a replacement SEND school will be provided either on-site or within the district, to the satisfaction of the Council and relevant key stakeholders.

5. Follow a sequential approach by directing development away from areas of flood risk.

6. Investigate, assess and address any land contamination issues arising from former uses of the site or from uses, or former uses, of land in proximity to the site.

7. Address impacts associated with the brick clay (Weald) Minerals Safeguarding Area.

Mid Sussex Design Guide Supplementary Planning Document (SPD; November 2020)



3.18 The Mid Sussex Design Guide Supplementary Planning Document (SPD) provides a number of design principles that aim to deliver high quality new development across Mid Sussex. It is states that all new development should be designed to high environmental standard. This applies to both the building design and layout, which should have regard to the following:

- Sustainable construction principles including maximising energy and water efficiency, minimising carbon emissions and use of resources;

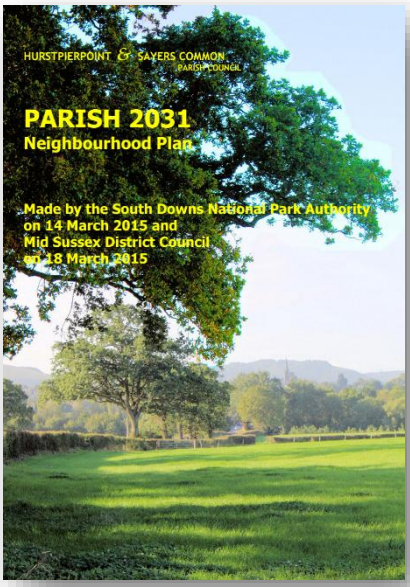
- Optimising development opportunities especially on brownfield sites and in locations close to facilities or with good transport links;

- Organising development around green transport principles that reduce travel distances, prioritise pedestrian and cycle movement and integrate public transport;

- Planning schemes around Green Infrastructure provision that is underpinned by: (a) healthy living and well-being principles; (b) helping to deliver a net gain in bio-diversity; (c) responding to the beauty of the natural landscape and ensuring that natural features are retained and enhanced; and

- Designing for adaptation and resilience to future weather events (drier/hotter summers and wetter/warmer winters).

Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan (March 2015)



3.19 The Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan sets out the development principles and allocation for areas of future building and land use. A number of strategic objectives and specific policies are also detailed to realise the following vision set out within the Neighbourhood Plan:

"We want to keep the village-feel of our community, and keep it a thriving and attractive Parish, a desirable place to live, work and visit. Our aim is to maintain, and where possible, improve the social, economic and environmental well being of our area and the quality of life for all, now and in the future."

Other Considerations

Climate and Sustainability Action

3.20 Mid Sussex Council is committed to playing its part in supporting internation and national plans to allow prosperity to continue, but to move away from old and polluting ways of doing things. Key actions that the Council is taking to aid in the achievement of this include:

- The use of the United Nations (UN) Sustainable Development Goals in the preparation of future plans and policies, to guide thinking and reporting on wider measures of social, environmental and economic wellbeing.

- The commissioning of climate change experts in June 2021 to advise how to create an effective pathway to reduce greenhouse gas emissions in line with the government's 2050 net-zero target.

- Requesting that the Council is proactive in including young people in the 'Climate Emergency' process.

- With the guidance of the recommendations of the Net Zero report, the updating of policy approaches to environmental sustainability, through the development of the Sustainable Economy Strategy and the review of the Local Plan during 2021 – 2022.

4. SUSTAINABILITY STATEMENT

4.1 The Sustainability & Energy Statement for the proposed development is divided into two main parts.

4.2 The sustainability strategy for the proposed development has been assessed in line with the guidance set out within relevant policies of Mid Sussex District Plan 2014 – 2031, as well as the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications). This enables a holistic sustainability approach to be set out for the proposed development. The Mid Sussex District Plan 2014 – 2031, the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications) encourage new development to incorporate high-quality design measures, and therefore represents best practice guidance to meet high standards of sustainable design and construction.

4.3 The carbon dioxide (CO_2) emissions reduction strategy for the proposed buildings to be delivered as part the development is based on the energy hierarchy to provide a rigorous methodology, which maximises cost-effective opportunities for emissions reduction, as detailed in Section 5.

Sustainable Design and Construction

4.4 In line with the guidance provided in the Mid Sussex District Plan 2014 – 2031, the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications), the sustainability features of the proposed development are outlined below.

4.5 Issues related to energy conservation, renewables and reducing greenhouse gases follow in a dedicated section.

Making Effective Use of Land

4.6 Figure 4.1 below shows the location of the development site with respect to its surroundings.

Figure 4.1 Current site

Approximate site boundary

4.7 As shown above, the proposed development site is located at the edge of an existing settlement, with residential properties located to the southeast of the site within the village of Sayers Common. A range of community facilities and amenities are located within Sayers Common and the surrounding area, including a nursery, a primary school, shops, cafes and areas of public open space, all within walking or cycling distance of the application site.

4.8 The proposed development seeks to deliver a new, replacement SEN School, whilst also retaining the existing chapel building to provide community uses. This will ensure the continued provision of specialist educational services, through the delivery of a purpose-built facility, whilst also providing community floorspace to serve both new residents of the proposed development, and existing residents of the surrounding area.

4.9 The proposed development is therefore considered to be an extension of the existing village of Sayers Common, and therefore makes effective use of land, located within an established settlement.

Location and Transport

4.10 Accessibility to public transport connections contributes to the sustainability of a site's location. Burgess Hill railway station is located approximately 6km to the east of the site, and Hassocks railway station is located approximately 6.3km to the southeast. These stations provide frequent access to a range of destinations, including London Victoria and Littlehampton via Southern services, Brighton via Thameslink services, and Gatwick Airport via Gatwick Express services.

4.11 The nearest bus stops are located on the B2118, which forms the eastern boundary of the site. These bus stops are served by the number 100 service, which provides an hourly service to destinations between Pulborough, Storrington, Washington and Burgess Hill on weekdays and Saturdays. The number 273 service, which runs approximately hourly on Mondays to Sundays, also serves these stops, providing access to destinations between Crawley and Brighton. The school bus service 331 also operates from these bus stops, with two services provided per day, once in the morning and once in the afternoon, to Downlands School.

4.12 There are a number of existing footways that provide access to the site, including a footway on the western side of the B2118 opposite the site. Numerous Public Rights of Way (PRoWs) are also present within the vicinity of the site. To the north, Bridleway 9Hu runs from B2118 to Twineham Lane on the west, routing through the existing access to the site and along the northern boundary. To the south of the site, Footpath 27Hu provides connections to Berrylands Farm and Langton Lane, as well as a crossing over the A23. Whilst there is no dedicated cycle infrastructure present in the area surrounding the site, it is noted within the Transport Assessment, prepared by i-Transport, that cycle travel is appropriate on many of the surrounding roads, in light of the sign-posted speed limits, and the characteristics of the roads.

4.13 As detailed within the Transport Assessment, the internal layout of the proposed development will ensure future residents and site users will be able to easily walk and cycle within the local community, whilst also providing access to the proposed SEN School. A spine road will be delivered to serve both the residential and school elements of the proposed development, with 2m-wide footways to be included for on either side of the carriageway. These footpaths will tie into the existing footway network, and will include for dropped kerbs and tactile paving to ensure safe and continuous pedestrian movement across the site frontage. As detailed above, Bridleway 9Hu routes through the existing site access, and it is intended that access to this PRoW be maintained and enhanced as part of the proposed development.

4.14 The layout of the section of the site within which the SEN School is to be located has been designed to ‘internalise’ all movement and parking associated with the operation of the school. A total of 69no. car parking spaces are to be provided for the SEN School,. The proposed layout of the SEN School introduces a one-way route around the outside of the car parking area that is to be used for dropping off and collecting pupils, with a drop-off point to be provided to the south of the school building.. This will deliver a betterment over the existing case whereby vehicles are held on the existing access, which also accommodates Bridleway 9Hu, until they are called forward to undertake drop offs or collections.

4.15 For the residential component of the proposed development, it is highlighted that the layout will be subject to future Reserved Matters Application(s). However, within the illustrative masterplan, shown in Figure 2.2 above, the following street hierarchy has been included for: Main Streets, providing

primary vehicle and pedestrian routes through the development; Secondary Streets, which will comprise shared surfaces; and Private Driveways, formed of narrower shared surface areas. Both cycle and car parking proposals for the residential component of the proposed development will be confirmed as part of future Reserved Matters Application(s). Parking provision will adhere to the West Sussex County Council Guidance on Parking at New Developments Supplementary Planning Document (2020). At this stage, it is envisaged that a total of 430no. vehicle parking spaces will be provided, of which 48no. will comprise visitor parking bays. Cycle parking will be provided within covered and convenient spaces in the curtilage of each dwelling. Electric vehicle paring will also be provided in accordance with Part S of the Building Regulations, with each dwelling to be provided with a charging socket with a minimum nominal rated output of 7kW.

4.16 A Sustainable Transport Strategy is also set out within the Transport Assessment, to encourage travel by sustainable modes, which plays a key role in facilitating future growth in the context of various constraints, including the Climate Emergency. The Sustainable Transport Strategy seeks to take a 'Reduce, Contain and Facilitate Alternatives' approach to travel demands, as follows:

<u>Reduce</u>

- Fast broadband connectivity will be provided, to reduce the need for future residents to travel off-site for work, and to enable online shopping and associated deliveries.

- Provision of comprehensive EV charging facilities for the proposed dwellings.

- Retention of the existing chapel building, with the potential for this building to be used for community purposes.

<u>Contain</u>

- Design of walkable networks, and the delivery of a site layout that provides permeability and direct routes for pedestrians and cyclists. Well-designed open space within the site will also aid to reduce the need for residents to travel elsewhere for such activity.

- Exploration of the provision of parcel drop-off facilities within a convenient location within the proposed development, which has the potential to reduce the need to travel for the collection of missed parcels and reduces the number of vehicular movements on the roads.

<u>Facilitate Sustainable Travel</u>

- Delivery of a range of off-site sustainable transport improvements, including:

    - The widening of the existing footway on the B2218, to the north of the site access to the B2218 / Mill Lane Roundabout, to provide a 3m-wide shared use pedestrian and cycle route;

- Provision of an uncontrolled crossing on the B2218 and a new footway / cycleway on the western section of the B2218, to tie into an existing footway adjacent to the southbound bus stop;
- Introduction of tactile paving at the junction between the B2218 / Oakhurst;
- Integration of a route within the site to link PRoW 9Hu and 19Hu; and
- The removal of traffic from Bridleway 9Hu and landscaping enhancement along the route.

- Delivery of public transport improvements, including the provision of Real Time Passenger Information (RTPI) and bus border kerbs at the northbound and southbound bus stops on the B2118, as well as a financial contribution to enable the enhancement of local bus services. It is noted that a Bus Service Agreement can be secured by S106 to set the parameters of the service improvements.
- Potential introduction of a car club, with car club vehicles and initial memberships for new residents to be provided.
- Measures to encourage cycling, including engagement with Brompton with respect to the provision of bicycles or electric bicycles within the site, or joining the cycle hire subscription service.

4.17 In addition to the above, a Framework Travel Plan will be implemented, identifying a number of soft measures to encourage the use of sustainable and active modes of transport, in lieu of private cars. The Framework Travel Plan sets out a number of measures to promote walking and cycling, including: the provision of information, including walking and cycling maps and health information, to future residents; the delivery of walking / cycling routes throughout the site and connecting to routes in the wider area; the provision of community noticeboards to identify travel opportunities and incentives; and the promotion of local car-share groups. Similarly, the use of public transport facilities will be encouraged via the Framework Travel Plan through the provision of public transport information, and the offer of a sustainable travel voucher that may be used on public transport. It is noted within the Transport Assessment that, whilst the pupil-specific requirements of pupils attending the SEN School limit opportunities to encourage a modal shift for pupil travel, a Travel Plan has been developed that seeks to encourage the uptake of sustainable modes of transport amongst staff. Measures set out within the Travel Plan include the installation of cycle parking and the offering of a cycle to work scheme; the provision of a Travel Information Pack to inform staff on ways to travel to work via sustainable modes; and the encouragement of car sharing, including access to Car Club vehicles once the residential component of the proposed development comes forward.

4.18 Based on the information contained within the Transport Assessment, it is considered that the proposed development will comply with relevant transport policy, and is acceptable in transport and highways terms.

Reducing Flood Risk and Surface Water Run-off

4.19 Information contained within the Flood Risk Assessment, prepared by RSK Land and Development Engineering Ltd, confirms that the entire site falls within Flood Zone 1, indicating a less than 1 in 1,000 (0.1%) chance of flooding from rivers or the sea per year. In addition, and as also demonstrated in Figure 4.2 below, the majority of the site is located within an area demonstrated to be at very low risk of flooding from surface water sources. There is an overland flow path located along the southern boundary of the site, which flows east to west along the southern boundary of the site, and is noted to follow the alignment of the Ordinary Watercourse that is present in this location. There are an additional two overland flow paths present within the site boundary; one flows southwards towards the southeastern section of the site, and aligns with an underground surface water drainage pipe present in this location, whilst the other overland flow path is located to the north of the site, originating within the site boundaries. No built development is to be located within the overland flow path identified at the southern boundary of the site, and other minor localised low points will be removed, as part of the proposed development. In addition, a site-wide surface water drainage system, further details of which are provided below, will be integrated to manage the risk of surface water flooding present at the site in the post-development context. The overland flow path present in the northern section of the site will be managed via the proposed surface water drainage system, whilst the existing underground pipe in the eastern section of the site will be retained with a minor diversion to manage the flow path in this location in the post-development context.

4.20 The Flood Risk Assessment also confirms that given the underlying geology and the results of groundwater monitoring undertaken, the risk of groundwater flooding at the site is low. Further to this, it is considered that, based on the local topography, any surcharged water from sewers present within and surrounding the site would likely flow southwards, with water likely to follow the road levels, and to flow away from the site. The risk of flooding from sewer sources is therefore considered to be very low. Finally, EA mapping indicates that the site is not located within an area that is at risk of reservoir flooding when river levels are normal, nor during times when the peak fluvial event and reservoir failure occur at the same time. The resultant risk of flooding from reservoir sources is therefore concluded to be very low.

Figure 4.2 Extract from the Environment Agency's online flood map

4.21 The proposed surface water drainage network, set out within the Flood Risk Assessment prepared by RSK Land and Development Engineering Ltd, seeks to manage surface water runoff generated within the site through the incorporation of a combination of permeable paving, rain gardens, detention basins and ponds, and conveyance swales. Swales could potentially be utilised alongside roads and bordering the development parcels to convey runoff through the drainage network to the various attenuation features, whilst rain gardens may be incorporated across the site to intercept and convey runoff through the drainage network, where feasible. Further to this, there is potential that permeable paving be incorporated within private roadways or parking areas, providing surface water attenuation and water quality benefits. Three detention basis are to be located within areas of open space; one basin will be provided in the north to control and treat surface water runoff associated with the proposed school prior to its discharge into the main surface water drainage network, whilst two basins are to be provided along the southern boundary of the site, which will control and treat surface water runoff generated across the residential component of the proposed development, in addition to the surface water runoff attenuated within the northwestern portion of the site. The incorporation of the proposed surface water drainage network will ensure runoff generated on the site is discharged from the site at a rate no greater than the existing Qbar greenfield rate for all storm events of magnitude up to and including the 1 in 100 year +45% climate change allowance event. Details of the treatment of attenuated surface water runoff and the maintenance of the proposed sustainable drainage features are provided in the Flood Risk Assessment, which accompanies this submission.

Reducing Water Consumption

4.22 The majority of England is under water stress, with more water often being consumed than is available during dry weather. As the population continues to grow, and with changes to the frequency of rainfall events projected as a result of climate change, this situation will be further exacerbated, with even greater pressure exerted on the supply of potable water.

4.23 In order to actively mitigate against this, it is intended that water efficient fittings and appliances shall be installed within the residential development to target a maximum internal water consumption of no more than 100 litres per person per day, based on the water efficiency calculator for new dwellings provided in Appendix A of Part G of the Building Regulations. Full details of the water consumption calculations are provided in Appendix A2. It should be noted that, whilst examples of fittings that may be specified as part of the proposed development are included within Appendix A2, the calculations undertaken here are indicative only, and the specification of internal sanitation fittings will be confirmed as part of a Reserved Matters application.

4.24 Table 4.1 provides an example of the consumption rates that may be targeted for sanitation fittings in order to achieve an internal water consumption rate of no more than 100 litres per person per day, subject to changes at later detailed design stages.

Table 4.1 Proposed water use

Fitting	Consumption
Low volume dual flush toilets	6.0 litres (full) / 3.0 litres (part)
Wash hand basin tap	5.0 litres per minute
Kitchen sink tap	6.0 litres per minute
Bath (where fitted)	180.0 litres capacity (to overflow)
Shower	6.0 litres per minute
Washing machine	5.6 litres/kg
Dishwasher	1.0 litres/place setting

4.25 To aid in reducing potable water consumption for external uses, it is recommended that water butts, or similar, be provided for each dwelling to enable rainwater harvesting for irrigation purposes. Rainwater harvesting or greywater systems may also be employed to serve internal, non-potable water demands, such as toilet flushing. The potential to incorporate systems of this type will continue to be explored as part of the detailed design stage.

4.26 For the non-residential element of the proposed development, it is recommended that water-efficient fittings, such as low flush volume toilets and low water use spray taps, be provided to aid the minimisation of internal water consumption. It is also recommended that rainwater harvesting be employed, with collected water used in toilet flushing and other non-potable applications, such as the irrigation of soft landscaping. Additional measures may also be considered for incorporation

during the detailed design stage, such as the employment of leak detection systems and solenoid shut-off valves controlled with PIR systems. It is also intended that runoff from the proposed SEN School be captured within an underground chamber, with the captured water to be used for the irrigation of the planting provided around the building and within the horticulture planters. This will aid to reduce the use of potable water for external uses.

4.27 Further to this, it is recommended that drought-resistant and drought-tolerant species be incorporated within the proposed Landscape Strategy, where appropriate, to reduce external water demand.

Materials and Waste

4.28 Materials should be responsibly sourced by the main contractor, and be specified to have a low embodied impact. Materials with a low embodied impact, as defined within the BRE Green Guide to Specification, should be selected for use in the building design and construction.

4.29 The selection of materials is determined by a variety of factors, such as the architectural context, design rationale, embodied carbon and maintenance requirements. For the proposed development, consideration will be given to the lifecycle environmental performance with materials selected in consideration of the BRE's Green Guide to Specification, aiming for A or B rated materials wherever possible.

4.30 Further to this, it is highlighted that the proposed development will seek to retain the existing chapel building to provide a community use on-site. The reuse of the existing chapel building will also aid to reduce the consumption of materials and resources. This will also aid to reduce the whole lifecycle carbon emissions associated with this element of the proposed development.

4.31 The use of locally sourced materials will be prioritised wherever possible to reduce the impacts associated with the transportation of materials. Using materials produced in the local area will also aid in developing the identity of the development, by ensuring it is in line with the local character and context. For the proposed development, there will be a focus on sustainable design, with materials selected that are in keeping with the local vernacular and landscape character, aiming for locally sourced materials where possible.

4.32 During detailed design of the building fabric, consideration will be given to minimising the environmental impact of materials, by selecting non-toxic and robust materials to ensure longevity and a minimal impact on the health of occupants.

4.33 Timber will be selected and purchased in consideration of sustainability certification. It is intended that all structural timber elements along with any timber used for temporary uses, such as scaffolding, will be sustainably sourced, e.g. from FSC and/or PEFC sources.

4.34 Consideration has been given to the reduction and recycling of waste during both the construction and operation phases.

4.35 During the construction phase, the principal contractor will be required to implement a Site Waste Management Plan (SWMP), which will detail who will be responsible for resource management, which types of waste will be generated, how the waste will be managed (e.g. reduced, reused or recycled), which contractors will be used, and how the quantity of waste generated by the project will be measured. Should any demolition be required on the site, demolition contractors will incorporate best practice measures to maximise the recovery of materials from the demolition site for reuse or recycling, in line with the guidance set out by the Institute of Civil Engineers' (ICE) "Demolition Protocol".

4.36 To encourage a greater proportion of the operational waste to be diverted from landfill, it is proposed to provide dedicated spaces of sufficient size and within convenient locations for each of the new dwellings. All waste collection and storage facilities will be considerate of Building Regulations and Council requirements. A dedicated external waste storage area for refuse and recycling will also be allocated for each dwelling to be delivered as part of the proposed development, in addition to a communal waste storage area for the proposed apartment buildings, and a dedicated waste storage area for the proposed SEN School.

Tackling Increased Temperatures and Drought

4.37 In order to protect the development against overheating in the future, a number of key design features have been proposed to ensure the proposals are resilient to increased temperatures, which may be experienced as a result of climate change. The following measures are deemed to contribute to the mitigation of the effects of climate change:

- The dwellings' facades will have a balanced amount of glazing to mitigate direct solar heat gain whilst optimising daylight penetration.
- Openable windows on multiple aspect spaces will be integrated to provide a passive ventilation strategy that utilises crossflow ventilation to maximise the potential for natural ventilation within the dwellings.
- Internal heat gains will be minimised through the use of energy efficient lighting and equipment, the anticipated employment electric-only heating systems, such as air source heat pump (ASHP) technology, and the insulation of hot water distribution pipework to prevent heat loss into the dwelling spaces and the occupiable spaces of the proposed SEN School.
- Soft landscaping, blue and green infrastructure and trees will be integrated throughout the proposed development, aiding to mitigate the green island effect, and providing opportunities for shading.

- The proposed SEN School has been designed to include for predominantly east- and west-facing classrooms, in addition to a number of north-facing classrooms. This, in combination with the provision of balanced areas of glazing to the classrooms, will aid to reduce solar gains within these spaces, whilst also ensuring sufficient levels of natural daylight are provided. Directional glazing will be incorporated at the first-floor level in order to mitigate direct south-facing light entering these spaces.

- The proposed SEN School has been designed to facilitate cross-ventilation, with openings and louvre panels to be provided on multiple aspects.

- Atrium spaces are to be provided within the proposed SEN School, with roof lights to be incorporated to facilitate stack ventilation. This will encourage warm air to rise and be expelled from the rooflights, with cooler air drawn in at the lower levels of the building.

- Green roof planting will also be incorporated within the proposed SEN School, which will aid to increase the thermal mass of the building by absorbing excess heat during the day and releasing it at night. This helps to keep indoor temperatures stable by preventing air temperatures from rising too quickly.

4.38 It is anticipated that detailed overheating assessments will be undertaken for the proposed development at the detailed design stage to ensure the potential risk of overheating is sufficiently mitigated. This will aid to inform any further mitigation measures that may be required to reduce this risk.

Ecology and Landscape

4.39 The Arboricultural Implications Report, prepared by SJA Trees, confirms that no statutory or non-statutory nature conservation designations are present within the site. It is also confirmed that no trees present within the site in the existing case are covered by a tree preservation order (TPO). Furthermore, there are no areas of Ancient Woodland, woodpasture or parkland present within or abutting the site. It is noted that one oak tree present adjacent to the southern boundary displays attributes consistent with being ‘Veteran’ and therefore would be considered to be an irreplaceable habitat that contributes to the site’s biodiversity, cultural and heritage value. The site is also noted to benefit from abundant notable and aged trees, which have the potential to become veteran trees in the future and are still of high value both for their arboricultural and ecological value. It is highlighted, however, that no trees that are classified as ‘Ancient’ or ‘Veteran’, which are considered to be notable, or which are classified as ‘Category A’ are to be removed to facilitate the proposed development. Similarly, no trees of high landscape or biodiversity value are to be removed. It is considered that the proposed removal of individual or groups of trees will a partial alteration to the main arboricultural features of the site, but only a minor alteration to the overall arboricultural character of the site and will not have a significant adverse impact on the arboricultural character and appearance of the local landscape.

4.40 Whilst pruning is proposed to facilitate the delivery of the proposed development, it is noted that this would be minor in extent, and will therefore not detract from the appearance of the trees that are to be pruned. It is also highlighted that any pruning undertaken will be done so in compliance with the relevant British Standards. Further to this, it is noted that any potential incursions into the root protection areas (RPAs) of the retained trees are minor, subject to the implementation of the measures recommended on the Tree Protection Plan included within the appendices of the Arboricultural Implications Report. This will ensure that no significant or long-term damage to the root systems of retained trees, or the rooting environments within which they are situated, will occur. It is also considered that none of the proposed dwellings or their associated amenity areas are likely to be shaded by the retained trees to an extent that would interfere with their reasonable use by future occupiers.

4.41 The Ecological Appraisal, prepared by Aspect Ecology, confirms that no statutory or non-statutory nature conservation designations are present within the site. The nearest statutory designated site is South Downs National Park, located approximately 2.5km to the southeast of the site. Further to this, Wolstonbury Hill Site of Special Scientific Interest (SSSI) is located approximately 4.5km to the southeast. The closest European designation to the site is Castle Hill Special Area of Conservation (SAC) and National Nature Reserve (NNR) located approximately 15km to the southeast. The nearest non-statutory designation to the site is the Mill Lane Designated Road Verge, located approximately 1.2km east of the site. It is considered that all statutory and non-statutory nature conservation designations are well separated from the site and, given the scale and nature of the proposed development, the identified designated sites are unlikely to be adversely affected.

4.42 Several areas of Ancient Woodland are present in the surrounds of the site, the closest of which is situated 0.26km to the south. It is noted, however, that the areas of Ancient Woodland present in the surrounding area are separated from the site, and are therefore unlikely to be adversely affected by the proposed development. Areas of woodland present within the site are identified as ‘Priority Habitat’, as is a small area of ‘Traditional Orchard’, hedgerows, and the pond located within the central courtyard of the existing school compound. As noted above, one veteran tree is also present on the site, which is considered to form an ‘Irreplaceable Habitat’. Tree lines present within the site are also considered to form important ecological features at the local level. The proposed development has followed the mitigation hierarchy, with habitats forming important ecological features to largely be retained as part of the scheme, which will ensure significant habitat losses are avoided. Built development will be focused within areas of lower value habitat, including modified grassland, with losses of these habitats, which do not form important ecological features, addressed as part of the overall balance of biodiversity net gain. All areas of woodland present within the site boundaries, as well as the identified veteran tree, will be unaffected by the proposed development, with the intention to retain them in full within the proposed Landscaping Strategy. Similarly, the existing hedgerows and lines of trees will be largely retained, with any hedgerow or treeline losses to be compensated for through the delivery of new native hedgerow planting as part of the proposed

Landscape Strategy. The northern area of the Traditional Orchard is to be lost under the proposals, however these losses will be compensated for through the provision of new orchard planting as part of the proposed development.

4.43 Survey work undertaken at the site confirms that two of the buildings present within the site support roosting bats. The loss of these roosts would impact on local populations of Common Pipistrelle and Brown Long-eared bats, however given the low status of the roosts recorded, it is considered that these roots are not crucial to the long-term favourable conservation status of these populations. It is also noted that, whilst emergences were not recorded in the other buildings present on the site, bats are a dynamic species, and it is possible that individuals may colonise these buildings in the future. In addition to this, one tree within the site has been confirmed to support roosting bats, the loss of which would impact on the local population of Noctule bats. However, given the low conservation status of the roost, it is not considered to be crucial to the long-term favourable conservation status of this species. A mitigation strategy will be implemented under a Natural England licence to ensure bats are fully safeguarded during enabling, demolition and construction works, with roosting opportunities within the site to be carefully maintained. It is also highlighted that the majority of woodland, trees and scrub within the site are to be retained as part of the proposed development, with new tree, hedgerow and shrub planting to be delivered, which will aid to improve the connectivity and foraging potential for bats throughout the site. A sensitive lighting scheme will be implemented as part of the proposed development to ensure these areas remain suitable for light sensitive species.

4.44 The site contains suitable habitat for Dormouse, particularly within the areas containing hedgerows and wooded vegetation. However, surveys undertaken at the site found no evidence of Dormice at the site, and this species is therefore considered to be absent from the site and the immediate surroundings. Nevertheless, it is noted that a precautionary approach will be applied during the construction of the proposed development, such as the undertaking of hand searches during vegetation removal. Should evidence of Dormouse be discovered, works will be ceased immediately, and advise sought from Natural England. Five ponds are present within the site, of which three hold water, however no watercourses are present within the site. The ponds therefore have no flowing water or connectivity to other waterbodies and, whilst a waterbody is present to the south of the site, it has no connectivity to other waterbodies. The habitats present within the site are therefore unsuitable for Water Vole and Otter, and these species are considered to be absent, or do not form a constraint to the proposed development. No evidence of any other protected, rare or notable mammal species was recorded within the site. Whilst there is potential that habitats present within the site to support Brown Hare and Hedgehog, which are both Priority Species, it is considered that habitat losses are unlikely to have a significant effect on these species. It is also highlighted that the provision of new gardens and open space will aid to mitigate the effects of habitat losses on Hedgehog, however, and precautionary safeguards are recommended to minimise the risk of harm to this species, and other mammals that may be present within the site.

4.45 The site provides suitable habitat for reptiles in the form of field margins, tall ruderal vegetation and grassland, however the results of surveys undertaken at the site indicate that the population of reptiles supported by the site is of importance at the local level only. It is noted that, as part of the proposed development, the majority of the suitable reptile habitats will be retained and enhanced to create a natural buffer following the site boundary. Where areas of the site within which reptiles have been recorded are to be affected by construction works, a habitat manipulation exercise will be put in place to safeguard these species. The site is also noted to provide potential opportunities for amphibians including Great Crested Newt and Common Toad, in the form of ponds, hedgerows and field margins. The ponds present within the site and the surrounding area will not be directly affected by the proposed development, however it is noted that, given the presence of Great Crested Newt and suitable terrestrial habitat within the site and within 250m of these ponds, it is possible that Great Crested Newt could be present within the site outside of the breeding season. As part of the proposed development, the majority of suitable terrestrial habitat, comprising rank grassland and scrub, is to be lost within the proposals for residential development and associated roads. It will therefore be necessary to undertake construction works at the site under licence, in accordance with the Nature Space-led district licensing scheme that is in place for Sussex. As part of this, mandatory capture exercises, such as pitfall trapping, must be carried out at the site for a minimum of 25 days, after which vegetation management must be undertaken to reduce the suitability for newts from the areas proposed for works. Subject to joining the district licensing scheme it is considered that the conservation status of the Great Crested Newt population will be maintained. The majority of habitats of elevated value for Common Toads will be retained as part of the proposed development, with habitat creation to be brought forward as part of the development, including the provision of SuDS basins, aiding to enhance opportunities for this species in the post-development context.

4.46 The site has also been identified to contain habitats that may support bird species. It is noted that, whilst the proposed development will result in the loss of several sections of hedgerow, which may affect nesting birds present at the time of works, a number of safeguards will be put in place to ensure there is no harm to these species. Further to this, it is highlighted that, in the long-term, newly created habitats will provide additional nesting opportunities for birds. No evidence for the presence of any protected, rare or notable invertebrate species was recorded within the site, and it is therefore considered unlikely that the proposed development will result in significant harm to any protected, rare or notable invertebrate populations.

4.47 A number of mitigation measures are recommended within the Ecological Appraisal to ensure harm to habitats and species as a result of the proposed development are minimised, including:

- The protection of all hedgerows and trees to be retained in line with standard arboricultural best practice (BS5837:2012) during construction.

- New hedgerow planting will be provided to compensate for losses of sections of hedgerows and treelines.

- Safeguards will be implemented to prevent against pollution arising from potential run-off or pollution events during construction, including:
    - The storage of chemicals and fuels at least 10m away from waterbodies, within storage areas that have an impervious base, and which are set within an oil-tight bund with no drainage outlet;
    - Subject to prior agreement with the sewage undertaker, the disposal of silty water to a foul sewer, or via another suitable form of disposal;
    - The carrying out of water washing of vehicles or mixing plant within contained areas located at least 10m from waterbodies; and
    - The refuelling of plant and vehicles within designated areas that are on an impermeable surface located at least 10m away from waterbodies.
- Undertaking of updated bat roosting surveys, should considerable time elapse between the survey work undertaken to inform the Ecological Appraisal and the commencement of works to confirm the continued absence of bats.
- Undertaking of works to the buildings and tree identified as supporting bat roosts under a European Protected Species (EPS) development licence, obtained from Natural England.
- Implementation of safeguarding measures when demolishing the buildings identified as supporting roosting bats, such as the undertaking of precautionary check surveys prior to demolition, and the subsequent staged removal of building materials under the supervision of a suitably qualified ecologist. Works should also avoid periods of cold weather to ensure bats are active.
- To compensate for the loss of roosting opportunities, and to provide increased roosting resources in the post-development context, bat boxes and roosting units should be provided on new buildings and retained trees. It is also recommended that car ports or other open structures included within the proposed development be designed to support roughened beams that are accessible to bats and which may act as new feeding perches.
- Soft-felling techniques should be implemented under an ecological watching brief immediately following a detailed inspection when removing trees that have been identified as having potential to support roosting bats. Under this approach, sections of the tree will be cut and lowered to the ground, where they will be left for a period of at least 24 hours to allow any bats, should these be present, to escape.
- Employment of a sensitive lighting strategy, with light-spill onto retained and newly created habitat to be minimised as far as possible, in line with good practice guidance.

- Updated badger surveys prior to the commencement of site works to confirm the current status of Badger at the site.

- Safeguards will be implemented during the clearance of vegetation, including the sensitive timing of works to avoid the peak hibernation or breeding periods of Dormice, and the undertaking of works under ecological supervision.

- Undertaking of works in accordance with District Licensing to minimise adverse impacts on Great Crested Newt, and to deliver maximum benefits for this species.

- Undertaking of reptile translocation exercises to ensure reptiles are relocated to suitable areas of retained or nearby habitat during construction.

- Undertaking of habitat manipulation exercises, involving the cutting of suitable vegetation within the areas of the site within which development is to take place to a short height (~15cm) so as to encourage reptiles to disperse to suitable areas of retained or nearby habitat, whilst also allowing for a fingertip search of the area. A destructive search should then be undertaken, involving the stripping of the top layer of ground. This exercise should be carried out under the supervision of a competent ecologist during the active reptile season (generally March/April to September/October, depending on prevailing weather). Any potential refuge features, e.g. piles of rubble, heavy logs or brash piles, should be fingertip-searched by an ecologist prior to being carefully disassembled.

- Undertaking of the clearance of vegetation suitable for nesting birds outside the bird-nesting season (1st March to 31st August, inclusive). Where is this not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests.

- Employment of safeguards for small mammals, such as the provision of means of escape for any trenches left open overnight and the dismantling of piles of material present onsite by hand.

- Provision of holes within garden fences or under gates to ensure access to suitable foraging habitats for Hedgehog and other small mammals.

4.48 The following enhancements are also recommended within the Ecological Appraisal:

- Delivery of new planting, comprising native species of local providence, where practicable. Where non-native species are proposed, these should include species of value to wildlife, such as varieties listed on the RHS' 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

- Creation of wildflower grassland within areas of open space. Within recreation and amenity areas, consideration can be given to seeding of flowering lawns. This will provide a further flowering and pollen resource for invertebrates.

- Provision of scrub habitat along the woodland margins, hedgerows and within grassland areas, to form valuable ecotone habitats for a range of wildlife, including reptiles, small mammals and invertebrates.

- Potential creation of wetland habitats as part of the proposed surface water management strategy. Such measures will benefit a range of wetland species including birds, aquatic invertebrates and amphibians whilst also helping to attenuate surface water run-off.

- Delivery of new lengths of hedgerow along the boundaries of green space and around built development areas. Existing hedgerows should also be subject to supplementary planting where necessary to fill gaps and strengthen the integrity of the hedgerow.

- Integration of bat and bird boxes throughout the proposed development, including on new buildings and retained trees.

- Retaining of a proportion of deadwood arising from vegetation clearance within areas of new planting, new wetland habitats or areas of wildflower grassland in order to provide potential habitat opportunities for invertebrate species, which in turn could provide a prey source for a range of other wildlife.

- Provision of Hedgehog domes, or similar, to provide shelter for this species within quit, sheltered locations, away from potential disturbance by people.

- Incorporation of bee bricks and insect boxes to provide nesting opportunities for declining populations of non-swarming solitary bee populations and other invertebrates.

4.49 The Illustrative Landscape Strategy, prepared by SLR, is shown in Figure 4.3.

Figure 4.3 Illustrative Landscape Strategy

4.50 The Biodiversity Net Gain (BNG) Assessment report, prepared by Aspect Ecology, explains how the proposed development aims to minimise ecological impacts, and maximise benefits, with the development predicted to deliver Biodiversity Net Gains of circa 21.52% in Hedgerow Units within the site boundary, and a 10% net gain in Habitat Units though the creation of off-site habitats.

4.51 In addition to the above, it is confirmed within the Landscape and Visual Appraisal (LVA), prepared by SLR, that whilst negative landscape and visual effects would arise as a result of the proposed development of the site, these effects would be highly localised, owing to the intention to retain the majority of existing vegetation, and the setting back of the built form from sensitive edges, which will allow for open spaces to be distributed throughout the development. Further to this, the proposed building heights and densities will be in keeping with existing development at Sayers Common. It is also highlighted that, through the incorporation of existing vegetation and landscape buffers, negative landscape and visual effects associated with the proposed development would be contained within the site, ensuring the effects would be temporary, and would not affect any valued or designated landscapes. In addition to this, it is considered that visual harm from the South Downs will be limited to negligible effects experiences at isolated, elevated locations.

Air Pollution

4.52 The Environment Act 1995 requires all Local Authorities to review air quality within the districts. If it appears that any air quality ‘Objective’ prescribed in the regulations, and in the National Air Quality Strategy, is not likely to be achieved, then the local authority must designate the affected area as an Air Quality Management Area (AQMA).

4.53 As detailed within the Air Quality Assessment, prepared by RSK, the main likely effects on air quality during the construction phase of the proposed development are related to fugitive dust and exhaust emissions from construction vehicles and plant. A number of measures are recommended within the Air Quality Assessment for implementation during the construction phase to mitigate the potential impacts of construction activities on local air quality. These measures, which include the development and implementation of a Dust Management Plan (DMP), the avoidance of using diesel- or petrol-powered generators, and the covering of vehicles entering and exiting the site, will be set out within a Construction Environmental Management Plan (CEMP). It is considered that, through the implementation of the measures set out within the Air Quality Assessment, the residual impacts of the construction activities and associated vehicles and plant on local air quality will be negligible.

4.54 An assessment of the potential operational impacts on local air quality has also been undertaken. This assessment compares the concentrations of key pollutants (nitrogen dioxide (NO_2) and particulate matter ($PM_{2.5}$ and PM_{10})) concentrations between two scenarios: 2031 without proposed development; and 2031 with proposed development. The percentage changes relative to the air quality objective is considered, and the magnitude of impact classified in line with the Environmental Protection UK (EPUK) – Institute of Air Quality Management (IAQM) guidance. The assessment concludes the air quality impacts of the proposed development with respect to annual mean NO_2, $PM_{2.5}$ and PM_{10} levels will be negligible. In addition, it is noted that electric heat pump technology, rather than significant stationary combustion sources, such as combined heat and power (CHP) plant, are proposed to deliver space and water heating for both the residential and SEN School components of the proposed development, and that photovoltaic (PV) panels will be provided for the SEN School to generate carbon-free electricity on-site. This will also ensure that the air quality impacts of the proposed development are reduced.

4.55 Based on the information contained within the Air Quality Assessment, it is considered that, should the appropriate mitigation measures be implemented, the proposed development will comply with national and local planning policies, and that there are therefore no air quality-related constraints for the development.

Noise Pollution

4.56 As detailed within the Noise Assessment, prepared by RSK Acoustics Limited, the dominant source of noise affecting the proposed development site is vehicular movements along the A23 to the east, in addition to intermittent vehicles along the B2118, also to the east. As part of the Noise Assessment, a Site Suitability Assessment was undertaken for the residential component of the proposed development to the requirements of BS 8233:2014, and in line with World Health Organisation (WHO) Guidelines, to determine the potential levels of internal and external noise at locations across the proposed development site. The results of the Residential Site Suitability Assessment indicate that, in order for all dwellings to achieve the internal design targets specified within BS 8233:2014,

and by WHO, standard specification single glazed systems to the building façade, accompanied by a suitable acoustically treated trickle ventilator, would be required.

4.57 As part of the Noise Assessment, the potential risk of overheating within the residential component of the proposed development has also been considered, through the employment of the simplified method of overheating assessment set out within Approved Document O of the Building Regulations. This assessment indicates that the noise levels present at the site would likely allow for partially open windows to be employed for ventilation purposes during a potential overheating scenario for the majority of the site. It is noted that dwellings situated within the eastern portion of the site would be subjected to the highest levels of noise and that, whilst these noise levels are unlikely to exceed the criteria set out in Approved Document O, there is potential that additional forms of ventilation or cooling may be required. This is subject to confirmation following the final design, and input from an overheating specialist.

4.58 The results of the Noise Assessment indicate that the levels of noise projected to be achieved within external amenity areas associated with the residential component of the proposed development are likely to comply with the upper design targets specified within BS 8233:2014, subject to the implementation of suitable mitigation, such as sympathetic building orientation and the use of standard garden fencing.

4.59 A Site Suitability Assessment was also undertaken for the school component of the proposed development to the requirements of Building Bulletin (BB) 93, to determine the potential levels of internal and external noise within northwestern section of the site. A number of noise targets are set out within the Noise Assessment, based on the types of spaces to be included from within the SEN School when they are unoccupied, and excluding noise contributions from teaching activities and associated activities. It is noted that, in order to meet the internal noise criteria of the spaces within the SEN School, the use of standard double glazing and the use of passive ventilation systems would be sufficient. It is highlighted that, to ensure noise levels during ‘heavy’ rainfall do not significantly exceed the appropriate noise level targets set out within the Noise Assessment, it should be demonstrated that lightweight roofs and roof glazing have been designed to provide suitable control of rain noise. It is anticipated that noise levels within external play areas associated with the SEN School will be compliant with the criteria recommended within BB93. Further to this, it is considered that noise emissions from the proposed Multi-Use Games Area (MUGA) will not result in an exceedance of the external amenity noise criteria at the closest existing and proposed residential properties. Targets relating to the noise performance of external plant serving the school have also been provided within the Noise Assessment to ensure significant adverse effects on nearby residential properties are avoided.

4.60 With respect to the levels of noise projected to be generated as a result of development traffic movements, whilst there is likely to be an increase in both the short and long term, the magnitude of

change in noise levels at the site will be of negligible impact, in accordance with the Design Manual for Roads and Bridges (DMRB).

4.61 Overall, it is considered that the predicted noise levels at the site will fall within the relevant noise design targets and are of a magnitude suitable for the nature of the proposed development. In consideration of the outline nature of the residential component of the proposed development, it is recommended that the principles of good acoustic design be adopted within the final masterplan. These considerations should include the positioning of buildings to maximise the distance attenuation to main road sources of noise, as well as the screening effects that may be realised by adjacent properties. The orientation of facades and considerate internal layout designs should also be taken into consideration during the detailed design stage.

Ground Contamination

4.62 As detailed within the Ground Appraisal Report, prepared by Geo-Environmental, the ground conditions at the site comprise deposits of Weald Clay Formation, which is classified as Unproductive Strata. A sandstone outcrop also spans the middle of the site, which is classified as a Secondary A Aquifer. It is noted, however, that the site is not located within a Groundwater Source Protection Zone (SPZ), and there are no licensed groundwater water abstractions or discharge consents to groundwater within a 500m radius of the site. Two ponds are present on the site, with ditches and additional ponds also present to the south and west.

4.63 Historically, the site has comprised a field network with numerous structures. In the 1950s, the eastern portion of the site comprised the Kingsland Nurseries, which are noted to no longer be present by the mid-1970s. Between 1982 and 1992, parts of the property had been redeveloped to form part of the Priory of our Lady. By 1993, the building footprints on the site were commensurate with those in the existing case, with the site labelled as LVS Hassocks School in 2024. Notable offsite historic changes in the surrounding area include: the presence of a graveyard adjacent to the eastern boundary of the site; a Brick and Tile Works which was later redeveloped as a depot and residential properties, and the associated disused pits forming ponds; a fuel-filling station to the southeast which was later redeveloped for residential uses; and additional residential development to the south and southeast.

4.64 The Ground Appraisal Report concludes that, whilst gross contamination is considered unlikely based on the information reviewed, there is the potential for heavy metals, metalloids, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) from fire grate ash, aerial deposition of Lead and PAHs. In addition, pesticides may have been used historically on parts of the site such as the fields and nursery. Further to this, an off-site brick and tile works, a landfill and two areas of infilled land have been identified within 250m of the site.

4.65 The Preliminary Risk Assessment (PRA) and Conceptual Site Model (CSM) presented in the Ground Appraisal Report have identified plausible potential pollutant linkages that exist in relation to the proposed redevelopment of the site. It is concluded, however, that these linkages are not considered to prevent development of the site, subject to the undertaking of additional investigation and assessment.

4.66 Following the undertaking of intrusive investigations at the site and laboratory testing of samples taken from the site, a number of recommendations are made with respect to engineering considerations. Based on the ground and groundwater conditions at the site, it is considered that conventional foundations may be appropriate for parts of the site remote of trees with foundations taken down through any Made Ground to bear upon the soils of the Weald Clay Formation. However, where foundations require deepening beyond 2.5m below the ground level (bgl), piled foundation solutions may be required. Further to this, in light of the potential presence of shrinkable soils, it is recommended that suspended ground floor slabs be adopted.

4.67 Ground gas was also undertaken at the site by Geo-Environmental between September 2024 and May 2025. Based on the monitoring undertaken, it is considered that the site should be categorised as Characteristic Situation 1. This indicates that there is a very low hazard potential arising from ground gases.

4.68 The following additional actions are recommended within the Ground Appraisal Report:

- The results of the chemical tests undertaken to inform the Ground Appraisal Report should be shared with the potable water supplier to provide advice on suitable pipe materials.
- Further investigation of the building footprints should be undertaken post-demolition.
- Further investigation should be undertaken of the area of the former garden nursery.
- Investigation of areas of proposed foundations should be undertaken to inform concrete specification.

Light Pollution

4.69 As outlined in the Ecological Appraisal, prepared by Aspect Ecology, a sensitive lighting strategy, designed in accordance with the recommendations of the Bat Conservation Trust and the Institute of Lighting Professionals (2023) Guidance Note 08/23 - Bats and Artificial Lighting at Night, should be implemented as part of the proposed development. This will limit light spill onto the retained and created suitable habitats across site, particularly the retained hedgerows, treelines and scrub. It is recommended that the following key factors be taken into consideration:

- Implementation of light exclusion zones or “dark buffers”, where lighting is controlled in areas likely to be used by bats, to allow movement around the site via interconnected areas free of artificial illumination;

- Employment of LED luminaries with a warm white spectrum should be prioritised to reduce the blue light component, and light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Metal halide and fluorescent sources, alongside luminaries with UV elements, should be avoided;

- Strategic positioning of new planting (e.g. hedgerows and trees) or fences, walls and buildings to reduce light spill;

- Lighting units should be spaced such that illuminated areas are minimised, to ensure dark refuges are provided between lights. The height of lighting should also be reduced to help decrease the volume of illuminated space, with low-level lighting to be considered for parking areas and pedestrian and cycle routes;

- Light intensity should be kept as low as possible to reduce the overall amount and spread of illumination;

- Lighting should be directed only to where it is needed, with particular attention paid to avoiding the upward spread of light so as to minimise trespass and sky glow; and

- Lighting control management systems should be used, which involve switching off/dimming lights for periods during the night when human activity is generally low, and/or using motion sensors to limit the time lighting is operational.

Water Pollution

4.70 The implementation of the proposed surface water drainage network, outlined in the Flood Risk Assessment, prepared by RSK Land and Development Engineering Ltd, will include appropriate pollution control measures to minimise the risk of pollution entering the ground and surface water bodies from surface water runoff from the development. An appropriate sustainable drainage systems (SuDS) treatment train, consisting of a combination of permeable paving, rain gardens, detention basins and ponds, and conveyance swales, has been incorporated within the design to treat surface water before it is discharged to the Ordinary Watercourse located at the southern boundary of the site.

4.71 Additional measures will also be adopted during construction to minimise the risk of ground and surface water pollution, including:

- Oil separators;

- Clear marking and signage of drainage stems;

- Full bunding of on-site fuel or oil delivery areas;

- Bunding of areas to be used for cleaning activities; and

- Best practice measures, implemented as part of a Construction Environmental Management Plan (CEMP), to mitigate the impacts of construction-related dust and emissions.

5. ENERGY STRATEGY

5.1 With reference to the policy requirements, guidance and industry best practice detailed in Section 3, a comprehensive energy and carbon dioxide (CO_2) emissions assessment has been carried out for the proposed development. The energy performance of the scheme has been analysed and evaluated against the most up-to-date iteration of Part L of the Building Regulations and pertinent Mid Sussex District Council policies.

5.2 In order to maintain a degree of flexibility in meeting the national standards set out in the Building Regulations on carbon and energy performance, as required by Mid Sussex District Council, the measures outlined below describe a potential means of achieving a reduction in CO_2 emissions over the Part L:2021 baseline. Therefore, the final building specification may be subject to change during detailed design, although the overall principles proposed below will be retained to deliver low carbon dwellings in operation.

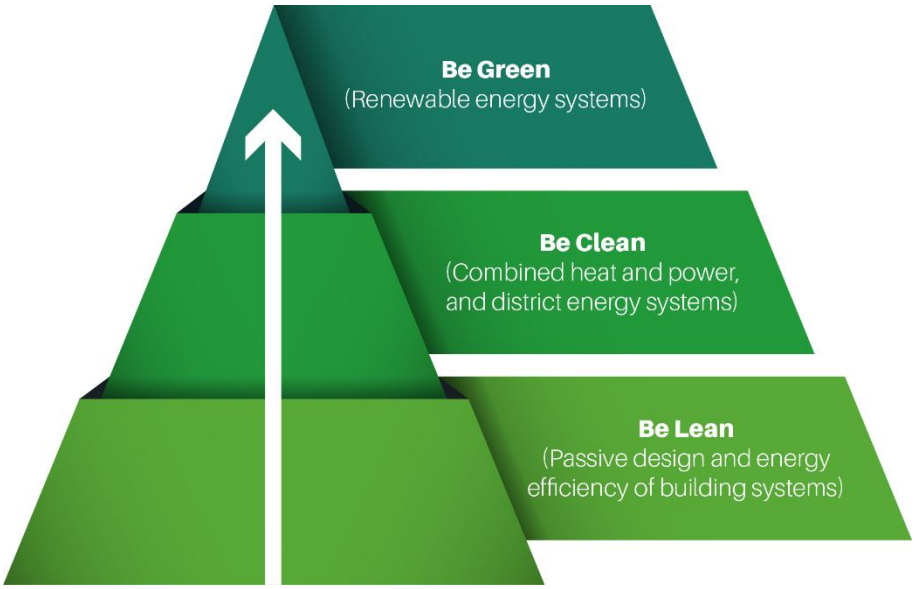
The Energy Hierarchy

5.3 The proposed strategy is based upon the principles of the Energy Hierarchy on the basis that it is preferable to reduce carbon dioxide emissions through reduced energy consumption above decarbonisation through alternative energy sources.

5.4 The tiers of the Energy Hierarchy are:

- Be Lean Use less energy
- Be Clean Supply energy efficiently
- Be Green Use renewable energy

Figure 5.1 The Energy Hierarchy



'Be Lean' (Use Less Energy)

5.5 Within the first stage of the energy hierarchy, it is proposed to incorporate high levels of passive and energy efficient design measures in order to reduce the development's energy consumption and associated CO_2 emissions, utilising a 'fabric first' approach to reduce energy demand.

5.6 Details of the passive design and indicative energy efficiency measures proposed have been detailed below.

Residential

5.7 Passive design utilises daylight, solar energy, shading and stack or wind driven ventilation to illuminate, heat, shade where necessary and ventilate/cool the building, thus requiring less (mechanical) energy to achieve the performance standards for health and wellbeing of the residents.

5.8 Site characteristics relating to local climate, surroundings, scale and size of the development therefore passively influence the potential energy requirement and savings that can be achieved through the consideration of these aspects. The parameters that most influence the potential to utilise sunlight and solar gains are the orientation and layout of buildings, however these are typically driven by various factors other than energy efficiency or bioclimatic design considerations (e.g. aesthetics, function, etc.).

5.9 As shown in Figure 2.2 above, the orientation of the dwellings will be dictated by the plot orientation in order to give the overall scheme a cohesive design approach. The distances between buildings will be optimised to ensure sufficient access to natural daylight and passive solar gains to the

dwellings. Light and solar gain will also be influenced by the fenestration and the selection of glazing with a high degree of light transmittance.

5.10 The following U-values, which align with the anticipated requirements of the upcoming Future Homes Standard, are proposed as a means of limiting heat loss through the dwellings' building fabric.

Table 5.1 Proposed residential building fabric U-values

Building Fabric Element	Part L1:2021 backstop U-values (W/m²K)	Proposed U-values (W/m²K)
Ground floor	0.18	0.13
External wall	0.26	0.18
Roof	0.16	0.13
Windows	1.60 (including frame)	1.20 (including frame)
Doors	1.60	1.00

5.11 It is expected that glazing will be double glazed, with a low emissivity coating. Although this has yet to be formally specified, it is anticipated that thermally efficient glazing will be employed, with window U-values of 1.20 W/m²K or better (including frame), a g-value of 0.63 and light transmission of ~70% to improve natural daylight penetration.

5.12 A high level of air tightness is proposed, where a level equal to or below 5 $m^3/h/m^2$ shall be targeted, meaning that air infiltration between the internal and the external environment will be largely controlled, and space heating/cooling demand further reduced.

5.13 The other significant means of heat loss from dwellings is due to thermal (or cold) bridging. This is typically a construction detail which has higher thermal conductivity than the surrounding materials, creating a path of least resistance for heat transfer. Thermal bridges result in an overall reduction in thermal resistance of the building elements and should be designed out where possible to minimise unwanted heat loss. In order to minimise heat loss through thermal bridges it is intended that low y-value will be targeted for each dwelling.

5.14 High efficiency plant, equipment and controls are proposed to limit the energy consumed in order to provide the required level of indoor environmental performance and control. Performance efficiency values have been specified in line with the requirements of the Future Homes Standard in order to minimise carbon dioxide emissions as far as possible through the 'Be Lean' stage.

- Low energy LED lighting will be installed throughout the residential units.
- In order to remove the need for fossil fuel combustion on-site, it is recommended that space and water heating will be provided by all-electric systems, such as air source heat pumps (ASHPs). This is addressed in more detail in the renewable and low carbon energy technology section below.
- All residential units will be provided with opening windows to enable a natural ventilation strategy that utilises cross ventilation where feasible to provide fresh air to habitable spaces, without increasing the risk of overheating.
- Energy management systems, such as smart meters, will be installed in all dwellings to enable future residents to monitor their energy usage, and therefore aid in reducing their energy consumption.
- All future residents will be provided with a Home User Guide, to ensure all plant and equipment provided is used correctly and to enable efficiency of use to be maximised.
- Suitable controls will be provided for heating systems, for example through the use of time and temperature zones that are controlled by the suitable arrangement of plumbing and electrical systems.

Non-Residential

5.15 Similarly to the residential elements of the proposed development, the non-residential component will include a wide range of energy efficiency measures, intended to reduce energy demand.

5.16 The proposed development will deliver a new SEN School. The building fabric specification has therefore been driven by the energy demand profile associated with this building use.

5.17 It is noted that the existing chapel is to be retained for community use. The details of the measures to be employed within the retained building to reduce energy consumption and related carbon dioxide emissions will be confirmed at the detailed design stage. It is envisaged, however, that passive design measures will be embedded, where possible.

5.18 The passive design of the proposed SEN School will, where practicable, include a number of specific energy efficiency features.

5.19 The following U-values, which align with the anticipated requirements of the Future Buildings Standard, are proposed as a means of limiting heat loss through the building fabric of the proposed SEN School.

Table 5.2 Proposed non-residential building fabric U-values

Building Fabric Element	Part L1:2021 backstop U-values (W/m²K)	Proposed U-values (W/m²K)
Ground floor	0.18	0.12
External wall	0.26	0.16
Roof	0.16	0.13
Windows	1.60 (including frame)	1.20 (including frame)

5.20 Subject to confirmation, it is proposed that glazing will be double or triple glazed, with a low emissivity coating. Although this has yet to be formally specified, it is expected that thermally efficient glazing will be employed, with window U-values of 1.20 W/m^{2}K or better (including frame).

5.21 A high level of air tightness is proposed for the proposed SEN School, where it is recommended that a level equal to or below 3 m^3/h/m^2 be targeted, meaning that air infiltration between the internal and the external environment will be largely controlled, and space heating/cooling demand further reduced.

5.22 High efficiency plant, equipment and controls are proposed to limit the energy consumed in order to provide the required level of indoor environmental performance and control. Performance efficiency values have been specified in line with the requirements of the Future Buildings Standard in order to minimise carbon dioxide emissions as far as possible through the 'Be Lean' stage.

- Low energy LED lighting is recommended to be installed throughout the non-residential spaces of the proposed development, including daylight dimming and presence detection controls where appropriate.

- In order to remove the need for fossil fuel combustion on-site, it is intended that space and water heating will be provided by all-electric systems, such as air source heat pump (ASHP) systems. This is addressed in more detail in the renewable energy technology section below.

- The design of the proposed atria, which will include for rooflights, will seek to maximise opportunities for passive, stack ventilation. It is intended that, within these areas of the building,

warmer air will rise and be expelled from the roof lights (or similar), with cooler aid drawn into the building at the lower level. This will aid to deliver fresh air to the internal spaces of the building, whilst also reducing demand for space cooling by providing natural ventilation with Windhive (or equal and approved) systems to be employed within classrooms under the flat roof areas, and heat recycling (NVHR) to all other classrooms and office spaces. Further to this, it is intended that the circulation spaces will be ventilated through the provision of openable louvres to the sides of the rooflights. These louvres will be controlled by a CO_2 monitor, which will cause the louvres to open when CO_2 levels peak. Whilst opportunities to employ passive means of ventilation will be prioritised, where necessary, mechanical ventilation with heat recovery (MVHR), with a low specific fan power may also be employed. It is recommended that, where provided, MVHR systems with a specific fan power (SFP) of 1.1 W/l/s and heat exchanger efficiency of 70% be employed. Toilets should be provided with extract ventilation only, using fans with a specific fan power not greater than 0.3 W/l/s. The specific fan powers to be employed are subject to confirmation at the detailed design stage.

- The cooling demands of the proposed SEN School will be reduced as far as possible, through the prioritisation of passive means of cooling. A similar approach will be applied to the community uses to be brought forward within the retained chapel building, however it may be necessary in some instances to employ active cooling within some spaces. Where cooling is required, it is recommended that this be provided using a variable refrigerant flow (VRF) system with a seasonal energy efficiency ratio of no less than 5.0.

- Energy and building management systems, such as smart meters, will be installed to enable members of the future facilities management team to monitor the energy usage of the school and the community uses to be brought forward within the retained chapel building, and therefore aid to reduce energy consumption. It is recommended that sub-meters be employed to enable the appropriate measurement and management of energy consumption, based on specific areas of the buildings and their relevant uses.

- It is recommended that variable speed pumps be employed to modulate flow rates as required by demand.

- Where relevant, the electricity power factor should be greater than 0.95, and light metering with warnings about out of range values will be utilised as part of the building management system

‘Be Clean’ (Supply Energy Efficiently)

5.23 The potential for the proposed development to incorporate a low carbon heating system has been reviewed for the scheme.

5.24 Local heat and power sources minimise distribution losses and achieve greater efficiencies when compared to a separate energy system. This in turn reduces the site-wide energy consumption and associated carbon dioxide emissions.

5.25 The potential integration of a district heating network (DHN) or a conventional gas-fired combined heat and power (CHP) plant to provide low carbon heat and power on-site has been evaluated for the development, in compliance with industry best practice and appropriate planning policies.

District Heating Feasibility

5.26 The feasibility of a DHN is heavily dependent on a location's heat demand. In turn, heat demand in the locality is dependent on building usage and the surrounding area heat demand density. The establishment of a new DHN is capital intensive and, to ensure economic viability, requires areas of high thermal demand density in order to minimise losses and associated costs. A threshold thermal density value of 50 kWh/m^2 is typically required to ensure viability, as is a location in proximity to an anchor heat load, such as a hospital.

5.27 Figure 5.2 below displays the development site within its proposed surroundings. From this, it can be concluded that the site itself is undeveloped, with a low-density residential settlement to the south and southeast. The surrounding area is therefore likely to be characterised by a low heat demand, and it is considered that no anchor heat load is present within the surroundings of the site.

Figure 5.2 Site and surroundings

5.28 There are no existing or proposed district heating networks within close proximity to the site. In addition, due to the relatively low density of the development, and the cost of the infrastructure

required to connect a peri-urban location to a district heat network, it is not deemed cost effective to establish a district heat network on the site as part of the proposed development.

5.29 The proposed development will deliver buildings that are designed to comply with the most up to date iteration of the Building Regulations and the Future Homes and Building Standards, which will reduce the energy demand of the buildings. It is anticipated, therefore, that the thermal demand density of the proposed development will be far less than the threshold value stated above. Further to this, densities well in excess of 100 dwellings per hectare are typically required at a minimum to ensure the efficient operation of a DHN. As demonstrated in Figure 2.2 above, the proposed development will not seek to deliver the densities required to support the efficient operation of a DHN.

5.30 Therefore, based on the low density of the proposed development, and the costs associated with the establishment of a DHN in a peri-urban location, in combination with the fact that there are no existing or proposed DHNs within close proximity to the site, it is not considered to be feasible to incorporate a DHN as part of the proposed development. It is noted that there is potential a mixed-use development of approximately 1,800 dwellings, alongside employment, retail and community facilities, schools, community buildings, and leisure and sports facilities to come forward at the neighbouring land to the South of Reeds Lane. Whilst this would deliver additional demand for heat within the surrounding area, the need for an anchor load in order to establish a new DHN would remain. Further to this, there is potential for issues to arise with respect to the distances over which heat would need to be transported in order to serve the proposed development, should a DHN come forward as part of the proposals at the land to the South of Reeds Lane, which could result in the generation of heat via individual systems being more efficient than connecting into a wider DHN. It is therefore recommended that individual systems be employed within the proposed development, which will also ensure that the meeting of heating demands within the proposed development are not dependent on development coming forward on the adjacent land to the South of Reeds Lane.

Combined Heat and Power Feasibility

5.31 Based on the anticipated timescale of the proposed development and the predicted trajectory of the national electricity grid decarbonisation, the establishment of a CHP network powered by fossil fuels is not considered to be a carbon efficient approach.

5.32 It is considered that projected changes to the carbon content of electricity and gas will result in technologies that have lower operational emissions than CHP, and which are able to optimise local energy sources, being the preferred option for serving the heating demands of the built environment. These technologies are likely to be able to offset more carbon emissions than traditional, gas-engine CHP systems.

5.33 The incorporation of a gas-fired CHP network will lock the development into relatively carbon intensive gas-fired heating and hot water technology, and will not facilitate the transition to less carbon intensive solutions.

'Be Green' (Utilise Renewable and Low Carbon Technologies)

5.34 The proposed development has given consideration to renewable and low carbon energy technologies that may be applicable to deliver the required level of carbon dioxide savings over the Part L:2021 baseline, and the likely local effects on the environment.

5.35 In determining the appropriate renewable and low carbon energy technology for the site, a number of factors including carbon dioxide savings, site constraints, and potential visual impacts have been considered. Further details of each technology and its associated assessment in relation to the development are provided below.

- **Biomass** – This technology is not considered a practical solution for reducing carbon dioxide emissions, in the view of storage space requirements for combustible material, and the transport related carbon emissions which are not normally accounted for within energy modelling. Furthermore, high nitrous oxide (NOx) and particulate matter (PMx) emissions are associated with the use of biomass fuel, and as the proposed development is located within proximity to existing, and will introduce new, residential dwellings, the permitted emissions will be restricted. It is noted that alternative technologies, such as ceramic filters or bag filters, have the potential to significantly reduce the emissions associated with biomass fuels, and this may therefore be explored as the design of the proposed development continues to progress.

- **Air Source Heat Pumps (ASHP)** – Given the site location and the lack of local existing or proposed heat networks, the use of air source heat pump (ASHP) technology is considered appropriate to serve the space and water heating demands of the proposed dwellings and SEN School, in addition to the cooling demands of the retained chapel building, should this be required. ASHPs do not produce emissions at the point of use, and do not impact on air quality within their locality. This technology is therefore considered appropriate for the proposed development, and should the intention be to incorporate ASHPs for the residential component of the proposed development and the retained chapel building, details of their integration would be provided as part of a Reserved Matters Application. It is noted that, should this type of system be employed to deliver space heating, low temperature systems, such as underfloor heating or low temperature radiators, would be recommended. Furthermore, should this technology be incorporated within the proposed development, it is recommended that acoustic measures to limit the noise generated by the outside unit of any ASHP systems employed during operation are considered. With respect to the proposed SEN School, it is proposed that highly efficient ASHP systems be installed to serve the space and water heating demands of the buildings. Further details are provided below.

- **Ground Source Heat Pumps (GSHP)** – As detailed above for air source heat pump (ASHP) technology, the location of the site means that the incorporation of ground source heat pump (GSHP) technology may also be appropriate to serve the space and water heating, and cooling where relevant, demands of the proposed development. Ground temperatures are typically stable throughout the year, and GSHPs are therefore able to provide a consistent level of performance throughout the year. It is highlighted, however, that there are uncertainties concerning the thermal properties of the ground, and that ground investigation and borehole drilling has the potential to be cost prohibitive, with the potential that a suitable energy source is not present. Furthermore, there is potential that the carbon dioxide and energy cost savings arising from the use of GSHP systems may not be significant when compared to that of ASHP systems, particularly as high-grade heat is required to generate residential hot water. It is also noted that GSHP systems are typically around twice as expensive as ASHP technology, which may therefore make the use of this technology economically unviable. Notwithstanding, the use of GSHP technology is potentially appropriate and feasible within the proposed development, and the potential use of systems of this type will continue to be considered as the detailed design of the proposed development progresses. It is noted, however, that the intention is to incorporate ASHP technology to serve the space and water heating demands of the proposed SEN School, as detailed above.

- **Photovoltaics (PV)** – This technology is considered to be appropriate for the proposed development, in light of the potential to deliver a proposed layout that includes for buildings with areas of unobstructed south-east to south-west facing roof space. This technology may therefore be employed to generate renewable energy on-site, with the potential for excess power to be exported to the grid or harnessed using battery storage. The use of this technology, which typically has minimal maintenance requirements, should therefore be considered during the detailed design stage to contribute to the proposed development's compliance with Part L:2021 of the Building Regulations and the Future Homes and Future Buildings Standards. As such, it is recommended that the incorporation of PV technology within the residential component of the proposed development continues to be explored through the detailed design stage and, should this technology be incorporated, details of the PV systems to be employed be provided as part of a Reserved Matters application. With respect to the proposed SEN School, it is proposed that PV arrays be integrated at the lower roof level of the building. Further details are provided below.

- **Solar Thermal Hot Water (STHW)** – This technology may also be considered appropriate for the proposed development, in light of the potential to deliver buildings with areas of unobstructed southeast to south-west facing roof space. The incorporation of this technology can contribute to the meeting of a building's residential hot water demand, and this technology can be employed effectively alongside a range of heating systems. It is noted that the incorporation of this technology would need to account for the requirements of other technologies that may be employed, such as heat pump or PV systems. In addition to this, the potential for hot water demand to fall outside the energy generating period for STHW systems should be accounted for,

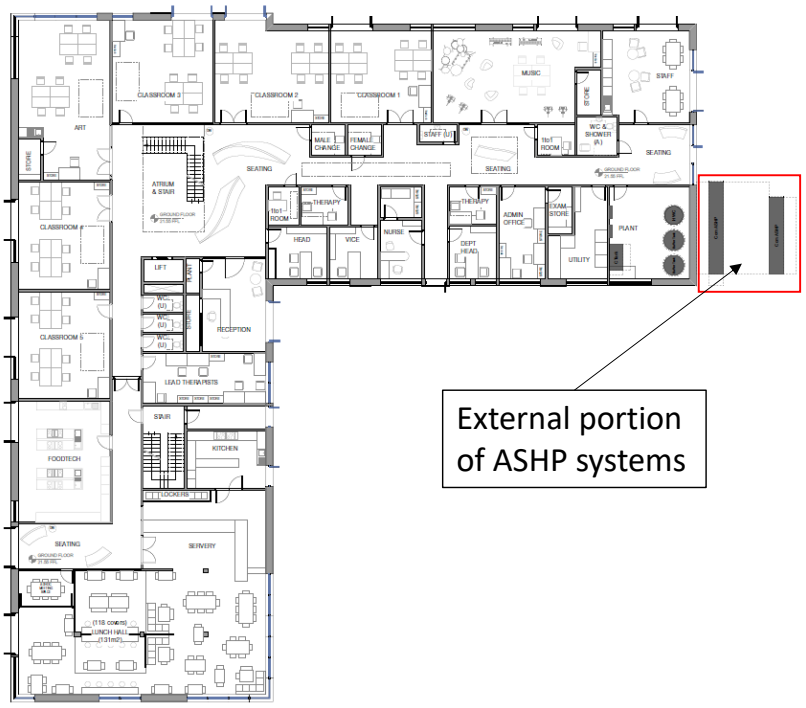
as this may result in a reduced ability for this technology to significantly reduce carbon dioxide emissions during operation. The potential incorporation of this technology within the residential element of the proposed development will continue to be explored throughout the detailed design stage, and should this technology be included for, details of the systems will be provided as part of a Reserved Matters Application. It is noted that, at this stage, it is not intended that STHW technology be employed within the proposed SEN School.

- **Wind Turbines** – Wind turbines may be employed to harness the kinetic energy of wind to generate electricity on-site. The employment of this technology should account for the need for a steady source of wind that does not have an uneven direction. This technology is typically incorporated at the roof level of buildings that are significantly higher than their immediate surroundings, or within an open area, to ensure disruption to prevailing winds is minimised. When accounting for the nature of the proposed development and the area within which it is situated, it is considered that the incorporation of this technology is inappropriate.

5.36 Based on the information set out above, it is recommended that air source heat pump (ASHP) systems and rooftop photovoltaic (PV) panels will be employed to serve the space and water heating demands of the proposed dwellings, and to generate carbon free electricity on-site. The incorporation of these technologies will aid the achievement of a significant reduction of carbon emissions in operation when compared to the Part L:2021 of the Building Regulations baseline, which is in line with the aspirations of the proposed scheme, as well as the requirements of both the adopted Mid Sussex District Plan 2014 – 2031, and the emerging policies set out within the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications).

5.37 As set out above, it is intended that highly efficient ASHP systems be installed to serve the proposed SEN School. At this stage, it is anticipated that Kronoterm ADAPT MAX 10105 and 10140 systems (or equal and approved), with a heating coefficient of 4.34, a hot water coefficient of performance of 2.05, will be employed within the SEN School to deliver space heating and water heating, respectively. This is subject to confirmation during further detailed design. It is expected that systems that operate quietly will be specified, however as the design continues to progress, additional acoustic measures to further limit the noise generated by the systems will be incorporated. These measures may include the incorporation of vibration isolation dampener mounts, or the use of absorptive panels. In addition, at this stage, it is intended that the external portion of the ASHP systems will be located adjacent to the proposed plant room at the ground floor level, next to the one-storey element of the building, to ensure disruption to pupils and staff is minimised. This is demonstrated in Figure 5.3, below.

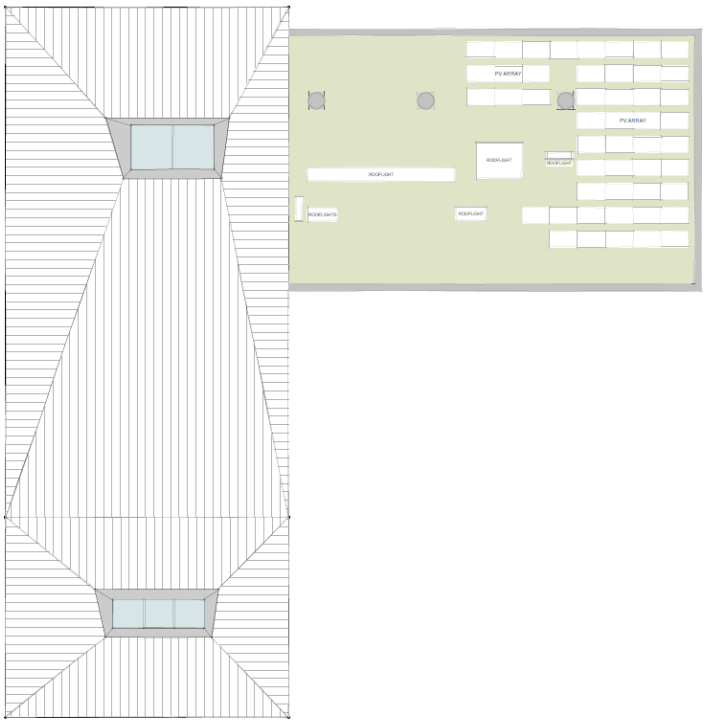
Figure 5.3 Location of external portion of ASHP system serving the proposed SEN School



5.38 Rooftop photovoltaic (PV) technology is also proposed to generate renewable electricity for the proposed SEN School. The location of the proposed arrays is highlighted on the roof plan displayed below. It should be noted that this plan is indicative at this stage, and demonstrates the proposed location of a potential PV array. This area, on the roof space of the lower element of the building, has been selected to be free from overshading from the taller element of the building and the proposed parapet, and to maximise the area within which panels may be placed with a southeast-facing orientation. It is noted that the configuration of PV panels shown in the image below represents the configuration that is considered to maximise the number of panels that may be incorporated on the roof of the scheme when accounting for the following:

- The need for access to the panels to enable maintenance;
- The need to space the panels an adequate distance from one another to minimise self-shading, which would result in reduced efficiency;
- The presence of rooflights serving spaces at the ground floor level; and
- Minimisation of the overshading of panels as a result of the proposed raised parapet and the presence of plant and structures on the roof.

Figure 5.4 Proposed rooftop PV panel locations for the SEN School



5.39 The roof area selected is proposed to house 58no. PV panels. The PV coverage extends to all reasonably available roof space that is unshaded. Standard PV panels have been assumed, with an output of 430W per panel, an efficiency of ~22.7% and a dimension of 40 x 1,812 mm. The array will provide a total generation capacity of 24.94kWp. Panels will be oriented 10° to the horizontal and will face in a southeasterly direction to maximise output per panel.

5.40 It is estimated that the 58no. PV panels will produce approximately 24,598 kWh of renewable electricity per year, equating to a carbon dioxide saving of approximately 3.3 tonnes of CO_2 per year using the SAP 10 electricity emissions factor of 0.136 kgCO_2/kWh.

Energy Assessment Results

5.41 Energy modelling of the proposed SEN School has been undertaken using EDSL TAS accredited software to predict operational carbon dioxide emissions. The proposed internal floorplans of the proposed SEN School are shown in Figures 5.5 and 5.6, below.

Figure 5.5 Ground floor layout

Figure 5.6 First floor layout

5.42 Based on the energy analysis of the proposed spaces, the total energy demand for the proposed SEN School is shown below. It is highlighted that the information presented below is based on the indicative modelling undertaken at the planning stage and that it is expected that updated modelling will be undertaken as the designs continue to progress.

Table 5.3 Energy Demand

Energy Demand following energy efficiency measures (MWh per year)					
Space Heating	Hot Water	Lighting	Auxiliary	Cooling	Unregulated
20,201,788	17,212,327	6,961,024	5,363,998	0	51,247,028

5.43 The carbon dioxide emissions for the proposed development, accounting for the measures outlined above, is shown below. A BRUKL documents showing the modelled performance of the proposed SEN School is provided in Appendix A3.

Figure 5.7 Carbon dioxide emissions

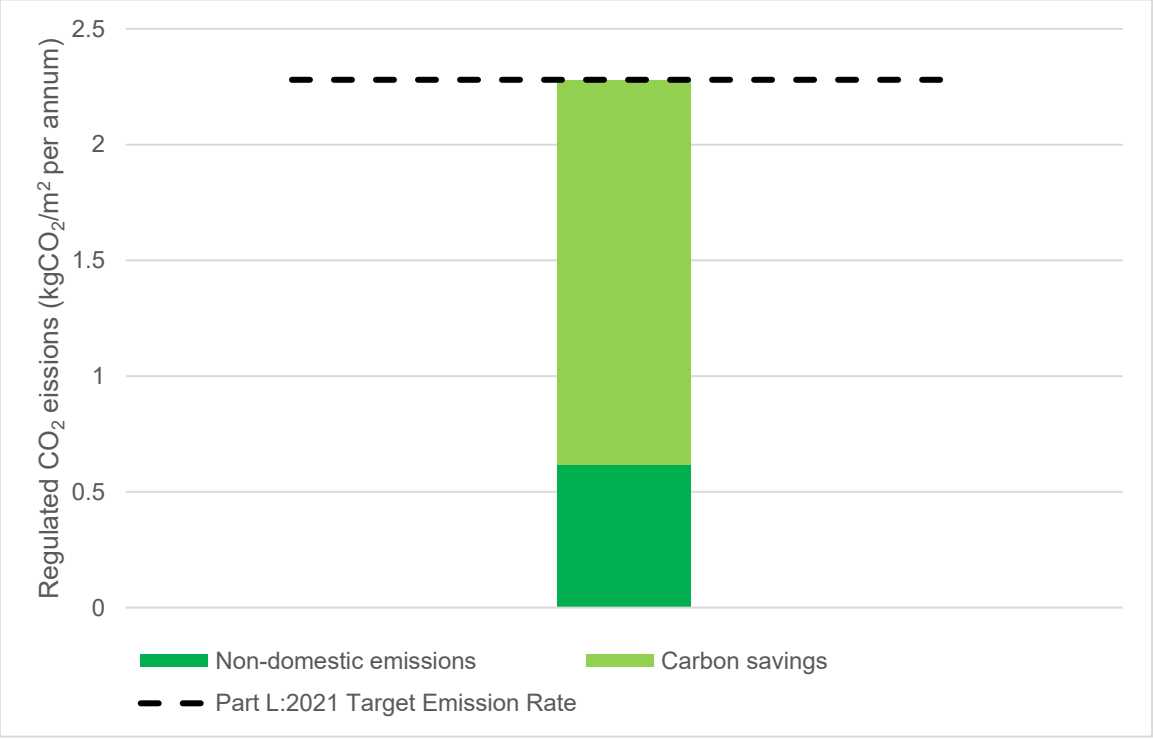


Table 5.4 Carbon dioxide emissions

TER: Baseline: Part L 2021 Emissions ($kgCO_2/m^2$ per annum)	BER: Proposed 'Be Green' Emissions ($kgCO_2/m^2$ per annum)	Emissions Savings ($kgCO_2/m^2$ per annum)	Emissions Savings (%)
2.28	0.62	1.66	72.8%

5.44 The above analysis shows that the proposed SEN School will achieve an approximate on-site carbon dioxide emissions saving of 72.8% through energy efficiency measures and renewable technologies, as detailed above.

6. SUMMARY

6.1 This Sustainability & Energy Statement provides an overview as to how the development of Land at LVS Hassocks, Sayers Common contributes to sustainable development in the context of the strategic, design and construction considerations.

6.2 Consideration has been given to Chapter 14 of the National Planning Policy Framework (NPPF), the Mid Sussex District Plan 2014 – 2031, as well as the Mid Sussex Design Guide Supplementary Planning Document, the Hurstpierpoint and Sayers Common Parish Council Parish 2031 Neighbourhood Plan, and the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications) in the formulation of this strategy, aiming to minimise the environmental impact of the proposed development during construction and operation, and ensure the development is constructed to rigorous sustainability standards.

6.3 By designing to rigorous energy standards, employing electric-only systems, and integrating renewable and low carbon energy technologies, the application will respond directly to the Climate Emergency declared by the Council in July 2019. These measures combine to facilitate significant carbon dioxide emissions savings compared to the Part L:2021 baseline, aiming to significantly exceed the current requirements of Mid Sussex District Council and to align with the draft policies set out within the Mid Sussex District Plan 2021 – 2039 (Regulation 19; with Main Modifications).

6.4 Sections 4 and 5 of this statement demonstrate that the siting and design of the proposals support relevant policies relating to sustainable development. This shows that the proposed development:

- make efficient use of land;
- retain the existing chapel building on-site to deliver community uses;
- promote the use of sustainable and active modes of transport;
- reduce the risk of flooding on-site and in the surrounding area;
- minimise internal water consumption to 100 litres per person per day;
- incorporate low-impact materials, in consideration of the BRE Green Guide to Specification;
- minimise waste production during construction and maximise the proportion of waste to be diverted from landfill;
- mitigate the risk of overheating;
- incorporate measures to improve site biodiversity, including biodiverse planting;

- ensure air, noise, ground, light and water pollution are minimised as far as possible;
- minimise energy demand through the specification of low U-values, low air permeability and low thermal bridging to reduce heat loss;
- be fossil fuel free, utilising electric-only systems, such as air source heat pumps (ASHPs) to serve the space and water heating demands of the proposed buildings;
- utilise renewable technology, where possible, such as rooftop photovoltaic panels, to generate carbon-free electricity; and
- achieve a significant reduction in CO_2 emissions for the proposed buildings, following the Energy Hierarchy methodology.

6.5 Overall, the proposals for the scheme are in line with the principles of sustainable development as well as the policy requirements of the NPPF and Mid Sussex District Council and will provide a development that promotes these principles in operation.

A1. SITE PLAN

Sayers Common

Hickstead Park

Strood's Farm

Kingsland Lodge

The Bungalow

LVS Hassocks

Christ Church

Sayers House

Kingscot

White Oaks

Beech House

Hall

Melaise

Coppins

Old School Cottages

Windrush

Sherwood

Oakfield

HERON CLOSE

THEACORNS

OAKHURST

MILL LANE

Playground

Shelter

El Sub Sta

Stand

Track

Drain

Pond

Path (um)

A23

B 2118

22.0m

17.7m

N

0 10 20 30 40 50 60 70 80 90 100
metres

Land off Oakhurst, Sayers Common Hassocks BN6 9JA	
Site Location Plan - SC-LP-01a	
Scale 1:1250 @ A1	19 Dec 2025

A2. RESIDENTIAL WATER USAGE CALCULATOR

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	6	1.46	0.00	8.76
	Part flush Volume (litres)	3	2.96	0.00	8.88
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	5.00	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow(litres)	180.00	0.11	0.00	19.80
Shower (where bath also present)	Flow Rate(litres / minute)	6.00	4.37	0.00	26.22
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	6.00	0.44	10.36	13.00
Washing Machine	(Litres/kg dry load)	5.63	2.1	0.00	11.82
Dishwasher	(Litres/place setting)	0.98	3.6	0.00	3.53
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	Total Calculated use (litres/person/day) =SUM(column 4)			101.49
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			92.36
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			97.4

Installation Type	Make/Model (mandatory)	Litres/Person/Day
WC (dual flush)	Grohe Concealed Cistern	17.64
Taps	Vecta+ Tap and Mixer	9.48
Baths (shower(s) present)	Ideal Standard	19.80
Showers (bath(s) present)	Dene Eco Cool Touch Bar Mixer Shower	26.22
Kitchen Taps	Reginox Ressini	13.00
Washing Machines	Samsung WW90T684DLH	11.82
Dishwasher	Samsung 2021 Series 11	3.53

Terms and Conditions
System Requirements

A3. BRUKL DOCUMENTS

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

LVS Hassocks

As designed

Date: Fri Dec 19 14:15:03 2025

Administrative information

Building Details

Address:

Certifier details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.6"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.6

BRUKL compliance module version: v6.1.e.0

Foundation area [m^2]: 909.42

The CO_2 emission and primary energy rates of the building must not exceed the targets

Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	2.28	
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	0.62	
Target primary energy rate (TPER), $kWh_{PE}/m^2.annum$	24.35	
Building primary energy rate (BPER), $kWh_{PE}/m^2.annum$	5.39	
Do the building's emission and primary energy rates exceed the targets?	BER =< TER	BPER =< TPER

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

Fabric element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.16	0.16	External Wall
Floors	0.18	0.13	0.13	Ground Floor
Pitched roofs	0.16	0.13	0.13	Roof
Flat roofs	0.18	-	-	No flat roofs in project
Windows** and roof windows	1.6	1.24	1.24	New Window
Rooflights***	2.2	2.02	2.02	Rooflight
Personnel doors^	1.6	-	-	No personnel doors in project
Vehicle access & similar large doors	1.3	-	-	No vehicle access or similar large doors in project
High usage entrance doors	3	-	-	No high usage entrance doors in project

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [$W/(m^2K)$] $U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [$W/(m^2K)$]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [$W/(m^2K)$]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m^2K

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	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- Extract Only (8 Zones)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	0	-	-	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

2- MVHR

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	4.34	-	-	1.5	0.7
Standard value	0.93*	N/A	N/A	1.9^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

* Standard shown is for gas single boiler systems <=2 MW output and overall for multi-boiler systems. For single boiler systems >2 MW or any individual boiler in a multi-boiler system, limiting efficiency is 0.88.

^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.

3- NatVent

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	0	-	-	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

4- NVHR

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	4.34	-	-	-	-
Standard value	0.5	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

5- WindHive

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	4.34	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.

1- New HWS Circuit

	Water heating efficiency	**Storage loss factor [kWh/litre per day]**
This building	2.05	0
Standard value	0.91	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter

NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
D1_Edu_Toilet 1	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 2	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 3	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 4	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 5	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 6	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 7	0.3	-	-	-	-	-	-	-	-	-	N/A
D1_Edu_Toilet 8	0.3	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting

Zone name	General luminaire	Display light source	
	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value	95	80	0.3
D1_Edu_Toilet 1	95	-	-
D1_Edu_Toilet 2	95	-	-
D1_Edu_Toilet 3	95	-	-
D1_Edu_Toilet 4	95	-	-
D1_Edu_Toilet 5	95	-	-
D1_Edu_Toilet 6	95	-	-
D1_Edu_Toilet 7	95	-	-
D1_Edu_Toilet 8	95	-	-
D1_Edu_Changing 1	95	-	-
D1_Edu_Changing 2	95	-	-
D1_Edu_Changing 3	95	-	-
D1_Edu_Teaching 1_WH	95	-	-
D1_Edu_Teaching 2_WH	95	-	-
D1_Edu_Teaching 3_WH	95	-	-
D1_Edu_Teaching 4_NVHR	95	-	-
D1_Edu_Teaching 5_NVHR	95	-	-
D1_Edu_Teaching 6_NVHR	95	-	-

General lighting and display lighting	General luminaire	Display light source	
Zone name	**Efficacy [lm/W]**	**Efficacy [lm/W]**	**Power density [W/m²]**
Standard value	95	80	0.3
D1_Edu_Teaching 7_NVHR	95	-	-
D1_Edu_Teaching 8	95	-	-
D1_Edu_Teaching 9	95	-	-
D1_Edu_Teaching 10	95	-	-
D1_Edu_Teaching 11	95	-	-
D1_Edu_Teaching 12	95	-	-
D1_Edu_Teaching 13	95	-	-
D1_Edu_Teaching 14	95	-	-
D1_Edu_Teaching 15	95	-	-
D1_Edu_FoodPrep 1	95	-	-
D1_Edu_FoodPrep 2	95	-	-
D1_Edu_EatDrink 1	95	-	-
D1_Edu_EatDrink 2	95	-	-
D1_Edu_Plant 1	95	-	-
D1_Edu_Store 1	95	-	-
D1_Edu_Store 2	95	-	-
D1_Edu_Store 3	95	-	-
D1_Edu_Store 4	95	-	-
D1_Edu_Store 5	95	-	-
D1_Edu_Circulation 1	95	-	-
D1_Edu_Circulation 2	95	-	-
D1_Edu_Circulation 3	95	-	-
D1_Edu_Circulation 4	95	-	-
D1_Edu_Circulation 5	95	-	-
D1_Edu_DrySptHall 1	95	-	-
D1_Edu_HighDensIT 1	95	-	-
D1_Edu_Plant 2	95	-	-
D1_Edu_Reception 1	95	95	-
D1_Edu_Office 1_NVHR	95	-	-
D1_Edu_Office 2	95	-	-
D1_Edu_Office 3	95	-	-
D1_Edu_Office 4	95	-	-
D1_Edu_Office 5	95	-	-
D1_Edu_Office 6	95	-	-
D1_Edu_Office 7	95	-	-
D1_Edu_Office 8	95	-	-
D1_Edu_Office 9	95	-	-
D1_Edu_Office 10	95	-	-
D1_Edu_Office 11	95	-	-
D1_Edu_Office 12	95	-	-
D1_Edu_Office 13	95	-	-
D1_Edu_Office 14	95	-	-
D1_Edu_Office 15	95	-	-

General lighting and display lighting	General luminaire	Display light source	
Zone name	**Efficacy [lm/W]**	**Efficacy [lm/W]**	**Power density [W/m²]**
Standard value	95	80	0.3
D1_Edu_Office 16	95	-	-
D1_Edu_Plant 3	95	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
D1_Edu_Teaching 1_WH	NO (-50%)	NO
D1_Edu_Teaching 2_WH	NO (-50%)	NO
D1_Edu_Teaching 3_WH	NO (-54%)	NO
D1_Edu_Teaching 4_NVHR	NO (-51%)	NO
D1_Edu_Teaching 5_NVHR	NO (-38%)	NO
D1_Edu_Teaching 6_NVHR	NO (-32%)	NO
D1_Edu_Teaching 7_NVHR	NO (-31%)	NO
D1_Edu_Teaching 8	NO (-81%)	NO
D1_Edu_Teaching 9	NO (-69%)	NO
D1_Edu_Teaching 10	NO (-73%)	NO
D1_Edu_Teaching 11	NO (-50%)	NO
D1_Edu_Teaching 12	NO (-51%)	NO
D1_Edu_Teaching 13	NO (-50%)	NO
D1_Edu_Teaching 14	NO (-61%)	NO
D1_Edu_Teaching 15	NO (-24%)	NO
D1_Edu_EatDrink 1	NO (-33%)	NO
D1_Edu_EatDrink 2	N/A	N/A
D1_Edu_DrySptHall 1	NO (-23%)	NO
D1_Edu_HighDensIT 1	NO (-71%)	NO
D1_Edu_Reception 1	NO (-30%)	NO
D1_Edu_Office 1_NVHR	NO (-8%)	NO
D1_Edu_Office 2	N/A	N/A
D1_Edu_Office 3	NO (-62%)	NO
D1_Edu_Office 4	NO (-54%)	NO
D1_Edu_Office 5	YES (+6%)	NO
D1_Edu_Office 6	N/A	N/A
D1_Edu_Office 7	N/A	N/A
D1_Edu_Office 8	NO (-2%)	NO
D1_Edu_Office 9	NO (-5%)	NO
D1_Edu_Office 10	N/A	N/A
D1_Edu_Office 11	NO (-25%)	NO
D1_Edu_Office 12	NO (-35%)	NO
D1_Edu_Office 13	N/A	N/A
D1_Edu_Office 14	NO (-63%)	NO
D1_Edu_Office 15	NO (-51%)	NO
D1_Edu_Office 16	NO (-30%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m^2]	1876	1876
External area [m^2]	3551	3551
Weather	LON	LON
Infiltration [m^3/hm^2@ 50Pa]	3	3
Average conductance [W/K]	844	955
Average U-value [W/m^2K]	0.24	0.27
Alpha value* [%]	36.88	21.88

* 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
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
100	**Non-residential Institutions: Education**
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	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/m^2]

	Actual	Notional
Heating	2.48	3.68
Cooling	0	0
Auxiliary	2.8	2.13
Lighting	3.52	5.51
Hot water	4.48	5
Equipment*	27.32	27.32
TOTAL**	**13.28**	**16.32**

* 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/m^2]

	Actual	Notional
Photovoltaic systems	9.89	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*9.89*	*0*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m^2]	38.77	36.83
Primary energy [kWh_{PE}/m^2]	5.39	24.35
Total emissions [kg/m^2]	0.62	2.28

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	1.3	0	0	0	0
	Notional	0.5	0	0.1	0	1.3	2.64	0	----	----
[ST] Central heating using water: floor heating, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
	Actual	48.3	0	3.3	0	8.8	4.12	0	4.34	0
	Notional	27.5	0	2.9	0	3.9	2.64	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	1.3	0	0	0	0
	Notional	0	0	0	0	1.3	0	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	51.3	0	3.5	0	0.8	4.12	0	4.34	0
	Notional	59.6	0	6.3	0	0.6	2.64	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	67.3	0	4.5	0	0.7	4.12	0	4.34	0
	Notional	66.7	0	7	0	0.7	2.64	0	----	----

Key to terms

Heat dem [MJ/m2] = Heating energy demand
Cool dem [MJ/m2] = Cooling energy demand
Heat con [kWh/m2] = Heating energy consumption
Cool con [kWh/m2] = Cooling energy consumption
Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER = Cooling system seasonal energy efficiency ratio
Heat gen SSEFF = Heating generator seasonal efficiency
Cool gen SSEER = Cooling generator seasonal energy efficiency ratio
ST = System type
HS = Heat source
HFT = Heating fuel type
CFT = Cooling fuel type

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