HYBRID APPLICATION FOR A MIXED-USE DEVELOPMENT, SEEKING FULL PLANNING PERMISSION FOR 28 DWELLINGS, 665M2 OF COMMERCIAL USE (CLASS E), PUBLIC OPEN SPACE, ALLOTMENTS, DRAINAGE, LANDSCAPE AND ANCILLARY WORKS AND OUTLINE PERMISSION WITH ALL MATTERS RESERVED BAR ACCESS FOR AN ADDITIONAL 3 SELF/CUSTOM-BUILD DWELLINGS.

LAND BETWEEN NORTH ROAD AND HARVEST LANE, CHARLTON HORETHORNE

Energy and Sustainability Strategy

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REPORT CONTROL

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1.0 INTRODUCTION

1.1 On behalf of Hopkins Estates Ltd, Grassroots Planning have been instructed to prepare this Energy and Sustainability Strategy to set out how this planning application has responded positively to the requirements set out in adopted policy, particularly EQ1 'Addressing climate change in South Somerset.

1.2 The planning application in question is a hybrid planning application proposal for up to 31 dwellings, employment floorspace, open space and ancillary works on land between north road and harvest lane, Charlton Horethorne

1.3 Climate change has underpinned every decision taken throughout the development of the proposal, from site selection to the layout that the application presents. This Energy and Sustainability Strategy sets out the proposal's approach and design principles that are to be adopted in the development as well as the future detailed Reserved Matters for the proposed self-builds to ensure the development reduces energy demand and carbon emissions to assist in mitigating the effects of climate change. The proposal has been designed with sustainability in mind, it therefore encourages the use of a sustainably located site and low carbon materials and construction techniques, allied with renewable energy technology to address climate change.

1.4 Detailed design and construction details are not provided at the current stage however, certain measures are suggested to guide future reserved matters and ensure the application retains the flexibility to successfully meet policy EQ1 requirements.

2.0 PLANNING POLICY

2.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning applications be determined in accordance with the development plan unless other material considerations indicate otherwise.

2.2 The proposal responds to the energy policies of the South Somerset Local plan 2006-2028, adopted March 2015.

2.3 The 'other material considerations' referred to in Section 38(6) of the Act would include the National Planning Policy Framework (NPPF), National Planning Practice Guidance (NPPG), Planning Policy Statements (PPS), Planning Circulars, Policy Advisory Notes (PAN), relevant Supplementary Planning Guidance (SPG) or Supplementary Planning Documents (SPD) (emerging and adopted).

2.4 The most relevant applicable policies in the context of this Energy and Sustainability Statement are as follows.

South Somerset Local Plan

2.5 Relevant policies from the Core Strategy are as follows:

- **Policy EQ1 – Addressing Climate Change in South Somerset.**
  - The Council will support proposals for new development where they have demonstrated how climate change mitigation and adaptation will be delivered, through inclusion of the following measures
    - New development will ensure that carbon dioxide emissions are minimised through energy efficiency measures, renewable and low carbon energy, and where necessary

    Allowable Solutions;
    - The following sustainable construction standards will be required, unless it is proven not to be feasible or viable:
      - Code for Sustainable Homes level 4 from 2013 (or as amended by future Government policy, regulations and/or legislation);
      - Code for Sustainable Homes level 5 from 2016 (or as amended by future Government policy, regulations and/or legislation);
      - BREEAM rating of 'excellent' for non-domestic buildings.
    - Development of renewable and low carbon energy generation will be encouraged and permitted, providing there are no significant adverse

impacts upon residential and visual amenity, landscape character, designated heritage assets, and biodiversity. The presence of several airfields in South Somerset will mean the impacts of wind turbines upon electromagnetic interference and aviation radar will be a particular consideration;

- Development should reduce and manage the impact of flood risk by incorporating Sustainable Drainage Systems, and through appropriate layout, design, and choice of materials;
- change should be considered in the design of new development, incorporating measures such as solar orientation, maximising natural shade and cooling, water efficiency and flood resilience;
- Susceptibility to climate change should be taken into account on all proposals to develop sites with biodiversity interest.

- **Policy EQ2 – General Development**
  - Development will be designed to achieve a high quality, which promotes South Somerset's local distinctiveness and preserves or enhances the character and appearance of the district. Innovative designs delivering low energy usage and/or wastage will be encouraged.
- **Policy EQ4 – Biodiversity**
  - All proposals for development, including those which would affect sites of regional and local biodiversity, nationally and internationally protected sites and sites of geological interest, will:
    - Protect the biodiversity value of land and buildings and minimise fragmentation ofhabitats and promote coherent ecological networks;
    - Maximise opportunities for restoration, enhancement and connection of naturalhabitats;
    - Incorporate beneficial biodiversity conservation features where appropriate;
    - Protect and assist recovery of identified priority species; and
    - Ensure that Habitat Features, Priority Habitats and Geological Features that are used by bats and other wildlife are protected and that the design including proposals for lighting does not cause severance or is a barrier to movement
- **Policy EQ5 – Green infrastructure**
  - The Council will promote the provision of Green Infrastructure throughout the district, based upon the enhancement of existing areas including public open space, accessible woodland, and river corridors, and by ensuring that development provides open spaces and green

corridor links between new and existing green spaces. Development proposals should provide and/or maintain a network of connected and multifunctional open spaces that, where appropriate, meet the following requirements:

  - Create new habitats and connects existing wildlife areas to enrich biodiversity & promote ecological coherence;
  - Provide and/or maintain an accessible network of green spaces and improve recreational opportunities, including environmental education, local food production and support physical health and mental wellbeing;
  - Ensure that all children and young people have reasonable access to a range of play and leisure opportunities;
  - Provide and/or maintain opportunities for enhanced, attractive walking and cycling routes linking urban areas and the wider countryside;
  - Enhance and/or maintain the character and local distinctiveness of the landscape;
  - Contribute to and/or maintain local identity and sense of place;
  - Increase the district's tree cover;
  - Help mitigate the consequences of climate change (sustainable drainage systems, shade etc.); and
  - Alleviate current and future potential visitor and recreation pressure/disturbance to internationally designated conservation areas.

- **Policy TA1 – Low Carbon Travel**
  - All new residential and employment developments in South Somerset should, subject to general viability:
    - Provide Travel Information Packs;
    - Provide for the charging of electric vehicles with an external charging point of at least 16 amps adjacent to each parking space and within the curtilage of the site. Such charging points should also be provided for garages within the development;
    - Provide a Green Travel Voucher for each occupier/employee valid for 1 year for use on sustainable transport;
    - Provide facilities for cycle parking within the new development commensurate with the levels and standards designated in the SCC cycle parking strategy;
    - Include Travel Plans (commensurate with Policy TA4);
    - Ensure that sustainable transport measures are in place and operational concurrent with first occupancy

National Planning Policy Framework

2.6 The NPPF sets out the Government's planning policies for England.

2.7 Relevant paragraphs to climate change are:

- **Paragraph 7** states that "The purpose of the planning system is to contribute to the achievement of sustainable development".

- **Paragraph 152** sets out that "The planning system should support the transition to a low carbon future in a changing climate…It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources….and support renewable and low carbon energy and associated infrastructure.

- **Paragraph 154** states that "New development should be planned for in ways that: a) avoid increased vulnerability to the range of impacts arising from climate change… b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

- **Paragraph 157** states that "In determining planning applications, local planning authorities should expect new development to …. take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

- Relevant to promoting sustainable transport paragraph 104 highlights that "Transport issues should be considered from the earliest stages of plan-making and development proposals, so that: … opportunities to promote walking, cycling and public transport use are identified and pursued"

2.8 The **10 Point Plan**, the **Net Zero Strategy**, the **Heat and Building Strategy** and the **Sixth Carbon Budget**, have set out very clear directions for a shift in transport modes to more active, greener and sustainable transport.

3.0 ENERGY AND SUSTAINABILITY STRATEGY

3.1 This section describes how the proposal has addressed sustainable design and sustainable construction measures and sets out the design principles that seek to reduce energy demand and carbon emissions, as well as mitigate against the effects of climate change.

3.2 The combination of approaches aligns with both national and local objectives in tackling climate change. The solutions go beyond that which is required for building regulations and present a rounded and sustainable approach to development.

Energy efficiency and micro-generation.

3.3 This section now identifies the proposal's approach and design principles and likely measures to making buildings more efficient to reduce energy demand and carbon emissions. The exact specifications can be provided at detailed design stage of the proposal which is post determination.

3.4 This Energy and Sustainability Strategy follows the implementation of a three-step method to new build dwellings described in the following energy hierarchy:

Figure 1. Energy Hierarchy. Energy efficiency and adaptation, Camden Planning Guidance 2021.

Step 1: Be lean.

3.5 This step addresses the reduction in energy demand, through the adoption of passive and active design measures that will reduce the energy demand.

3.6 The following passive design measures will be prioritised overactive measures to reduce energy (see Figure 6 below):

- Making the most of sunlight

- Making the most of daylight
- Preventing overheating
- Natural cooling
- Thermal performance
- Enhanced U-values- the new buildings will incorporate high levels of insulation and high-performance glazing that exceed Part L 2021 targets to reduce the demand for space heating.
- Air tightness improvement-

3.7 Where active measures are unavoidable the following will be considered:

- Efficient heating
- Efficient ventilation and cooling
- Other energy efficient technology

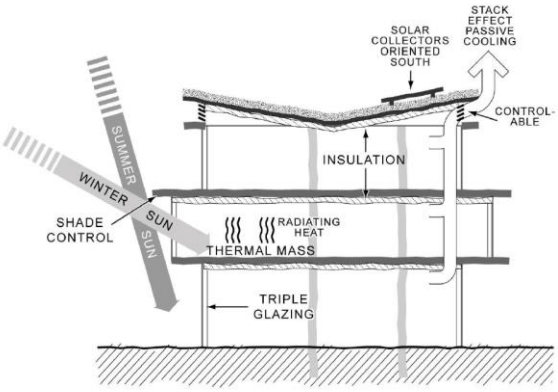

Figure 2. Natural system principles.
Energy efficiency and adaptation, Camden Planning Guidance 2021.

3.8 The proposed master plan orientates the development, and specific housing blocks, in a way that allows the main living spaces to benefit from the heat and light of the sun which can reduce the requirement to use fuels to perform the same function. This reduces costs, energy use and associated carbon emissions.

3.9 In terms of air tightness, u-values etc. this is a matter for detailed design which is usually done post determination. Notwithstanding this the proposed dwellings will be built with a high level of air tightness in order to reduce the heating requirements of the properties. This will be balanced with the need to have sufficient ventilation.

3.10 Additional savings will be made through the fixtures and fittings used within the development. LED lighting will be fully utilised to minimise lifetime energy use and associated emissions.

Step 2: Be Clean

3.11 After implementing Step 1, the remaining residual energy demand is supplied as efficiently as possible (e.g. by connecting to a district energy network or developing a site-wide network).

3.12 District heating has been assessed and dismissed on the basis of economic availability due to the size of the development and the costs associated with the infrastructure and maintenance of a central plant.

3.13 Notwithstanding this the UK is moving towards the electrification of the heating system with the ban of new gas connections expected from 2025. As the grid continues to decarbonise the energy used from it is cleaner than that of natural gas, a trend that will compound further over time. Solar panels and air source heat pumps are proposed as part of the development to reduce the dependency on natural non-renewables.

Step 3: Be Green

3.14 There are a variety of renewable energy technologies that can be installed to supplement the energy needs of new developments. This last step of the energy hierarchy looks at the feasibility of on-site renewable energy generation.

3.15 Based on feasibility and viability considerations, an analysis of the appropriate renewable energy sources for the site has been produced for the proposal, see Table 1 below.

3.16 Due to the location, size and type of development, the most appropriate renewable technologies for the site are PV panels and air source heat pumps (ASHP), because solar thermal would take up roof space available for PV and PV is preferred as it will generate electrical energy. As such both technologies will be implemented to serve each dwelling within the development.

Renewable technology	Specification	Maintenance	Appropriate
Solar thermal	South facing at 30-40° is ideal, but as the panels do not rely on direct sunlight they can still be efficient at other angles.	Low	✗

	Any size development.		
Solar PV panels	On a roof or a wall that faces within 90 degrees of south and isn't overshadowed by trees or buildings. Flat roof or pitched roof not greater than 45°. Any size development.	Low	✓
Ground Source Heat Pumps (GSHP)	Requires significant space and very high capital costs. Vertical systems use boreholes which require a ground survey and a drilling license from the Environment Agency. Medium to large developments.	Med	✗
Air Source Heat Pumps (ASHP)	External wall or other location on-site for equipment. Visual, noise and vibration impact considerations. Any size development.	Med	✓
Wind turbines	Require a certain level of wind to make them feasible. Noise, vibration and flicker. Large developments.	High	✗
Biomass	Space needed for plant, fuel storage and deliveries. Burning of wood pellets releases high NOx emissions. Medium to large developments.	High	✗

Table 1. Feasibility of renewable energy technology.

3.17 Therefore, it is proposed that all plots would be provided with air source heat pump to provide low carbon heating and hot water along with the provision of PV panels to produce a 20% of ongoing energy usage through onsite renewable energy. Averaging across plots will be acceptable to provide the flexibility to meet this target.

3.18 Water efficiency measures will be in place to ensure that the standard for water stressed locations of 110 litres per person per day is met.

3.19 Other measures that will be implemented during the development of the detail design proposals and the construction process are:

- Minimising materials
- Using materials with low embodied carbon content
- Utilising recycled products when possible
- Reducing energy and water during construction
- Reducing waste and recycling

- Enabling low energy and water demand once the building is in use

3.20 Reducing embodied carbon impacts can result in other additional benefits including: less waste to landfill from efficient construction methods, or improved air quality benefits from reduced transportation and lower costs of development, operation and maintenance.

3.21 The strategy above shows that the scheme has addressed sustainable design. The exact specifications will be determined at detailed design stage however the above details should ensure that the development exceeds building regulations for energy efficiency.

4.0 ADAPTATION AND NATURE BASED SOLUTIONS

4.1 This section demonstrates how the proposal implements nature-based measures such as conserving, protecting and enhancing existing natural resources; planting trees and hedgerows to create shade, cooling and biodiversity, and implementing sustainable drainage systems.

4.2 The illustrative master plan shows how these measures have been taken onto account, by retaining and enhancing the existing boundary planting that exists on the site and creating generous green spaces in excess of policy requirements. Trees are introduced into the proposed streets which provide cooling in summer months (subject to the selection of suitable deciduous tree species).

4.3 Other nature-based solutions that are related to the design of the new buildings such as the introduction of a large number of bird and bat boxes and swift bricks.

4.4 The application provides a central area for open space, a publicly inaccessible woodland as well as allotments and hedgerow planting. In order to achieve 10% net gain an off-site area within the applicant's control has been proposed for improvement. Based on the submitted proposals a biodiversity net gain is achieved as follows:

Habitat units	10%
Hedgerow units	30%
River units	N/A

Figure 3. BNG Results

4.5 This meets the emerging policy requirements of 10% and show the clear commitment to ecological sustainability that has been adopted as part of the development proposals.

4.6 Therefore, the proposal's strategy for climate change and resilience has gone beyond a 'standard' development by proposing nature-based solutions that will not only contribute to the avoidance of overheating, but will also achieve Biodiversity Net Gain, support natural flood management, improve air quality, contribute to carbon net zero targets and strengthen ecological connectivity to a network of green spaces.

4.7 The above is in line with the Local Plan and meets the requirements of the Council's Climate Strategy and Green & Blue Strategy. The latter recognises that "...green and blue

infrastructure plays a key role in nature recovery, building resilience to climate change and promoting healthy, resilient and safe communities".

5.0 CONCLUSIONS

5.1 The Energy and Sustainability Strategy for the proposed development has been developed to show how the proposed development complies with the relevant policies of South Somerset Council.

5.2 The proposed scheme has been designed to address sustainability and mitigate against the effects of climate change. The proposal incorporates the use of nature-based solutions and sustainable construction methods and materials, addressing and mitigating the effects of climate change on the development.

5.3 The masterplan that has been sensitively developed to ensure that detailed design can make best use of factors such as solar gain and cooling from vegetation in summer months and a condition would be applied to any consent to required that then details of building fabric and the exact details of the proposed photovoltaic panels and air source heat pumps are provided in due course to show how a minimum of 20% of the development's ongoing energy requirements are provided via renewable means.

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