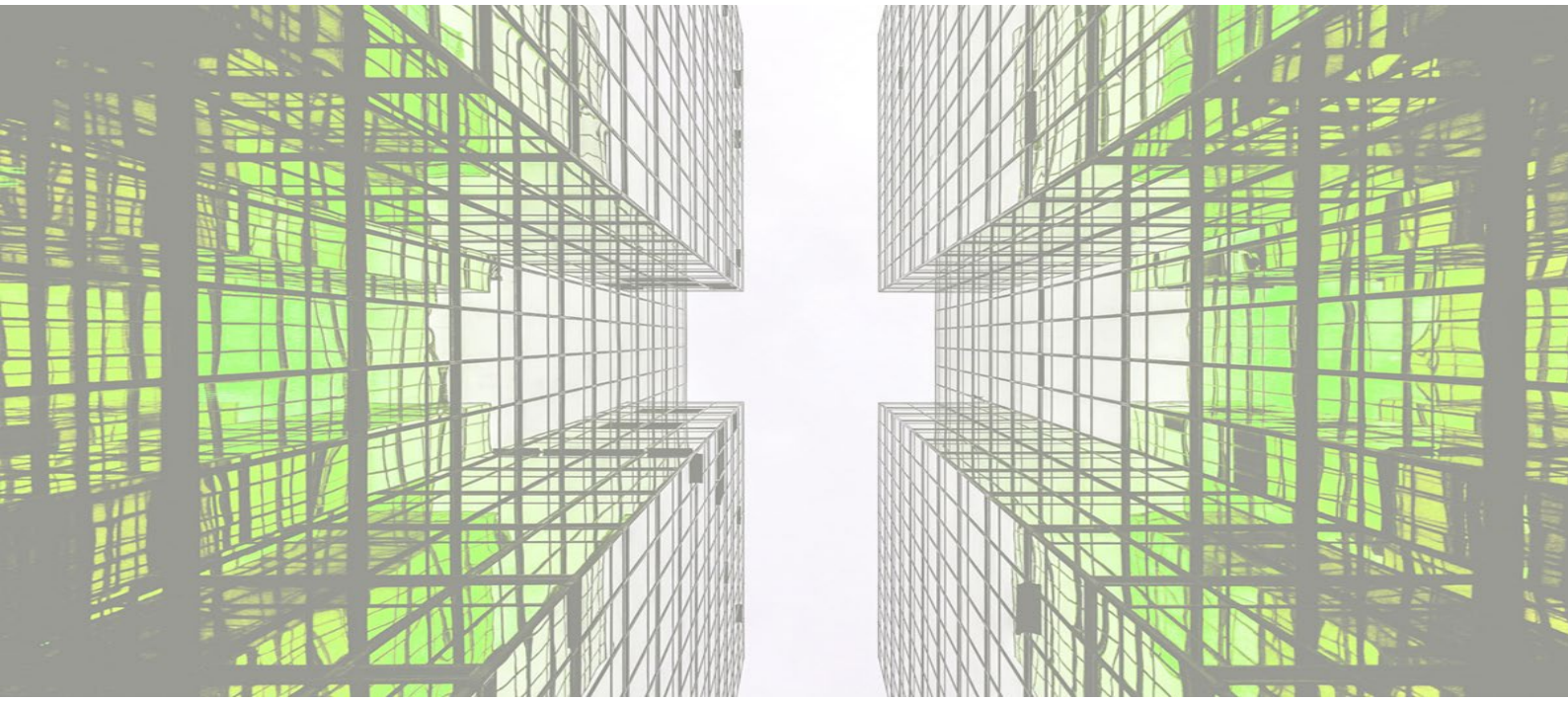
Sustainability and Energy Statement, incorporating Commercial Waste Management Plan

Bodicote Care Home

Prepared for Mercian Developments
November 2022



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EXECUTIVE SUMMARY

1. This Sustainability and Energy Statement has been prepared by Envision on behalf of Mercian Developments and is submitted to support a planning application for the development of a 128-bed care home at the land at Longford Park Road and Canal Lane, Bodicote.

2. The statement demonstrates how the development could be taken forward in accordance with national and local planning policies and the use of best practice sustainable design and construction.

3. At a national level, the National Planning Policy Framework (NPPF) sets a presumption in favour of sustainable development, looking at the three dimensions, social, economic and environmental. At a local level, the Cherwell Local Plan 2011-2031 encourages sustainable design and construction to be incorporated into development proposals to ensure sustainable development.

4. This sustainability statement sets out how the proposed development following the requirements of both national and local planning policies and demonstrates how it will exceed the benchmarks set out in the current Building Regulations. In particular, the following sustainable design and construction principles have been adopted: -

   - Strong consideration of the existing landscape and the natural environment in the development of the proposed layout;
   - Commitment to best practice sustainable design and construction principles, to be developed further throughout the detailed design process;
   - Commitment to the reduction of carbon emissions, exceeding building regulation requirements; and
   - Consideration of operational waste management and reduction of waste to landfill.

1 INTRODUCTION

1.1 Envision has been appointed by Mercian Developments (the applicant) to produce a Sustainability and Energy Statement, incorporating a Commercial Waste Management Plan, to support the planning application for a 128-bed care home at the land at Longford Park Road and Canal Lane, Bodicote.

Scope

1.2 The primary purpose of this statement is to explain how planning policy drivers, which influence the environmental sustainability of the development can be addressed by a development of this nature. The report establishes the principles that would be followed during detailed design and construction.

1.3 This statement is structured as follows:

- Section 2 provides a description of the main sustainability policies relevant to the application;
- Section 3 examines the general sustainable features proposed in the development against the policies outlined in Section 2, and includes a Commercial Waste Management Plan and a renewable energy feasibility assessment; and
- Section 4 provides a concluding summary.
- A BREEAM Predictive Assessment is included in Appendix 1, demonstrating the findings of an initial BREEAM review.

About the Applicant

1.4 Mercian Developments is a property development and investment company based in the Midlands with an excellent track record in retail, leisure, industrial, residential, and care development. Mercian promote schemes for care home and extra care development with a number of schemes currently in construction.

Location and Existing Situation

1.5 The proposed development site is located at the land at Longford Park Road and Canal Lane, at the centre of Longford Park. The site is an area of 0.97 hectares, not currently occupied and is situated in a residential area. The general site location is shown in figure 1.1.

Fig 1.1. Site Location

Development Proposals

1.6 The applicant is seeking planning permission for a 128-bed care home at the land at Longford Park Road and Canal Lane, Bodicote. A general illustrative site layout of the proposed development is given in Figure 1.2.

1.7 The predominantly two-storey building will provide numerous communal amenity spaces for the residents, including several lounges and dining rooms, a bistro/café, and a salon, in addition to external gardens and landscaping with seated areas.

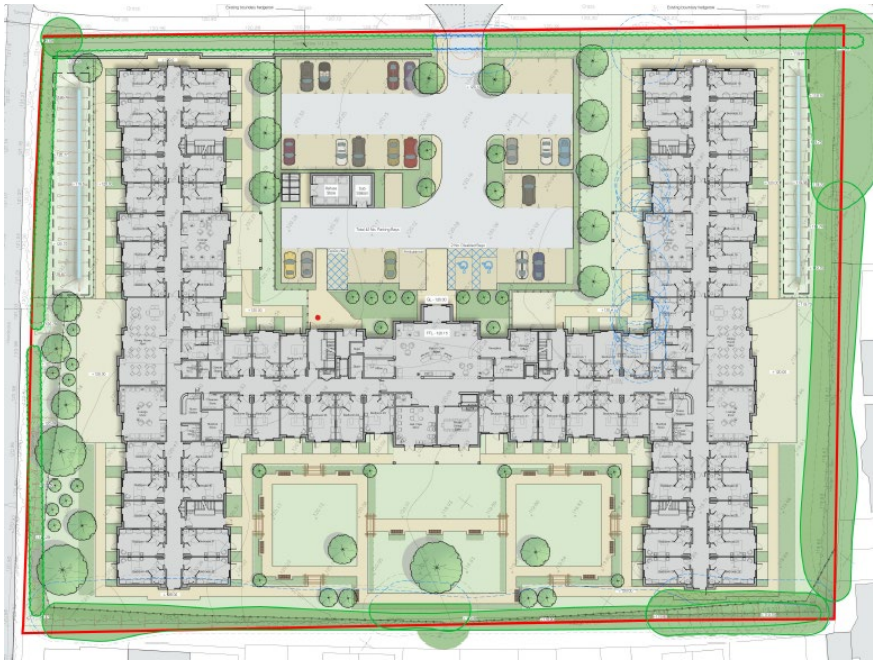

Fig 1.2. Illustrative Site Layout

2 SUSTAINABILITY POLICY & DRIVERS

2.1 The mechanism for delivering sustainability is now well enshrined within a wide range of UK statues, strategies and polices. This is reflected in the UK planning system, which is implemented through national guidance along with local planning policies. A review of all the relevant policy documents was undertaken in order to gain an understanding of the guiding principles for sustainability.

National Planning Policy Framework

2.2 The revised National Planning Policy Framework (NPPF) was released on 20th July 2021. This replaces the previous National Planning Policy Framework published in March 2012, revised in July 2018 and updated in February 2019. It sets out the framework for all planning policy in England and how these policies are expected to be applied. 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. At a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being and environmental protection.

2.3 The NPPF sets out a presumption in favour of sustainable development, and the need to support economic growth through the planning system. Achieving sustainable development means that the planning system has three overarching objectives, 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 objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

2.4 Planning plays a key role in helping shape places to radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development. The NPPF does not include detailed measures on sustainable design codes and standards to apply,

although expects that when setting any local requirement for a building's sustainability, local planning authorities should do so in a way consistent with the national technical standards.

Cherwell District Council Planning

2.5 The most relevant policies which need to be considered when assessing the scheme's compliance to sustainability policy are those provided within local development documents. Cherwell District Council has an adopted Local Plan for the plan period 2011-2031.

2.6 The Local Plan includes a range of policies relevant to sustainability and this development, including:

- Policy ESD 1: Mitigating and Adapting to Climate Change - *The incorporation of suitable adaptation measures in new development to ensure that development is more resilient to climate change impacts will include consideration of the following:*
    - *Taking into account the known physical and environmental constraints when identifying locations for development;*
    - *Demonstration of design approaches that are resilient to climate change impacts including the use of passive solar design for heating and cooling;*
    - *Minimising the risk of flooding and making use of sustainable drainage methods; and*
    - *Reducing the effects of development on the microclimate (through the provision of green infrastructure including open space and water, planting, and green roofs).*

- Policy ESD 2: Energy Hierarchy and Allowable Solutions – *promoting an 'energy hierarchy' of: reducing energy use, suppling energy efficiently, making use of renewable energy, and making use of allowable solutions.*

- Policy ESD 3: Sustainable Construction – *meeting water efficiency limits of 110 litres/person/day, and achieving a BREEAM 'Very Good' rating, subject to review over the plan period to ensure the target remains relevant. The demonstration of the achievement of this BREEAM standard should be set out in the Energy Statement. All development proposals will be encourage to reflect high quality design and high environmental standards, demonstrating sustainable construction methods including but not limited to:*
    - *Minimising both energy demands and energy loss;*
    - *Maximising passive solar lighting and natural ventilation;*
    - *Maximising resource efficiency;*
    - *Incorporating the use of recycled and energy efficient materials;*
    - *Incorporating the use of locally sourced building materials;*
    - *Reducing waste and pollution and making adequate provision for the recycling of waste;*
    - *Making use of sustainable drainage methods;*
    - *Reducing the impact on the external environment and maximising opportunities for cooling and shading); and*

- *Making use of the embodied energy within buildings wherever possible and re-using materials where proposals involve demolition or redevelopment.*

- Policy ESD 4: Decentralised Energy Systems - *The use of decentralised energy systems, providing either heating (District Heating (DH)) or heating and power (Combined Heat and Power (CHP)) will be encouraged in all new developments. A feasibility assessment for DH/CHP, including consideration of biomass fuelled CHP, will be required for:*

  - *All residential developments for 100 dwellings or more;*
  - *All residential developments in off-gas areas for 50 dwellings or more;*
  - *All applications for non-domestic developments above 1000m2 floorspace.*

  The feasibility assessment should be informed by the renewable energy map at Appendix 5 'Maps' and the national mapping of heat demand densities undertaken by the Department for Energy and Climate Change (DECC) (see Appendix 3: Evidence Base). Where feasibility assessments demonstrate that decentralised energy systems are deliverable and viable, such systems will be required as part of the development unless an alternative solution would deliver the same or increased benefit.

- Policy ESD 5: Renewable Energy - *A feasibility assessment of the potential for significant on site renewable energy provision (above any provision required to meet national building standards) will be required for:*

  - *All residential developments for 100 dwellings or more;*
  - *All residential developments in off-gas areas for 50 dwellings or more;*
  - *All applications for non-domestic developments above 1000m2 floorspace.*

  Where feasibility assessments demonstrate that on site renewable energy provision is deliverable, viable and any adverse impacts can be addressed satisfactorily, this will be required as part of the development unless an alternative solution would deliver the same or increased benefit. This may include consideration of 'allowable solutions' as Government Policy evolves.

- Policy ESD 6: Sustainable Flood Risk Management – *Site-specific flood risk assessments are required for: all proposals located in flood zones 2 or 3; proposals of 1 Ha or more in flood zone 1; sites located in an area known to have experienced flooding problems or within 9m of any watercourse.*

- Policy ESD 7: Sustainable Drainage Systems (SuDS) – *all development will be required to use sustainable drainage systems (SuDS) for the management of surface water run-off. The need to protect ground water quality must be taken into account, and where possible SuDS should seek to reduce flood risk, reduce pollution, and provide landscape and wildlife benefits SuDS will require the approval of Oxfordshire County Council as LLFA and SuDS Approval Body, and proposals must include an agreement on the future management, maintenance and replacement of the SuDS features.*

- Policy ESD 10: Protection and enhancement of biodiversity and the natural environment – *through seeking a net gain in biodiversity, protection of trees, reuse of soils, adequately mitigating any harm resulting from a development, incorporating features to encourage biodiversity and retain and (where possible) enhance existing features of nature conservation value within the site, identifying and maintaining existing ecological networks to avoid habitat fragmentation, and provision of green infrastructure including ecological corridors.*

- Policy ESD 13: Local Landscape Protection and Enhancement - *Opportunities will be sought to secure the enhancement of the character and appearance of the landscape, particularly in urban fringe locations, through the restoration, management or enhancement of existing landscapes, features or habitats and where appropriate the creation of new ones, including the planting of woodlands, trees and hedgerows. Development will be expected to respect and enhance local landscape character, securing appropriate mitigation where damage to local landscape character cannot be avoided.*

3 SUSTAINABILITY AND ENERGY STATEMENT

3.1 This section provides an account of the sustainability benefits of the proposed development, and how relevant policy will be addressed in the development proposals. The section is structured to reflect the key issues of sustainability relevant to this project, addressing the following issues raised in the NPPF and Cherwell District's planning policies: -

- Reduction in Carbon Emissions;
- Managing the Impact of Climate Change;
- Biodiversity and Green Infrastructure;
- Sustainable Transport;
- Efficient Use of Land and Integration with Local Area;
- Sustainable Construction;
- Creation of Sustainable Communities;
- Commercial Waste Management; and
- Sustainable Building Accreditation.

Reduction in Carbon Emissions

3.2 In the UK, the residential sector accounted for 18.5% of the UKs carbon emissions in 2019, and in total was estimated to be 65.2 million tonnes of CO2e[1]. Climate change mitigation involves reducing the flow of heat-trapping greenhouse gases into the atmosphere, either by reducing sources of these gases (for example, the burning of fossil fuels for electricity, heat or transport) or enhancing the "sinks" that accumulate and store these gases.

3.3 New development has an important role to play in climate change mitigation, requiring development to emit significantly reduced carbon emissions by comparison to existing building stock to meet national and international climate targets.

Energy Conservation Principles

3.4 The conservation of energy is an important design consideration for Bodicote Care Home, and this will be developed further at detailed design. The design will, in accordance to Cherwell Local Plan Policy ESD 1, have regard to an energy and carbon hierarchy, summarised in in figure 3.1, which illustrates the issues which should be considered at different stages of design development.

3.5 In accordance with this hierarchy, the first stage of design should be to take into consideration basic spatial design elements, including enabling access to solar energy, provision of wind breaks and the integration of the proposed scheme with the natural landscape setting. The second stage

[1] Department for Business, Energy and Industrial Strategy, Provisional UK greenhouse gas emissions national statistics. June 2020

considers these issues further in relation to siting of building plots, as well as the scale and massing of the proposed built environment. The site layout demonstrates how good spatial design principles have been accommodated. The layout will allow access to beneficial solar energy, for example.

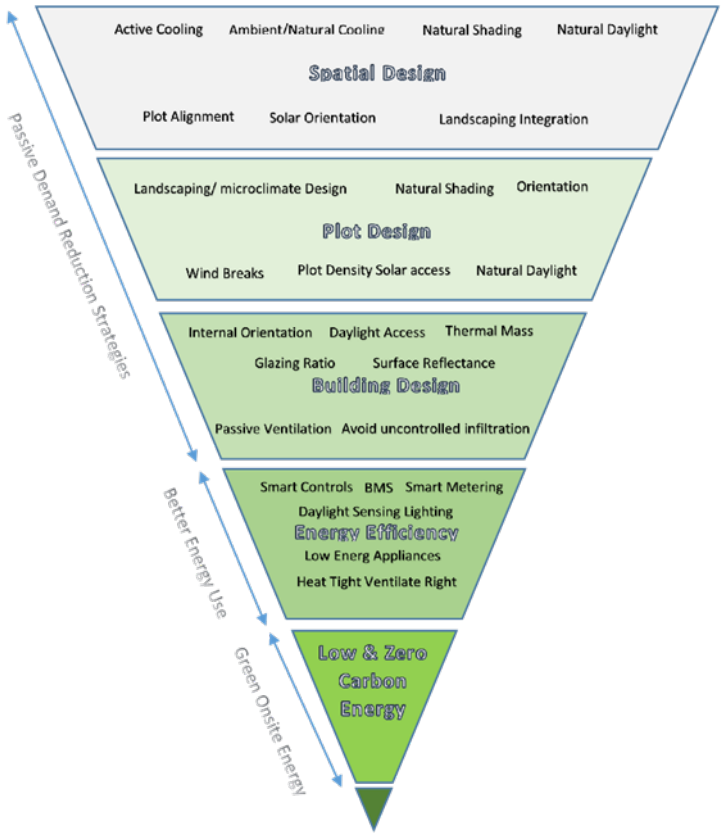

Fig 3.1 Energy & Carbon Hierarchy in design development

Low Carbon and Renewable Energy Solutions

3.6 Robust low carbon seeks a 'fabric first' approach to reducing the carbon footprint of the built environment. This approach will be adopted for the care home, using less energy by improving u-values, airtightness and lighting efficiency amongst others. The focus will be on the improvement of the thermal performance of the walls, roofs, windows and doors through the specification of low u-values and reducing the air permeability of the structures. The glazing design allows for passive heating into the buildings. Where overheating is a concern, the glazing will be openable to provide natural ventilation alongside a combination of internal and external shading. The position of the glazed openings will further maximise the available daylight. This will provide both high levels of comfort for the occupants but also reduce the energy consumption alternatively provided through artificial lighting. Energy efficient lighting will be specified, in the form of LED lights throughout the development and PIRs where appropriate.

3.7 The use of low carbon/renewable technology has been explored for the site to ensure energy security and contribute to the region's low carbon economy. A summary of this assessment is shown in Table 3.1, identifying any unsuitable options which can be discounted at this early stage in the design.

3.8 The initial energy strategy proposes the use of a Combined Heat and Power (CHP) unit. This classed as a low carbon technology, and is expected to achieve the energy reduction requirements associated with compliance with Cherwell Policy and achieving a BREEAM Very Good Rating. As the site falls under the previous 2013 Part L Building Regulations, a CHP unit is expected to comply. This will be confirmed with the full energy strategy produced during the detailed design phase.

Table 3.1 Summary of LZC Technology Options

LZC Technology	Benefits	Limitations	Feasibility
Ground Source Heat Pump	Low maintenance	Requires extensive ground works to bury vertical boreholes or a significant area for horizontal pipes May need immersion backup for hot water	No
Air Source Heat Pump	No need for external ground works Highly Reliable Low Maintenance	Vital that ASHP model selected can maintain performance at the low temperature and high humidity conditions of the British winter. May need immersion backup for hot water Potential visual and noise impact on the residents	Technically feasible, but commercial restraints
Solar Photovoltaic	Typically installed on roof space; little to no impact on land use Low maintenance Long lifespan	Large area of roof space required, and ideally southerly-facing Large array may need electrical infrastructure upgrade	Technically feasible, but commercial restraints and dependent on suitable roof space
Solar Thermal	Typically installed on roof space; little to no impact on land use Low maintenance	Large area of roof space required, and ideally southerly-facing Requires hot water cylinders that link to system and requires additional energy	Technically feasible, but commercial restraints
Combined Heat and Power	On-site generation of electricity Efficient fuel use	Requires regular operational support and maintenance Larger plant space required Requires sufficient thermal and electrical demand	**Yes**

Biomass Boiler	Affordable Fuel	Large area for fuel storage and delivery required Require a flue to effectively disperse pollutants (>2m above roofline) High NOx emissions Require regular maintenance and regular deliveries of fuel	No
Wind Turbine	Smaller models can be roof-mounted	Must be higher than surrounding structures/trees Annual services required Aesthetic and noise impacts Wind speed requirements Planning requirements	No

3.9 In alignment with Cherwell Local Plan Policy ESD 4: Decentralised Energy Systems, consideration has been given in regards to the feasibility of connecting to existing/new District Heating Networks now or in the future. Given that the only proposed District Heating Scheme in the Cherwell District lies just outside of Bicester (as identified in Appendix 5, pg 366, of the Cherwell Local Plan 2011-2031), connection to an existing scheme is not deemed feasible. However, should a District Heating Network be brought adjacent to the proposed building, it may be possible to connect into the proposed Domestic Hot Water Systems at a later date, subject to financial assessments at that time.

Managing the Impact of Climate Change

3.10 In designing new developments, steps must be taken to ensure they can adapt to the already inevitable consequences of climate change. In the UK climate change is expected to lead to warmer, wetter winters and hotter, dryer summers. This will lead to potential greater risks of flooding chances and increased concerns for water scarcity.

Flood Risk and Sustainable Drainage

3.11 According to the Environment Agency, the site is located within Flood Zone 1 and as such, it is suitable for residential development. The Government Flood Maps identify the site to be at very low risk from flooding from rivers or the sea, surface water or from reservoirs. As such, and due to the site being under 1 Ha, a flood risk assessment is not required.

3.12 With regards to drainage, the Preliminary Drainage Requirements drawing submitted to planning outlines the proposals for how surface water will be managed sustainably in accordance with Cherwell Local Plan Policy ESD 7. The preliminary proposals incorporate swales, buried geocellular attenuation and controlled discharge, and will follow best practice to ensure that any surface water runoff from the development is managed, and therefore flood risk is not increased elsewhere.

3.13 As confirmed in the drainage plans submitted for planning, these features will be designed to store the volume of water associated with a 1 in 100-year rainfall event, plus an additional 40% allowance to account for increased rainfall due to climate change.

Water efficiency

3.14 In order to meet the water efficiency limits in Cherwell Local Plan Policy ESD 3 of 110 litres per person per day, it is envisaged that the following measures for water conservation will be employed in this scheme;

- Potable water consumption will be reduced through the specification of efficient water fittings where feasible; and
- Water consuming white goods will be water efficient.

Biodiversity and Green Infrastructure

3.15 A preliminary ecological appraisal of the site has been undertaken by Zebra Ecology. The appraisal determined the main habitat types on site as being sheep-grazed pasture surrounded by lines of trees and native hedgerow, and did not recommend any further survey work for protected species.

3.16 The landscaping strategy has been developed taking into account the findings of the initial appraisal, and the proposed landscape measures (as detailed in the Biodiversity Net Gain Plan) will reinforce existing landscape features and support the biodiversity of the site, to result in a net biodiversity gain of over 10%. This will be achieved through the inclusion of wildflower areas, and native tree, shrub, and hedgerow planting. Appropriate protection measures will be put in place for the duration of construction to protect the existing ecological features.

Sustainable Transport

3.17 Sustainable transport promotes the use of public transport, cycling and walking in advance of private car use. Consideration of the site's location and links with the local transport network is an important consideration in defining how sustainable transport opportunities can be promoted.

3.18 The home is located in the centre of the Longford Park development in Bodicote. There is a bus stop at the entrance to the site, providing regular service to both Bodicote and Banbury town centres, including stopping 450m, approximately a 6 minute walk, from Banbury train station for travel to neighbouring towns.

3.19 The site has an existing access point from Longford Park Road, which will be used as the proposed entrance to the development. The care home will have a dedicated car parking area, providing 42 parking spaces, including 2 disabled spaces, a delivery bay, and an ambulance bay.

3.20 A Travel Plan has been developed, with the objective of reducing dependence of staff on travel by private car, and incorporates a range of measures to encourage sustainable transport modes, including the provision of cycle storage and facilities, and a Travel Plan Coordinator onsite.

Efficient Use of Land and Integration with Local Area

3.21 The site is currently unoccupied, and not allocated for any use, located in a residential area in the centre of the Longford Park development.

3.22 The design has been developed in accordance with Cherwell Local Plan Policies BSC 2 and ESD 13 to respond to the existing characteristics of the local area and ensure the development has as positive impact on the immediate environment and its neighbours.

Sustainable Construction

3.23 A responsible approach would be taken in managing all resources used and minimising the impact on the local environment in the construction phase for this proposed development. All construction materials will be responsibly sourced, of low environmental impact, and where feasible locally sourced. Examples of measures that will be considered include, specifying locally sourced timber where feasible, and ensuring no construction or insulation materials are to be used which will release toxins into the internal and external environment, including those that deplete stratospheric ozone.

3.24 Through future supply chain involvement, consideration will be given to the responsible sourcing of main construction materials. For example, suppliers will preferentially hold an Environmental Management System (EMS), and where possible accredited to ISO 140001. In addition, all timber in the scheme will be FSC and procured in accordance with the UK Government's 'Timber Procurement Policy'.

3.25 With regards to construction waste, a Site Waste Management Plan will be developed prior to commencement of works on site, requiring the principal contractor, sub-contractors, design team and suppliers to minimise the amount of construction waste produced by adopting principles to reduce waste.

Creation of Sustainable Communities

3.26 The proposed development will provide a new care facility to the local area, helping to meet the nursing and dementia care needs of the local community. Additionally, the operator will offer the use of some of the care home facilities to the general public.

3.27 The care home will provide employment opportunities for local people, offering around 100 skilled care and nursing jobs to residents of Bodicote and the surrounding area.

Commercial Waste Management

Approach to Waste Minimisation

3.28 A key element within National Planning Policy for Waste (2014) is the Waste Hierarchy, which was first introduced as a concept in the Waste Framework Directive (1975/442/EEC). It was implemented in England and Wales by the Waste Regulations 2011. The waste hierarchy ranks waste management options according to the least impact on the environment (See Figure 3.3):

- Prevention – most effective environmental solution to reduce the generation of waste, including the re-use of products.
- Preparing for re-use – products checked, cleaned or repaired so they can be re-used.
- Recycling – materials to be reprocessed into products, materials or substances.
- Other recovery – serving a useful purpose by replacing other materials that would otherwise have to be used.
- Disposal – least desirable solution where none of the above options are appropriate.

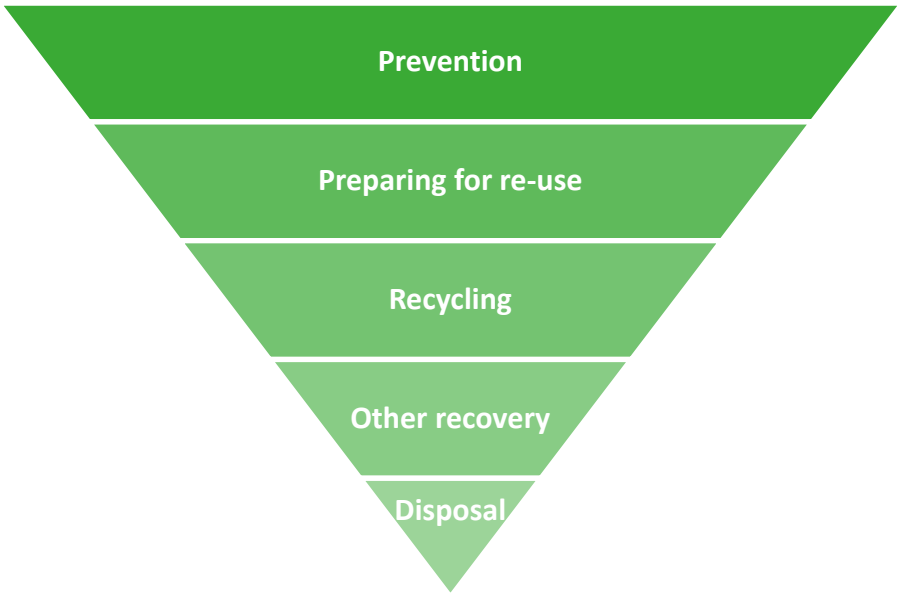

Figure 3.3. The Waste Hierarchy

Operational Waste Strategy

3.29 In accordance with Cherwell Local Plan Policy ESD 3, this statement sets out how waste arising during the occupation of the proposed development would follow the general principles of waste minimisation, and gives consideration to both the design, allowing sufficient space and access for waste collection, and the operational strategy to ensure waste is managed effectively.

3.30 Health care facilities such as the proposed care home produce many different types of waste, including general and recyclable waste, as well as clinical waste specifically related to health care.

The safe management of health care waste is the responsibility of every health care professional. It is essential that all staff understand how waste should be classified, segregated and stored prior to collection and treatment or disposal. This is a legal responsibility of the proposed care home and all relevant procedures would be in place prior to occupation to ensure the safe disposal of all wastes.

3.31 A bin store has been identified externally within the car park, which will be appropriately sized to allow sufficient space for the required general waste, recyclable waste, and clinical waste bins.

3.32 As shown on the site plan, easy access to the bin store from the drop off area would ensure speedy and efficient collection of waste. The waste collection vehicles can access the site via the main entrance to the care home, the development has been designed to accommodate a refuse vehicle and make allowance for its turning. Analysis of the service vehicle manoeuvres has been undertaken by the transport consultants, with the results presented in the Transport Statement. This confirms the service route through the car park is satisfactory and that the service vehicles would be able to manoeuvre within the site, enabling waste collection vehicles to arrive and depart to/from the site in forward gear.

3.33 General and recyclable waste would be collected on a weekly basis, and clinical waste collected monthly. Collections of all waste would be between the hours of 8am and 4pm to avoid disturbance of residents during unsociable hours.

3.34 Due to a high level of food waste produced from the communal kitchen, the provision of both an internal food waste bin in the kitchen store and a larger food waste bin located in the refuse store would be considered as an option if feasible, to help divert organic materials from landfill.

3.35 The development will have a contract with a waste contractor or choose to opt into a contract with the waste contractor appointed by Cherwell District Council. Collection of the hazardous waste from site would be collected by the same waste contractor or a separate contract with specific measures for hazardous waste. As far as is practicable, selected waste management facilities would be local, in order to reduce the environmental impacts associated with the management of the site's waste.

3.36 The proposed operational waste strategy would help encourage the future residents and staff of the development to actively manage the different types of waste produced, and reduce the amount of waste disposed in landfill during the life of the care home.

Sustainable Building Accreditation (BREEAM)

3.37 All of the above measures combine to deliver best practice in sustainable design and construction, and can be demonstrated by achieving high ratings in sustainable building accreditations such as BREEAM. Having undertaken an initial exercise with the design team to review the BREEAM requirements and incorporating best practice sustainable design and construction principles in the development proposals, it is considered feasible to achieve a BREEAM Very Good rating for this development. This is based on analysis against the BREEAM New Construction 2018 Criteria

3.38 A BREEAM Predictive Assessment has been completed for the development, the results of which are summarised below, with detailed results presented in Appendix 1, confirming a BREEAM Very Good rating is feasible, in line with Local Plan Policy ESD 3: Sustainable Construction.

Table 3.1 – BREEAM Predictive Assessment Results

	Available Credits	Targeted Credits
Management	21	19
Health and Wellbeing	19	13
Energy	23	10
Transport	12	8
Water	8	5
Materials	14	3
Waste	9	4
Land Use and Ecology	13	9
Pollution	12	7
Exemplary Level	10	1
Weighted Scores		**58.08%**
BREEAM RATING		**Very Good**

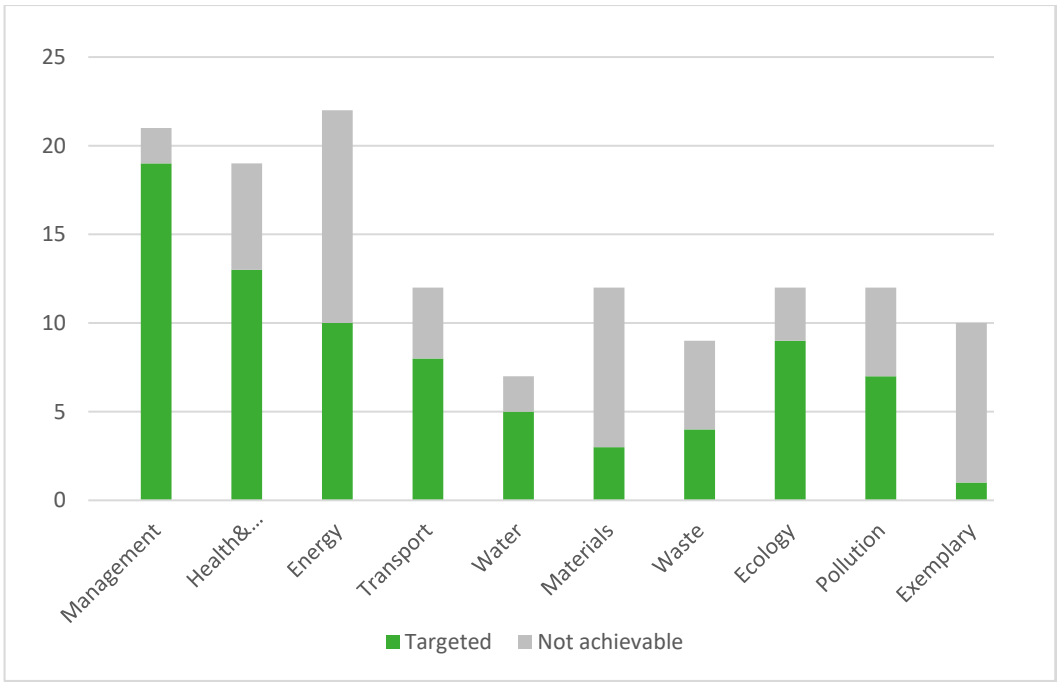

Figure 3.1. Graph illustrating BREEAM Predictive Assessment Results

4 CONCLUSION

4.1 This Sustainability and Energy Statement supports the planning application for the development of a 128-bed care home at the land at Longford Park Road and Canal Lane, Bodicote. The statement demonstrates how the proposals would be able to meet with the sustainability policy guidelines set out in the Cherwell Local Plan 2011-2031, and how wider sustainability benefits would be achieved using best practice design measures. The following conclusions can be drawn:

- **Reduction in Carbon Emissions** - The scheme will exceed Part L Building Regulations standards by adopting a hierarchical approach to energy and carbon. A hierarchy is set out in the statement which will be followed at further design.
- **Managing the Impact of Climate Change** - The scheme is not located within a flood risk zone. A sustainable drainage scheme has been developed which will enable the development to meet with required runoff rates. The scheme will also be incorporate water efficiency measures to reduce water consumption.
- **Biodiversity and Green Infrastructure –** A landscaping strategy has been developed to ensure retention of existing vegetation and further enhancement through new planting. The timing of demolition and suitable protection measures to be followed during construction will protect the existing ecological features identified.
- **Sustainable Transport** - The site is well located with good access routes and public transport in close proximity. The proposed scheme incorporates a range of transport measures to reduce impacts from private vehicles, including the provision of space for the secure storage of cycles and a Travel Plan Coordinator.
- **Efficient Use of Land and Integration with Local Area –** The site is currently unoccupied, and the design has been developed to ensure good integration with the character of the local area.
- **Sustainable Construction** – A responsible approach would be taken in managing all resources used and minimising the impact on the local environment in the construction phase for this proposed development. To manage the impacts of waste arisings in construction, a Site Waste Management Plan will be produced to consider options for sustainable material management.
- **Creation of Sustainable Communities** – The proposed development will provide both housing and employment opportunities for the local area, as well as the use of facilities for the local community.
- **Commercial Waste Management** – The operational waste strategy laid out in the statement outlines measures to manage waste safely and effectively; and reduce waste to landfill throughout the occupational life of the care home.
- **Sustainable Building Accreditation** – An initial assessment of the development has been undertaken against the BREEAM UK New Construction 2018 criteria, confirming that a 'Very Good' rating is feasible to achieve.

APPENDIX 1 - BREEAM PREDICTIVE ASSESSMENT

A1.1 BREEAM assessments provide a sustainability rating of a non-domestic building by giving consideration to a range of criteria. This includes principles of Management, Health & Well Being, Energy, Transport, Water, Materials, Waste, Land Use & Ecology and Pollution. Innovation credits are also available, representing new or exemplary performance in a specific sustainability issue.

A1.2 The most appropriate BREEAM assessment standards for the care home development at the land at Longford Park Road and Canal Lane, Bodicote, are the BREEAM UK New Construction 2018 criteria. The relevant building type is Multi-Residential Accommodation - Residential Care Home.

Pre-Assessment Summary

Scoring Level

A1.3 A BREEAM rating is based on a point scoring system. In order to achieve progressively higher ratings, more points (or 'credits') need to be achieved. These are not all equally weighted, with some categories holding more value in the assessment than others. In terms of ratings, a Very Good rating is a score of 55% or more.

Table A1.1 BREEAM Rating Levels

Level	% Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	**≥ 55**
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

Mandatory Credit Requirements

A1.4 The majority of credits within BREEAM are tradable, meaning that there is some flexibility to how a specific target can be achieved. However, BREEAM also includes a number of mandatory standards which must be met in order to achieve specific ratings. These credits are shown in the table below.

Table A Error! No text of specified style in document..**2. Mandatory Credits**

BREEAM Category	Minimum Standards by BREEAM Rating Level	
	Very Good	Excellent
Man 03 Responsible construction practices	None	One credit (responsible construction management)
Man 04 – Commissioning and Handover	One credit (Commissioning-test schedule and responsibilities)	One credit (Commissioning-test schedule and responsibilities)
Man 04 – Commissioning and Handover	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)

BREEAM Category	Minimum Standards by BREEAM Rating Level	
	Very Good	Excellent
Man 05 – Aftercare	None	One credit (Commissioning-implementation)
Ene 01 Reduction of energy use	None	Four credits
Ene 02 – Energy Monitoring	One credit (First sub-metering credit)	One credit (First sub-metering credit)
Wat 01 Water consumption	One Credit**	One Credit
Wat 02 – Water Monitoring	Criterion 1 only**	Criterion 1 only
Mat 03 – Responsible Sourcing	Criterion 1 only*	Criterion 1 only
Wst 03 - Operational waste	None	One Credit

*Minimum Standard for 'Pass' rating
**Minimum Standard for 'Good' rating

BREEAM Predictive Assessment Results

A1.5 A summary of the BREEAM predictive assessment results is presented in the main body of this Sustainability Statement, confirming a BREEAM Very Good rating is feasible to achieve for the proposed care home development. Overleaf, a more detailed breakdown of the BREEAM targeted credits is set out, confirming the commitments made at this early design stage.

Project Name: **Bodicote**

Targeted BREEAM rating % **58.08** **Very Good**

Building Type: **Multi Residential (Care Home)**

Project Type: **Fully Fitted**

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
MANAGEMENT						
Man 01	**Project Brief and Design**	Project Delivery Planning	1	1	A clear sustainability brief developed prior to concept design. Identify and define roles, responsibilities and contribution of project team for key phases of the project delivery.	2
		Stakeholder Consultation (Interested Parties)	1	1	Consult all relevant parties on minimum consultation content at RIBA Stage 2. Prior to completion of RIBA Stage 4 feedback to all relevant parties must be given and received.	2 2-4 4
		Pre-requisite for BREEAM Advisory Professional credits: Have the client & the contractor formally agreed performance targets?			**BREEAM target must be formally agreed with the design team.**	2
		BREEAM Advisory Professionals (AP) (Concept Design)	1	1	Appointment of BREEAM AP prior to RIBA Stage 2. BREEAM target must be formally agreed with the design team.	2
		BREEAM AP (Developed Design)	1	1	BREEAM AP monitor and report progress against agreed BREEAM performance targets throughout the project up to PC Stage.	4
Man 02	**Life Cycle Cost and Service Life Planning**	Elemental Life Cycle Cost (LCC)	2	0		
		Component Level Life Cycle Cost Options Appraisal	1	1	A component level LCC plan has been developed by the end of RIBA Stage 4 in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008.	4
		Capital Cost Reporting	1	1	Report the capital cost for the fit-out works in pounds per meter square (£/m2) via the BREEAM Assessment Scoring and Reporting tool.	4
		Pre-requisite: Legal and sustainable timber			**All timber and timber-based products used during construction process of the project are legal and sustainable i.e. FSC or PEFC certified.**	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Man 03	**Responsible Construction Practices**	Environmental Management	1	1	Contractor operates EMS: certificate of ISO 14001, EMAS or have a structure that is in compliance with BS 8555:2003 and has reached stage four of the implementation stage. And implement best practice pollution prevention procedures: PPG6, Pollution Prevention Guidelines.	4
		Pre-requisite for BREEAM AP on site: Have the client & the contractor formally agreed performance targets?			**BREEAM target must be formally agreed with the main contractor.**	4
		BREEAM AP (Site)	1	1	A BREEAM AP is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and therefore BREEAM target, during the Construction, Handover and Close Out stages.	4
		Responsible Construction Management **Minimum Standard: 1 credit Excellent, 2 credits Outstanding**	2	2	Responsible Construction Management based on Considerate Contractors Scheme score of: >25 to <35 - 1 credit >35 - 2 credits (plus BRE specific requirements that are good site management practices).	4
		Monitoring of Construction Site Impacts - Utility and Water Consumption	1	1	Principal contractor to monitor energy and water consumption on site.	4
		Monitoring of Construction Site Impacts - Transport of Construction Materials and Waste	1	1	Principal contractor to monitor fuel consumption of transport of materials and waste to/from site.	4
Man 04	**Commissioning and Handover**	Commissioning - Testing Schedule and Responsibilities **Minimum Standard: 1 credit Very Good, Excellent and Outstanding**	1	1	Schedule of commissioning and testing prepared, with confirmation of commissioning completed to relevant standards as defined by BRE. Where BMS specified, carry out specific commissioning and training of of system. Appoint appopriate team member to monitor and programme precommissioning, commissioning and testing. Principal contractor accounts for commissioning and testing in overall programme.	4
		Commissioning - Design and Preparation	1	1	Achieve above, plus for buildings with complex services and systems, appoint a specialist commissioning manager to undertake design reviews and provide input on programme and management of commissioning.	4
		Testing and Inspecting Building Fabric	1	1	Thermographic survey to be undertaken by professional holding a UKTA certificate and an airtightness test undertaken by professional holding with membership of ATTMA or IATS. Appointment of specialist.	4
		Handover			2 sets of building user guides to be developed: a technical and non-technical	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		Handover **Minimum Standard: 1 credit Very Good, Excellent and Outstanding**	1	1	A training schedule is prepared for building occupiers at handover including proposed occupation plans (introduction to Building User Guides, installed systems an key features, O&M manual, commissioning records, aftercare information).	4
Man 05	**Aftercare**	Aftercare Support	1	1	Operational infrastructure and resources in place to collect energy and water consumption data for a minimum of 12 months from occupation. And aftercare support provision for at least 12 months from occupation (i.e. helpline).	4
		Commissioning - Implementation **Minimum Standard: 1 credit Excellent and Outstanding**	1	1	Over a 12 month period (after occupation) the seasonal commissioning activities: at summers/winter months; full/part load conditions are required to be carried out by a commissioning manager.	4
		Post Occupancy Evaluation (POE)	1	1	Third party appointment to undertake post occupancy evaluation exercise one year after initial building occupation to gain feedback from building users to inform operational processes.	4

MANAGEMENT	**TOTAL**	**21**	**19**
	% of total score	**11.00%**	**9.95%**
	% of each credit	**0.52%**	

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
HEALTH & WELLBEING						
Hea 01	**Visual Comfort**	Control of Glare from Sunlight	1	1	Glare control strategy designs out potential glare in relevant building areas where risk is identified. The glare control strategy must avoid increasing lighting energy consumption and be occupant controlled devices such as blinds or external shading.	4
		Daylighting	2	2	TBC, needs daylight factors in the internal space to be assessed to confirm the percentage of the room areas that would achieve an average daylight fator of 2% or greater.	4
		View Out	1	1	95% of the floor area in 95% of spaces for each relevant building area is within 5m of a wall which has a window or permanent opening providing an adequate view out. The window or opening must be ≥ 20% of the surrounding wall area.	4
		Internal and External Lighting Levels, Zoning and Controls	1	1	Internal lighting designed to provide lux levels in accordance with SLL Code for Lighting and other relevant industry standards; and zoned to allow occupant control. External lighting designed in accordance with BS5489-1:2013 and BS EN 12464-2:2-14.	4
Hea 02	**Indoor Air Quality**	**Pre-requisite: Indoor Air Quality (IAQ) Plan**			**IAQ Plan to be developed**	4
		Ventilation	1	0	Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. Consideration of carbon dioxide (CO_2) or air quality sensors. Design intakes and exhaust 10m apart and 20m from sources of external pollution or in accordance with BS EN13779:2007 Annex 2.	4
		Emissions from Construction Products	2	1	Three of the five product types meet the BREEAM emission limits, testing requirements, and any additional requirements. Additional credit for all product types meeting the requirements.	4
		Post-construction Indoor Air Quality Measurement	1	1	The formaldehyde concentration in indoor air is measured post construction. Where levels are found to exceed limits remediation to be undertaken. Measured levels of formaldehyde and TVOC to be reported to BREEAM Assessor.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Hea 04	**Thermal Comfort**	Thermal Modelling	1	1	Thermal modelling to be carried out in accordance with CIBSE AM 11. Air conditioned building to be designed in accordance with CIBE Guide A and the PMV & PPD to be reported; for naturally ventilated building consider overheating in line with CIBSE TM52/TM59.	4
		Design for Future Thermal Comfort	1	1	The thermal modelling demonstrates the building is designed for a projected climate change environment and for conditioned building report PMV & PPD.	4
		Thermal Zoning and Controls	1	1	Above thermal comfort analysis informs temperature control strategy, and strategy provides compliant zoning and controls to its users.	4
Hea 05	**Acoustic Performance**	Acoustic Performance	4	2	Meet relevant acoustic performance standards for sound insulation, indoor ambient noise levels and reverberation. Suitably qualified acoustician to undertake calculation and testing requirements. Sound insulation - 1 credit if +/-3db, 2 credits if +/- 5db Indoor ambient noise levels - comply with BS8233:2014 Room acoustics - comply with sound absorption Building Reqs between residential and communal spaces	4 4
Hea 06	**Security**	Security of Site and Building	1	0	Security Needs Assessment (SNA) undertaken by Suitably Qualified Security Specialist (SQSS) during RIBA Stage 2 and design embodies recommendations. Any deviation from recommendations to be justified and agreed with SQSS.	2 4
Hea 07	**Safe and Healthy Surroundings**	Safe Access	1	0	Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to off-site cycle paths. Pedestrian drop-off areas, delivery areas, dedicated parking or waiting areas are designed for vehicles. Credit not achievable based on shared spaces in external layout	4
		Outside Space	1	1	There is an outside space providing building users with an external amenity area.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
HEALTH & WELLBEING		TOTAL	19	13		
		% of total score	14.00%	9.58%		
		% of each credit	0.74%			

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
ENERGY						
Ene 01	**Reduction of Energy Use and Carbon Emissions**	Energy Performance **Minimum Standard: 4 credits Excellent, 6 credits Outstanding**	9	3	Credits are achieved through energy modelling (BRUKL report) and reduction in regulated CO2 emissions.	4
		Prediction of Operational Energy Consumption **Minimum Standard: 4 credits for Outstanding**	4	0	Undertake energy workshop to focus on operation energy performance with design team and additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures.	4
Ene 02	**Energy Monitoring**	Sub-Metering of End-Use Categories **Minimum Standard: 1 credit Very Good, Excellent and Outstanding**	1	1	Separate energy metering installed for each fuel type / use for 90% of estimated annual energy consumption, with pulsed output for future connection to energy management system.	4
		Sub-Metering of High Energy Load and Tenancy Areas	1	1	This requires sub metering of different functional areas. Meter to be connected to BMS or equipped with pulsed output for future connection to energy management system.	4
Ene 03	**External Lighting**	External Lighting	1	1	Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt. Automatic control to prevent operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	4
Ene 04	**Low Carbon Design**	Passive Design Analysis	1	0	Hea 04 to be achieved. Analysis is carried out at RIBA Stage 2 and identifies passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption.	2
		Free Cooling	1	0	Passive design is achieved and any of the free cooling strategies are implemented: night time cooling; ground coupled air cooling; displacement ventilation; ground water cooling; surface water cooling; evaporative cooling; desiccant dehumidification and evaporative cooling, using waste heat; absorption cooling, using waste heat; building does not require any significant form of active cooling or mech. ventilation i.e. naturally ventilated.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		Low Zero Carbon Feasibility Study	1	0	LZC Study carried out at RIBA Stage 2 by an energy specialist to establish most appropriate low or zero carbon energy source(s). Technology(ies) to be specified and resulted in a meaningful reduction in regulated CO2 emissions.	2

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Ene 06	**Energy Efficient Transportation Systems**	Energy Consumption	1	1	An analysis of the transportation demand and usage patterns is carried out and energy consumption has been estimated in accordance with BS EN ISO 25745 Part 2 and 3.	4
		Energy Efficient Features - Lifts	1	1	Energy efficient features offering the greatest potential energy savings are to be specified: standby condition during off-peak periods; lift care lighting and display across is >70lamp lumens/circuit Watt; drive controller capable of variable speed, variable-voltage and variable-frequency. Where use of regenerative drive saves energy it needs to be specified (not applicable due to height of building)	4
Ene 08	**Energy Efficient Equipment**	Energy Efficient Equipment	2	2	Identify the building's unregulated energy consumption and demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building.	4

ENERGY	**TOTAL**	**23**	**10**
	% of total score	**16.00%**	**6.96%**
	% of each credit	**0.70%**	

TRANSPORT						
Tra 01	**Transport Assessment and Travel Plan**	Travel plan	2	2	Transport Assessment and Travel Plan to be carried out at RIBA Stage 2 early considering the impact onto the surrounding infrastructure and to calculate the public transport Accessibility Index (AI) for the assessed building.	2
		1. The existing AI calculated in Tra 01 as being >8		0		

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Tra 02	**Sustainable Transport Measures**	2. Demonstrate an increase over the existing Accessibility Index.	10	0		
		3. Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure.		1	Targeted Credit	2-4
		4. Provide electric recharging stations of a minimum of 3kw for at least 10% of the total car parking capacity for the development.		0		
		5. Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme.		1	Targeted Credit	2-4
		6. During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it.				
		7. Install compliant cycle storage spaces to meet the minimum levels set out in a BREEAM manual Table 7.5		0	Potential Credit. Requires 1 space per 10 visitors or beds and 1 per 10 members of staff.	2-4
		8. Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type) – Showers; – Changing facilities; – Lockers; – Drying spaces.		0	Potential Credit. Option 7 must be achieved in addition to at least 2 compliant cyclist facilities: showers, changing rooms, lockers or drying space.	2-4
		9. At least three existing accessible amenities are present within 500m of the main entrance.		1	Targeted Credit - see column D for details	2-4
		10. Enhanced amenities		3	Targeted Credit - café and outdoor space provided, 3 points awarded	2-4
		11. Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan.		0	No additional measures proposed	

TRANSPORT	**TOTAL**	**12**	**8**
	% of total score	**10.00%**	**6.67%**

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		% of each credit	**0.83%**			
WATER						
Wat 01	**Water Consumption**	Water Consumption **Minimum Standard: 1 credit Good, Very Good, Excellent and 2 credits Outstanding**	5	2	Specification of water efficient domestic water-consuming components, grey/rain water collection to reduce the water consumption. Use the BREEAM Wat 01 calculator to assess the efficiency of sanitaryware.	4
Wat 02	**Water Monitoring**	Water Monitoring **Minimum Standard: Criterion 1 - water meter on mains Good, Very Good, Excellent and Outstanding**	1	1	Specification of water meter with pulsed output and BMS connected on mains water supply to each building. Install sub-meters or water monitoring equipment to water-consuming plant or building areas consuming 10% or more of the building's total water demand	4
Wat 03	**Water Leak Detection**	Leak Detection System	1	1	Water leak detection system capable of detecting a major leak on the mains water supply within the building and between the building and the utilities water meter.	4
Wat 04	**Water Efficient Equipment**	Water Efficient Equipment	1	1	Identification of all unregulated water demands that could be realistically mitigated or reduced. Demonstration, through either good practice design or specification, a meaningful reduction in the total water demand of the building.	4

WATER	**TOTAL**	**8**	**5**
	% of total score	**7.00%**	**4.38%**
	% of each credit	**0.88%**	

MATERIALS						
Mat 01	**Environmental Impacts from Construction Products - Building Life Cycle Assessment (LCA)**	Superstructure - Concept Design	6	0	Using BREEAM simplified Building LCA tool or an IMPACT approved tool, carry out building Life Cycle Assessment (LCA) at RIBA Stage 2 **before planning submission.** Integrate the LCA options appraisal within the wider design decision-making process.	2
		Superstructure - Technical Design			Using BREEAM simplified Building LCA tool or an IMPACT approved tool, carry out building LCA for superstructure design options at RIBA Stage 4.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		Substructure and Hard Landscaping Options Appraisal during Concept Design	1	0	Using BREEAM simplified Building LCA tool or an IMPACT approved tool, carry out the LCA options appraisal for s substructure and hard landscaping at RIBA Stage 2.	2
Mat 02	**Environmental Impacts from Construction Products - Environmental Product Declarations (EPD)**	Specification of Products with a Recognised Environmental Product Declaration (EPD)	1	0	To specify products with recognised EPD and use BREEAM Mat 01/02 results submission tool.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Mat 03	**Responsible Sourcing of Construction Products**	**Pre-requisite: Legal and sustainable timber**			**100% of timber and timber-based products used in the project are 'Legal' and 'Sustainable' as per UK Government's Timber Procurement Policy (TPP).**	4
		Enabling Sustainable Procurement	1	1	Sustainable Procurement Plan includes sustainability aims, objectives and strategic targets to guide procurement process must be in place before RIBA Stage 2.	2
		Measuring Responsible Sourcing	3	1	To specify materials from manufacturers who can provide EMS Certification, FSC, PEFC, SFI, CARES, Eco-reinforcement, BES 6001, Supply chain.	4
Mat 05	**Designing for Durability and Resilience**	Protecting Vulnerable Parts of the Building from Damage and Protecting Exposed Parts of the Building from Material Degradation	1	1	The building incorporates suitable durability and protection measures and specification to limit materials degradation between environmental factors.	4
Mat 06	**Material Efficiency**	Preparation and Brief	1	0	Set targets and report opportunities and methods for optimise the use of materials for each of the RIBA Stage. Consideration should be given to pre-fabrication and WRAP compliance.	1
		Concept Design				2
		Developed Design				3
		Technical Design				4
		Construction				5

MATERIALS	**TOTAL**	**14**	**3**
	% of total score	**15.00%**	**3.21%**
	% of each credit	**1.07%**	

WASTE

Wst 01	**Construction Waste Management**	Construction Resource Efficiency	3	2	Prepare a compliant Resource Management Plan (RMP) covering the targets of non-hazardous waste arising from site construction and main contractor to achieve a construction waste resource efficiency benchmark of 6.5 tonnes of construction waste generated per 100m2 GIA.	4
		Diversion of Resources from Landfill	1	1	Prepare a compliant RMP and divert at least 80% (tonnes) non-demolition waste from landfill.	4
		Pre-requisite: If demolition occurs on site, to encourage the reuse of the site-won material on site complaint Pre-demolition Audit			**As per Wst 01 above.**	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Wst 02	**Recycled Aggregates**	Project Sustainable Aggregate Points	1	0	Identify all aggregate types, quantities and calculate the distance travelled by transport type. Points are awarded using BREEAM Wst 02 calculator. Credit not currently targeted. Potential to achieve dependent on design / material specification	4
Wst 03	**Operational Waste**	Operational Waste **Minimum Standard: 1 credit Excellent and Outstanding**	1	1	A dedicated central space for storage of recyclable waste, clearly labelled and accessible to building occupants/facilities operators. If consistent generation in volume of large amounts of packaging waste generated by building's use and operation, require static waste compactor or baler. In addition, provide 3 internal storage containers for every six bedrooms and for each self-contained dwelling, with a minimum total capacity of 30 litres, no individual container smaller than 7 L, all containings in a dedicated non-obstructive position, containers for recycling in addition to non-recycling, provide a minimum of 10 liters of internal storage for compostable waste	4
Wst 05	**Adaptation to Climate Change**	Resilience of structure, fabric, building services and renewables installation	1	0	Conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of RIBA Stage 2. Carry out risk assessment to identify and evaluate the impact on the building from extreme weather conditions. Provide an update at RIBA Stage 4.	2 4
Wst 06	**Design for Disassembly and Adaptability**	Design for Disassembly and Functional Adaptability - Recommendations	1	0	Carry out and implement a functional adaptation appraisal at RIBA Stage 2 and developed recommendations and solutions (i.e. alternative building uses, functions, etc.)	2
		Disassembly and Functional Adaptability – Implementation	1	0	Provide an update during RIBA Stage 4, how the recommendations have been implemented i.e. plant replacement, horizontal / vertical expansion, refurbishment potential etc.	4

WASTE	**TOTAL**	**9**	**4**
	% of total score	**6.00%**	**2.67%**
	% of each credit	**0.67%**	

LAND USE & ECOLOGY

LE 01	**Site Selection**	Previously Occupied Land	1	0	At least 75% of new development footprint is built on the previously occupied land.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		Contaminated Land	1	0	Specialist's land contamination report and summary details of the implementation plan of the remediation strategy to be developed. Assumed no contamination therefore not feasible to achieve.	4
LE 02	**Ecological Risks and Opportunities**	**Pre-requisite: Statutory Obligations**			**The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.**	4
		Survey and Evaluation	1	1	A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation early enough to influence site preparation works, layout, and where necessary, strategic planning decisions. The SQE's survey and evaluation determins the site's ecological baseline, and recommendation and data collected are shated with project team to influence decisions	1
		Determining Ecological Outcomes	1	1	The first credit achieved. Liaise with stakeholders to determine optimum ecological outcomes, and to identify, appraise,and selection measures to meet this. Evaluation is shared with design team to influence decision-making process.	2

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
LE 03	**Managing Impacts on Ecology**	**Prerequisite: Ecological Risks and Opportunities**			**LE 02 has been achieved. The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.**	2
		Planning and measures on-site	1	1	Roles and responsibilities to be assigned. Plan and implement site preparation and construction work early; collaborate and implement solutions and measures with stakeholders.	2
		Managing Negative Impacts	2	1	Negative impacts from site preparation and construction works have been managed according to the hierarchy and no overall loss of ecological value has occurred (two credits), or loss has been minimised (one credit)	4
LE 04	**Ecological Change and Enhancement**	**Prerequisite: Managing Negative Impacts on Ecology**			**LE 03 has been achieved. Roles and responsibilities to be assigned. Site preparation and construction works have been planned. The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.**	4
		Ecological Enhancement	1	1	Measures have been implemented that enhance the site's ecological value, based on input from the project team and SQE in collaboration with stakeholders an data collated as part of LE02. Date collated are analysed, and where potentially valuable, provided to local environmental records centres.	4
		Change and Enhancement of Ecology	3	2	Credits awarded based on the change in ecological value occurring, calculated in accordance with GN36.	4
LE 05	**Long Term Ecology Management and Maintenance**	**Prerequisite: Statutory Obligations, Planning and Site Implementation**			**LE 03 and LE 04 have been achieved. The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.**	4
		Management and Maintenance throughout the project	1	1	Measures have been implemented to manage and maintain ecology throughout the project, based on input from LE02. These measures monitor and review the effectiveness of the mititcation and enhancement measures in place for LE 03 & 04. A section on Ecology and Biodiversity is included in the BUG	4
		Landscape and Ecology Management Plan	1	1	A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS42020:2013 Section 11.1 covering 5 years after project completion	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
LAND USE & ECOLOGY		**TOTAL**	**13**	**9**		
		% of total score	**13.00%**	**9.00%**		
		% of each credit	**1.00%**			
POLLUTION						
Pol 01	**Impact of Refrigerants**	**Pre-Requisite: Systems with Electric Compressors**			**All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.**	4
		Impact of Refrigerants	2	1	1 credit where Refrigerant's Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_2e) of ≤ 1000 $kgCO_2e/kW$ cooling/heating capacity; 2 credits where DELC is ≤ 100 $kgCO_2e/kW$	4
		Leak Detection	1	0	All systems are hermetically sealed or only use environmentally benign refrigerants or a permanent automated refrigerant leak detection system is required.	4
Pol 02	**Local Air Quality**	**Is the project required to connect to a District Heating system, and it supplies all heating and hot water demands to the building?**			**When it is required to connect to DH the Local Air Quality credit is N/A.**	4
		Local Air Quality	2	2	Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed BREEAM requirements.	4
Pol 03	**Flood and Surface Water Management**	Flood Resilience	2	2	Site specific Flood Risk Assessment prepared by specialist to confirm that the site is a low probability of flooding from all sources of flooding.	4
		Surface Water Run Off	2	0	For one credit: - Peak rate of runoff from site is no greater than pre-development, for 1-yr and 100-year return. Calculations include allowance for climate change - Relevant maintenance agreements for ownership, operation and maintenance of SuDs	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
		Minimising Watercourse Pollution	1	0		
Pol 04	**Reduction of Night Time Light Pollution**	Reduction of Night Time Light Pollution	1	1	External lighting design is in line with ILP guidance of obtrusive light and can be automatically switched off. Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.	4
Pol 05	**Reduction of Noise Pollution**	Reduction of Noise Pollution	1	1	A BS 4142:2014 compliant noise impact assessment to be carried out by Acoustician, and recommendations for mitigation incorporated in design.	4

POLLUTION	**TOTAL**	**12**	**7**
	% of total score	**8.00%**	**4.67%**
	% of each credit	**0.67%**	

EXEMPLARY						
Man 03	**Responsible Construction Practices**	Responsible Construction Practices	1	1	Responsible Construction Management based on Considerate Contractors Scheme score of >40 (plus BRE specific requirements that are good site management practices).	4
Hea 01	**Visual Comfort**	Daylighting	1	0	When relevant building areas exceed good practice daylight factor OR the relevant building areas exceed good practice average and minimum point daylight illuminance criteria.	4
		Internal and External Lighting Levels, Zoning and Controls	1	0	Lighting in each zone can be manually dimmed down to 20%.	4
Hea 02	**Indoor Air Quality**	Emissions by Construction Products	1	0	All decorative paints and varnishes specified must meet performance standard EU Directive 2004/42/CE and testing standard BS EN ISO 1189-2:2013, Pat2. In addition, all 7 remaining product categories meet testing requirements and emissions levels criteria for Volatile Organic Compound (VOC) Emissions.	4
Hea 06	**Security**	Security of Site and Building	1	0	The performance against the scheme has been confirmed by independent assessment and verification.	4

Credit Ref.	Credit Title	Credit Name	Available	Targeted	Credit Requirement / Project Specific Notes	RIBA Stage
Ene 01	**Reduction of Emissions**	Beyond Zero Net Regulated Carbon and Carbon Negative	5	0	Carbon neutral or carbon negative building is achieved. A calculation of the energy score using the BREEAM Refurbishment and Fit-out energy model must be carried out. This must be assessed against a baseline BRUKL.	4
		Post Occupancy Stage	2	0	Achieve maximum available credits in Ene 02 and a client or building occupier commits funds to pay for the post occupancy stage. Assessor to be appointed and to report on the actual energy consumption for first 12 months. Remediation action might be required.	4
Wat 01	**Water Consumption**	Water Consumption	1	0	Specification of water efficient domestic water-consuming components to reduce the water consumption 65% beyond the baseline. Use the BREEAM Wat 01 calculator to assess the efficiency of sanitary wear including rainwater and greywater harvesting.	4
Mat 01	**Life Cycle Impacts**	Core Building Services Options Appraisal	1	0	Carry out LCA options of at least 3 significantly different core building services.	2
		LCA and LCC Alignment	1	0	Align LCA and LCC options appraisal activity. Both credits LCA and LCC must be achieved.	4
		Third Party Verification	1	0	A suitably qualified third party work or verifies the building LCA work and produces a report.	4
Mat 03	**Responsible Sourcing of Materials**	Responsible Sourcing of Construction Products	1	0	Achieve 50% of the points available in the Mat 03 calculation through sourcing of main building materials from responsible suppliers.	4
Wst 01	**Construction Waste Management**	Construction Resource Efficiency and Diversion of Resources from Landfill	1	0	To achieve a construction waste resource efficiency benchmark of 1.6m3 (or 1.9 tonnes) of construction waste generated per 100m2 GIA and divert at least 85% by volume or 90% tonnage of non-demolition waste from landfill and 85%y volume or 95% in tonnage of demolition waste from landfill.	4
Wst 02	**Recycled Aggregates**	Project Sustainable Aggregate Points	1	0	Identify all aggregate types, quantities and calculate the distance travelled by transport type. Points are awarded using BREEAM Wst 02 calculator.	4
Wst 05	**Adaptation to Climate Change**	Responding to Climate Change	1	0	Achieved when credits Hea 04 Thermal comfort, 8 credits in Ene 01, Ene 04 Passive analysis, 3 credits in Wat 01, Mat 05 Material degradation and Pol 03 Flood risk and 2 credits for Surface water run-off credits are achieved.	4
LE 02	**Ecological Risks and Opportunities**	Wider Site Sustainability	1	0	Wider sustainability related activities and potential ecosystem service benefits are considered as part of determining the optimal ecological outcomes for the site.	4
LE 04	**Managing negative impact on ecology**	Enhancement of Ecological Value	1	0	The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved	4

EXEMPLARY	**TOTAL**	**10**	**1**
	% of total score	**10.00%**	**1.00%**