



**ELEMENT
SUSTAINABILITY**

SOVEREIGN DISTILLERY, KNOWSLEY

ENERGY AND SUSTAINABILITY STATEMENT

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CONTENTS

Contents	26
1. Introduction	1
2. Development Proposals	2
2.1 Development Site Description	2
2.2 Development Proposals.....	3
3. Policy Review	4
3.1 National Planning Policy	4
3.2 Local Planning Policy	4
3.2.1 Knowsley Local Plan Core Strategy	4
3.2.2 Merseyside and Halton Joint Waste Local Plan	7
3.3 Supplementary Planning Documents	8
3.3.1 Ensuring a Choice of Travel.....	8
3.4 Climate Emergency.....	8
3.5 Emerging Policies.....	8
3.5.1 Design Quality in New Development	8
3.6 Regulatory Framework	9
3.7 Applicable Targets	9
4. Sustainability Statement	10
4.1 Energy Performance	10
4.2 Water Conservation	10
4.3 Flood Risk Management:	10
4.4 Waste Management.....	11
4.5 Materials	12
4.6 Ecology and Biodiversity.....	12
4.7 Transport.....	13
5. BREEAM	14
5.1 BREEAM Methodology	17
5.2 BREEAM Score and Rating	18
6. Energy Strategy	19
6.1 Energy Strategy for Sovereign Distillery	19
6.1.1 Build Fabric and Thermal Performance	19
6.1.2 Building Services Specification	20
6.2 Renewable Energy Feasibility	20
6.3 Energy Performance Calculations.....	21

6.3.1	Methodology & Output.....	21
6.4	Energy Hierarchy	22
7.	Conclusion	24

1. INTRODUCTION

Element Sustainability has been commissioned by NSD Huyton Ltd to review the sustainability performance of the proposed scheme at Sovereign Distillery, Knowsley.

The purpose of this statement is to summarise the relevant policy background and requirements of Knowsley Council (hereafter referred to as the council) and demonstrate the ways in which the developer has addressed these aims through their proposals, ensuring all practicable measures have been taken in order to deliver a sustainable development at this site.

Details of the design attributes, specifications and characteristics of the scheme are appraised in order to demonstrate how the proposals contribute to sustainable development in Knowsley and seek to mitigate the environmental impacts of the scheme, providing a sustainability appraisal in support of the planning application.

2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The application site is located off Wilson Road, Huyton and is the former Sovereign Distillery Site. It is bound by industrial buildings to the North, the remainder of Sovereign Distillery to the South, Wilson Road to the Northeast, and existing residential properties to the West. The 10.75 acre / 4.35 hectare site is situated within Huyton Business Park, strategically situated off the M62/M57 intersection, also referred to as Tarbock Island.

The site currently comprises of a modern production, bottling and distribution facility of steel portal frame construction with brick, outer skin and cladded elevations. The site is dominated by hardstanding, tarmacked car parking areas and access roads to all the industrial units on site.

Figure 2.1 - Site Location Plan



2.2 Development Proposals

Planning approval is sought for the part demolition, part refurbishment and repurposing of the some of the existing facilities and, the construction of two new build units to the north end of the site, overall providing a total area of approximately 18,091 sqm. The development is designed to accommodate a mix of high-quality industrial workspace (B2 and B8 use classes), with ancillary office use. The site has been designed with the appropriate infrastructure to support the use of the development including the provision of yards suitable for HGV loading, and car parks for staff and visitors.

The proposed development will incorporate both hard and soft landscaping elements. The hard landscaping scheme includes concrete service yards, tarmac finish car parking bays, and paving slabs utilised for paths to, and around the units. Soft landscaping will include grass, shrubs, and trees on the approach to the site along the northern boundary, as well as improving planting along the south of the site.

Figure 2.2 - Proposed Site Plan



3. POLICY REVIEW

3.1 National Planning Policy

The National Planning Policy Framework (NPPF) 2021 states that the planning system should play an active role in guiding development to sustainable solutions. At the heart of the 2021 updated NPPF lies the ‘presumption’ in favour of sustainable development; the golden thread running through plan-making and decision taking. There are three dimensions to sustainable development, as stated within the NPPF: economic, social, and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

An economic role – contributing to building a strong, responsive, and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;

A social role – supporting strong, vibrant, and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating beautiful and safe places, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being; and

An environmental role – contributing to protecting and enhancing our natural, built, and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These dimensions are considered to be mutually dependent with the NPPF, in its entirety, defining sustainable development. The NPPF states that ‘the purpose of the planning system is to contribute to the achievement of sustainable development’ (paragraph 7). It summarises the objective of sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their needs. It goes on to state that 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.

3.2 Local Planning Policy

3.2.1 Knowsley Local Plan Core Strategy

Knowsley’s Core Strategy (CS) is a Development Plan Document adopted by resolution of the Council, on the 6th January 2016. The Core Strategy will provide the strategic context for other planning policy documents, including other parts of the Local Plan. The number and type of supporting documents to be produced has been carefully considered by the Council.

Policy CS2 – Development Principles - New development in Knowsley and the preparation of subsequent stages of the Local Plan will be expected to support the following development principles:

- **Principle 1** - Promote sustainable economic development, tackle the causes of deprivation and disadvantage and narrow the gap between the richest and poorest neighbourhoods

- **Principle 2** - Reduce carbon emissions and adapt to the effects of climate change by:
 - Contributing to reductions in carbon dioxide emissions from all sources, in line with national targets;
 - Ensuring an ability to adapt to future changes to national targets for carbon dioxide and other greenhouse gas emissions, including recognising the role of new technology;
 - Identifying and applying measures offering effective mitigation and adaptation to likely environmental, social and economic impacts of climate change; and d) Meeting appropriate minimum standards for sustainability.
- **Principle 3:** Reduce the need to travel and increase accessibility by:
 - Selecting locations that reduce the need to travel, especially by car, and enable people as far as possible to meet their needs locally;
 - Assisting the Council in achieving a shift towards more sustainable modes of transport for people, goods and freight;
 - Encouraging safe and sustainable access for all, particularly by promoting the use of public transport, walking and cycling between homes and employment
- **Principle 4:** Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote quality of place

Policy CS7 – Transport Networks - New development will be required to be:

- Located and designed to prioritise accessibility and sustainable modes of travel through a choice of walking, cycling, public transport, and incorporate access for private vehicles. Where deficiencies are identified, developer contributions will be required to improve the accessibility of the location;
- Located and designed to ensure that larger scale proposals (attracting a lot of visitors, customers and/or employees) are located in the most accessible locations;
- Where subject to a planning application, accompanied (except in the case of smaller scale proposals) by Transport Assessments and/or Travel Plans;
- In compliance with adopted cycle, car, disabled and service vehicle parking standards for different types and scales of new development; e) Inclusive of measures that will mitigate carbon emissions and improve air quality where appropriate

Policy CS22 - Sustainable and Low Carbon Development - Sustainable Construction Principles

1. New development will be required to meet high standards of sustainable design and construction and minimise carbon emissions. This should be achieved by:
 - a. Designing new buildings for flexible uses throughout their lifetime;
 - b. Avoiding the creation of adverse local climate conditions by using natural systems to avoid internal overheating and excessive heat generation; c) Ensuring developments are comfortable and safe for users;
 - c. Making the most effective and sustainable use of water, aggregates and other resources;

- d. Limiting energy use by incorporating high standards of insulation, heat retention, natural ventilation and passive solar techniques; f) Landscaping (including measures such as green walls or roofs) to create shelter and reduce any heat island effect;
- e. Using sustainable materials from local suppliers where possible;
- f. Supplying energy efficiently and incorporating decentralised energy systems, using renewable and low carbon energy where feasible;
- g. Managing flood risk, including through the use of Sustainable Drainage Systems (SuDS) and flood resilient design for infrastructure and property; and
- h. Promoting sustainable waste practices in new and existing developments.

Low Carbon Development, Community Energy Fund and Allowable Solutions:

- 2. Government targets for carbon reduction in new development are expected to be implemented through updates to the Building Regulations. Where it is not technically feasible or economically viable to meet the requirements on site, contributions to the Council's Community Energy Fund may be accepted as one of a range of options under the Government's proposed 'Allowable Solutions' mechanism. The Fund will be used to support carbon reduction initiatives in Knowsley and potentially the wider Liverpool City Region. Sustainable Construction Targets
- 3. Local targets for sustainability in relation to specific development areas or sites may be outlined in the Local Plan: Site Allocations and Development Policies. Priority Zones and Decentralised Energy Networks
- 4. Knowsley Industrial Park and Knowsley Business Park are identified as a 'Priority Zone'. Within this area the Council and its partners will facilitate renewable and low carbon infrastructure by (subject to feasibility) requiring new development to:
 - a. Make provision for connection to an existing or planned decentralised energy network;
 - and b) Be designed to enable future connectivity in terms of proposed site layout, infrastructure and heating provision, including consideration of connections at a later date or phase.
- 5. Subject to opportunity and need, additional 'Priority Zones' may be identified in the Local Plan: Site Allocations and Development Policies.

Policy CS23 Renewable and Low Carbon Infrastructure - The Council will support proposals that will produce and distribute decentralised, low carbon and renewable energy, provided that they do not cause significant harm (in terms of their number, scale, siting or cumulative impacts) to:

- a. Natural resources, biodiversity, geodiversity, water and air quality and, landscape character;
- b. Aviation and transport safety;
- c. Historical and cultural assets;
- d. Public amenity and living conditions; or
- e. Openness and amenity of the Green Belt, except in very special circumstances.

Proposals must be accompanied by information that shows how the local environment will be protected, and how the site will be restored when energy production ends. Proposals resulting in an unacceptable impact must be mitigated by appropriate measures agreed by the Council

Policy CS24 – Managing Flood Risk - All development which is within or otherwise affects an area of flood risk or is larger than one hectare in size shall be accompanied by a site-specific Flood Risk Assessment (FRA).

New development shall include flood mitigation measures, where necessary, to manage flood risk associated with or caused by the development. These measures shall be derived from the Strategic Flood Risk Assessment (SFRA), relevant FRA(s) or a local strategy for flood risk management

The drainage of new development shall be designed to reduce surface water run-off rates to those associated with a green-field site by treating it at its source.

Policy CS26 – Waste Management - The Council will promote sustainable forms of waste management in accordance with the waste hierarchy. As set out in the Merseyside and Halton Joint Waste Local Plan

3.2.2 Merseyside and Halton Joint Waste Local Plan

The Merseyside and Halton Joint Waste Local Plan has been prepared by the Merseyside Environmental Advisory Service (MEAS) for Halton, Knowsley, Liverpool, Sefton, St Helens and Wirral Councils and sets out the planning strategy for the sustainable management of waste across the sub region. It is a constituent part of each district's Local Plan and was adopted in July 2013.

Policy WM 8 Waste Prevention and Resource Management - Any development involving demolition and/or construction must implement measures to achieve the efficient use of resources, taking particular account of:

- Construction and demolition methods that minimise waste production and encourage re-use and recycling materials, as far as practicable on-site;
- Designing out waste by using design principles and construction methods that prevent and minimise the use of resources and make provision for the use of high-quality building materials made from recycled and secondary sources;
- Use of waste audits or site waste management plans (SWMP)G , where applicable, to monitor waste minimisation, recycling, management and disposal.

Evidence demonstrating how this will be achieved must be submitted with development proposals of this type. Explanation

Policy WM 9 Sustainable Waste Management Design and Layout for New Development - The design and layout of new built developments and uses must, where relevant, provide measures as part of their design strategy to address the following:

- Facilitation of collection and storage of waste, including separated recyclable materials;
- Provide sufficient access to enable waste and recyclable materials to be easily collected and transported for treatment;
- Accommodation of home composting in dwellings with individual gardens;
- Facilitate small scale, low carbon combined heat and power in major new employment and residential schemes, where appropriate

3.3 Supplementary Planning Documents

3.3.1 Ensuring a Choice of Travel

The Ensuring a Choice of Travel SPD was adopted by the Council in September 2010 to provide detailed guidance about the council's transport policies. The main objective of the SPD is to ensure a good choice of travel modes to all new developments in Knowsley.

Policy T7 - New Development and Walking and Cycling Routes - New development should preserve and where possible enhance the walking and cycling network.

3.4 Climate Emergency

On 29th January 2020, Knowsley Council declared a Climate Emergency and made a commitment to develop an action plan with the aim of achieving net zero carbon emissions from the Council's estate and services by 2040.

the plan identifies the key areas for action, noting that some will require further feasibility, project development and business case approval to support the Council to reduce carbon emissions as far as possible by 2040 and then use offsetting to achieve the net zero target

A separate Knowsley Action Plan will be developed to address the Council's influence on carbon emissions across the wider borough, building on existing programmes to reduce emissions further. Again, the Scrutiny Committee will have oversight of this work and have agreed a series of eight key themes to set a framework against which actions can be developed:

- Protecting and enhancing Knowsley's green spaces;
- Reducing carbon emissions from transport in Knowsley;
- Reducing carbon emissions from new development in Knowsley;
- Reducing carbon emissions from energy use by businesses in Knowsley;
- Reducing carbon emissions from energy use in residential properties in Knowsley;
- Reducing carbon emissions from schools in Knowsley;
- Reducing carbon emissions from waste generation in Knowsley; and
- Community engagement and awareness in Knowsley.

3.5 Emerging Policies

3.5.1 Design Quality in New Development

This document, together with other Supplementary Planning Documents, complements the policies within the Local Plan.

General Principles – Sustainability in Design – A.7: The design of all new developments should:

- Meet any requirements regarding renewable energy, carbon reduction or sustainable development set out in the Building Regulations and any local adopted planning policy or guidance.
- Ensure that any voluntary measures relating to sustainability are fully integrated into the overall design, and (where such measures will affect the layout or external appearance of the

development) are illustrated by appropriate drawings submitted as part of any relevant application for full planning permission or for approval of reserved matters.

- Reduce and mitigate any flood risk through the use of Sustainable Drainage Systems (SuDS) and flood resilient design where appropriate to enhance the layout, and landscaping to complement the development.
- Make appropriate provision for the storage and recycling of all waste likely to be generated by users of the development as an integral part of its layout (including well designed and screened bin storage areas).

3.6 Regulatory Framework

Building Regulations, Part L - Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings. Guidance on how to meet the requirements of this regulation is provided within a number of approved documents. The relevant document is referenced below:

Approved Document L2A addresses the conservation of fuel and power in new non-domestic buildings. The proposed development will be registered against Building Regulations, Part L (2013) which requires all newly constructed buildings to comply with the 5 criteria set out in Approved Document L2A:

- I. Achievement of an acceptable Building CO₂ Emission Rate. i.e., the BER is less than the TER (target emission rate for a notional building);
- II. Limits on design flexibility – including U-values, air permeability, air handling plant efficiency, duct leakage, insulation, lighting system efficiency;
- III. Limiting solar gains in summer;
- IV. Construction quality and commissioning - The BER must be recalculated as constructed; and
- V. Provision of information - Information must be provided to the building operator.

Approved Document Part L2B addresses the conservation of fuel and power in existing buildings other than dwellings.

Each document sets out what, in ordinary circumstances, may be accepted as reasonable provision for compliance with the energy efficiency requirements of the Building Regulations for the type of building work in question.

3.7 Applicable Targets

Based upon a review of relevant planning policy requirements, legislative drivers, and client priorities, the following list provides a brief precis of the key criteria that should be targeted for this development:

- **Approved Document L2A & L2B (2013)** will addresses the conservation of fuel and power in non-domestic buildings
- **Policy CS7 – Transport Networks**
- **Policy CS22 – Sustainable and Low Carbon Development**
- **Policy CS23 - Renewable and Low Carbon Infrastructure**
- **Policy WM 8 Waste Prevention and Resource Management**
- **Policy WM 9 Sustainable Waste Management Design and Layout for New Development**

4. SUSTAINABILITY STATEMENT

This section provides an appraisal of the development proposals and details the specific approach, design features and specifications which will contribute to reducing the environmental impact of this scheme. This section outlines those commitments that have been made to ensure this scheme contributes to sustainable development and meets the Council's policy aims.

4.1 Energy Performance

In order to limit energy demand and carbon dioxide (CO₂) emissions from the operation of the buildings, a number of design features will be integrated that will collectively contribute towards the emissions reduction target for the scheme.

Detailed measures are presented in Chapter 5 of this report, but in essence, the energy strategy focuses on a holistic and multi-faceted approach of improving the buildings' performance by applying a fabric-led approach and through improvements in the efficiency of the mechanical and electrical systems in order to overall achieve a high EPC rating.

The reduction in energy demand to meet the carbon reduction targets will be achieved through the following design measures and low carbon technology options:

- High performance thermal insulation
- Low air permeability
- Maximising solar control to mitigate overheating risks

4.2 Water Conservation

The proposed development will be designed to reduce mains/potable water consumption and will include the following water efficient design and equipment:

- 'A' rated appliances will be used for their water saving capabilities;
- Specification of efficient water fixtures throughout the scheme (low flow taps and dual flush WCs); and,
- In order to reduce water demand, the sanitary fixtures will be specified to limit daily consumption of potable water.

4.3 Flood Risk Management:

The Site is located within Flood Zone 1, and the probability of flooding is low (with a 1 in 1000 annual probability of river or sea flooding).

- The site is predominantly at a medium risk of flooding on the EA Risk of Flooding from Surface Water Maps, however, some areas of the site have a high risk of flooding.
- The site is at a very low risk from reservoir flooding;

- There is a lack of historical information relating to groundwater flooding within the district, however reviews of borehole records suggest that the site is not highlighted as an area being at risk from groundwater flooding; and,
- Historic flood maps indicate the site is not at risk of sewer flooding.

The image below shows the extent of flooding on site (medium) on the EA Surface Water Flood Map.

Figure 4.1 EA Surface Water Flood Map



4.4 Waste Management

Construction Waste

Best practice techniques to prevent and minimise waste during the design and construction phases of the development will be adopted, as follows:

- Prior to commencement of the construction phase, a site waste management plan (SWMP) will be produced by the developer to limit the on and off-site environmental impacts of construction. The SWMP will detail:
 - Recycled and secondary materials;
 - Waste reduction;
 - Waste segregation;
 - Waste recovery; and,
 - Waste disposal.

- This scheme will promote the minimisation of waste arising in site development and seek to maximise the use of recycled materials in construction; and,
- A site waste management plan will identify opportunities to minimise waste generation and divert construction waste from landfill.

Operational Waste

The operational waste strategy for the scheme focuses on the segregation of waste at source, in order to maximise the potential for staff and visitors to recycle. All staff will be informed on collection frequency, as well as guidance on recycling and health and safety practices related to the management and storage of waste.

The proposed strategy has been developed in compliance with the policies of Knowsley Council:

- Waste will be segregated at source with the help of segregated bins. It is expected that there will be multiple streams of waste – general, recyclables and compost / green waste;
- Each unit has space allocation for waste and refuse storage and recycling
- It is intended that the unit occupiers will engage private contactors for trade waste collection

4.5 Materials

This development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This is demonstrated by the prioritisation and selection of:

- Materials with low environmental impact throughout their lifecycle;
- Responsibly sourced materials from suppliers operating an Environmental Management System or procuring timber verified by either the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification standard (PEFC);
- Local sourcing of construction materials where feasible and viable, which will minimise the impact of carbon dioxide emissions associated with the transportation of materials;
- Material selection within the warehouses will be carefully considered to avoid the use of toxic materials, such as Volatile Organic Compounds (VOCs) and contribute towards creating a healthy indoor environment;
- Excavated material (such as soil and substructural elements) from construction and demolition works will be used, where practical, for landscaping purposes and within the public realm.

4.6 Ecology and Biodiversity

An extended phase 1 habitat survey has been undertaken for the site. The findings demonstrate that the site provides ecological value for farmland birds and is home to the Japanese Rose, an invasive plant species. Therefore, the following recommendations should be taken into consideration:

- If any work to the scattered scrub needs to be carried out within the bird nesting season (which is generally March to August), then a nesting bird survey will be required immediately prior to work commencing.
- The proposed soft landscaping should include the provision of native and non-native flowering perennial species, to provide a pollen and nectar source for invertebrates.
- Bird boxes and/or bat boxes should be erected on the new buildings where possible.
- Further survey works need to be undertaken to accommodate an update to the original proposals
- Trees planting of native species should be implemented where practically possible

4.7 Transport

The proposed site has a high level of connectivity and benefits from access to a number of sustainable transport methods. Pedestrians will be able to access the site via footways that run alongside the roads surrounding the site such as Wilson and Cronton Road (A5080).

The site is situated within walking distance (2km) from Huyton Town Centre and Huyton Rail Station, and within cycling distance from several residential areas including Huyton, Tarbock, Fincham, Winstham Cross, Belle Vale and Prescott. This vast network of footways provides street lit routes to and from the site, the surrounding residential areas, and other amenities. Therefore, the development is considered to be highly accessible via foot and bicycle for future staff and visitors.

A pair of bus stops are situated on Cronton Road, which are within 500m of the site. These local bus services, enable passengers to travel to Liverpool, Warrington, Widnes, Runcorn and the numerous residential areas in between, making this mode of transport a convenient choice for future visitors. Huyton Rail Station is within a 2km walk of the site or via bus services calling at Huyton Bus Station which is approximately 300m east. Services operating through this station travel to Liverpool Lime Street, Blackpool North, Crewe and Wigan Northwestern.

256 car parking spaces have been proposed for the development, of which 20 are proposed as electric and 16 are proposed as accessible.

To enhance the sustainable credentials of the proposal, the site is underpinned by a Travel Plan. This plan seeks to promote existing transport routes, complement the sustainable location of the site, and meet the needs of visitors. This travel plan will be managed by an appointed Travel Plan Coordinator that will be tasked with implementing the travel plan measures, monitoring and reviewing the travel plan through regular surveys, and updating performance targets based on the survey results.

To further promote sustainable transport methods and encourage the uptake of the travel plan, a travel information pack will be distributed upon first occupation. This will introduce employees to the travel plan's objectives and benefits, include information on the potential benefits of making more sustainable transport choices, include time and cost savings and the possibility for carbon footprint reductions, and provide details for the travel plan coordinator.

Overall, the surrounding area benefits from excellent levels of pedestrian and cycling infrastructure and there are public transport options within appropriate walking distance of the site.

5. BREEAM

5.1 BREEAM

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings.

BREEAM UK New Construction scheme is a performance-based assessment method and certification scheme for new non-domestic buildings. The primary aim of BREEAM is to mitigate the life cycle impact of new buildings on the environment in a robust and cost-effective manner. This is achieved through integration and the use of the scheme by clients and their project team at key stages in the design and construction process.

The building's performance is assessed under a number of categories, including:

- Energy;
- Water;
- Transport;
- Materials;
- Land Use;
- Pollution;
- Health and wellbeing; and,
- Management

The BREEAM rating benchmarks for BREEAM projects assessed are presented in Table 5.1 below.

Table 5.1 – BREEAM Rating Benchmarks

BREEAM Rating	% Score Required
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30

To achieve a particular level of performance the majority of BREEAM credits can be traded, i.e. non-compliance in one area can be off set through compliance in another to achieve the target BREEAM rating. To ensure that performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas.

Table 5.2 – Minimum ‘Excellent’ Standards

BREEAM NC 2018 Issues	Minimum Standards for BREEAM for 'Excellent' rating
Man 03: Responsible Construction Practices	One credit (responsible construction management)
MAN 4: Commissioning and Handover	One credit (commissioning-test schedule and responsibilities)
MAN 4: Commissioning and Handover	Criterion 11 (Building User Guide)
MAN 05: Aftercare	One credit (commissioning – implementation)
ENE 01: Reduction of Energy Use and Carbon Emissions	Four Credits (Energy Performance or Prediction of Operational Energy Consumption)
ENE 2: Energy Monitoring	One credit (First sub metering credit)
WAT 1: Water Consumption	One credit
WAT 2: Water Monitoring	Criterion 1 only
MAT 3: Responsible Sourcing of Materials	Criterion 1 only
WST 03: Operational Waste	One credit

5.1 BREEAM Methodology

The BREEAM scheme can be used to assess the environmental life cycle impacts of non-domestic buildings at the design and construction stages.

A BREEAM pre-assessment report has been prepared by a qualified and licensed BREEAM Assessor to demonstrate the feasibility of achieving the desired BREEAM ratings for the new build scheme. The initial pre-assessment report details the possible strategies to be employed.

The BREEAM assessment methodology applicable to this development is as follows:

- BREEAM New Construction 2018; and
- BREEAM 2014 Refurbishment

5.2 BREEAM Score and Rating

BREEAM UK 2018 New Construction and BREEAM 2014 Refurbishment pre-assessment has been prepared by a qualified, licensed BREEAM Assessor. This determines the feasible credits and potential BREEAM rating for the Sovereign Distillery and demonstrates a commitment to the principles of good construction, design and sustainability.

Working alongside the qualified BREEAM assessor, the technical design team has reviewed the individual credit criteria and award of credits within the Pre-Assessment in order to optimise the building's BREEAM performance. All credits allocated within this BREEAM Pre-Assessment will require further technical verification and additional feasibility assessment during the formal Design Stage and Post Construction BREEAM assessment.

A review of the current development proposals has been carried out against the BREEAM assessment methodology. The BREEAM Pre-Assessment show that the building is expected to perform as follows:

- **New Build**
 - Indicative building BREEAM score = 55.7%
 - Indicative BREEAM rating = Potential for **BREEAM 'Very Good' rating.**
- **Refurbishment Units**
 - Indicative building BREEAM score = 57.58%
 - Indicative BREEAM rating = Potential for **BREEAM 'Very Good' rating.**

The rating obtained by using this BREEAM Pre-Assessment is for guidance only. The predicted ratings may differ from those obtained through a formal assessment, which will be carried out by an appropriately licensed BREEAM assessor. Advice should be sought from a licensed assessor at an early stage in a project to ensure the estimated rating will be obtained.

Note that a number of assumptions have been made within this initial appraisal which will require confirmation by means of further technical input during the formal assessment, once the design and specifications are finalised. The approach to achieving the target BREEAM rating may therefore, be subject to change further into the development cycle.

6. ENERGY STRATEGY

6.1 Energy Strategy for Sovereign Distillery

The Energy Strategy for this development seeks to improve the building’s energy demand and carbon dioxide emissions performance by applying an enhanced thermal envelope to limiting demand side energy loads. This will be allied to improvements in the efficiency of the mechanical and electrical systems and controls, along with the inclusion of renewable and low carbon energy technology. The design measures outlined in the Energy Strategy have been incorporated so as to ensure the buildings achieve a high EPC rating, and so as to comply with the policy requirements as set by Knowsley Council’s Core Strategy.

6.1.1 Build Fabric and Thermal Performance

The proposed material specification that will be incorporated site wide to limit heat loss and ensure efficient operation of the dwellings is presented in Table 5.1.

Table 5.1 – Proposed Fabric Specification

Item	Specification
Ground Floor	U=0.15 W/m ² K
External Wall	U=0.22 W/m ² K
Internal Wall	U=0.22 W/m ² K
Windows	U=1.4 W/m ² K
Roof	U=0.18 W/m ² K
Air Permeability	5.0m ³ /hm ² (@50Pa.) <i>New Build Only</i>
Cold Bridge	Bespoke Construction Details

The energy strategy and design attributes will provide the following benefits:

- **High performance thermal insulation** throughout the building envelope (ensuring very low U-values for all heat loss elements) and thermally efficient windows and doors will minimise heat loss through the main building elements;
- **Thermally efficient windows** will be specified with argon gas fill and low emissivity coatings to limit heat loss through the panes. The glazing g-value will be specified to optimise beneficial solar gains but limit the propensity for the apartments to overheat;
- **Low air permeability** to further reduce heat losses and provide high levels of occupant comfort (in combination with the proposed mechanical ventilation strategy). Focus on the quality of the build is vital to deliver such airtight buildings;
- **Attention to cold bridging junctions** including the provision of insulation to reduce heat and limit heat losses that occur at the junctions between building elements and around openings and will significantly improve the emission rate of the apartments; and

These will help to deliver an energy efficient development that achieves an emission rate reduction and fabric energy efficiency performance significantly beyond the requirements set by building regulation Part L (2013).

6.1.2 Building Services Specification

In addition to the improvements in the building fabric and thermal performance, a number of measures to improve the energy efficiency of the building systems have also been considered to ensure efficient servicing of the buildings. The mechanical and electrical specification will deliver a Building Regulation Part L (2013) compliant scheme and will provide the following benefits:

- **Electrical panel heating (for space heating)** generates a reduced overheating potential – electric space heating delivers virtually instantaneous heating at the location it is required. Unlike a ‘wet system’ associated with communal gas boilers which inherently have a long lag time for the heat to be generated and then dissipated when no longer needed. This lag time can lead to the units overheating as the hot water remains in the radiators for a considerable time after the heat demand is required;
- **Point of use water heaters** deliver hot water on demand with minimal standing losses;
- **LED lighting** will be specified throughout the scheme to maximise operational efficiencies and lifespan of the fittings. LEDs operate with an estimated energy efficiency of up to 90% when compared to traditional lighting and conventional light bulbs. This means that about c.90% of the electrical energy is converted to light, rather than wasted heat as in conventional bulbs; and
- **Sophisticated heating controls** including time and temperature zonal controls will ensure the efficient delivery of heat from electric panel heaters to further reduce the apartments’ energy demand.

6.2 Renewable Energy Feasibility

In order to meet the energy targets of the Core Strategy Policy CS22 and CS23. An analysis of the most appropriate options has been undertaken to ensure compliance.

A number of renewable energy technologies have been considered for this site, including:

- Solar Hot Water;
- Photovoltaics (PV);
- Wind;
- Heat Pumps; and
- Biomass heating.

A review of the development proposals and site location concludes that one of these options are feasible for this scheme, as detailed below:

✗ **Solar Hot Water** utilises the energy in sunlight and diffuse daylight to heat water for use in buildings. The main component of any solar water heating system is the collector, which absorbs the radiant energy of the sun and converts it to heat energy. This technology is not considered to be a feasible option for this site because, there is limited hot water demand from the operation of the buildings therefore these solar thermal technologies can make only a relatively limited contribution to reducing the building’s energy demand and carbon dioxide emissions.

✓ **Photovoltaic (PV)** panels harness solar thermal energy and convert it into electricity which can then be used within a building. The panels may be roof mounted and orientated in a southerly direction to enable this technology to operate efficiently. This technology is considered to be a potentially suitable option for this site with sufficient roof weight bearing capacity to accommodate a PV array.

✗ **Wind Turbines** are considered unsuitable for this site due to a poor wind resource and lack of space to locate the turbines at the lower levels of the scheme. Integrating these systems at height is not considered feasible due to the associated noise, vibration and structural stresses upon the building. Furthermore, there are planning issues and perceived safety concerns with this technology.

✗ **Ground Source Heat Pumps** collect low-grade heat from the ground to supply useful heat for space and water heating requirements. By applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required. Such technology is considered unsuitable for this site due to an insufficient area (based upon the proposed densities) to install a horizontal ground collector and the prohibitive costs and technical constraint of installing vertical boreholes.

✓ **Air Source Heat Pumps** collect low-grade heat from the air to supply useful heat for space and water heating requirements. They operate in the same way as a ground source heat pump, by applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required. The incorporation of ASHP's may be appropriate subject to further design development and financial viability.

✗ **Biomass heating** would be capable of delivering the target CO₂ emission reductions but are considered inappropriate for this type of development and location due to the requirement for a large fuel store and the high NO_x emissions associated with biomass combustion which is inappropriate for this urban location.

6.3 Energy Performance Calculations

To demonstrate the environmental benefits associated with the 'fabric led' specification to energy demand and emissions reduction at the site, approved SBEM software has been used to generate representative energy demand models of the developments.

The enhanced building fabric specification throughout the scheme, plus efficient mechanical and electrical servicing allied to low-carbon technology will achieve compliance with the emission reduction targets stipulated by Building Regulation, Part L2A (2013).

6.3.1 Methodology & Output

Approved SBEM software (Design Builder v6.7) has been used to calculate representative energy demand models for the proposed buildings at the site.

The calculated Building Emission Rate reduction over Part L2A (2013) associated with the proposed specification for the proposed showroom unit is presented in Table 5.4.

Table 5.4 – Calculated Building Emission Rates

Building Type	G1	G2
Building Emission Rate (kgCO ₂ /m ² /yr.)	5.80	6.6
Target Emission Rate (kgCO ₂ /m ² /yr.)	29.0	28.3
% BER Reduction over Part L 2013	23.2	21.7

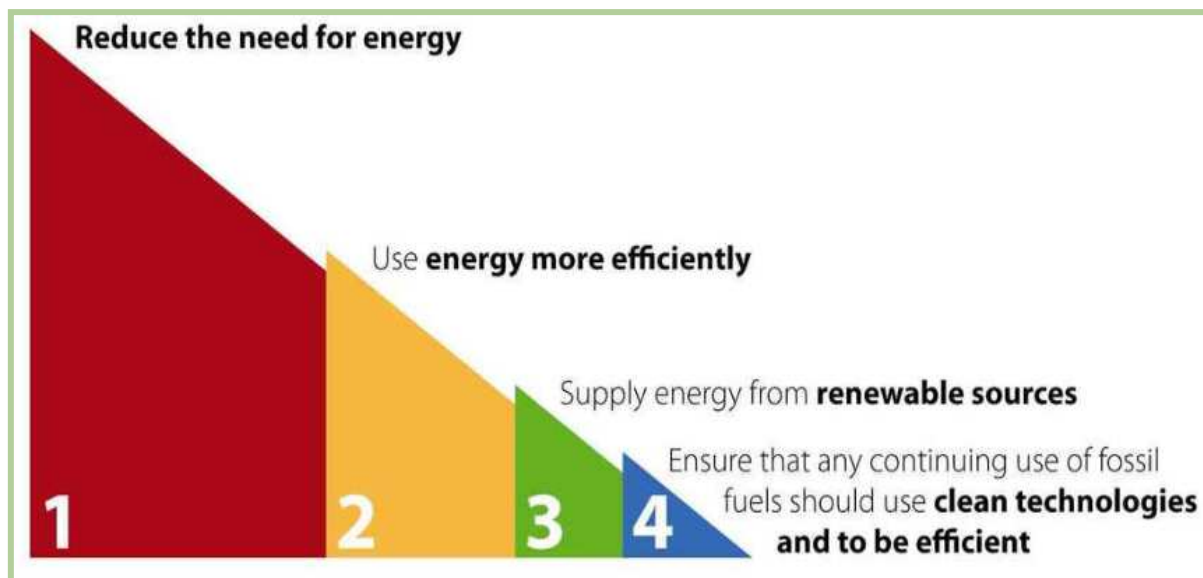
The above calculations demonstrate that the Building Emission Rate (BER; carbon dioxide emissions) reductions for this scheme are expected to be at least 20% better than the Part L2A (2013) compliance requirements.

6.4 Energy Hierarchy

The Sovereign Distillery scheme will incorporate a significantly enhanced material specification along with high quality design and construction standards in order to improve the whole building energy efficiency through a 'fabric led' energy strategy. The proposed construction, design and specification will deliver a scheme that is inherently energy efficient during occupation.

The energy hierarchy provides a framework to guide energy policy and decision making to achieve practical and cost-effective carbon emission reductions. The hierarchy prioritises demand-side activities to reduce wastage and improve efficiency (see Figure 5.1).

Figure 5.5 – The Energy Hierarchy



First Principle:

The following efficiency measures are designed to reduce heat losses and minimise energy demand:

- The building will be constructed with high specification materials and design criteria which exceed current minimum Building Regulation standards and includes numerous efficiency measures designed to reduce heat losses and minimise energy demand.
- Heating systems will be provided with zonal, programmable thermostatic controls. This is intended to reduce the demand for additional energy usage.

Second Principle:

The approach taken for this Scheme will help to minimise energy demand and associated carbon dioxide emissions and is aligned with the second principle of the energy hierarchy which states that reduction in energy demand should be achieved initially by energy efficiency.

To this effect, the following measures have been proposed:

- The design air permeability target for the buildings is $5.0\text{m}^3/\text{hm}^2$ (@50Pa.). This low air permeability target will assist to limit the heat loss through the structure of the building;
- The g value within the buildings will be optimised to control solar gain in the summer months and allow beneficial gains in the winter season to minimise the overheating risk and limit the heating energy demand within the units;
- 100% LED provision and sophisticated control systems for the space within the buildings will also ensure the energy consumed is used efficiently; and,
- Photocell switching and automatic presence control of the lighting will be specified in order to further improve the efficiency of the lighting system.

Third Principle:

Renewable and low carbon technology including air source heat pumps will be specified for the development in a bid to reduce the scheme's operational carbon footprint. The buildings have the capacity to accept photovoltaic arrays in the future.

Fourth Principle:

The use of electric panels and point of use water heaters will ensure that fossil fuels converted and distributed through the National Grid as electrical energy for heating purposes will be consumed cleanly and efficiently.

Furthermore, as the UK electricity grids' CO₂ footprint continues to improve, so too would the carbon dioxide emissions associated with the operational phase of the proposed scheme which benefits from a 'full electric' energy strategy.

7. CONCLUSION

This Statement has reviewed the sustainability performance of the proposed Sovereign Distillery Development against national and local planning policies. The conclusion that can be drawn from the review is as per the following:

Sustainability Performance –

- Water consumption of the development will be minimised through **the specification of efficient water fixtures**.
- The proposed scheme location promotes access **to sustainable transport options**. The direct links to local cycleways and footways, cycle storage and access to regular busses will all contribute towards creating a highly connected and sustainable development.
- The development Site is located within Flood Risk Zone 1. Post development surface water run-off rates will be **managed and mitigated through the implementation of SUDs** where applicable.
- Waste arising during construction and occupation/operation will be minimised through the **implementation of a Waste Management Plan (WMP)**. The WMP will be used to ensure that there is adequate management and storage of construction waste takes place in line with the Council's policies. Opportunities for the possible recycling of construction from excavation works will also be considered in line with best practice.
- Materials are proposed to be **responsibly sourced and materials with low environmental impact** will be selected and local suppliers will be prioritised. Material selection will be carefully considered to avoid the use of toxic materials and materials with VOCs.
- The findings from the Phase 1 Habitat Survey show that the site is of some ecological value and further **bird surveys will be required** to determine appropriate means to mitigate the impact of the proposed scheme.

BREEAM –

- BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings. The Sovereign Distillery development is being assessed under both BREEAM New Construction 2018 and BREEAM Refurbishment 2014.
- The pre assessment created for the new build aspect of the development has provided an indicative building BREEAM score of 55.7%, equivalent to a BREEAM 'Very Good' rating.
- The pre assessment created for the refurbishment aspect of the development has provided an indicative building BREEAM score of 57.58%, equivalent to a BREEAM 'Very Good' rating.

Energy Strategy –

The development will be designed and specified in accordance with **the principles of the energy hierarchy** and in line with the **targets and guidance set out Knowsley Core Strategy**.

- A combination of **enhanced building fabric** (significantly beyond the regulatory compliance standard), **efficient mechanical and electrical systems**, and controls will be specified; and,
- The energy strategy will achieve a high EPC rating and will allow for compliance with the emission reduction targets stipulated by Building Regulations Part L2A and L2B (2013).

In conclusion, the proposals reviewed within this statement for this industrial scheme on Wilson Road, Huyton will deliver a highly energy efficient and sustainable scheme, providing a quality development that accords with the guidance provided within the Knowsley's adopted planning policies.