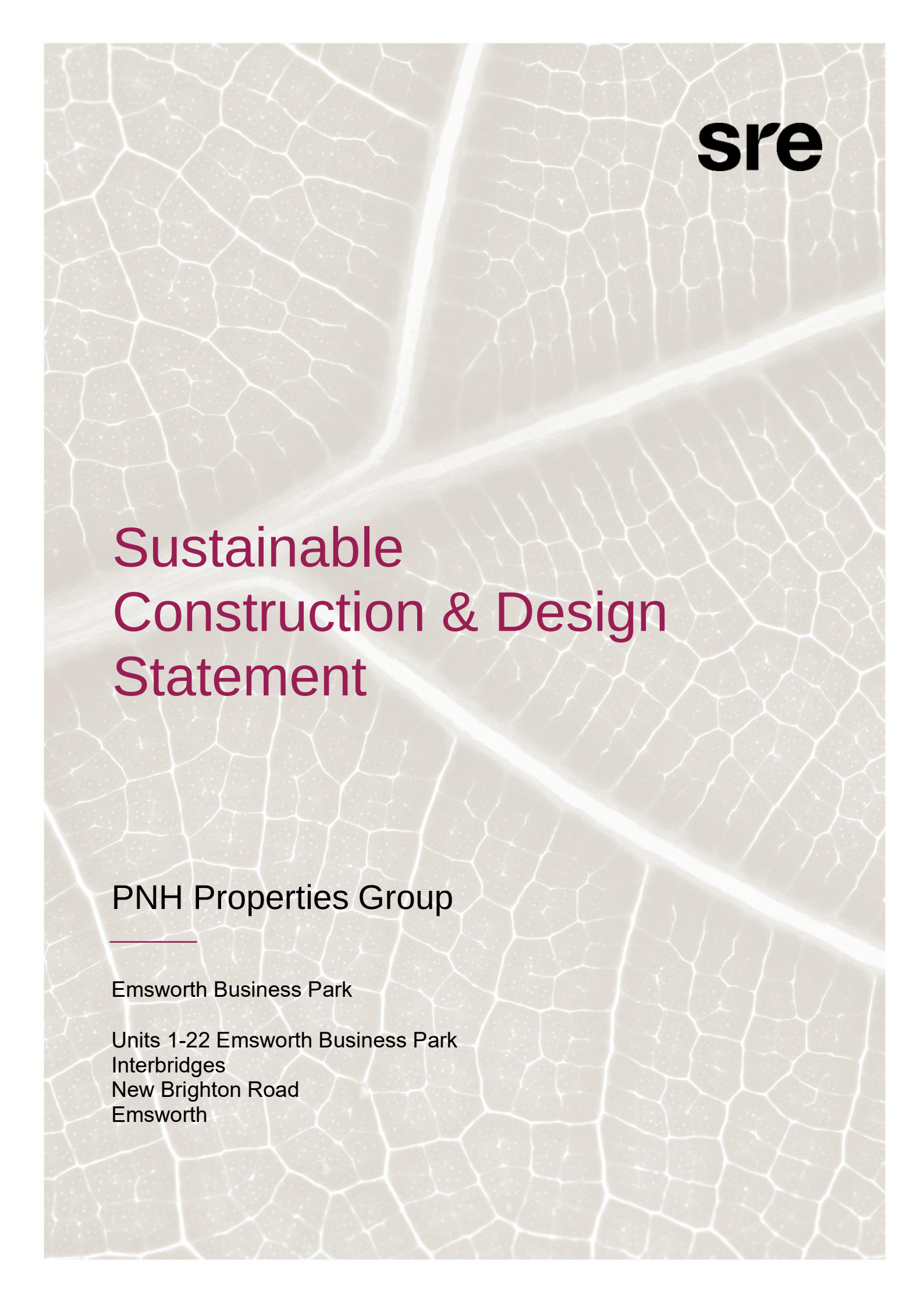




sre

Sustainable Construction & Design Statement

PNH Properties Group

Emsworth Business Park

Units 1-22 Emsworth Business Park
Interbridges
New Brighton Road
Emsworth

Version	Revision	Date	Author	Reviewer	Project Manager
1	A	06.12.2024	Honeyksha Waghela	Elsa Withnell	Adam Tucker

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Executive Summary

This Sustainable Construction & Design Statement has been written to demonstrate the measures incorporated into the development of Emsworth Business Park. The Proposed Development prioritizes sustainability, incorporating thoughtful design and construction measures to address climate change and reduce CO₂e emissions through a highly efficient energy strategy. This approach minimizes environmental impact during both construction and operation, resulting in a building that aligns with local and regional policies while positively contributing to its surroundings.

The development ensures air pollution contributions remain negligible by excluding combustion-based systems, as no gas connection is proposed on-site. Future tenants may install electric systems, with the energy model accommodating a worst-case scenario for heating and cooling needs. Noise impacts are mitigated through effective insulation, and flooding risks are low, with surface water management strategies in place as needed. Sustainable practices, including efficient waste management and the use of environmentally friendly materials, further support the project's commitment to reducing its ecological footprint. Additionally, water efficiency measures align with BREEAM UK NC v6.1 standards, contributing to the overall sustainability of the building.

Proposed Sustainability Strategy

Careful considerations regarding sustainable design and construction have been made for the Proposed Development. This takes into account impacts of climate change and will result in measures to reduce CO₂e emissions through the use of a highly efficient energy strategy on-site.

Overall, the Proposed Development has aimed to minimise its impact on the environment at both construction and operational phases and will provide a sustainable building which responds positively to the surroundings, and local and regional policy.

The net result of the sustainability measures implemented meets and exceeds the targets set out by the Local Authorities through the following:

- Air pollution contributions from the units themselves will be negligible on site as the Proposed Development is currently untreated Shell and Core. and there are no heating and cooling plant proposed within the scope of works for this development. There is a possibility that future tenants may wish to install their own systems to individual units - these will have to be electrical, as there will be no gas connection. For this reason, we have included an indicative system treating the mezzanine floor areas, in the proposed Energy model for the site to present a 'worst case' scenario.
- There is no external plant to be installed as part of the construction works for these commercial units, the building has good level of insulation which will help with noise control.
- Flooding is considered to be a low risk for the site and surface water management strategies will be included wherever needed;
- Waste management will follow the waste hierarchy, adopting the reuse, recycle and recovery methodology for construction and demolition;
- Implementation of sustainable construction techniques and materials, inclusive design, site management and procurement procedures;
- Internal water use will be controlled in alignment with BREEAM UK NC v6.1, targeting a >40% improvement over baseline Part G water consumption.

The background of the slide is a microscopic image of plant tissue, likely from a leaf. It shows a network of cells with thickened corners, characteristic of cornuata cells. The cells are arranged in a somewhat regular pattern, with some larger cells and some smaller ones. The overall color is a light beige or cream, with the cell walls appearing slightly darker.

Introduction

1.0 Introduction

The World Commission on Environment and Development (WCED) report: Our Common Future, describes Sustainable Development as development that: *“Sustainable Development - meets the needs of the present without compromising the ability of future generations to meet their own needs.”* (World Commission on Environment and Development: Our Common Future¹).

The planning system focuses on three objectives to achieve a sustainable development: economic, social, and environmental. These objectives mutually support each other and have been adapted in this statement to meet the objectives of the Havant Borough Council. This planning framework has ‘Seven Key Design Principles’ that developments make the best use of resources, increase the sustainability of the local communities and are adaptable to climate change. Careful considerations have been taken to ensure the Proposed Development meets these expectations.

The new development will be built on the current greenfield, so no major demolition will be required on site, minimizing the potential pollutants during construction. The proposed site is bordered by the A27 to the north, the railway to the south, the B2148 New Brighton Road to the west, and the greenfield to the east. Figure 1 shows the location of the proposed site.



Figure 1 - Location of the Proposed Development (Google Earth)

The proposed site is well connected by public transport. Emsworth railway station is within a 5-minute walk, and several buses stops nearby facilitate transfers for local residents. The area is primarily residential, with a few industrial warehouses to the west and south of the site. The

¹ <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

large green fields surrounding the area contribute greenery to the locality and help mitigate potential pollutants during construction.

The Proposed Development at Emsworth Business Park, Interbridges includes an employment development with associated access, parking, yards, landscaping and substation. Figure 2 shows the site plan of the Proposed Development.

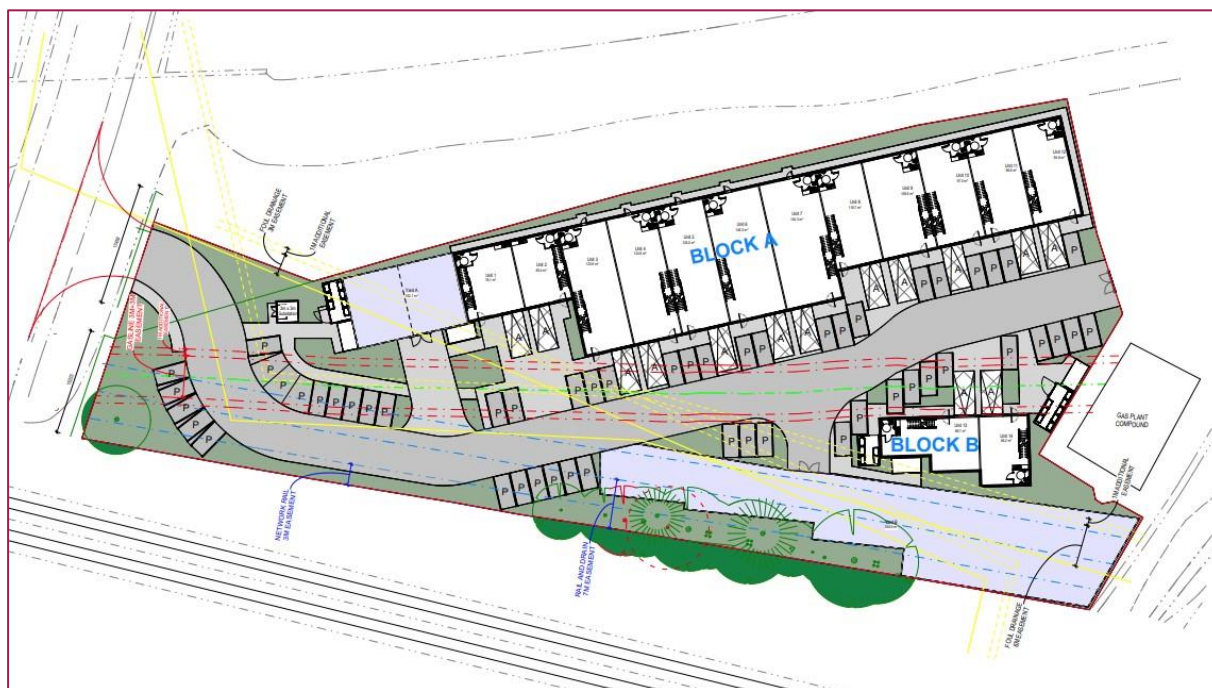


Figure 2 – Proposed Site Plan of the Proposed Development (Hyphen)

1.1 Planning Policies

The Development Plan for the Site comprises:

- Havant Borough Council: Core Strategy Arch 2011
- Havant Borough Council – Borough Design Guide 2011
- Havant Borough Local Plan – Allocations 2014
- Emsworth Neighbourhood Plan – April 2019
- Havant Borough Council Local Plan – Examination Paper 2021

The planning policy requirements relevant to the Proposed Development with regards to the energy and sustainability strategies are summarised in Table .

Planning Policy	Requirement
Havant Borough Council: Core Strategy Arch 2011	<u>Policy CS14 Efficient Use of Resources</u> Planning permission will be granted for development that: 1. Provides adequate land or funding for waste management infrastructure. 2. Locally contributes to the delivery of the PUSH target of 100MW of renewable energy by 2020 for the whole of the PUSH area. Major areas of development must ensure that their on-site renewable energy production is maximised and resource efficiency is maximised. 3. On completion, unless proven to be financially or technically unviable, meets the following standards: a) Residential development – Level 3 of the Code for Sustainable Homes; b) Multi occupation homes and non-residential development over 500sqm - BREEAM standard ‘very good’. Improvements to these standards throughout the plan period will be encouraged. c) Particular attention should be paid to water efficiency measures. d) 4. Allowable Solutions’ may be used to achieve higher levels of carbon reduction where on-site proposals are not feasible or viable.
Havant Borough Council Local Plan – Submission Version 2021	<u>Policy E12 Efficient use of resources and low carbon design</u> Development proposals which are intended to improve the efficiency measures of existing buildings or provide low or zero carbon energy will be supported in principle. Development proposals which involve an increase in non-residential floorspace or a net gain in overnight accommodation will be expected to: a) Reuse existing buildings’ construction materials wherever possible; b) Appropriately integrate solar gain, natural ventilation or ventilation with heat recovery, fabric performance and Passivhaus principles into the layout and design; c) Use district heat or combined heat and power (CHP or CCHP) (existing or proposed or on-site), where appropriate;
Emsworth Neighbourhood Plan – April 2019	<u>Policy D6 Resource Efficiency</u> b) Applicants should give consideration to the following issues during the preparation of development proposals: i. High levels of energy conservation in the construction and use of new buildings ii. Integration of rainwater capture and grey water recycling technologies in new buildings iii. The use of local building materials

Planning Policy	Requirement
	iv. The minimisation of the amount of impermeable ground cover to reduce water run-off speeds v. The use of sustainable on-site energy sources, where applicable, including solar, wind, ground-source heat pumps, biomass vi. The use of local forms of power to minimise power loss through the national grid vii. The promotion of low CO2 transport options through the provision of electric car charging points The inclusion of solar panels on roofs that can maximise the capture of solar energy will be supported, subject to the appropriate level of heritage and conservation assessment.
Havant Borough Council – Borough Design Guide (December 2011)	<u>Policy CS16</u> The report states 7 Principles of good design: Distinctive Character: A place's character is shaped by its predominant activities, natural and built features, and its surroundings. 1. Ease of Movement: People should have easy, equal access to a place, with good connectivity to neighbouring areas. 2. Good Legibility: The layout should have logical, safe, and convenient routes, with visual markers like nodes, views, and landmarks to help people navigate. 3. Good Continuity and Enclosure: Buildings and landscape features should frame spaces, providing continuity in design and an appropriate level of enclosure. 4. Good Quality Public Realm: Public spaces should be well-designed, functional, and constructed with durable, high-quality materials that are well-maintained. 5. Diversity and Detailing: New places should include variety and attention to detail, adding interest and uniqueness to the area. 6. Adaptability and Sustainability: Places should be designed to adapt to changing needs (e.g., aging residents, climate change) and built sustainably with energy and water efficiency measures.
Havant Borough Local Plan – Allocations (July 2014)	<u>Policy BD39</u> 1. Access to be provided from North Street to the satisfaction of the highway authority 2. Employment and Skills Plan to support planning application 3. Flood Risk Assessment to support planning application 4. Development outside of Flood Zone 1 will need to provide compensatory floodplain 5. Reduce green field runoff rates, on-site SUDS and a possible contribution to the Emsworth Flood Alleviation Scheme (Policy DM25) 6. An Ecological Assessment may be required to assess the impact on Local Nature Reserve

Table 1 - Summary of local planning policy requirements

1.2 Policy Interpretation

As outlined above, the Havant Borough Council Core Strategy currently does not have any CO₂ emissions reductions standards for residential dwellings due to the dissolution of the Code for Sustainable Homes in 2014. Therefore, within current policy, the Proposed Development is required to meet Building Regulations Part L Compliance only.

1.3 BREEAM Assessment

This statement is accompanied by a BREEAM UK New Construction V6.1 to demonstrate the targeted measures for this development.

The pre-assessment has demonstrated that proposed project has the potential to achieve a BREEAM 'Very Good' (a score of >55%) rating based on the assumptions and information agreed to date. The minimum standards for an 'Very Good' rating have been targeted by the Proposed Development, and the resulting overall target score for the assessment is currently 58.36%, which will deliver a robust 'Very Good' rating. The credits targeted are considered by SRE and the Project Team to be realistic and deliverable on-site.

As well as targeted credits, the pre-assessment also highlights 'Potential' credits – those which could be adopted to improve the current score and provide a sufficient 'buffer' against the loss of credits throughout the construction phase. These credits are more challenging to achieve and will therefore require additional input from the Project Team. The 'Potential' score for the project currently sits at 62.69%, demonstrating that the Proposed Development is well on track to achieve the targeted 'Very Good' rating.

BREEAM standards can be challenging to achieve, and the pre-assessment should be carefully reviewed by the design and construction teams to ensure all targeted credits are delivered as the project progresses.

An aerial photograph of a vast, arid landscape. The terrain is light beige and covered in a network of fine, irregular cracks, suggesting extreme dryness. A single, thin, light-colored road or path winds diagonally across the frame from the bottom left towards the top right. The overall scene conveys a sense of environmental hardship and scarcity.

Key Sustainability Principles

2.0 Sustainability

Sustainable Development – “meets the needs of the present without compromising the ability of future generation to meet their own needs.” (World Commission on Environment and Development: Our Common Future²).

The planning system focuses on three objectives to achieve a sustainable development: economic, social and environmental. These objectives mutually support each other and have been adapted specifically to the Havant Borough Council (HBC). The local plan seeks to address the challenge of climate change at a local level by expecting new development to minimise energy use and CO₂e emissions in operation. The Local Plan also focuses on protecting and enhancing the environment through urban greening, good air quality and sustainable transport. Therefore, careful considerations relating to sustainable design and construction have been taken to ensure the Proposed Development meets these objectives and supports the commitments.

Climate change Mitigation

The year 2023 was the warmest year since global records began in 1850, with global temperatures reaching 1.18 °C above the century average.³ According to the UK Meteorological Office, there is a 98% chance that the next warmest year will be within five years, with there being a two-in-three chance that global average temperature will exceed 1.5°C above pre-industrial levels.⁴ Projected annual emissions are only expected to rise, with global temperatures following the same trendline (Figure).

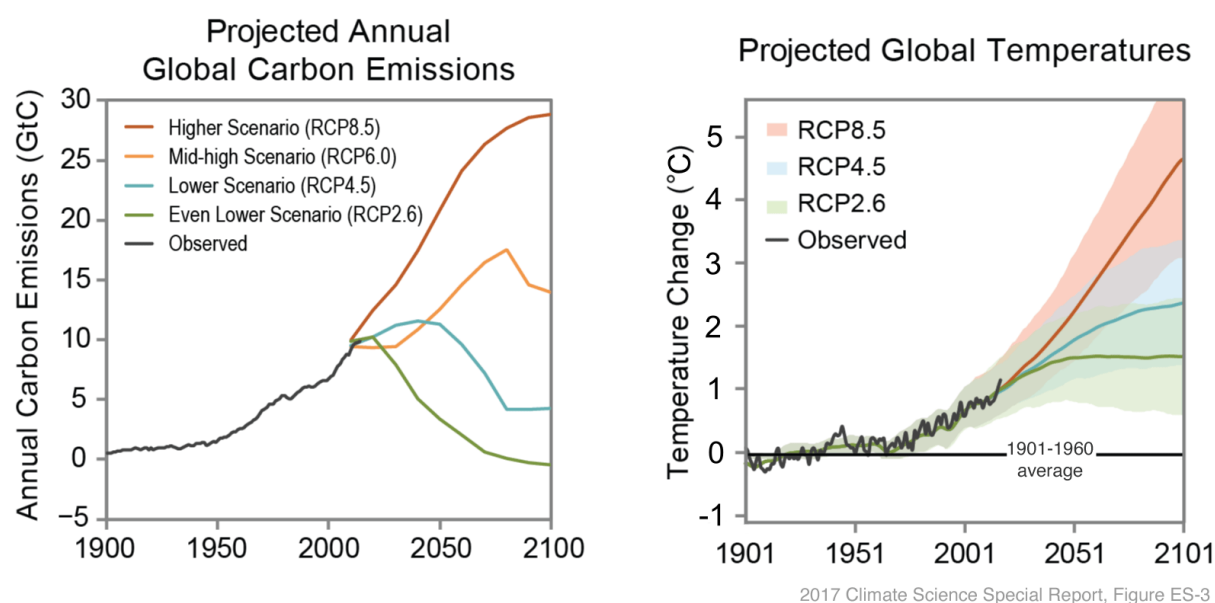


Figure 3 - Project global emissions and temperatures

The UK built environment is one of the largest contributors to greenhouse gas (GHG) emissions, contributing approximately 25% to the total share of UK GHG emissions

² Report of the World Commission on Environment and Development: Our Common Future

³ Annual 2023 Global Climate Report | National Centres for Environmental Information (NCEI) (noaa.gov)

⁴ New global temperature records on the horizon - Met Office

according to the UK Green Building Council⁵. For a sustainable future, a clear pathway to reducing emissions in our proposed building is no longer a choice, but a requirement.

The Proposed Development will maximise solar gains where possible within the confines of the site. The unit will have double low emissivity (Low-E) glazing to control the solar gains and fabric is energy efficient as shown in table 2.

The addition of 'Green' technologies can provide a significant reduction in CO₂e emissions and enable the Proposed Development to achieve a 33% improvement over Baseline emissions. The proposed strategy includes VRF and electric point-of-use hot water systems with a 52m² PV array across both roofs of Block A (44m²) and Block B (8m²). The improvements in CO₂e and primary energy rate (PER) over the Baseline are shown in Table and Table .

Element	Proposed U-value (W/m ² K)
External Wall - Blockwork	0.18
External Wall - Cladding	0.18
Ground Floor	0.12
Pitched Roof	0.12
Vehicle Access Door	1.30
Pedestrian Door	1.60
Rooflights	U-value - 1.6, G-value (glazing) - 0.4
Windows and Glazed Doors	U-value - 1.6, G-value (glazing) - 0.4
Additional Elements	
Air Tightness @50 Pa	5

Table 2 - Fabric energy efficiencies

Energy Hierarchy Category	Average CO ₂ e emissions (t/yr)	Improvement over Baseline(%)
Baseline	6.92	
Green	4.62	33

⁵ UKGBC – Climate Change Mitigation

Table 3 - Green CO₂e emissions and improvement over Baseline

Energy Hierarchy Category	Primary Energy Rate (kWh/m ² /yr)	Improvement over Baseline(%)
Baseline	33.58	
Green	22.25	34

Table 4 - Primary Energy Rate of the Proposed Development

2.1 Distinctive Character

The proposed site has a distinctive character, being well-connected by public transport with Emsworth railway station just a 5-minute walk away and several bus stops nearby, ensuring easy access for local residents. The area is primarily residential, with a few industrial warehouses to the west and south. The large green fields surrounding the site contribute greenery to the locality, helping to mitigate potential pollutants during construction and enhancing the area's overall character. Additionally, the council has an Employment and Skills Plan in place to support the planning application, ensuring that local employment and skill development are prioritized during the development process.

The Proposed Development has been designed to respect and complement the character of its surroundings:

- **Layout and Form:** The Proposed Development has been designed to respect and complement the character of its surroundings. The buildings are set back from the surrounding roads, train track and residential development and take advantage of the existing mature trees and foliage around the site boundary. This means the development remains visually unobtrusive, minimizing the need for stylistic alignment with the surrounding residential area.
- **Landscape and Topography:** Retaining the mature trees and foliage preserves the current natural aesthetic of the area, acting as a visual buffer and minimizing the development's impact.
- **Details and Materials:** The two blocks, containing 14 units, follow a cohesive and repetitive design pattern that ensures visual consistency. High-quality materials will be selected to blend with the surrounding environment and provide a modern and refined finish.

2.2 Ease of Movement

Sustainable Transport – “Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, ultra-low and zero emission vehicles, car sharing and public transport.” (National Planning Policy Framework 2021⁶).

The Proposed Development is situated in an urban area, within 400-800 meters and a 20-minute walk from public transport and various public services. It includes features designed

⁶ National Planning Policy Framework (December 2023)

to encourage the use of more sustainable transportation options, reducing future users' dependence on private vehicles.⁷

2.2.1 Public transport

Interbridges is located to the north of Emsworth District Centre between the A27 and the railway line. Emsworth railway station is approximately 40m west walking distance to the site, and the nearest bus stop is approximately 115m south walking distance. There is a bus route within 100m and walking distance to Emsworth District Centre. Detailed transport statement can be referred to for more detail. A footpath alongside the access road will provide access from the site entrance through to the industrial units.

2.2.2 Parking

According to Havant Borough Council, Parking SPD (July 2016), partially updated September 2019), the site should provide a minimum of 50 car parking spaces. The scheme is proposing a total of 55 car parking spaces exceeding with the LPA minimum car parking standards. The car parking will be located within the site and largely obscured from the surrounding roads and train tracks by the existing trees around the site boundary.

2.2.3 Electric vehicle charging

BREEAM Compliance states that 10% of the total car parking capacity are required to provide Electric Vehicle (EV) charging points with a minimum of 7kW. Accordingly, the site will provide 6 active EV charging points.

2.2.4 Cycle Storage

An appropriate level of car and cycling parking will be provided, with reference to the Havant Borough Council, Parking SPD (2016), to accommodate the developments likely staff and visitor parking demand. Four cycle storage units will be distributed across the site with a capacity of 6 bicycles per unit, equivalent to a total of 24 bicycles spaces. This figure complies with BREEAM cycle provision requirements and the minimum LPA standards. Further details of which can be found in the Transport Statement.

Cycle storage spaces spec will adhere to the following:

- Secured within spaces in racks with overhead covering. The cycle racks are set in or fixed to a permanent structure (building or hardstanding) or alternatively, may be located in a locked structure fixed to, or part of, a permanent structure with appropriate surveillance.
- The distance between each cycle rack, and the cycle racks and other obstructions, e.g. a wall, allows appropriate access to the cycle storage space for easy storage and access to bikes.
- The storage facility or entrance to the facility is in a prominent site location visible to potential users from either an occupied building or a main access to a building.
- The cycle storage facility has adequate lighting In accordance with CIBSE Lighting Guide 7 and/or BS EN 12464-2: 2014.
- The lighting is to be controlled to avoid out-of-hours use and operation during daylight hours, where there is sufficient daylight in or around the facility.

⁷ Transport Statement, Interbridges Site, Emsworth, prepared by Bellamy Roberts

2.3 Good Legibility

2.3.1 Access Road

The nearest railway services are from Emsworth railway station, approximately 40m west of the site on North Street / New Brighton Road. The site is within walking distance of a bus route, Emsworth railway station, and Emsworth District Centre, further highlighting its accessibility. It is evident that the application site is located in an accessible area with genuine opportunities for staff and visitors of the site to travel to/from the application site using sustainable modes of transport. It also seeks to introduce a new access from the eastern side of North Street / New Brighton Road.

2.3.2 Pedestrian

Transport report shows the application site is located in a highly accessible location for both pedestrians and cyclists accessing the site from local transport facilities. A footpath alongside the access road will allow pedestrians to walk from the site entrance through to the industrial units.

2.3.3 Refuse Storage

In accordance with BREEAM Wst 03 refuse storage areas are designated to facilitate the segregation, storage, and collection of recyclable waste streams. These areas are expected to be enclosed with close-boarded structures to contain "Eurobin" type containers, each with a capacity of 1,100 litres and clearly labelled for general waste or recycling purposes. Each Eurobin occupies approximately 1.27 square meters (See Figure 4). Refuse storage collection access is also given (See Figure 5). The design of the internal road network has been carefully planned to accommodate access for the refuse collection trucks. Turning radii and road widths have been designed in compliance with the relevant standards to enable manoeuvring of large vehicles. Dedicated collection points are strategically located to minimize disruption to residents while facilitating easy access for waste collection vehicles.

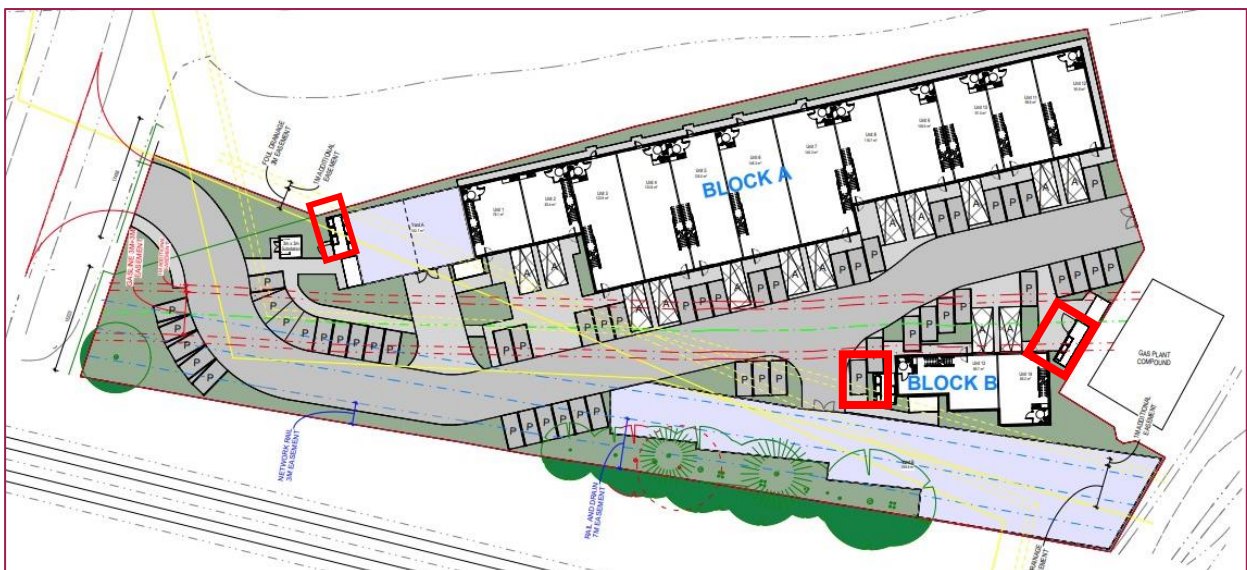


Figure 4 – Refuse Access (Hyphen Architects)



Figure 5 – Refuse Access (Bellamy Roberts TC)

2.4 Good Continuity and Enclosure

The Proposed Development will be effectively screened from view by the existing mature trees and foliage surrounding the site as indicated in the Google Earth image in Figure 6.

- To The south, a train track runs adjacent to the site, with Emsworth Station located at the south-west corner. The existing trees outside the southern site boundary will be preserved, ensuring that views of the development from the train track, the station, and the residential properties beyond the track are obscured.
- To the east, the residential property is separated from the proposed buildings by a buffer of trees, which will maintain privacy and limit visual impact.
- Similarly, to the north, an existing row of trees outside the site boundary provides a natural screen, effectively obscuring views of the development from the road.

This thoughtful integration of the existing landscape ensures the Proposed Development will blend seamlessly with its surroundings while maintaining the visual continuity and enclosure of the area.



Figure 6 – Existing Site (Google Earth)

2.5 Good Quality Public Realm

2.5.1 Air Quality

Havant Borough Core Strategy states developments should find opportunities to improve air quality, helping protect health and to meet local obligations.

The Proposed Development is not located within any AQMA declared by the HBC, indicating that the general air quality in the area is good. NO₂ concentrations do not exceed the air quality objective limits at locations of relevant exposure, which has resulted in no AQMAs being declared within HBC. Air quality assessment has been completed by SRE which assess quality and discusses construction and operational phase impacts on the local air quality have been considered. Key mitigation measures have been addressed relating to the increase traffic, odour, and aerosols from the proposed scheme⁸.

The Proposed Development will limit its contribution to local air pollution where possible through the following:

The project is largely a shell only design with some light core and there is no heating or cooling plant proposed in this development. For future tenants, it is anticipated that space heating and hot water will be provided using all-electric systems. This may include a VRF system for heating and cooling, along with instantaneous electric hot water. No gas infrastructure is proposed on-site, ensuring that only non-combustion electrical systems are

⁸ Air Quality Assessment for PHN Properties Group, Emsworth Business Park, prepared by SRE

possible, with no associated NOx emissions.

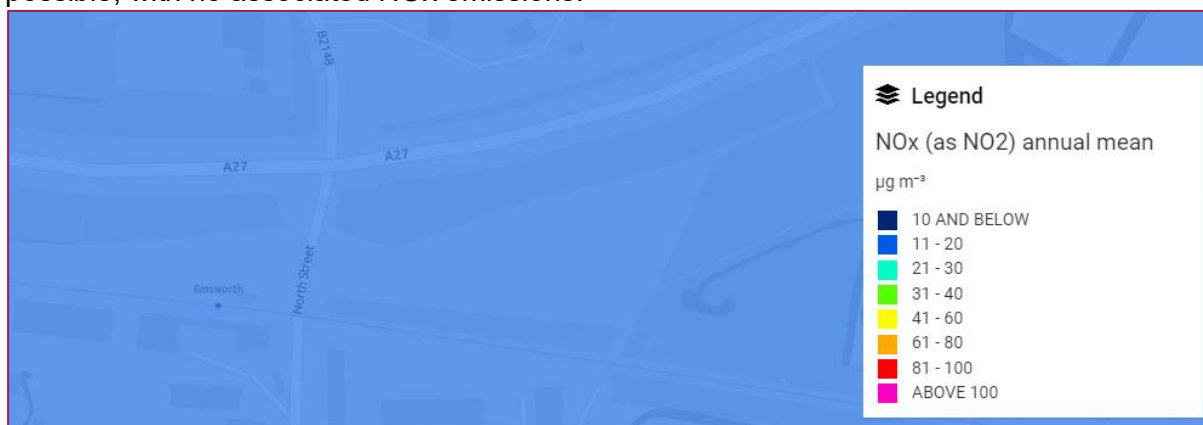


Figure 7 - DEFRA UK Air Pollution Map showing pollution from NOx as NO₂

2.5.2 Noise and Vibration

There is no external plant to be installed as part of the construction works for these commercial units. The nearest noise sensitive location would then be residential estate on the other side of the rail line, on Sultan Road, in the outskirts of Emsworth. However, the frequently high-speed rail line would be the dominant background noise in the vicinity.

The commercial units are unlikely to have any frequent or large amounts of occupancy, however if any external plant is installed in future, it is recommended that a suitable specification is selection with high acoustic performance or suitable attenuation to mitigate any negative effects, particularly during the nighttime outside of rail operating times.

2.5.3 Light

The site layout and designs of the Proposed Development has maximised internal daylight levels taking into consideration a range of design and specification requirements, these include the following:

- Sensitivity of sightlines to neighbouring properties and engagement to the public space
- The design has focused on maximising natural daylight to occupied areas with roof lights and windows to the mezzanine floor
- Low energy fittings with PIR sensors in WC and auto-dimming in mezzanine
- Security lighting to be PIR and daylight/timer controlled
- Effects of loss of sunlight to existing surrounding properties will be considered
- Sunlight availability at different times of the year will be calculated according to the BRE guide
- External lighting is of the minimum level of illumination and duration required for security and operational purpose

These measures will ensure light pollution will be minimised where possible, ensuring little to no detriment to locals and any negative impacts on local wildlife.

2.6 Flood Risk

Investigation into the location of the Proposed Development reveals the site is within a low risk of flooding from surface water (Figure) and rivers and seas (Figure). Flood risk assessment has been carried out by Martin J. Harvey Consultant Civil Engineer which

consider the site to be flood risk zone 1. Surface water strategies proposed by providing adequate underground soakaway, a watercourse and a sewer.⁹

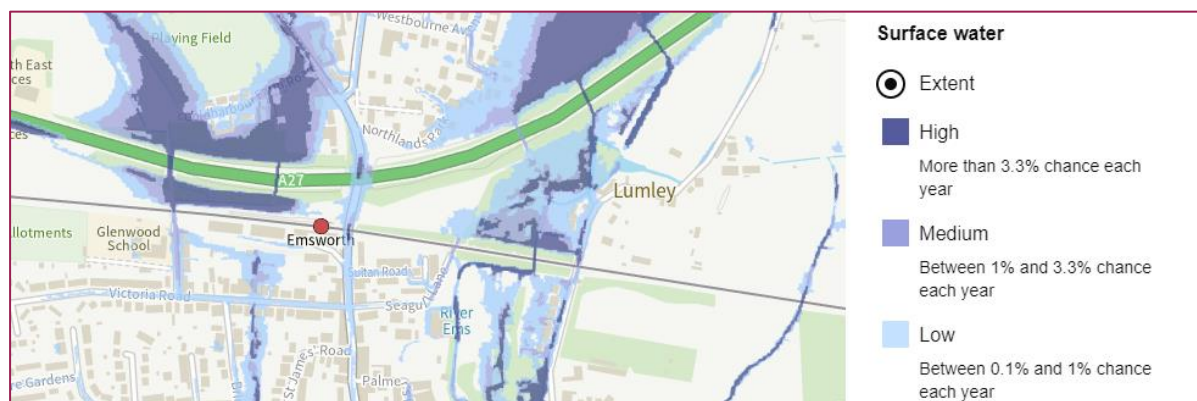


Figure 8 - Flood map showing risk of flooding from surface water (GOV.UK Environment and countryside: Flooding)

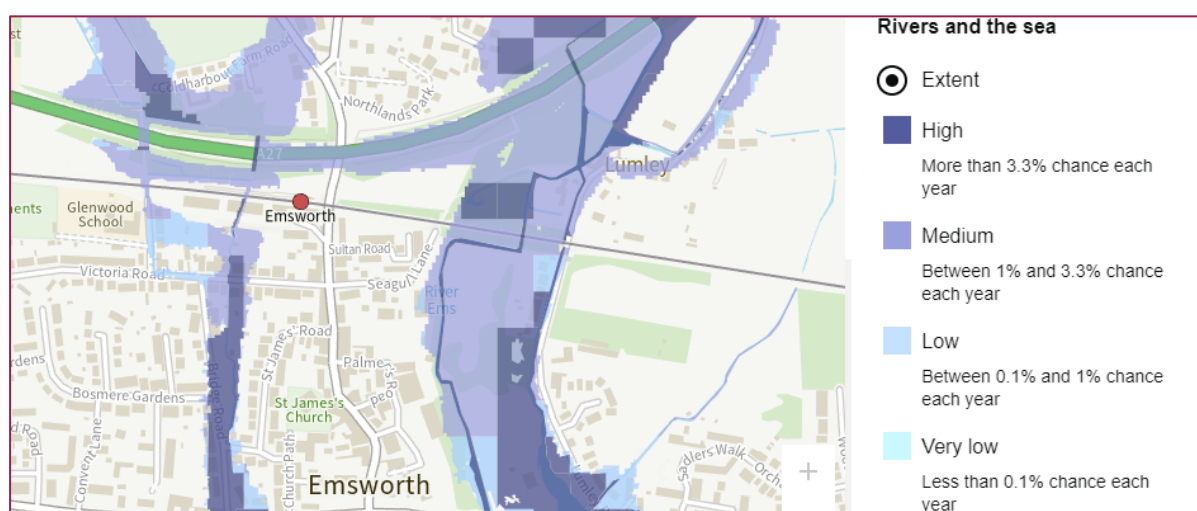


Figure 9 - Flood map showing risk of flooding from rivers or the sea (GOV.UK Environment and countryside: Flooding)

2.7 Diversity and Detailing

The site is a greenfield site hence existing landscape will not be harmed. It will also address the needs of people with disabilities and reduced mobility in relation to all modes of transport.

2.7.1 Biodiversity

Biodiversity is generally considered to be the variety of life forms within a certain ecosystem. The construction industry is very environmentally disruptive to plant species and wildlife. It is therefore important to protect and enhance biodiversity onsite wherever possible both during and post construction.

⁹ Flood Risk Assessment for Nash & Partners, Interbriges Emsworth, prepared by Martin J. Harvey, April 2016

A Biodiversity Net Gain Assessment has been carried out and a report produced which outlines several biodiversity-enhancing measures for the project site, primarily through native planting and habitat improvements. Key interventions identified include¹⁰:

- **Native Tree Planting:** One native tree (Rowan, *Sorbus aucuparia*) will be planted close to the site entrance at the western boundary. This tree provides shade, food, and shelter for wildlife, including pollinators and small animals.
- **Habitat Creation and Improvement:** The plans include enhancing habitat complexity by incorporating a mix of trees, shrubs, and ground cover vegetation to support a variety of species. The vegetation is strategically placed to provide ecological niches for different urban wildlife, such as pollinators, birds, and small mammals.
- **Minimizing Non-native Species:** Targeted scrub, bracken and invasive species removal will be carried out as necessary, during Winter i.e. October - February (outside of bird nesting season).
- **Maintenance Practices for Tree Health:** Ensuring minimal pruning and human impact on trees to maintain canopy integrity. This approach promotes canopy continuity, which benefits species that rely on dense, connected tree canopies.
- **Recommended Interventions for Tree Condition Improvement:** Specific recommendations for certain trees involve increasing deadwood or cavity presence, which could further enhance biodiversity by providing habitats for invertebrates and small animals.

These measures align with the site's biodiversity objectives and contribute to an overall biodiversity net gain through structured and native-focused landscaping and management practices.

According to the Arboricultural Report¹¹, the remedial work will ensure that no above-ground parts of the trees are damaged during the construction process, nor will they come into physical contact with the proposed buildings.

2.8 Adaptability and Sustainability

The Proposed Development will be flexible enough to adapt to future changes in use, lifestyle, and demographics. Water and resources used shall be minimised through implementation of sustainable technologies and design. Furthermore, the Proposed Development will aim to make efficient use of materials, minimise construction and demolition waste and maximise the recycling/re-use of materials throughout the construction phase. Low impact materials will also be incorporated where appropriate – resources such as the BRE Green Guide¹² will be considered to select these products. The pre-assessment has demonstrated that proposed project has the potential to achieve a BREEAM 'Very Good' (a score of >55%) rating based on the assumptions and information agreed to date

2.8.1 Waste Management

The Proposed Development will aim to use materials efficiently, minimise waste and maximise reuse and recycling of materials produced throughout the construction phase. BREEAM Wst 01 Construction resource efficiency will be targeted for 2 credits where the

¹⁰ BNG Habitat Management & Monitoring Plan, Interbriges Emsworth, prepared by Ecosupport Ltd, November 2024

¹¹ Arboricultural Report, Interbriges Emsworth, prepared by John Tree Consultancy, November 2024

¹² Materials Passports - BAMB (bamb2020.eu)

amount of waste generated per 100m² is < or equal to 7.5 (m³) or 6.5 (tonnes). In alignment with BREEAM Wst 05 as a combative solution, a building material climate risk evaluation and mitigation will be carried out.

A comprehensive Construction Management Plan will be implemented from the outset of site works and will follow the principles of the Waste Hierarchy (shown in Figure).

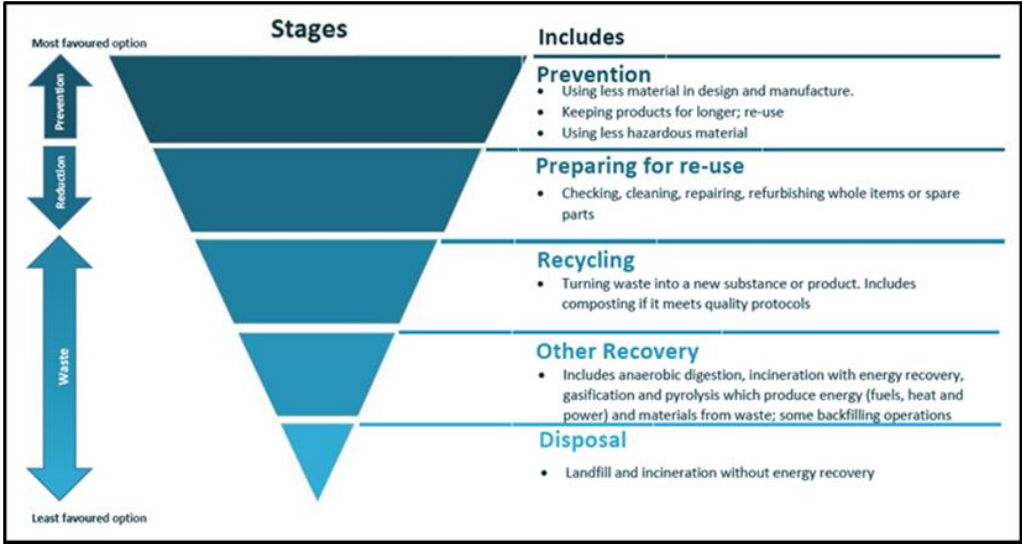


Figure 10 - The Waste Hierarchy

The construction and demolition waste generated as part of the redevelopment will be segregated and monitored as per best practice. Suitable materials will be recycled as part of this process, either to be reused on site, if feasible, or introduced back into the supply chain through recycling by a Licensed Contractor. During construction, all waste arisings will be recorded using a waste management tool (e.g. Smart Waste).

New locally sourced materials will be used, wherever possible, and transportation to site will be managed in the most efficient way possible.

Nominal construction waste should be sent to landfill or for incineration, unless this is unavoidable subject to the nature of materials found on the existing site.

Waste should be recycled in accordance with the local authority collection scheme and suitable space will be provided to store waste until collection. It will be ensured that at least 50% of this operational waste storage space is dedicated to recyclable waste.

2.8.2 Design for Disassembly

The building will be designed with an open-plan layout, allowing for future adaptability, and should incorporate a detachable SFS facade, ensuring ease of disassembly. The mezzanine floor can be disassembled and can be changed in size. The proposed building will also be targeting Design for Disassembly Wst 06 credit as a combative solution to mitigate waste and maximise material reuse.

2.8.3 Materials

The Proposed Development is to use high quality, low impact materials in order to minimise the overall impact on the environment as far as possible. The form of construction is

anticipated to be concrete foundation and floor slab with a steel frame structure. The UK concrete Standards BS 8500 (Part 1 and Part 2) are currently being updated and new ternary blend cements utilising limestone powder will be available. Compared to a standard CEM I they offer up to a 65% reduction in Embodied CO₂e per cubic metre of concrete delivered to site.

Offsite steel construction technologies can improve the final quality of the building and its speed of construction. Steel is also a lightweight construction system which minimises loads on the foundations, and therefore saves on sub-structure costs, which can be important on 'brownfield' or infill sites or for building extensions.

Steel is predominantly manufactured by either of two process routes, namely the primary or basic oxygen steel-making route (BF-BOF) and the secondary, electric arc furnace (EAF) route. Typically, the EAF steel-making process has an embodied CO₂e of around 20% that of BF-BOF steelmaking and also utilises up to 100% recycled content, compared to BF-BOF, which incorporates up to 30% recycled content. Specifying EAF steel will significantly lower the embodied CO₂e of the development and increase the recycled material being used on site, supporting our transition to a circular economy.

As standard industry best-practice, all insulation on the site will have a GWP of <5. Other ozone depletion materials will be avoided where feasible, including high VOC content paints and sealants, further minimising the Proposed Development's effect on global Climate Change.

All other materials will be sourced from suppliers who have an accredited Environmental Management System (EMS) certified through ISO 14001 or the Eco-Management and Audit Scheme (EMAS), wherever possible, ensuring that any environmental impacts caused are managed and reduced. In addition, wherever possible, procurement of materials in line the following responsible sourcing principles will be sought:

- Source materials from suppliers and manufacturers with ISO14001 certification
- Source materials locally and responsibly
- Secure relevant certification and product details from suppliers and manufacturers prior to order
- Maintain records of materials ordered, manufacturer, supplier and certification
- Research each supplier and their credibility to ensure sustainable practices extend beyond the site.

2.8.4 Energy Demand

The proposed building will feature energy-efficient design, including photovoltaic panels on the roof to generate renewable energy. The development will also maximise natural daylight and use energy efficient light fixtures to minimize energy demand. For further details refer energy statement.

2.8.5 Water

The southeast of England has been declared an area of 'serious water stress' by the Environment Agency. Water is a vital resource and has an associated CO₂e footprint of 0.344kgCO₂e/m³. The Proposed Development aims to reduce mains water use through a combination of efficiency measures, including the use of fittings with a low capacity or flow restrictors.

Internal water use will be reduced in line with BREEAM UK New Construction v6.1 to reduce water usage by >40% and incidences of water stress at times of peak demand, and/or minimal supply.

The specification outlined below sets out the maximum flow rates that can be fitted to individual components to meet these requirements:

- WCs: 3.75 litres effective flush volume
- Wash-hand basin taps: 5 litres/minute
- Kitchenette taps: 6 litres/minute

3.0 Sustainability Conclusions

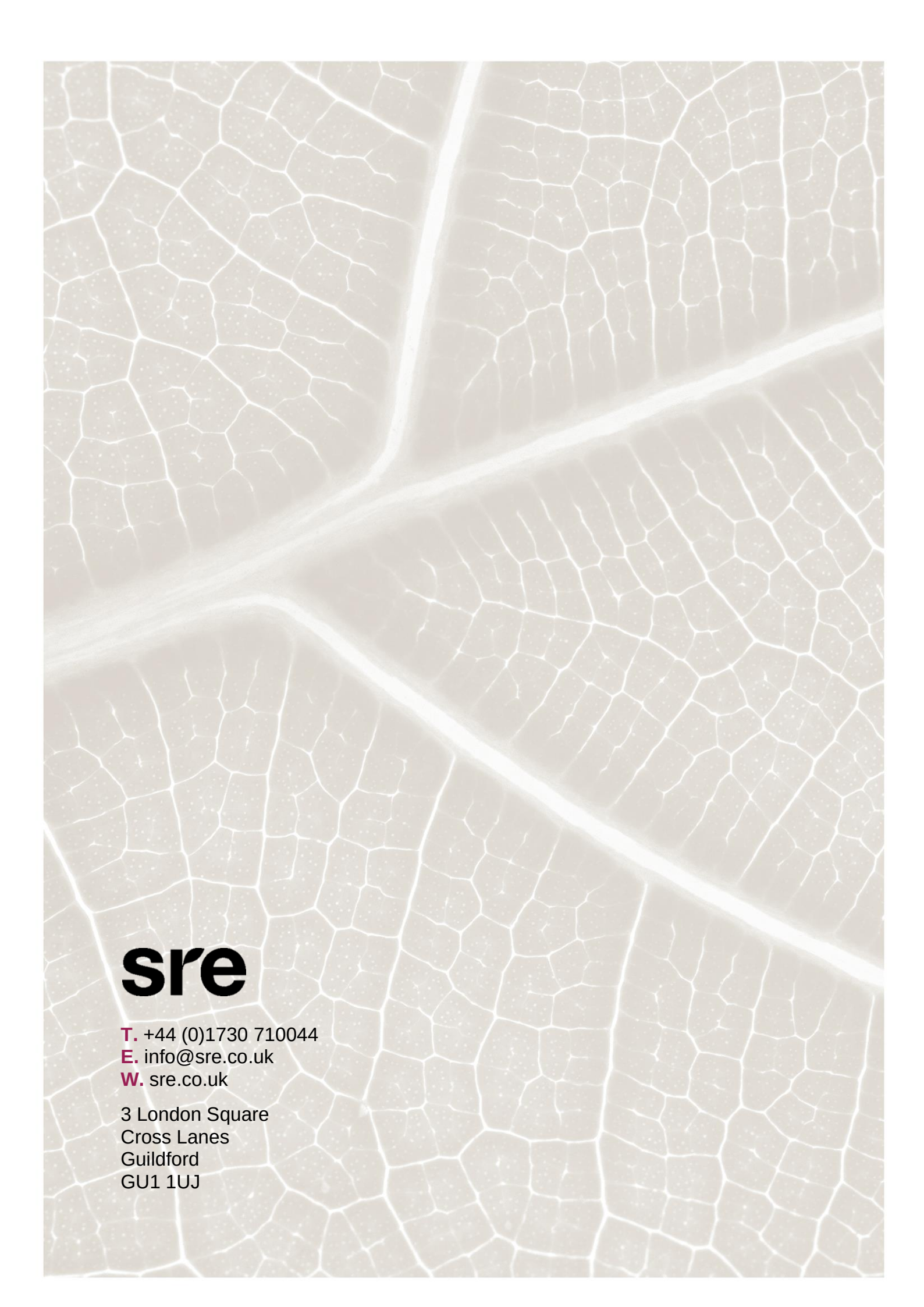
Careful considerations regarding sustainable design and construction have been made for the Proposed Development. This takes into account impacts of climate change and will result in measures to reduce CO₂e emissions through the use of a highly efficient energy strategy.

Overall, the Proposed Development has aimed to minimise its impact on the environment at both construction and operational phases and will provide a sustainable building which responds positively to the surroundings, and local and regional policy.

The Proposed Development is integrated into the existing landscape, with mature trees and foliage providing natural screening on all sides, ensuring privacy, minimal visual impact, and seamless blending with the surrounding environment.

The net result of the sustainability measures implemented meets and exceeds the targets set out by the Local Authorities through the following:

- Air pollution contributions will be negligible on site as the Proposed Development is currently Shell and Core no heating and cooling plant proposed within the scope of works for this development. There is a possibility that future tenants may wish to install their own systems to individual units - these will have to be electrical, as there will be no gas connection. For this reason, we have included an indicative system treating the mezzanine floor areas, in the proposed Energy model for the site to present a 'worst case' scenario.
- There is no external plant to be installed as part of the construction works for these commercial units, the building has good level of insulation which will help with noise control.
- Flooding is considered to be a low risk for the site and surface water management strategies will be included wherever needed;
- Waste management will follow the waste hierarchy, adopting the reuse, recycle and recovery methodology for construction and demolition;
- Implementation of sustainable construction techniques and materials, inclusive design, site management and procurement procedures;
- Internal water use will be controlled in alignment with BREEAM UK NC v6.1.



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