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Rose Kiln Court,
Reading

**Sustainability
Statement**

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15.05.2023
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About Us

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Established for 20 years, Carbon.Climate.Certified (formerly GWP Project Services) have grown into a leading UK based Sustainability Consultant, working on multiple award winning schemes in the UK and overseas. Specialising in environmental analysis and reporting we work closely with internationally renowned Architects, designers & contractors on highly efficient, low impact modern buildings that aim to significantly reduce carbon emissions and building related costs during design, construction and operation.

Our international client base includes some of the world's most successful organisations and the UK's most established institutions such as Kings College London, Jaguar Land Rover, Price Waterhouse Cooper, Bacardi Martini and DHL.

Our knowledge, experience and contribution to Environmental Design, Built Form Sustainability and Carbon Reduction has been recognised with the award of BREEAM Assessor of the Year in 2013 & 2015, being a major contributor to their assessor network and providing internal consultancy to the BRE Global organisation and input into the development of current and future BREEAM methods.

We offer a proactive approach to the challenges faced with Environmental Assessment and have developed systems and protocols specifically within the BREEAM / WELL / HQM markets to assist in the complex task of assessing and delivering certified buildings. We work very closely with the design and construction teams to ensure communication and organisation is adopted from the outset, informing the supply chain so opportunities are maximised where feasible.

Author & Assessor details

The report has been produced by Carbon.Climate.Certified Director Barry Rankin, who is qualified and licensed to undertake BREEAM assessments in accordance with the BRE Global Ltd assessor network. He was awarded a fellowship of the BRE Academy in 2018 and often works within the BRE's steering group on where sustainability and environmental assessment should be developed and evolve towards in future years.

Barry has over 15 years experience in the sustainable design and environmental assessment sector providing consultancy and BREEAM assessment roles on 5 BREEAM award winning developments including the highest rated BREEAM assessed building in at The Green, Bradford in 2010.

Barry is leading the environmental assessment of one of the four station complexes in Europe's largest infrastructure project, HS2 and has recently completed over 30 building assessments across the UK for Hermes Real Estate Investment fund, ranging from shopping centres and retail premises to Grade A+ commercial offices buildings and industrial parks.

Barry is also currently providing consultancy to many British Universities, including University of Leeds on how to meet net zero carbon commitments by 2030.

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1.0

Executive Summary

This Sustainability Statement has been prepared by Carbon.Climate.Certified Ltd to accompany a planning application for the Logicor Park development. The Project is located on Rose Kiln Court in Reading, RG2 0BY, just South on the central hub of the town and sits alongside the A33.

The proposed development includes the Demolition of the existing Class E(g)(i) (Office) building and the construction of three buildings for Class E(g)(iii) (Light Industrial) / Class B2 (General Industrial) / Class B8 (Storage or Distribution) uses, including the provision of a new substation, parking, landscaping, and associated works.

This Sustainability Statement reflects a commitment to sustainable design and construction, considering all aspects of development form which can contribute to securing high standards of sustainable development from the outset, including but not limited to:

- Energy efficiency and carbon emissions of the building;
- Water conservation;
- Flood risk and drainage strategy;
- Community impacts;
- Transport;
- Health and Wellbeing
- Material usage, wastage, responsible sourcing and environmental impact, including embodied carbon;
- Pollution issues, low NOx, low global warming potential (GWP), reducing need for mechanical cooling;
- Ecological aspects to enhance the proposed developments for flora and fauna; and
- Best practice management of the site.

Sustainable design aspirations were prioritised from the earliest design stages to minimise impact in environmental terms on the surrounding area and wider community, also meeting national and local policies in climate change, energy and recognised environmental accreditation schemes including **BREEAM**.

A BREEAM Pre-Assessment has been provided within the statement which concludes in a BREEAM credit score of **75.54%** and a BREEAM rating of **'Excellent'**.

This Statement also makes reference to the Energy Efficiency Statement has been prepared by MYA Consultancy Services. The proposed energy strategy was demonstrated to deliver a **47.2% reduction in regulated carbon emissions and a regulated energy reduction of 49.3%**, thereby demonstrating a significant saving beyond this Part L 2021 compliance.



BARRY RANKIN

Director,
Carbon.Climate.Certified Limited



2.0

Background

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2.1 Project Overview

Carbon.Climate.**Certified** Limited has been commissioned by Redwood (Light Industrial) Propco Sarl to produce this Sustainability Statement for the proposed Logikor Park development at the site known as Rose Kiln Court inReading (hereafter also referred to as the 'site').

The development consists of the demolition of the existing Class E(g)(i) (Office) building and the construction of three buildings for Class E(g)(iii) (Light Industrial) / Class B2 (General Industrial) / Class B8 (Storage or Distribution) uses, including the provision of a new substation, parking, landscaping, and associated works.

The proposed development intends to utilise a greater proportion of the site area and enhance the use of the available transport links. Each of the blocks is be treated as shell & core, with a combined total of 8no. units to let and approx. 3,081sqm of gross internal area of floor space separated between each block as following:

	No. of Units	Total GIA (m²)
Block A	3	868
Block B	1	697
Block C	4	1,516



Proposed Aerial View

2.2 Aims & Objectives

The aim of this document is to demonstrate a formal design response and commitment to achieve compliance with best practice design standards and planning policy, setting out the vision of how this development will address local planning policy and client aspirations to deliver a sustainable and environmentally conscious development.

National Planning Policy Framework (NPPF) considerations relate to;

Para 153

Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.

Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

Para 154

New developments should be planned for in ways that: a) avoid increased vulnerability to the range of impacts arising from climate change.

When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and b) can help to reduce greenhouse gas emissions, such as through its location, orientation and design.

Local Planning Policy considerations include;

Reading Borough Council has declared a Climate Emergency, and set out its commitment to working to achieve a carbon neutral Reading by 2030 by considering how carefully it adapts to the changing climate, the impact that its built space has on its own natural resources and habitats as well as pollution of its ground, water and air.

The Reading Borough Local Plan was adopted in November 2019, responding to the Climate Emergency by setting out ambitious but achievable standards for sustainable design and construction. It states that it is vital that residential and non-residential schemes are built in a way that minimises their use of energy and harmful emissions, reducing and mitigating other environment impacts.

Policy CC2 - Sustainable Design and Construction

This policy seeks improved sustainability performance of buildings by setting out BREEAM requirements for non-residential developments conversions to residential. It also sets out the general principles of sustainability in new development that applies to both residential and non-residential uses. Requiring the specified BREEAM levels will significantly contribute to achieving Reading's emissions targets, as well as mitigating the effects of climate change.

Policy CC3 - Adaptation to Climate Change

This identifies measures including building orientation, shading, heating, ventilation, green or brown roofs and walls, planting and surface water run-off to deal with the effects of climate change. Where these measures are not appropriately incorporated, planners will consider whether or not this is a reason for refusal. This policy will ensure that development within the Borough is resilient in the face of climate change.



2.2 Aims & Objectives

Policy CC4 - Decentralised Energy

This policy requires developers to consider inclusion of decentralised energy infrastructure, increasing the amount of decentralised energy provision in the Borough. This will help to achieve a shift to sustainable energy consumption and production and covers a wide range of technologies that reduce dependence on a centralised network or grid.

Policy CC5 - Waste Minimisation & Storage

This policy requires developers to identify measures to minimise the generation of waste and to handle waste appropriately during the lifetime of a development. It will help to achieve the aims of the Council's Waste Minimisation Strategy, as well as to comply with national policy, such as the Landfill Directive.

Policy EN18 - Flooding & Sustainable Drainage Systems

This policy directs development away from areas that are liable to flood. In areas of lower risk, development may move forward if it passes the exception test in the NPPF. It also requires major developments to incorporate Sustainable Drainage Systems (SuDS). This policy will help to protect people and property from flooding.

Reading Climate Change Strategy

Reading's existing Climate Change Strategy 2013 – 2020, "Reading Means Business on Climate Change" set a target of reducing the carbon footprint of the Borough by 34% in 2020 compared with levels in 2005. This required a reduction of around 7% annually. Of the strategic priorities identified, the following are relevant to planning policy:

- Energy supply
- Low carbon development
- Natural Environment
- Water supply & flooding
- Transport
- Purchasing, supply & consumption

BREEAM

BREEAM 'Very Good' standard will be required on all non-residential minor developments <1000m² and 'Excellent' on major developments >1000m².

Checklist for achieving required standards for sustainable buildings and places

This checklist, found within Appendix 1 of the 'Sustainable Design and Construction' SPD 2019 can be used to demonstrate the requirements of Reading's local planning policies CC2-CC5 and EN18. It sets out what is required through planning policy for all types of development.

The following sections of this report have been provided in response to the aims set out in the 'sustainable design checklist for non residential development'.



2.3 High Level Sustainability Strategy

Applying a clear and direct strategy towards sustainable building operation from the earliest stages of design is an absolute requirement. Retrospective or ill-conceived planning can often significantly impact the energy efficiency of a building for its entire life cycle.

The key principles are identified here and investigated in further detail within the following sections of this report

Principles

Reduction of carbon emissions where possible and targeting best practice performance levels

Energy Strategy

Energy efficient building envelope and thermally efficient design principles should be adopted

Passive Design

Using innovative and efficient building systems and services relevant to the buildings use and context

Heating/ Hot Water/ Ventilation

Improving the ecological value of a site through the introduction of appropriate soft landscaping, the creation and enhancement of species, habitats and urban greenery

Biodiversity

Modern controls systems, metering, lighting and low / zero carbon technologies can provide a major reduction in energy consumption

Smart Technologies

Limiting environmental impact on issues that effect the Circular Economy like waste and recycling, water use and material life cycle assessment

Resources

Analysis of existing public transport accessibility, sustainable modes of transport including walking, cycling and introduction of Electric Vehicle car parking

Transport

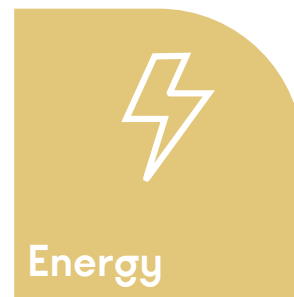


3.0

BREEAM Key Considerations

3.1 BREEAM Introduction

BREEAM (Building Research Establishment Environmental Assessment Methodology) is a method for rating and certifying the performance of domestic and non-domestic new buildings and refurbishment projects. It is a national standard for use in the design and construction of buildings with a view to encouraging continuous improvement in sustainable construction.

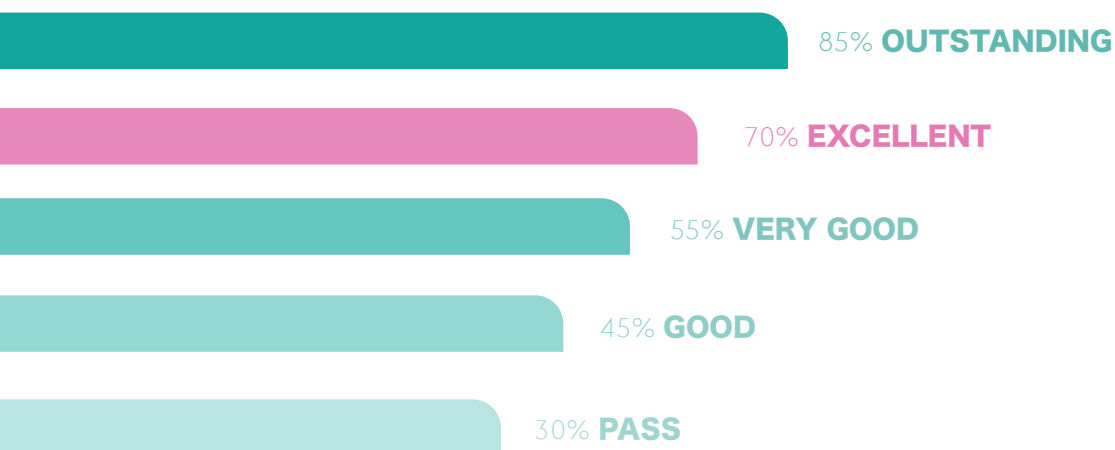


BREEAM covers nine sections of sustainable design and additional innovation. Each section includes a number of environmental issues which are considered a source of impact on the environment. Each issue is assessed against a pre-defined performance target or standard and awarded on a 'credit' basis.

BREEAM uses a percentage system to award ratings based upon credit scores obtained from each of the 9 sections plus the Innovation section. Each section is individually weighted and culminates in an overall BREEAM credit score (%) and a BREEAM rating.

3.2 BREEAM Summary

- Carbon.Climate.Certified have been appointed as the BREEAM Assessor for the scheme and confirm the method of Assessment as **BREEAM New Construction - Version 6**.
- A single BREEAM assessment will be undertaken for all units, using the 'Similar Buildings' methodology.
- The BREEAM Assessment will be 'Shell and Core'.
- The Pre-Assessment Report included within Appendix B concludes in a BREEAM credit score of **75.54%** and a BREEAM rating of '**Excellent**'.
- Carbon.Climate.Certified have also provided a list of potential areas for consideration, which could further support the BREEAM rating - these credits have the potential to increase the credit score towards 77.24% but all credits are unlikely to be realised.
- To ensure performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas e.g. energy, water, waste etc. These minimum standards have **all been met** in the calculation of the above score & BREEAM rating.
- Carbon.Climate.Certified are trained, qualified and licensed by BRE Global Limited to undertake BREEAM assessments using the above scheme documents and associated reporting and calculation tools.



The detailed BREEAM analysis in Appendix B of this report details the areas of estimated compliance against BREEAM criteria.

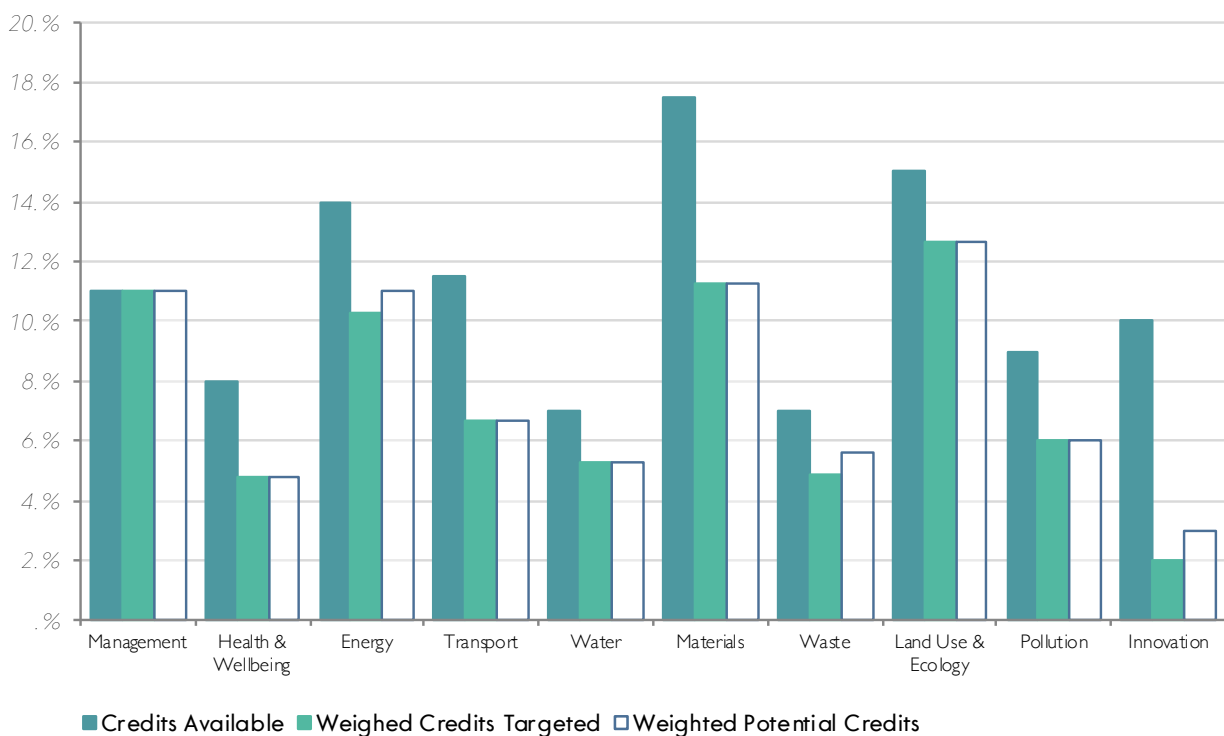
The analysis demonstrates a robust framework towards achieving the above BREEAM rating by targeting the available credits based upon detailed review & analysis of the scheme design proposals, interviews & workshops held with the design team consultants and early scheme design information being made available to the assessor.

The 70% benchmark for BREEAM 'Excellent' has been determined as being the highest possible rating available to the development and meets the Policy requirement of BREEAM 'Excellent' for non residential buildings exceeding 1000sqm.

3.3 Building Performance By Section

CREDIT SECTION	CREDITS			WEIGHTED CREDITS		
	AVAILABLE	TARGETED	POTENTIAL	AVAILABLE	TARGETED	POTENTIAL
Management	18	18		11.0%	11.0%	
Health&Wellbeing	10	6		8.0%	4.8%	
Energy	19	16		14.0%	11.79%	
Transport	12	7		11.5%	6.71%	
Water	8	6		7.0%	5.25%	
Materials	14	8		17.5%	10.0%	
Waste	10	7	1	7.0%	4.9%	0.70%
Land Use & Ecology	13	12		15.0%	13.85%	
Pollution	12	7		9.0%	5.25%	
Innovation	10	2	1	10.0%	2.0%	1.00%
BREEAM Credit Score					75.54%	77.24%
BREEAM Rating					'Excellent'	'Excellent'

3.4 Assessed Building Performance By Section



4.0

Management Strategy

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Sustainable Design Checklist Aim: To recognise and encourage environmentally and socially considerate development.

4.1 Commissioning & Handover

Targets regarding building energy performance are increasingly challenging. The first difficulty is around making sure that the building performs in practice as expected in terms of energy consumption and performance. The second aspect, directly linked to the first one, is related to achieving thermal comfort and high satisfaction levels for building occupants.

In order to **encourage a properly planned handover** and commissioning process that reflects the needs of the building occupants, the project design team will ensure that all systems are adequately commissioned prior to and following handover.

4.1.1 Building user guides

Prior to handover, the project team will develop two **building user guides**. These will cover non-technical users and be distributed to building occupants and technical users to be distributed to the facilities managers. The building user guides shall be building-specific or site-specific guidance. The purpose of the guides is to **help building users access, understand and operate the building efficiently** and in accordance with the original design intent. The content of the guides is specific to the building type and end users, but will include information on the following:

- *Overview of the building and its environmental strategy, e.g. energy, water or waste efficiency policy or strategy, and how users should engage with and deliver the policy or strategy.*
- *Provision of, and access to, shared facilities.*
- *Safety and emergency information or instructions.*
- *Building-related operational procedures specific to building type or operation, e.g. laboratories.*
- *Building-related incident reporting and feedback arrangements.*
- *Provision of and access to transportation facilities, e.g. public transport, cyclist facilities, pedestrian routes etc. – Provision of and access to local amenities.*
- *Links, references and relevant contact details.*

Additionally, for the non-technical building user guide for building occupiers:

- *Building services overview and access to building occupant controls, e.g. where to find them, what they control, how to operate effectively and efficiently etc.*
- *Pre-arrival information for visitors, e.g. access and security procedures or provisions.*

4.1.2 Training schedule

Prior to handover, the project team will also develop **training schedules** to ensure appropriate maintenance regimes are in place. These will cover non-technical users and be distributed to building occupants and technical users to be distributed to the facilities managers. The schedules will include the following:

- *Introduction to the non-technical building user guide for building occupiers and other relevant building documentation.*
- *The available after-care provision and after-care team main contacts, including any scheduled commissioning and post occupancy evaluation.*
- *Introduction to, and demonstration of, installed systems and key features, particularly building management systems, controls and their interfaces.*
- *Introduction to the technical building user guide for facilities managers' and other relevant building documentation, e.g. design data, technical guides, maintenance strategy, operations and maintenance (O&M) manual, commissioning records, log book etc.*
- *Maintenance requirements, including any maintenance contracts and regimes in place.*

4.2 Responsible Construction Practices

The health and safety of the site operatives is a major concern within the construction sector. Within the UK construction sector, 43 workers were fatally injured in 2015/16 and 66,000 non-fatal workplace injuries were reported. Mental health is also a major cause of sickness and lost productivity in the construction sector with a CIOB survey indicating almost a third of respondents felt that stress at work was impacting on their health and wellbeing.

In addition to the human cost of unaddressed mental health issues, there is also a financial one; absences due to sickness costing British businesses £26bn a year in lost productivity. Construction also impacts on health and safety off site: approximately 19% of cyclist and 15% of pedestrian fatalities in the UK involve large goods vehicles over 3.5 tonnes, many of which are related to construction traffic.

The project team recognise the importance of operating a construction site that is managed in an environmentally, socially considerate and responsible manner and will therefore develop a construction management plan in order to achieve this. Adoption of more responsible construction practices can lead to a wide range of environmental, social and financial benefits.

Monitoring health and safety procedures, resources, construction progress and site conditions is valuable in informing construction practices and maximising project performance.

Environmental Management System : All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) will operate an EMS covering their main operations. The EMS will be third party certified, to ISO 14001: 2015, EMAS (EU Eco-Management and Audit Scheme) or an equivalent standard.

Pollution Prevention : In addition, all parties who at any point manage the construction site will implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.

Considerate Constructors Scheme (CCS) : The principal contractor will ensure that the site is registered with CCS. The site will therefore be monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements. The contractor will endeavour to achieve a final CCS score of above 39, scoring at least 13 within each of the 3 sections.

Monitoring Construction Site Impacts : The Principal Contractor will assign responsibility to an individual (ideally site based) for monitoring, recording and reporting energy use, water consumption and transportation data resulting from all on-site construction processes as follows:

Energy

- Set targets for the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation.
- Monitor and record data for the energy consumption.
- Report the total carbon dioxide emissions (total kgCO₂/project value) from the construction process.

Water

- Set targets for the potable water consumption arising from the use of construction plant, equipment (mobile and fixed) and site accommodation.
- Monitor and record data for the potable water consumption.
- Report the net water consumption (m³) from the construction process.

Transport

- Set targets for transport movements and impacts resulting from the delivery of the majority of construction materials to site and construction waste from site.
- Monitor and record data for the transportation movements
- Report the total transport-related carbon dioxide emissions (kgCO₂-eq), plus total distance travelled (km)

4.3 Site Investigation

Delta-Simons was instructed to prepare a Geo-Environmental Risk Assessment for the site. The findings of this assessment are summarised within their report titled: **Geo-Environmental Assessment (Report dated April 23)**.

Based on the findings of the Report, a number of recommendations for supplementary investigation / assessment are made within section 9.4 of the report.

4.4.1 Community Consultation

Early stakeholder engagement ensures that key project stakeholders are identified and engaged to determine end user requirements and operational adaptability, allowing them to be taken into account throughout the project.

The National Planning Policy Framework places importance on community engagement in the development of Local Plans: *'Early and meaningful engagement and collaboration with neighbourhoods, local organisations and businesses is essential. A wide section of the community should be pro actively engaged, so that Local Plans, as far as possible, reflect a collective vision and a set of agreed priorities for the sustainable development of the area, including those contained in any neighbourhood plans that have been made.'*

In accordance with the BREEAM Consultation methodology, the design team will consult with all interested parties on matters that cover the minimum consultation content as follows:

- *Provision of appropriate internal and external facilities (for future building occupants and visitors or users).*
- *Management and operational implications.*
- *Maintenance resources implications.*
- *Impacts on the local community, e.g. local traffic or transportation impact.*
- *Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders.*
- *Compliance with statutory (national or local) consultation requirements.*
- *Energy use and sustainability measures.*
- *Implementing principles and processes that deliver an inclusive and accessible design.*

The design team will then demonstrate how the stakeholder contributions and consultation exercise outcomes influence the Initial Project Brief and Concept Design.

4.4.2 Project Execution Plan

In order to optimise the final building design through recognising and encouraging an integrated design process and robust stakeholder engagement, the team have produced a project execution plan. The aim of the plan is to identify variation in stakeholder needs, maximising benefits and acceptability of the project in operation to users and those affected by it. The implementation of the PEP will:

- *Enhance team integration and efficiency*
- *Achieve project targets and maximise opportunities for project performance*
- *Minimise risks related to delays and costs*
- *Meet performance expectations in operation thus minimising the risk of a performance gap*

For each phase of the project, the plan will identify and define key roles, responsibilities and contributions in relation to the following:

- *End user requirements*
- *Aims of the design and design strategy*
- *Particular installation and construction requirements or limitations*
- *Occupiers' budget and technical expertise in maintaining any proposed systems*
- *Maintainability and adaptability of the proposals*
- *Operational energy*
- *Requirements for the production of project and end user documentation*
- *Requirements for commissioning, training and aftercare support*

4.5 Security of Site and Building

BREEAM states that feelings of safety and security are essential to successful, sustainable communities. Freedom from crime and the fear of crime has a major impact on quality of life, and therefore effects the wellbeing and productivity of building occupants.

Security risks are dependent on the context of a building and, as a result, need to be specifically determined based on a number of variables including function and location. In addition to this, security risks are not static and can change over time. Therefore consultation with the appropriate professionals is essential in determining the necessary security measures for any development.

Through consultation with a suitably qualified security specialist (SQSS), site-specific recommendations can be made to improve the security of the site. This creates a safer and more secure environment that reduces the fear of and risk of crime. This supports the physical and mental wellbeing of building users, and the protection of property and business.

As part of the BREEAM Assessment works, the design team will engage with a SQSS who will conduct an evidence-based Security needs assessment (SNA). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development.

Within the SNA, the SQSS will be expected to develop a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA.

The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS.

Health & Wellbeing

Sustainable Design Checklist Aim: To ensure a good quality amenity level is afforded to occupants of buildings.

5.1 Air Quality Assessment

In order to ensure good quality amenity level, an air quality constraints and opportunities appraisal has been carried out by Delta-Simons to determine the baseline conditions in the vicinity of the site. The findings of this assessment are summarised within their report titled: **Air Quality Constraints and Opportunities Appraisal Statement (Report dated: 27/02/23)**.

The Delta-Simons report confirms that the site is located within the Reading Air Quality Management Area (AQMA), declared by Reading Borough Council (RBC) due to exceedances of the annual mean Air Quality Objective (AQO) for nitrogen dioxide (NO₂). The Site is also located in an area where air quality is mainly influenced by road traffic emissions along the A33 and the local road network and as such, elevated pollutant concentrations may be experienced at this location. Consequently, the proposal has been assessed to determine whether it has the potential to cause adverse impacts to existing pollutant levels at nearby sensitive receptors, as a result of fugitive dust and plant/vehicle emissions during construction and road vehicle exhaust emissions during operation.

The report concludes that the assessment of construction phase impacts associated with emissions of fugitive dust and fine particulate matter (PM) with an aerodynamic diameter of less than 10 and 2.5 microns (PM₁₀ and PM_{2.5}, respectively), has been undertaken in line with the relevant Institute of Air Quality Management (IAQM) guidance. This identified that there is a medium to low risk of dust soiling impacts and a low to negligible risk of increases in PM concentrations, due to unmitigated construction activities. However, through good site practice and the implementation of suitable mitigation measures, the effect of dust and PM releases would be significantly reduced. The residual effects of the construction phase on air quality are considered to be not significant.

The Delta-Simons report further concludes that the Proposed Development is predicted to result in traffic flows below the Environmental Protection UK (EPUK)/IAQM Air Quality criteria and would result in a negligible impact associated with the operational phase traffic on nearby receptors. Furthermore, the Proposed Development is expected to result in an overall net reduction in total vehicles, compared to the existing use of the Site and as such, no significant effects on air quality are anticipated at existing receptors. The residual effect on air quality as a result of the Proposed Development is judged to be not significant, in line with EPUK and IAQM assessment criteria.

Based on the appraisal results, Delta-Simons consider that the Proposed Development complies with national and local planning policies and there are no air quality constraints considered to restrict planning consent. Accordingly, there is no requirement for further assessment of potential air quality effects.



5.2 Visual Comfort

Visual comfort is an important part of ensuring building occupant health, comfort and wellbeing. Reducing glare that can cause discomfort and distraction, and enabling occupant lighting control, the building can increase productivity of its users. By reducing the impacts of glare that can cause discomfort and distraction, and enabling occupants to have a level of control over their visual environment, the building can increase productivity of its users.

Maximising exposure to natural daylight and providing an external view out provides users with a connection to nature. This can in turn support mental wellbeing, for example by improving people's mood and reducing the symptoms of depression. Increasing the level of daylight within the building also reduces the need for artificial lighting, which can reduce operational costs and environmental impacts of the building. Further to this, naturally lit environments increase occupant productivity and support the regulation of circadian rhythms.

5.2.1 Lighting Strategy

The project team have set robust design criteria to ensure that the development is designed so that users have appropriate lighting levels encouraging best practice in visual performance and comfort. Savills were commissioned to produce a Stage 1 Report outlining this design criteria and lighting levels are highlighted below. All systems are design in line with CIBSE code for interior lighting.

Lighting Levels – General (at floor level unless otherwise stated)		
Luminaire properties	Colour temperature	4000k
	Rendering index	≥80Ra
	Efficiency	130 lumens/Watt
Offices		300 lux (0.75 AFFL), 0.7 uniformity, <19 UGR
Common areas (stairs, corridors, store rooms)		200 lux, 0.7 uniformity, <22-25 UGR
External Areas		20 lux
Toilets		150 Lux
Industrial Space		200 Lux (Target for Assessment purposes – Contractor fitout)

Extract from Savills Stage 1 MEP Report - 05.03.23

To ensure good visual comfort through designing out glare, achieving good practice daylight factors and having an adequate view out, the project team have proposed the following design measures:

- Solar control will be considered to glazing on all elevations to limit solar gains
- Natural ventilation has been proposed for the office spaces to provide sufficient fresh air.
- Rooflights over shell spaces to encourage use of natural light and reduce reliance on energy intensive artificial light.

Energy Strategy

Sustainable Design Checklist Aim: To conserve energy and maximise the use of energy efficiency techniques.

6.1 Energy Strategy

The Energy Strategy has been developed and demonstrated in the **Energy Efficiency Statement** provided by MYA Ltd (**report dated: 15/05/23**). Energy analysis and dynamic simulation modelling has been undertaken by an appropriately licensed and accredited energy consultant and the reporting is extremely detailed in terms of its output and conclusions against Local Planning Policy.

Within section 4 of the MYA report it is confirmed that the energy strategy for Logikor Park has been developed in accordance with the guidance for energy efficiency as stated within the Reading Borough Council Sustainable Design and Construction SPD. This outlines an approach to prioritise passive measures (e.g. fabric enhancements, solar control etc.), before selecting efficient systems and renewable technologies to reduce both energy demand and carbon emissions.

It is key to note that the site is being developed on a shell and core basis, therefore Savills have produced a performance specification indicating a proposed route to meeting key performance metrics. The occupying tenant will be responsible for the detailed design of the speculative area of the warehouse/industrial unit and in accordance with the National Calculation Methodology 2021 and BREEAM conventions, assumed services and performance have been allowed for to assess likely performance against the key indicators.

Minimising energy demand, conserving energy and maximising the use of energy efficient techniques have been considered throughout the earliest design stages of the project. For more detailed analysis please refer to the **Energy Efficiency Statement** provided by MYA Ltd dated May 2023, extracts are provided in the following sections.

6.1.1 Passive Design Measures

The following passive design measures are proposed within Logikor Park to minimise the energy demand:

- *Enhanced U-values across the building envelope to reduce heat loss/gain*
- *Compact form to maximise efficiency of operational services.*
- *The internal layout will be designed to ensure good daylight access for occupied spaces.*
- *Rooflights over shell spaces to encourage use of natural light and reduce reliance on energy intensive artificial light. These are recommended to be provided with high-performance U-values and low g-value to reduce excessive heat loss while limiting excessive solar gains.*
- *Insulation to the internal walls and floors separating conditioned spaces (i.e. offices, toilets) from unconditioned/frost-protected spaces (i.e. warehouse/industrial unit, circulation) to limit hidden heat losses from one internal space to another.*
- *Solar control will be considered to glazing on all elevations to limit solar gains*
- *Natural ventilation has been proposed for the office spaces to provide sufficient fresh air*
- *Consideration will need to be given to passive ventilation methods to prevent excessive heat loss/gain during low and high periods of external temperature when heating and cooling is required.*

6.1.2 System Efficiency - Heating, ventilation and air conditioning

High efficiency VRF systems have been proposed to heat and cool for the occupied office areas to the data centre cooling to condition the equipment. SCOP and SEER values upwards of 3.50 kW/kW and 5.00 kW/kW are available on the market and should be used to reduce the electrical demand of the heating/cooling loads required for the building. It is in the interest of the end user to seek high performance systems to reduce the electricity demand and operational cost of the building.

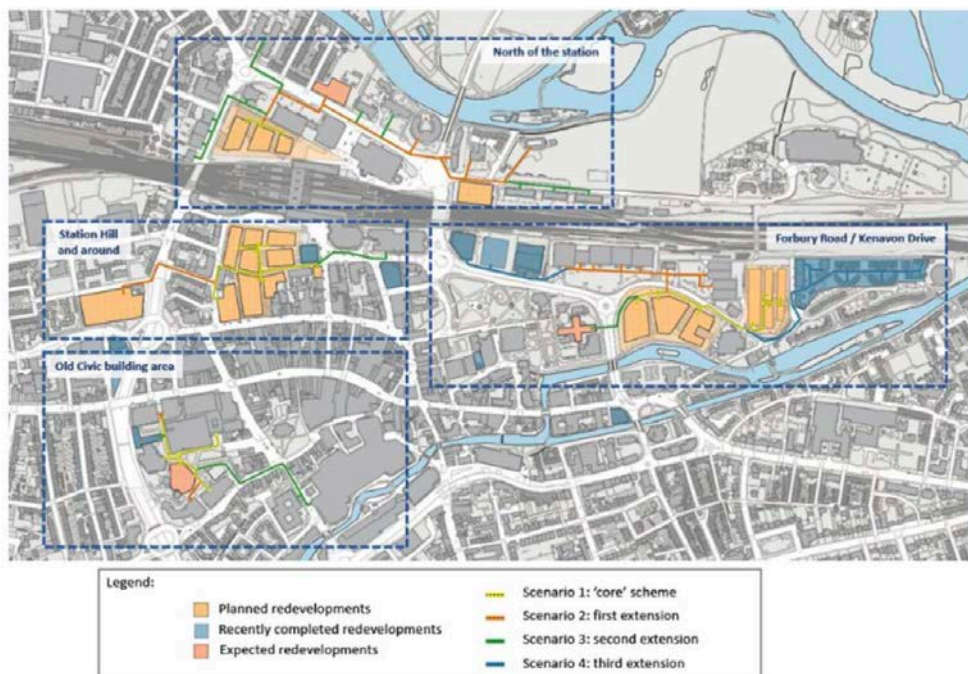
Shell areas of the ground floor untreated spaces and circulation areas to be provided with frost protection only. These are anticipated to likely be used for low energy demand space usages with vehicle access doors frequently open. Therefore a position of encouraging no conditioned services in these areas as a starting point is proposed.

Toilets are proposed to have direct electric rads with extract ventilation and with instantaneous hot water.

6.1.3 Decentralised Heating

Element Energy was commissioned by Reading Borough Council to undertake a heat mapping and energy masterplanning study for Reading town centre. Four clusters were identified as shown within Figure 8. Logicator Park is situated to the south of the highlighted 'Old Civic building area' and outside the potential zone proposed for potential development. It is therefore the design team's understanding that there are therefore no existing district heat networks in the near proximity of the site.

In addition, the required heating load is anticipated to be relatively small in relation to the size of the site due to its usage as noted previously and hot water heating will primarily be limited to the small amount of occupied office spaces. Due to the lack of financial feasibility associated with the large distance to a future potential location in combination with the minimal heating demand it is not suggested to explore a connection to any of these identified clusters.



Four identified clusters for proposed district heating schemes (Source: Element Energy via Reading Borough Council Sustainable Design and Construction SPD, Dec 2019)

Combining the space heating and hot water demands of each building into a combined single network can offer a greater pool of energy, however, it is subject to higher investment costs associated with the increased pipe and duct lengths and limited flexibility. It may be extremely difficult to control due to anticipated fluctuating demand and relatively low demand, as well as the additional losses to maintain temperatures between the buildings.

6.1.4 Low & Zero Carbon Technologies

With only cooling proposed for the office areas and a small space heating and hot water load requirement, finding an efficient low-carbon technology to deal with these small loads is a focal point of the energy strategy. This means that systems such as biomass boilers, local CHP are not financially feasible as their investment costs significantly outweigh their payback and the latter typically requires a constant base load to be a viable option.

Variable Refrigerant Flow (VRF)

VRF technology can provide an effective energy reduction contribution to the buildings heating and cooling requirement. Heat energy is extracted / discharged from / to the air. This technology is determined as feasible, the relatively small footprint required for the external condenser units has minimal impact on the surroundings and can be quite easily installed on site, potentially at the rear of each building.

VRF systems are powered by electricity, enabling the new buildings to be fuelled by 100% electrical energy and offer a large reduction in energy usage over direct electric systems with an COP ranging between 2.5 - 4 vs a direct electric system which at best, can offer a COP of 1. A smaller system like a heat pump can be beneficiary as it requires relatively low investment based on the setting.

The Coefficient of Performance (COP) of a combined heating and cooling ASHP is low when supplying the higher temperatures required for DHW. Dedicated hot water ASHPs can provide higher flow temperatures with improved CoPs and could be provided, but due to the low hot water demand anticipated, selecting the ASHP for space heating only and reducing the supply temperature would allow a higher efficiency unit to be selected.

Photovoltaics (PV)

PV panels generate electricity that can be used directly on-site or exported back to the grid to provide direct carbon offset to an electrically fuelled energy strategy, reinforcing the drive towards net-zero carbon. PV panels are therefore the preferred renewable generation technology for Logicor Park to be used in combination with the localised heat pump arrangement and to complement the electric led system.

Photovoltaic panels are a well suited low-carbon technology for the site. The available roof space is subject to changes in roof-mounted equipment size and their access routes as well as the provision of roof lights above each of the warehouse/industrial units. The abundance of roof space is the most efficient location for PV system placement as the blocks do not provide cross-shading and the impact of shading from trees is anticipated to be limited due to most being located to the north of the site.

Whilst the proposed roof plans of the buildings provide areas for the location of photovoltaic panels, the exact space will be determined determined in further design stages pending future design development for roof lights, plant space, access and maintenance zones, plant replacement requirements and shading to determine the usable area for PVs. Photovoltaic panels can also be mounted on top of roof greenery such as sedum or another light plantation.

A PV array system with a combined total annual yield of **22,607 kWh** is proposed for installation on rooftops. For the purposes of EPC, it has been assumed that the electricity generated on each block roof is equally distributed and fed into the individual meter of each unit.



6.2 Summary

The energy efficiency statement has identified a route to demonstrating how the proposed development will address the energy and carbon emission reduction policies set out by the corresponding UK Building Regulations and local planning policies, as well as the Client aspirations for sustainable building design.

In summary, Logicator Park is targeting the following key performance energy indicators:

- Compliance with Part L 2021
- EPC 'A' rating per unit
- 5no. minimum credits under Ene01 for BREEAM 'Excellent' rating per block.

The release of the most recent UK Building Regulations Part L in June 2022 have now recognised the decarbonisation of the UK grid and therefore developments supplied by electricity are now more advantageous where traditionally gas-fuelled alternatives are penalised from a carbon perspective. For consistent energy use, carbon reductions would also likely continue to improve as the UK grid continues to de-carbonise. The scheme is proposing an **electric-led strategy to maximise this potential via the use of ASHP and photovoltaic arrays.**

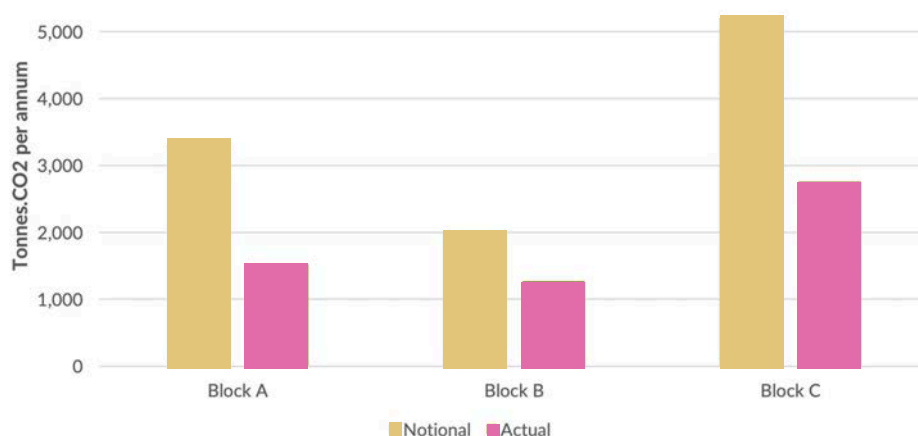
The proposed energy strategy was demonstrated to deliver a **47.2% reduction** in regulated carbon emissions and a regulated energy **reduction of 49.3%**, thereby demonstrating not only a route to compliance to Part L 2021, but a significant saving beyond this.

The scheme was also shown to provide a **43.4% reduction** in the combined heating and cooling demand of the building, highlighting a substantial saving via passive measures before system efficiencies and renewable technologies are accounted for.

Finally, all units were shown to achieve an EPC 'A' rating and each block achieve a minimum of 7 No. credits for Ene01 under BREEAM. These performance indicators were based upon an assumed fit-out specification for the shell industrial/warehouse areas and would need to be considered as part of any Tenant fit-out agreement for BREEAM purposes. The EPC is indicative only and will be subject to the first fit-out of tenant areas and where any of the performance specification stated within this statement appendix can not be achieved it would be the responsibility of the contractor to demonstrate that the EPC 'A' could still be achieved with any proposed fit out.

KPI Summary - Energy efficiency statement - MYA - 15.05.23

	Regulated demand savings %	Regulated energy savings %	Regulated carbon savings %	PV annual yield (kWh per annum)	EPC (per unit)	BREEAM Ene01 credits
Block A	45.3%	56.5%	53.9%	8,511	A	>5
Block B	40.7%	38.0%	36.8%	2,756	A	>5
Block C	43.1%	49.2%	47.0%	11,341	A	>5
Site	43.4%	49.3%	47.2%	22,608	-	-



Part L 2021 Results - Energy efficiency statement - MYA - 05.05.23

Sustainable Design Checklist Aim: To reduce the need to travel through appropriately located development

7.1 Transport Assessment

Mayer Brown were commissioned to assess the highways and transportation implications of the proposed Logicor Park development. Within a detailed Transport Statement, Mayer Brown have provided the following:

- an overview of the site, existing access arrangements, the local highway network
- and the services available in the local area
- a detailed assessment of the accessibility of the site by sustainable modes of travel
- an assessment of the development proposals, including the proposed access, servicing and parking arrangements
- an assessment of the traffic and parking impact of the proposals

Mayer Brown confirm that the site will operate a staff Travel Plan to promote the use of sustainable modes of travel and discourage private motor vehicle use by Staff. A framework Travel Plan has been developed.

For more detailed analysis please refer to the **Transport Statement** and **Travel Plan** and provided by Mayer Brown Ltd both dated April 2023, extracts are provided in the following sections.

7.1.1 Location

The site is located near the Reading Link Retail Park, circa. 1.5km to the south of Reading Station, in a well-established commercial/retail area. The site covers an areas of 0.69ha (1.7 acres) and is currently occupied by a two-storey office building with a gross floor area (GFA) of circa. 3,252sqm, together with 136 on-site car parking spaces (including 3 disabled parking bays and 8 visitor parking bays). A covered cycle shelter is also provided on-site capable of accommodating up to 10 bicycles.

The site is bordered by the Holy Brook stream and residential dwellings to the north, the A33 dual carriageway to the east/southeast, an office building which has recently been converted to residential use to the south (Cadogan House) and Rose Kiln Lane and the Reading Link Retail Park to the west.

Vehicular and pedestrian access to the site is taken from Rose Kiln Lane via a simple priority junction with large bellmouth radii leading to a gated access into the site. The visibility splays from the site access along Rose Kiln Lane have been measured at 2.4m x 100m to the southwest (i.e. to the Rose Kiln Lane/A33 junction) and 2.4m x 130m to the northeast (i.e. to the Rose Kiln Lane/Laud Close junction).



Site location plan in relation to existing highway network

7.1.2 Amenities

The following amenities are located within a 500m walking distance of the site:

- Starbucks Café (currently under construction) – 60m to the west
- Reading Link Retail Park (a mix of food and non-food retail units) – 190m to the southwest
- Petrol Station including food and drink retail – 200m to the southwest
- Grosvenor Casino – 300m to the south

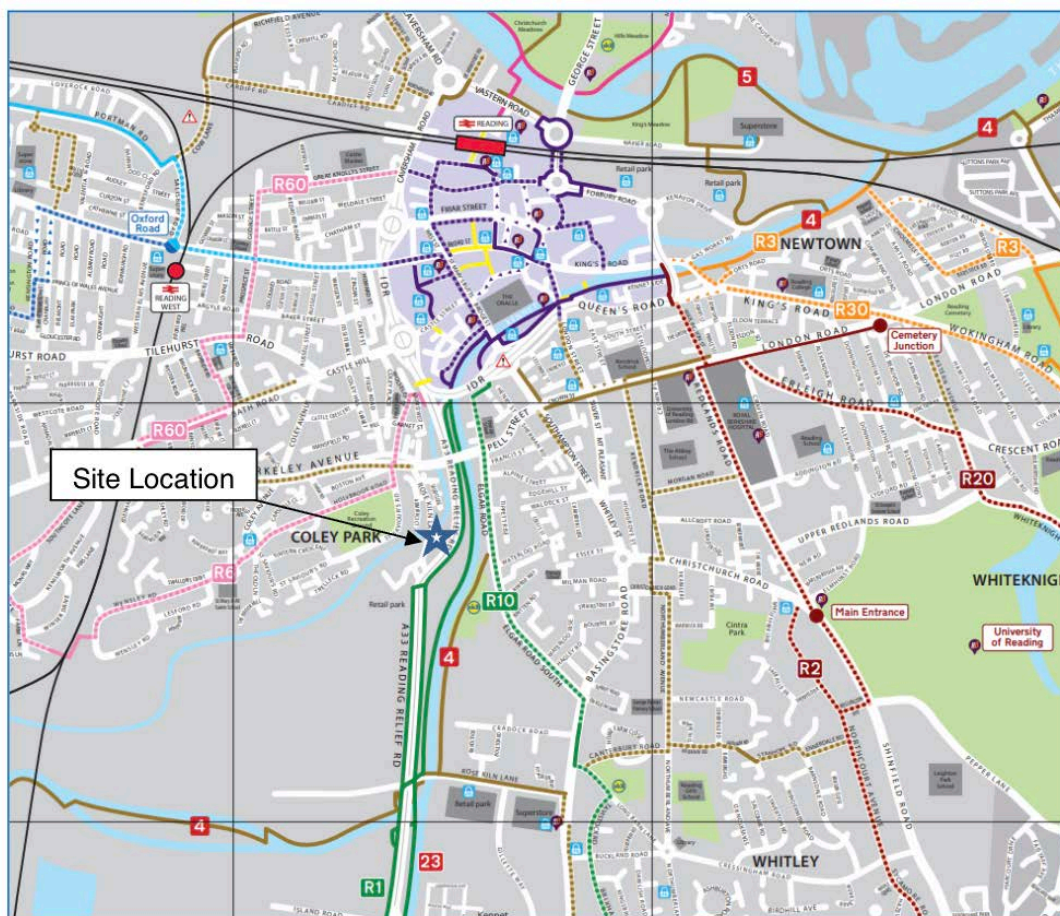
7.1.3 Pedestrian and cycling accessibility

Rose Kiln Lane benefits from 2m wide foot ways and regularly spaced street lighting, providing safe and convenient pedestrian links to local bus stops and nearby facilities.

Pedestrian crossing facilities are provided at the Rose Kiln Lane/A33 junction to the south of the site including dropped kerb crossings with tactile paving and a signalised Toucan crossing providing convenient pedestrian access over the A33.

A signalised pedestrian crossing is also provided at the Berkeley Avenue/Rose Kiln Lane junction to the north of the site.

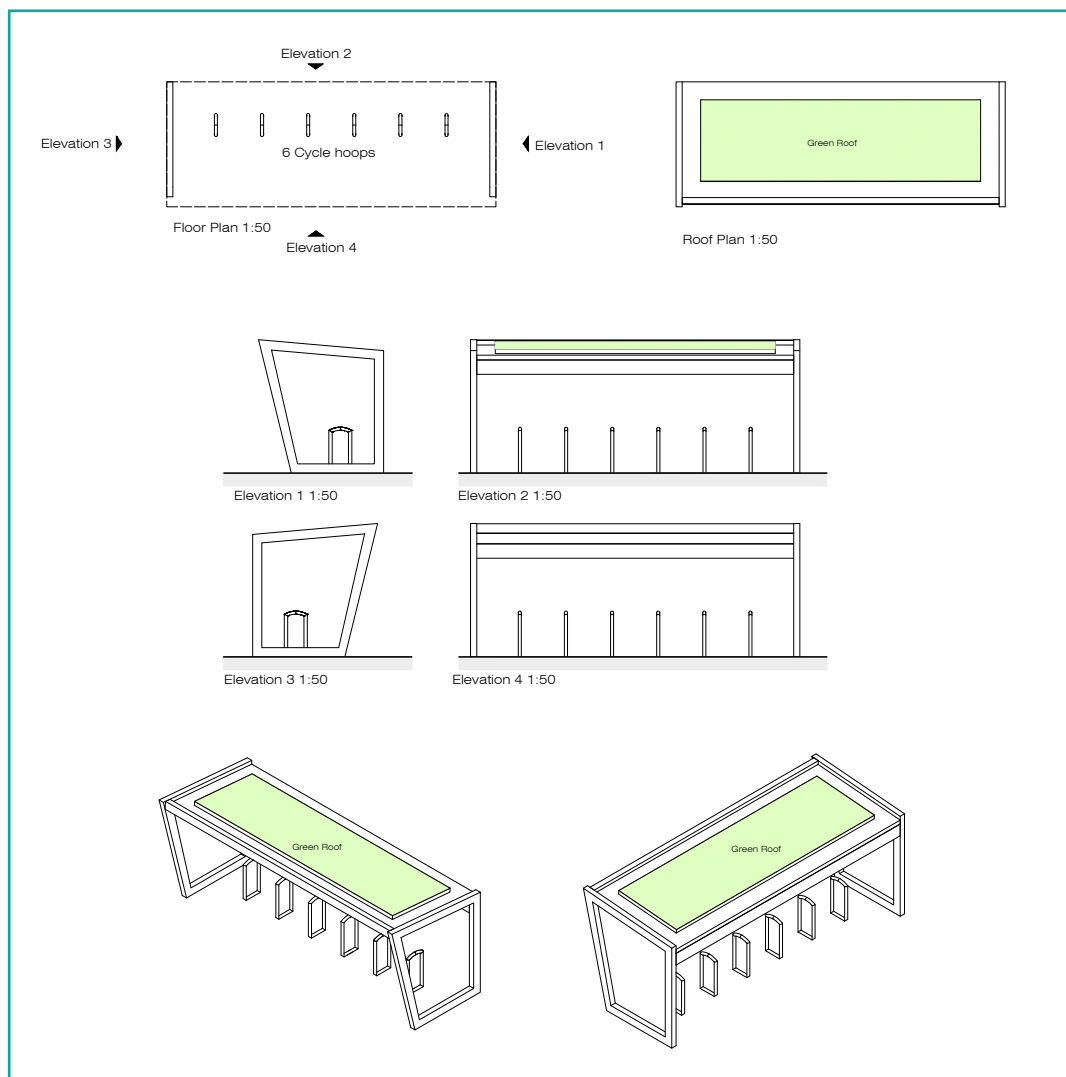
Regarding disabled and visually impaired access, pedestrian crossing facilities at the Rose Kiln Lane/A33 junction benefit from dropped kerbs and tactile paving, and the majority of foot way widths in the area are at least 1.5m wide to allow comfortable wheelchair access.



The National Planning Policy Framework places significant emphasis on sustainable transport options, stating that planning should “make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable”.

Air pollution is estimated to cause 29,000 deaths each year and reduces life expectancy by 6 months on average in the UK, at a cost of £16 billion per year(152). It also damages plants and animals, affecting biodiversity and crop yields. By reducing air pollution levels, the burden of disease from stroke, heart disease, lung cancer and both chronic and acute respiratory diseases, including asthma, can be lessened.

While the role of strategic policies is key, the need to address these issues with careful planning and design remains key to the creation of urban environments that are healthier and more pleasant to live. The design team have identified cycling as a sustainable transport method and have ensured the project will provide safe cycle storage to encourage this method of transport for users. Plans for this are shown below:



Proposed cycle provision and site layout - Webbgray - March 2023



7.1.4 Bus Services

The closest bus stops to the site are the Boston Avenue bus stops (a 450m walk to the south) and the Katsgrove Lane stops, which are a walking distance of 450m and 500m respectively to the north of the site.

These bus stops are served by the 11 Bronze bus (operated by Reading Buses), which runs in a circular route between the centre of Reading and Coley Park.

The 11 Bronze service runs at a frequency of three services per hour during weekdays and Saturdays (and 2 services per hour on Sundays), providing convenient bus accessibility between the site and Reading town centre and Reading Station.

Bus	Route	Weekday Peak Frequency		Weekend Peak Frequency	
		AM	PM	Sat	Sun
11 Bronze	St Mary's Butts – Friar Street – Balgrave Street – Market Place – London Street Foot – Crown Street – Crown Street, Pell Street – Latesgrove Lane – Boston Avenue – Shaw Road – Roundhead – Coley Park House – Wensley Road Flats – Wensley Road West – Coley Park Terminus	3 per hour	3 per hour	3 per hour	2 per hour

Accessible bus services and frequencies

7.1.5 Rail Services

The nearest railway station to the site is Reading Railway Station, located circa. 2km to the north (a 24-minute walk, or an 8-minute cycle ride from the site).

Reading Railway Station is a major transport hub and is managed by Network Rail and served by four train companies; Great Western Railway, CrossCountry, South Western Railway and the Elizabeth Line.

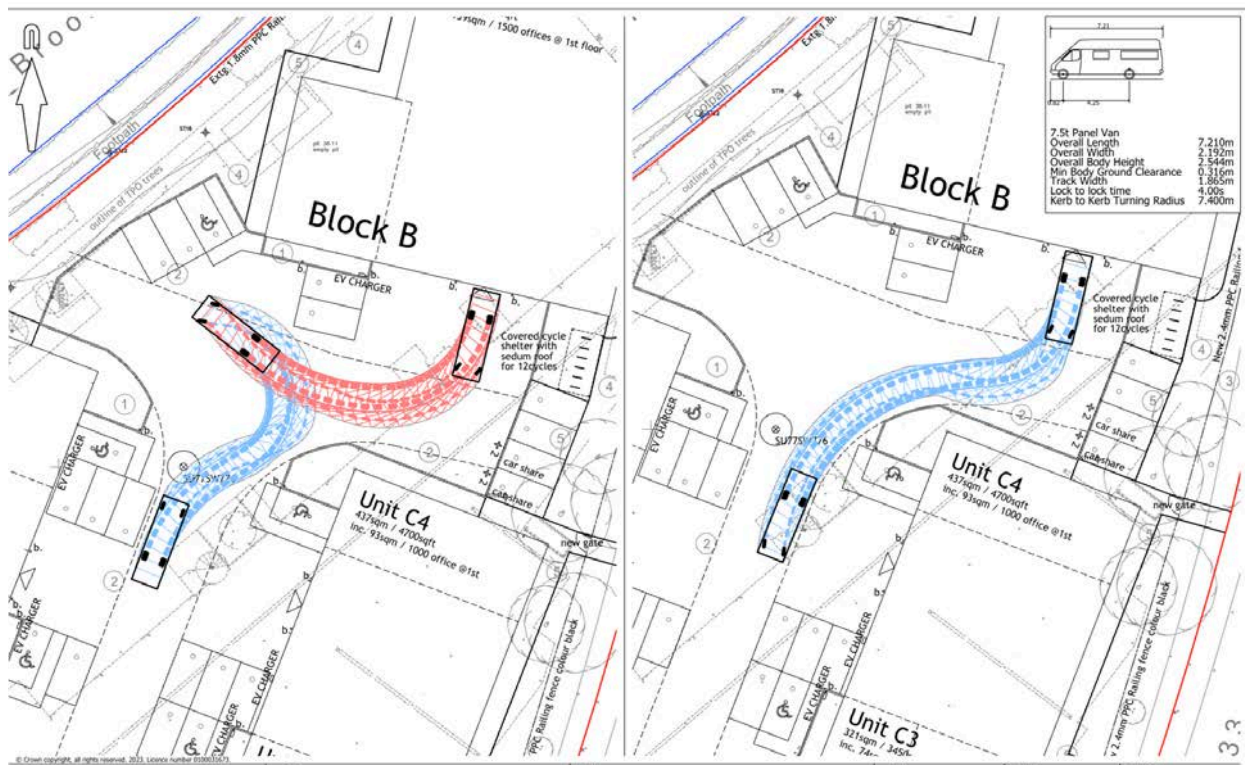
Reading Railway Station provides access to a huge number of rail services to numerous destinations across the country. It is clearly not within the scope of this report to list all of these individual train services in detail, however in summary the station serves the Great Western Main Line which runs between London Paddington and the west country and South Wales. Other main lines provide access to Birmingham and northern England, and to destinations in southern England including Basingstoke, Winchester, Southampton and Bournemouth. The newly opened Elizabeth Line runs from Reading through central London to Abbey Wood. The Elizabeth Line also provides access to Heathrow Airport.

Secondary lines provide access to Guildford, Reigate, Redhill and Gatwick Airport, Basingstoke, Newbury, Bedwyn, Oxford, London Paddington, Wokingham, Bracknell, Ascot, Staines, Richmond, Clapham Junction and London Waterloo.



7.1.6 Deliveries

In order to reduce unnecessary movement and increase safety provision throughout the site, the project team have considered vehicle movement and deliveries from the earliest design stages. Mayer Brown Limited have carried out tracking and swept path analysis for the project to demonstrate the delivery and manoeuvring routes for the project.



Example swept path analysis - Mayer Brown Limited - March 2023

7.2 Summary

The site is located within a well-established commercial and retail area which is easily accessible by pedestrians, cyclists and public transport users.

Numerous pedestrian and cycle facilities are provided in the local area, providing safe walking and cycling routes to local amenities and the centre of Reading.

It is therefore evident that the site is located in an area that is accessible by sustainable travel modes. The use of sustainable modes of travel by staff at the proposed development will be promoted and supported by the operation of a staff Travel Plan.



8.0

Water

Sustainable Design Checklist Aim: To reduce the need to travel through appropriately located development

8.1 Water Efficiency

As part of the BREEAM strategy, where sanitary items are installed as part of the shell & core scope of works, these will be specified as low flow / low flush, in order to achieve a 40% improvement upon a 'baseline performance' (in accordance with the BREEAM methodology).

8.2 Flood Resilience

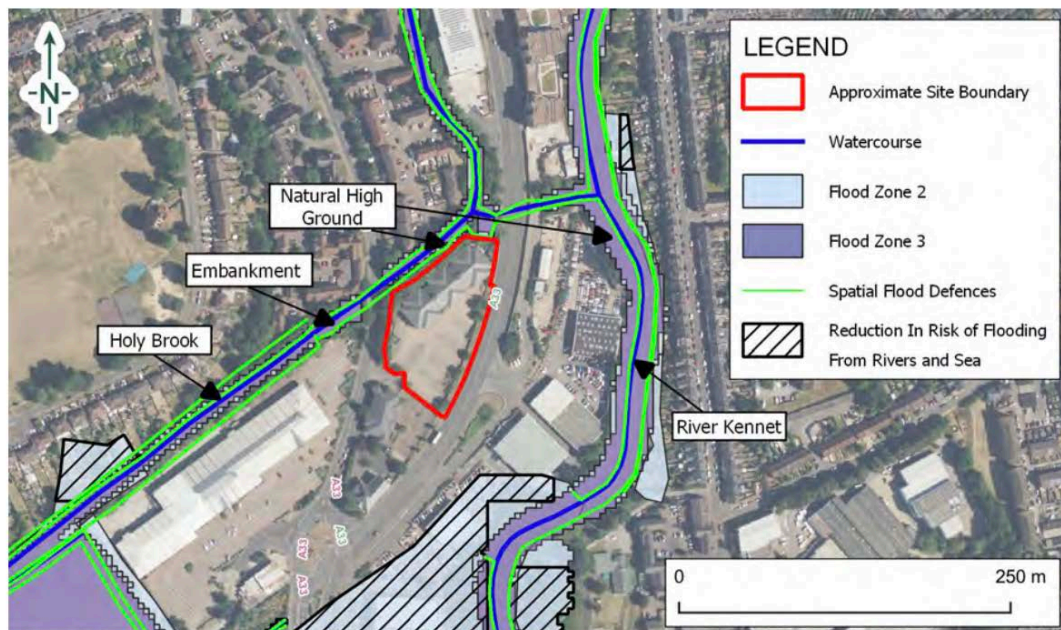
Delta-Simons were instructed to carry out a **Flood Risk Assessment and Drainage Strategy** (dated April 2023) for the proposed development. The assessment considers potential flood risks from all sources and provides options for managing any Site-specific flood risks identified.

The Site is located on Rose Kiln Lane, approximately 1 km south of Reading Town Centre and 1.4 km south of Reading Train Station. Online mapping (including Google Maps imagery, accessed January 2023) shows that the Site comprises of a two-storey office building in the northwest, with associated car parking in the south and east. Several generators and an electricity substation are located in the west of the Site. Limited areas of soft landscaping are present along the Site boundaries.

The Site is bordered by trees, Holy Brook and a weir to the north, the A33 to the east, an existing office development to the south and Rose Kiln Lane to the west. Hardstanding areas on Site currently occupy 6,351 m² or 92.1% of the total Site area. The remaining permeable, soft landscaped areas occupy 546 m² or 7.9% of the total Site area. Values have been calculated using a Topographical Survey undertaken by Greenhatch in May 2021. Access to the Site is provided from Rose Kiln Lane to the west.



Site Location Plan and nearby watercourse



EA's flood map - FRA & Outline Drainage Report - DeltaSimons - April 2023

8.2.1 Assessment of Flood Risk

The Delta-Simons **Flood Risk Assessment** assesses flood risk from all sources including:

- Tidal
- Fluvial
- Surface Water
- Groundwater
- Artificial
- Residual Risks
- Impact of Flood Risk Elsewhere

The FRA concludes the following:

- The Environment Agency (EA) 'Flood Map for Planning' shows that the Site is located wholly within Flood Zone 1 and EA data confirmed that the Site is expected to be free from flooding during the 1% Annual Exceedance Probability (AEP) event +25 % CC. The proposed development is therefore not considered to be at risk of fluvial flooding.
- Whilst the EA's surface water flood map identifies areas of ponding on-Site during the 1% AEP event, mapped flood depths would remain below 300 mm. Given that a surface water drainage system is proposed to store rainfall up to and including the 1 in 100 year plus 35% climate change event, no significant ponding of surface water is anticipated on the Site post-development. Notwithstanding this, Delta-Simons have recommended that ground floor levels are elevated 150 mm above external ground levels to provide a degree of protection against residual ponding, should it occur.
- Considering the proposed mitigation, the risk of flooding from all sources has been assessed and the flood risk to the proposed development is considered to be **Low and Acceptable**.

8.3 Drainage Strategy

The Delta-Simons Drainage Strategy confirms that the proposed development will result in 5,210 m² (or 75.5%) of hardstanding areas. This therefore results in a decrease in hardstanding areas.

The strategy confirms that to create a betterment to the existing situation, surface water discharge from the Site will be controlled.

Consultation with Reading Borough Council (RBC) in its role as LLFA has been undertaken which detailed that any proposed development within RBC should incorporate a 10% allowance for urban creep. This considers the potential for future increases in impermeable areas within the Site (i.e. the paving cover of soft landscaped garden areas). For the purposes of this assessment, including the 10% allowance for urban creep, an overall hardstanding area of 5,731 m² has been considered.

8.3.1 Sustainable Drainage Systems

Attenuation storage should be provided in the form of Sustainable Drainage Systems (SuDS) where practical. The following SuDS options have been considered within the Drainage Strategy report:

- **Rainwater Harvesting**

Rainwater harvesting techniques such as water butts could be incorporated within the final design for landscape irrigation.

- **Porous/Permeable Paving**

Permeable paving could potentially be incorporated within the proposed parking areas on Site. Storage would be provided within the sub-grade material prior to connectivity into a storage crate and controlled release to the receiving watercourse. The amount of storage offered by permeable paving is subject to sub-grade depth and Site gradient. The use of permeable paving should be considered at the detailed design stage.

- **Underground Attenuation Tanks**

Storage could be provided within underground attenuation tanks or within oversized pipes. Sufficient space for an underground tank is available beneath external hardstanding areas.

Delta-Simons confirm that the attenuation volumes included in the flood risk assessment and drainage report will need to be verified when undertaking detailed drainage design. The considered SuDs should be incorporated within the design where possible.

Sustainable Design Checklist Aim: To reduce the need to travel through appropriately located development

9.1 Life Cycle Assessment

The use of construction products leads to a wide range of environmental and social impacts across the life cycle through initial procurement, wastage, maintenance and replacement. Taken together, construction products make a highly significant contribution to the overall life cycle impacts of a building. In some cases they may even outweigh operational impacts (such as energy consumption).

The introduction of Part L into the building regulations has led to reductions in the operational energy consumption of buildings and these regulations are being progressively tightened. As a result, greenhouse gas emissions from other aspects of buildings, such as embodied emissions, are becoming increasingly important in terms of reducing the overall emissions in terms of reducing the overall emissions that lead to climate change and arise from the procurement, maintenance and replacement of construction products over the building's lifetime.

9.1.1 What?

Embodied carbon analysis considers the amount of greenhouse gases (GHGs) that are released throughout the supply chain of a material. As the National Grid becomes de carbonised and the thermal performance of buildings improves, operational carbon emissions are reducing and more emphasis is being placed on embodied carbon. In addition, unlike operational carbon emissions, embodied energy and carbon can't be reversed and once released, there is no opportunity for reduction. It is therefore crucial that embodied carbon assessments are carried out at a stage when there is opportunity for energy efficient measures to be implemented.

9.1.2 Why?

Carrying out an embodied carbon study at the early stages of a project allows the design team to identify opportunities for reductions in carbon. It helps project teams understand the overall environmental impact of a design and ensure that all life cycle greenhouse gases are taken into account, as well as operational emissions. The process pushes design teams to assess the environmental impacts of specific products and take into account project specific conditions and priorities, identifying optimal solutions and reducing the impact of the construction and construction product industries.

9.1.3 Embodied Carbon Study

The development has sought from the earliest design stages to minimise impact in environmental terms on the surrounding area and global community. The specification of all building elements for the proposed development site and their impact have been considered in terms of the raw materials and manufacturing process. The building life cycle assessment was carried out at Stage 2 and the process will be repeated at Stage 4 where product specific data will be modelled and compared.

To ensure that the project team are making accurate and informed low carbon material decisions, where possible they will compare data on the impacts through the provision of EPDs. This will improve the accuracy of the building life cycle assessment reducing the overall life cycle impacts arising from the building.

9.2 Opportunities for reductions

9.2.1 Maximise recycled steel content

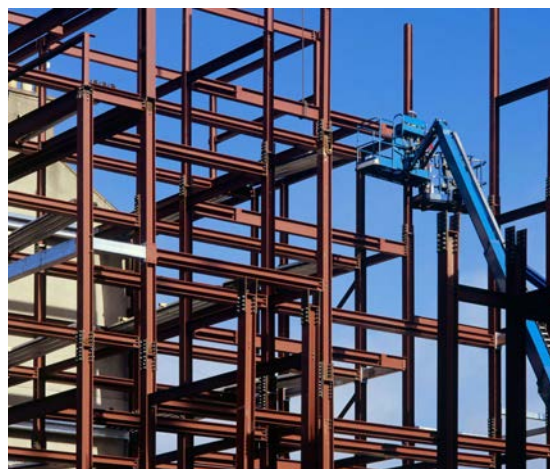
When specifying products with high contents of recycled material, the life cycle emissions can be significantly reduced, compared to products procured with virgin material.

As the superstructure solution is proposed as comprising a steel frame, steel is expected to contribute significantly to the total embodied carbon associated with the project.

There are two main production routes for steel: the Basic Oxygen Furnace (BOF) and the Electric Arc Furnace (EAF). The BOF route can accommodate up to 35% recycled steel while an EAF can accommodate up to 100% recycled steel.

In the UK, three BOFs, one in Scunthorpe and two in Port Talbot, produce about 70% of UK steel, which is not dissimilar to the global production split. Therefore, the quantity of recycled steel that can be incorporated into products is restricted by the very nature of the UK steel production routes.

When structural steel is requested with a recycled content above 35%, the infrastructure is simply not available in the UK to meet this demand, so it is sourced from Europe. Nevertheless, the carbon saved in production significantly outweighs any carbon increase from transportation. With this in mind, the design team will endeavour to incorporate recycled content wherever possible.



9.2.2 Maximise GGBS cement replacement

Overall, concrete is expected to contribute to the overall embodied carbon emissions associated with the scheme due to its use within the floor slabs, and the foundations. Considering high cement replacement content with GGBS (Ground Granulated Blast-furnace Slag) could deliver great carbon savings.

The below table demonstrates that specifying a 50% GGBS replacement would reduce the carbon footprint of the concrete by around 50%.

Concrete		CO _{2e} per cubic metre (kgCO _{2e} /m ³)			CO _{2e} as % of PC-only	
Designation	Typical application	PC concrete	30% fly ash concrete	50% GGBS concrete	30% fly ash concrete	50% GGBS concrete
GEN1	Blinding	214	158	104	78%	51%
GEN1 S4	Trench foundations	213	171	108	80%	51%
RC25/30	Reinforced foundations	286	228	155	80%	54%
RC28/35	Suspended floors	304	248	169	81%	56%
RC32/40	Structural concrete	336	276	196	82%	58%

NOTE: Calculations are based on:

- The typical mix designs used by BRE for the calculations of 'Ecopoints' for concrete.
- The data on embodied CO_{2e} of UK cement, additions and cementitious material, referenced below.
- D Higgins, L Parrott & L Sear "Effects of ground granulated blastfurnace slag and pulverised-fuel ash upon the environmental impacts of concrete". CIA Factsheet.

The specification of GGBS in ready-mixed concrete is known to provide many benefits alongside reducing environmental impact, including:

- Lower early-age temperature rise, reducing the risk of thermal cracking in large pours
- High resistance to chloride ingress (see fact sheet) thus reducing the risk of steel reinforcement corrosion
- High resistance to attack by sulphates and other chemicals
- Better workability, making placing and compaction easier
- Pleasing off-white colour

It is understood that the higher the proportion of GGBS, the better is the durability. The disadvantage of the higher replacement level is that early-age strength development is somewhat slower.

Another factor of consideration is the transportation of concrete. Whilst all concrete has been assumed to be transported from 50km away (in accordance with the RICS methodology), if in-situ concrete could be sourced from a nearby concrete plant (i.e. 10 to 25km away), this could further reduce the carbon impact of the concrete. With the above benefits in mind, where concrete is required the design team will endeavour to incorporate GGBS cement replacement where possible.

9.2.3 Environmental Product Declaration

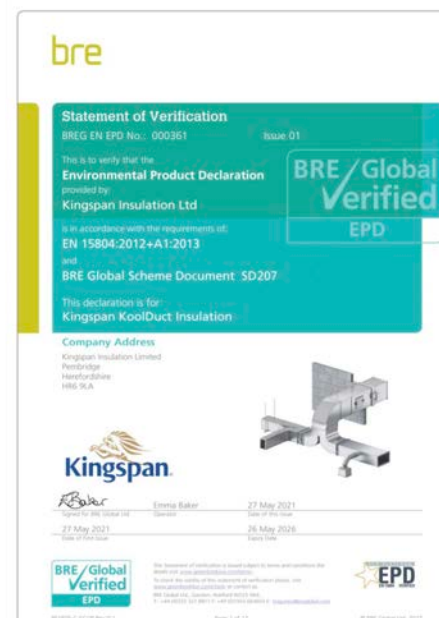
An Environmental Product Declaration (EPD) is a document that quantifiably demonstrates the environmental impacts of a product.

EPD's improve the accuracy of building life cycle assessment (LCA) and improves the availability of robust and comparable data for designers and specifiers to aid construction product selection and specification.

Increasing numbers of EPD are being produced by construction product manufacturers. However, many construction products do not have an EPD, meaning generic LCA data must be used when carrying out a building LCA. While helpful in making basic construction product choices at the early design stage, this does not assist in specifying lower impact construction products during detailed design and construction stages.

Further accuracy can be gained when carrying out LCA or specifying construction products by using EPD specific to a manufacturer's product range or, better still, the specific construction product.

In order to encourage and drive decisions during the detailed design stages to reduce embodied carbon emissions, the contractor will request EPD's from all suppliers and prioritise sourcing materials with Environmental Product Declarations (EPD's).



9.3 Sustainable Procurement

9.3.1 Sustainable Procurement Plan

A sustainable procurement plan will be developed by the principal contractor to facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.

The plan will be used to guide specification towards sustainable construction products, prioritising the procurement of materials with an EPD, locally sourced materials, responsibly sourced materials and materials with recycled content such as the steel frame and GGBS cement replacement within concrete. The plan will:

- Include sustainability aims, objectives and strategic targets to guide procurement activities
- Include a requirement for assessing the potential to procure construction products locally
- There must be a policy to procure construction products locally where possible
- Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan

9.3.2 Responsibly Sourced Timber



When sustainably sourced, timber is one of the most environmentally friendly construction materials available, acting as a natural carbon sink whilst being truly renewable. Sustainable timber refers to timber that has been harvested responsibly from well managed forests that are continuously replenished and ensure that no damage is caused to the surrounding environment or to native flora and fauna.

The contractor will ensure that **100% of the timber used throughout the buildings construction, both temporary and permanent will be certified as responsibly sourced and will be 'legal' and 'sustainable'** as per the UK Government's Timber Procurement Policy (TTP).

In the UK, two main certification schemes are implemented to ensure that all wood and wood-based products originate from sustainable sources. These are the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC).

Following the building life cycle assessment, the design team carried out an options appraisal to incorporate timber elements into the design where possible. If this option is carried forward, the design team will ensure that all timber is legally and sustainably sourced in line with the UK Government's regulations.

9.3.3 Responsibly Sourced Materials

Most construction products involve long and complex supply chains that result in a wide range of impacts locally and globally. These might include environmental (e.g. toxicity or biodiversity), economic (e.g. corruption) or social (e.g. slave labour, equality) issues and can occur during the extraction, processing, manufacturing or supply chain stages.

The increasing globalisation of supply chains increases the difficulty of tracing the supply chain and mitigating negative impacts caused by it.

The contractor will promote more economically, socially and environmentally responsible practices across the construction products, component manufacturing and supply sectors through the selection of responsibly produced materials.

10.0

Waste Reduction Strategy

Sustainable Design Checklist Aim: To reduce the need to travel through appropriately located development

One-third of all waste in the UK is generated by the construction and demolition sector, which is the largest contributor of waste in the nation. Reducing waste at source in both construction and operational phases of a buildings life cycle reduces direct environmental impact, the cost of waste handling, reduces carbon in waste transfer and NOx emissions in waste incineration plus many more benefits.

10.1 Pre-demolition Audit

Best practice solutions for waste reduction include the implementation of the circular economy concept, which provides an alternative to a traditional linear economy (make, use, dispose). This approach is adopted by certain manufacturers that offer a 'take back' scheme and by design teams that use the concept of 'design for deconstruction'.

To implement these principles, a competent person will undertake a **pre-demolition audit** of any existing buildings, structures or hard surfaces being considered for demolition. This will be used to maximise the recovery of material for subsequent high grade or value applications.

Completing this process encourages reuse, recovery and best practice waste management practices to minimise waste going to landfill.

10.2 Waste Management Plan

As part of the construction phase of the development, a Resource Management Plan (RMP) will be developed by the principal contractor to promote resource efficiency and to prevent illegal waste activities. It will define:

- A target benchmark for resource efficiency, i.e. m3 of waste per 100m2 or tonnes of waste per 100m2
- Procedures and commitments to minimise non-hazardous waste in line with the target benchmark
- Procedures to minimise hazardous waste
- A waste-minimisation target and details of waste minimisation actions to be undertaken
- Procedures to estimate, monitor, measures and report on hazardous and non-hazardous site waste and demolition waste, where relevant, arising from work carried out by the principal contractor and all subcontractors. Waste data obtained from licensed external waste contractors needs to be reliable and verifiable, e.g. using data from EA/SEPA/EA Wales/NIEA waste return forms or from a PAS402 compliant company
- Monthly reporting of all construction waste data throughout the project checked against what would be expected based on the stage of the project, invoices, etc., to validate completeness of waste reporting data
- Procedures to sort, reuse and recycle construction waste into defined waste groups, either on site or through a licensed external contractor
- Procedures to review and update the plan
- The name or job title of the individual responsible for implementing the above.

The RMP will be used by the contractor to log and record the amount of site waste generated, and the amount of waste diverted from landfill.

10.3 Operational Waste

The proposed development site will include storage space for refuse covering both general and recyclable waste streams. The operational waste strategy will support a waste management plan, detailing waste storage provision within commercial areas, central storage locations and management procedures for the collection and removal of waste from the site, which has been cross referenced against Local Authority waste collection design requirements.

Land Use & Ecology

Sustainable Design Checklist Aim: To retain, protect and enhance wildlife habitats and natural features.

11.1 Ecological Appraisal

Delta-Simons were commissioned to undertake an ecological appraisal for the site. A survey was undertaken by a suitably qualified ecologist in February 2023, where the Site was assessed for its potential for or signs of protected and notable species.

The **Preliminary Ecological Appraisal (PEA) Summary Report**, provided by Delta-Simons dated April 2023, summarises the key ecological constraints and opportunities on-Site, based on the PEA site visit and desk study results. Recommendations have been provided for further surveys, avoidance of impacts, mitigation, compensation and enhancements where appropriate.

A notable finding of the PEA related to bats. The report confirms the following:

- Neither the building nor any of the trees on Site supported features for roosting bats. However, three off-Site trees that over hang the northern Site boundary were identified to contain features suitable to support roosting bats.
- The Site itself provided limited opportunities for foraging and commuting bats. However Holy Brook and the treeline bordering the Site to the north and west offer greater habitat value and connectivity to the surrounding landscape.
- One tree overhanging the northern Site boundary was assessed as having moderate Bat Roost Potential (BRP). Further surveys are programmed for the start of the bat survey season, to inform associated impacts and mitigation given the proximity of proposed works. Two nocturnal surveys are to be undertaken during the peak active bat season (May- August, inclusive) with at least two weeks between visits.

Based on these findings, the following has been recommended by the ecologist;

Avoidance

The hedgerow and scattered trees should be retained and protected wherever possible to maintain suitable foraging habitat.

Mitigation

A sensitive lighting design is required to minimise light spill beyond the northern boundary as far as possible

Should any management works be required to the two trees assessed as having low BRP, a precautionary approach must be applied, including pre-commencement checks for evidence of bats by a licenced ecologist. Further mitigation will be informed by the nocturnal bat surveys.



11.2 Biodiversity Net Gain

Delta-Simons were also commissioned to undertake a Biodiversity Net Gain Assessment (BNGA) for the site. For more detailed analysis please refer to the **Biodiversity Net Gain Assessment** provided by Delta-Simons dated April 2023, extracts are provided in the following sections.

The approach used to assess biodiversity impacts resulting from the proposed development is detailed below. The assessment has been based on the Defra Metric 4.0 version (the Metric), the Landscape Proposal Plan provided by TGP Landscape Architects and the Preliminary Ecological Appraisal (PEA) undertaken by Delta-Simons on 8th February 2023.

Baseline

The BNGA confirms that the Site covers an area 0.64 ha and comprises an office building and associated hardstanding with scattered trees and areas of introduced shrub. A single ornamental hedgerow was located along the south-western boundary of the Site.

Baseline habitats are shown in the tables below. The tables below include extracts from the Defra Metric 4.0, which is also appended to this report. Overall, the baseline for the Site is calculated to provide 0.75 Habitat Units and 0.03 Hedgerow Units.

The tables below, provide a summary of the baseline habitats, areas, condition and biodiversity units for the Site and a post development comparison of the habitat score.

Existing Habitats (Area)	Condition	Area (ha)	Biodiversity Units
Urban – Developed land; sealed surface	N/A	0.4	0.00
Urban – Developed land; sealed surface	N/A	0.18	0.00
Modified grassland	Poor	0.08	0.16
Introduced Shrub	N/A	0.04	0.08
Individual Trees – Urban Tree	Moderate	0.126*	1.01
Total		0.70	1.25

On-Site area habitat baseline score - DeltaSimons - BNG - March 2023

Existing Habitats (Linear)	Condition	Length (km)	Linear Units
Hedge Ornamental Non-Native	Poor	0.028	0.03
Total		0.028	0.03

On-Site linear habitat baseline score - DeltaSimons - BNG - March 2023

Proposals

The majority of the Site post-development will be 0.51 ha hardstanding and building. Soft landscaping will incorporate 0.0195 ha modified grassland (flowering lawn mix), 0.0565 ha modified (amenity mix) grassland, 0.068 ha neutral (wildflower hedgerow) grassland mix, and individual tree representing 0.0041 ha. Retained trees represent 0.0977 ha, whilst 0.0399 ha of modified grassland along the roadside verge is also to be retained. The existing ornamental hedgerow is to be retained and a new native hedgerow, measuring 0.215 km proposed within the landscape plans.

Proposed Habitats (Area)	Target Condition	Area (ha) Retained	Area (ha) Created	Area (ha) Enhanced	Biodiversity Units
Urban – Developed land; sealed surface	N/A	0	0.51	0	0.00
Grassland - Modified grassland	Moderate	0	0.0195	0	0.07
Grassland - Modified grassland	Poor	0.0399	0.0565	0	0.19
Grassland - Other neutral grassland	Moderate	0	0.068	0	0.46
Urban – Street Tree	Moderate	0.0977*	0.0041*	0	0.79
Total					1.51

On-Site area habitat post-development score - DeltaSimons - BNG - March 2023

Proposed Habitats (Linear)	Target Condition	Length (km) Retained	Length (km) Created	Length (km) Enhanced	Linear Units Delivered
Native Hedgerow	Poor	0	0.215	0	0.41
Hedge Ornamental Non-Native	Poor	0.028	0	0	0.03
Total					0.44

On-Site linear habitat post-development score - DeltaSimons - BNG - March 2023

Summary

The above assessment results in a total net unit change of:

Area Units = +0.26 Total net % change = +20.66%
 Linear Units = +0.41 Total net % change = +1383.17%

Based on the information currently available, the assessment indicates that **the development has the potential to achieve a net gain in biodiversity in excess of 10%**. The habitat trading summary is not met due to the loss of trees within the development, however the habitat composition and species within the landscaping scheme have been chosen to be appropriate to the nature and setting of the Site.

12.0

Pollution

Sustainable Design Checklist Aim: To minimise damage to the environment through air, ground/surface water, land, noise or light pollution.

12.1 Noise Mitigation

Delta-Simons were instructed to prepare a **Noise Impact Assessment** (dated April 23) to determine the impact of the proposed development on existing nearby noise sensitive receptors (NSR).

A Noise Impact Assessment was previously undertaken by Anderson Acoustics for the Site in March 2022 with baseline noise surveys undertaken in June 2021 and January 2022. To validate these measurements, Delta-Simons undertook a baseline noise survey on Site over a weekday and weekend period.

Delta-Simons confirm that noise modelling software CadnaA has been used to create a 3D noise model of the Site to undertake operational noise and maximum noise event calculations to inform the assessment.

The operational assessment results have shown that the rated level of noise without mitigation could exceed measured background sound levels at night at receptor R3 (Cadogan House (recently converted to residential)). Internal noise levels from a LAFmax event would not exceed criteria at R1 (Laud Close) and R2 (Admirals Court) but would exceed at R3 (Cadogan House). Therefore, mitigation has been considered.

Delta-Simons confirm that restricting night-time external loading and unloading operations at Unit C1 (as per the recommendations noted in the Report) would reduce the site noise levels to below existing background sound levels. With this operational arrangement in place, results from the operational assessment would be below the measured background sound levels at all NSRs during both daytime and night-time periods, indicating a negligible impact. Results show that internal noise levels from LAFmax events would not exceed internal noise level criteria at any NSR indicating a negligible impact.

The assessment has set noise limits for fixed plant items at the closest receptors.

Provided the noise emission at receptor locations from fixed plant and operations from the Proposed Development does not exceed the levels set out in the report (see table 17), the impacts from fixed plant would be negligible.

12.2 Minimising Light Pollution

Light 360 were requested by Savills to develop the **Lighting Strategy Report** for the Planning Application of the development of the Logicor Park Reading site. The design team which Light360 have primarily interacted with is comprised of Savills Engineering & Webb Gray Architects, who we have consulted in advance of this submission.

Currently the proposal is to retain the tree line to the North of the site at Holy Brook bank side, therefore the report has undertaken a spill lighting exercise to ensure there is minimal light trespass which potentially disrupts local wild life habitat.

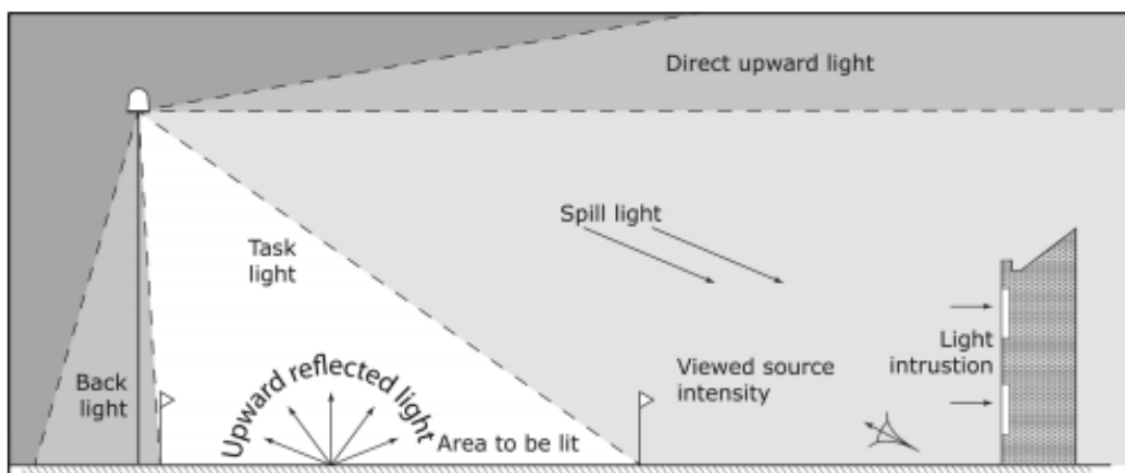
The application also proposes a foot path extended to the rear of the development alongside Holy Brook connecting Rose Kiln Lane & the A33 footpath. Careful consideration has been taken to keep the mounting height of the site luminaries as low as practicable to ensure it is appropriate to the location and minimise impact on the local wildlife, residential properties beyond & ensure they pose no road safety risks to high density traffic on the A33.

Light360 have considered that the site will have operation hours (in compliance with planning restrictions). As part of the planning application, we have suggested the use of lighting controls so that within the hours of operation there is sufficient lux levels are provided. During late night scenarios, dimmed lighting will be on to provide security lighting.

The lighting design approach **considers the wider lighting impact, i.e. being sympathetic to the neighbouring residential developments, local wildlife & adjacent A33 road traffic safety.**

Design methodologies to reducing obtrusive Lighting:

- Use a prismatic diffuser to control the light transmitted, giving more control to the fixture and less glare light.
- Keep glare and light spill at a minimum by considering mounting heights and beam angles. E.g. a narrower beam angle allows for a higher mounting height.
- Minimise upward facing light fixtures e.g. uplights, ground markers.
- Avoid over lighting a space, only light as you need.
- Light intrusion into neighbouring areas of the site will be limited using luminaries with good optics providing sharp cut-off angles.
- The external façade feature lighting shall be carefully specified to reduce unwanted upward light spillage.



Stage 1 Lighting Strategy - Light360 - March 2023

12.3 Minimising Nitrogen Dioxide Emissions

All heating and hot water is proposed to be supplied by non-combustion systems; ie. only powered by electricity. The development will therefore contribute to a reduction in local air pollution through the use of non-combustion appliances in the building, thereby providing improved air quality for building occupants, visitors and neighbours leading to better health and wellbeing outcomes.

12.4 Minimising Impact from Refrigerants

The typical refrigerants used in building systems are major greenhouse gases that are many times more potent than carbon dioxide in their contribution to global warming and climate change. Although released in much smaller quantities they are, never the less, a significant contributor to increasing global temperatures. As such, they are the focus of increasingly strict regulatory controls internationally and nationally.

During the early design stages the team have undertaken a review of the proposed refrigerants in accordance with the BREEAM methodology for POL01 Impact of Refrigerants. The design team will ensure that systems using refrigerants have a direct effect life cycle CO₂ equivalent emissions (DELC) of ≤1000kgCO₂-eq/kW cooling and heating capacity.

Appendix A
.....

Table A1.2: SUSTAINABLE DESIGN CHECKLIST FOR NON-RESIDENTIAL DEVELOPMENT

Sustainable Design Checklist	
Management	
<i>Aim: To recognise and encourage environmentally and socially considerate development.</i>	
1.	Will guidance for the non-technical building user be provided so they can understand and operate the building efficiently and understand how the design reduced the overall environmental impact of the building and raise environmental awareness?
2.	What consideration has been given to resource use, energy consumption and pollution in terms of the construction site impacts?
3.	Will site investigation and appropriate remedial action be undertaken?
4.	Will the community and stakeholders be involved in the design process encouraging flexibly designed buildings which cater for shared use with the local community?
5.	How has the building been designed to reduce the opportunity for and the fear of crime?
6.	What consideration has been given to the maintenance of the building?
Health and Well-being	
<i>Aim: To ensure a good quality amenity level is afforded to occupants of buildings.</i>	
7.	How has the development been designed to ensure users have sufficient daylight, an external view, adequate and appropriate lighting, ventilation, air quality and drinking water?
Energy	
<i>Aim: To conserve energy and maximise the use of energy efficiency techniques.</i>	
8.	How has the building been designed to minimise CO2 emissions associated with their operational energy consumption?
9.	How has the development been designed to optimise the use of the energy from the sun, natural daylighting and controlled natural ventilation?
10.	How will the design of the building make efficient use of energy? (e.g. use of thermally massive materials, levels of insulation and use of green/brown roofs etc.).
11.	Have renewable energy sources or decentralised energy been considered for this development and if so, how would they be incorporated within the development?
Transport	
<i>Aim: To reduce the need to travel through appropriately located development.</i>	
12.	How has the design and layout incorporated measures to reduce the need to travel, especially by car, and promote alternative and sustainable modes of transport such as walking, cycling and the use of public transport?
13.	How have public transport networks been considered in terms of the location of the development and proximity to local amenities?
14.	How have deliveries and the manoeuvring of delivery vehicles been considered?

Water

Aim: To improve efficiency in the use of water, conserve water resources and minimise vulnerability to flooding.

15. How will the development incorporate the use of water saving devices to achieve a maximum consumption of 5.5 cubic m per year per person for office developments? (or the most appropriate benchmark for other types of development).
16. Will the development and access to and from it such as roads and paths be located away from areas of potential flooding?
17. How will the development incorporate harvesting and re-use of rainwater?
18. Does this development meet the requirements of EN18?

Materials

Aim: To retain local character and promote the use of materials with a low environmental impact.

19. How will the selected materials help retain local character, ensure long life and ensure a low environmental impact, including consideration of embodied energy?
20. What consideration has been given to reusing materials in-situ, responsibly sourcing materials and re-using existing structures?

Waste

Aim: To minimise the production of waste and maximise re-use and recycling.

21. Has an audit of the materials present on the site been conducted with an assessment of the extent to which materials could be re-used?
22. How will the development make the maximum use of construction, demolition waste and recycled materials?
23. How will provision be made for the storage and recycling of waste for all users of the site?

Land Use and Ecology

Aim: To retain, protect and enhance wildlife habitats and natural features.

24. How have the wildlife habitats and natural features on and adjacent to the site been considered and how will they be retained, protected and enhanced?
25. What consideration has been given to not using previously undeveloped land?
26. What consideration has been given to the removal of contamination from the land?

Pollution

Aim: To minimise damage to the environment through air, ground/surface water, land, noise or light pollution.

27. What measures have been incorporated to ensure that noise and light pollution plus pollution transported through surface water runoff or infiltration will be minimised through the development?
28. What measures have been incorporated to ensure that light pollution will be minimised through the development?
29. What consideration has been given to reducing refrigerants and minimising nitrogen dioxide emissions?
30. How has the development been sited to minimise the impact of flooding?
31. How has the design considered the use of sustainable drainage systems (SuDS) and how will they be incorporated within the development?

Innovation

Aim: To recognise innovation in the field of sustainability.

32. What consideration has been given to innovative sustainability measures in terms of a procurement strategy, design feature, management process or technological

Appendix B

.....

BREEAM Pre Assessment Summary

BREEAM

Credit By Credit

Overview

.....

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Project brief & design

4 4 0

Project delivery planning -

The project delivery stakeholders have met to define roles & responsibilities and contributions inc a Project Execution Plan

1

1

SAVILLS/
LOGICOR

Third party stakeholder consultation -

Stakeholder consultation & contributions have demonstrated influence on the Project Brief / Concept Design

1

1

SAVILLS/
LOGICOR

BREEAM AP (concept design) -

Appointed to facilitate the setting of contractual BREEAM performance target(s) for the project

1

1

CERTIFIED

BREEAM AP (developed design) -

Appointed to facilitate the achievement of contractual BREEAM performance target(s) for the project

1

1

CERTIFIED

...

MAN1: Detailed & robust project delivery planning and stakeholder consultation is assumed. Barry Rankin (Certified) appointed as BREEAM AP.

Life cycle cost & service life planning

4 4 0

Elemental life cycle cost (LCC) -

Design option appraisals as 'Standardized method of life cycle costing for construction procurement' PD 156865:2008

2

2

QUANTEM

Component level LCC plan -

Envelope / Services / Finishes / Spaces & influence on minimising life cycle costs and maximise critical value

1

1

QUANTEM

Capital cost reporting -

Report the capital cost for the building in pounds per square metre (£/m²)

1

1

QUANTEM

MAN2: Reporting of capital cost considered standard implementation. LCC needs to be in place from RIBA Stage 2 onwards.

CREDIT SUMMARY

Responsible construction practices

All timber and timber based products used on the project is 'Legally harvested and traded timber' (see Relevant definitions)

Environmental management -

The principal contractor operates an environmental management system (EMS) in accordance with ISO14001

Sustainability champion construction (BREEAM AP) -

Appointed to monitor site based activities for the construction period

Responsible construction management -

Evaluating, planning and implementing actions to minimising identified construction risks

Construction site impacts -

Monitoring, recording and reporting energy use, water consumption and transport data to KPI output

AVAILABLE TARGETED POTENTIAL

6 6 0

Pre-requisite

Y

CONTRACTOR

1

1

CONTRACTOR

1

1

CONTRACTOR

2

2

CONTRACTOR

2

2

CONTRACTOR

Commissioning & handover

4

4

0

Commissioning (pre completion) -

Independent monitor, schedule and programme of pre-commissioning, commissioning, testing, re-commissioning etc

1

1

CONTRACTOR

Commissioning (design and preparation) -

Complex building services and systems are commissioned under specialist commissioning manager & process

1

1

CONTRACTOR

Testing and inspecting building fabric -

Demonstrated through the completion of a thermographic survey, airtightness test and insulation integrity inspection

1

1

CONTRACTOR

Handover -

Two building user guides (Non-technical & Technical user) and two Training Schedules are developed prior to handover for distribution to the building occupiers and premises managers

1

1

CONTRACTOR

MAN3:
Standard
implementation.

MAN4:
Standard
implementation.

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Visual comfort

3	2	0
---	---	---

Daylighting -

Relevant building areas meet good practice daylight factor(s) and other relevant criterion

1

0

-

View out -

95% of the floor area in relevant building areas is within 8m of a wall which has a window or permanent opening that provides an adequate view out

1

1

WEBB GRAY

Internal/external lighting -

Lighting in all relevant areas of the building is designed to relevant CIBSE / BS guidelines and fitted with high frequency ballast

1

1

SAVILLS MEP

HEA1: Internal & external lighting considered standard implementation. Daylighting and View out considered unachievable.

Indoor air quality

1	0	0
---	---	---

Indoor air quality (IAQ) plan -

An indoor air quality plan is produced, with actions that minimise indoor air pollution during occupation of the building

Pre-requisite

Y

-

Air quality (ventilation) -

Minimising the concentration and recirculation of pollutants in the building - inc intake/extracts, CO2 sensors, HVAC filters

1

0

-

HEA2: Ventilation credit considered unachievable due to location.

Thermal comfort

2	2	0
---	---	---

Thermal modelling -

Full dynamic thermal analysis carried out in accordance with CIBSE AM11. Temperature ranges are in accordance with CIBSE Guide A

1

1

SAVILLS MEP

Adaptability (climate change) -

Thermal modelling demonstrates requirements are achieved for a projected climate change environment

1

1

SAVILLS MEP

HEA4: Standard implementation.

CREDIT SUMMARY

AVAILABLE

TARGETED

POTENTIAL

RESPONSIBILITY

HEA5

Acoustic performance

Acoustic performance -

Appropriate acoustic performance standards and testing requirements met for Sound Insulation, reverberation times, ambient noise

1

1

0

1

1

DELTA SIMONS



HEA5: Indoor ambient noise levels credit assumed achievable.

HEA6

Security

Security of site and building -

A suitably qualified security specialist (SQSS) conducts a security needs assessment (SNA) during or prior to RIBA stage 2

1

1

0

1

1

WEBB GRAY



HEA6: SNA to be undertaken by security consultant. Recommendations to be implemented by the design team.

Safe & healthy surroundings

Safe access -

Where external site areas meet relevant safety standards for pedestrian, cyclist, vehicular and delivery areas.

2

0

0

1

0

-

Outside space -

There is an outdoor space providing building users with an external amenity area

1

0

-



HEA7: No dedicated outside space and safe access currently detailed.

HEA7

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Reduction of energy use and carbon emissions

Energy performance -

Calculation of energy performance ratio for new constructions (EPRNC), based on energy performance, energy consumption & CO2 emissions

13

9

1

9

5

1

SAVILLS MEP

Prediction of operational energy consumption -

Additional energy modelling (design and post construction stage) to generate predicted operational energy consumption figures

4

4

SAVILLS MEP

ENE1: Energy modelling to achieve an EPR_{NC} figure of 0.7 to achieve 7 credits. 'Prediction of Operational Energy Consumption' credit brought into scope to achieve 'Excellent' rating - additional cost incurred.

Energy monitoring

Sub-metering (energy) -

Metering systems installed to enable at least 90% of estimated annual energy consumption of each fuel assigned to end-use categories

2

2

0

1

1

SAVILLS MEP

Sub-metering (high load & tenancy) -

An accessible energy monitoring and management system or separate energy sub-meters for predominant areas

1

1

SAVILLS MEP

ENE2: Standard Implementation.

External lighting

External lighting -

Average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 l/cW with relevant controls

1

1

0

1

1

SAVILLS MEP

ENE3: Energy efficient external light fittings to be specified with automatic controls.

Low carbon design

Passive design (analysis) -
Passive design measures to reduce total heating, cooling, mech vent and lighting demand in line with the passive design analysis

Passive design (cooling) -
Building uses free cooling strategies to reduce the cooling energy demand

LZC technologies -
Low zero carbon feasibility study & LZC specified

3	2	0
1	1	
1	0	
1	1	

SAVILLS MEP

-

SAVILLS MEP

ENE4: BREEAM specific passive design & LZC reports to be produced at RIBA Stage 2.

CREDIT SUMMARY

Transport assessment & travel plan

Travel plan -

A site specific travel assessment & travel plan has been developed as part of the feasibility and design stages covering key travel issues & implementations.

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

2	2	0
---	---	---

2

2

MAYER BROWN

TRA1: Assumed a transport assessment and transport plan will be undertaken as part of planning - tbc.

Sustainable transport measure

10	5	0
----	---	---

Sustainable transport measures -

Identify the range of sustainable transport measures available. Credits awarded based on the Accessibility index and the number of options implemented

10

5

0

See Below

Assessment option 1 -

Accessibility index >8

1

0

-

Assessment option 2 -

Demonstrate an increase in Accessibility index or provide a dedicated service

3

0

-

Assessment option 3 -

Provide a public transport information system

1

0

-

Assessment option 4 -

Provide electric recharging stations of a minimum of 3kW for >10% of the total car parking capacity

1

1

SAVILLS MEP

Assessment option 5 -

Setup a car sharing group

1

1

LOGICOR

Assessment option 6 -

Consult with the LA on how to improve the local cycling network and public accessible pedestrian routes.

2

0

-

Assessment option 7 -

Compliant cycle storage spaces that meet the minimum levels prescribed depending on building type

1

1

WEBB GRAY

Assessment option 8 -

Compliant cycle changing / showers / drying space that meet the minimum levels prescribed

1

1

WEBB GRAY

Assessment option 9 -

Close proximity to three existing local amenities relevant to building type

1

1

MAYER BROWN

Assessment option 10 -

One (2 points) or more (3 points) accessible amenities are provided relevant to building type

3

0

-

TRA2: Accessibility index is low due to location of asset and distance to local transport hubs. Provision of electric recharging stations currently targeted. Car sharing group implementation considered an easy win. Cycle storage spaces and facilities to be investigated for compliance. Food outlet, postal facility and outdoor open space all within 500m of asset.

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Water consumption

5	3	0
---	---	---

Water consumption -

The water consumption (litres/ person/day) for the assessed building is compared against a baseline performance.

5

3

WEBB GRAY /
SAVILLS MEP

WAT1: 3no credits should be considered achievable. 40% improvement upon baseline performance will be required.

Water monitoring

1	1	0
---	---	---

Water monitoring -

Water-consuming plant / areas, consuming >10% of the total water demand, have water monitoring equipment (meters), min 1 per building.

1

1

SAVILLS MEP

WAT2: Standard implementation.

Water leak detection & prevention

2	2	0
---	---	---

Leak detection system -

A system capable of detecting a major water leak on mains water supply between the building and utilities water meter is installed

1

1

SAVILLS MEP

Flow control devices -

Devices that regulate the supply of water to each WC area/facility according to demand are installed

1

1

SAVILLS MEP

WAT3: Standard implementation.

CREDIT SUMMARY

AVAILABLE

TARGETED

POTENTIAL

RESPONSIBILITY

Environmental impacts
from construction products
- building life cycle
assessment (LCA)

7	4	0
---	---	---

Superstructure LCA -

The building's quantified environmental life cycle impact through assessment of the superstructure

6

3

LCA MODELLER
WITH DESIGN
TEAM INPUTSubstructure and hard landscaping
options appraisal -

The building's quantified environmental life cycle impact through assessment of the substructure and hard landscaping

1

1

LCA MODELLER
WITH DESIGN
TEAM INPUT

MAT1: LCA consultant to be appointed, credits awarded will be subjected to benchmarking.

Environmental impacts
from construction products
- Environmental product
declarations (EPD)

1	0	0
---	---	---

Specification of products with EPD -

Achieve a total EPD points score of 20.

1

0

-

MAT2: Market availability for products with EPD certification is limited, but increasing.

Responsible sourcing of
construction products

4	3	0
---	---	---

All timber and timber based products used on the project is 'Legally harvested and traded timber'

Pre-requisite

Y

CONTRACTOR

Sustainable procurement plan -

The principal contractor sources materials for the project in accordance with a sustainable procurement plan

1

1

CONTRACTOR

Responsible sourcing of materials (RSM) -

The applicable building & hard landscaping materials are responsibly sourced in accordance with BREEAM

3

2

CONTRACTOR

MAT3: Expected that a sustainable procurement plan can be provided. Products with responsible sourcing certificates expected to be prioritised.

MAT5

Designing for durability & resilience

Robust design -
Protecting vulnerable parts of the building from damage and protection of exposed parts of the building from material degradation

1	1	0
1	1	

WEBB GRAY



MAT5: Standard implementation.

MAT6

Material efficiency

Material efficiency -
Opportunities / measures are identified to optimise the use of materials during procurement, construction, maintenance & end of life

1	1	0
1	1	

WEBB GRAY /
WATERMANS /
CONTRACTOR



MAT6: Design report at RIBA Stage 2 with strategy for optimising the use of materials. To be developed at each RIBA workstage.

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Construction waste management

Pre-demolition audit -

An audit of any existing buildings, structures or hard surfaces being considered for demolition.

Construction resource efficiency -

A resource management plan (RMP) has been developed covering non-hazardous construction waste & target figures met

Diversion from landfill -

Percentages of non-hazardous construction / demolition / excavation waste generated by the project are diverted from landfill

5

4

0

1

1

DEMOLITION
CONTRACTOR

3

2

CONTRACTOR

1

1

CONTRACTOR

WST1: Contractor to ensure that a robust waste management plan is in line: no more than 6.5 tonnes per 100sqm (GIFA) of construction waste to be generated and 80% (tonnage) should be diverted from landfill.

Use of recycled & sustainability sourced aggregates

Pre-demolition audit -

An audit of any existing buildings, structures or hard surfaces being considered for demolition.

Project sustainable aggregate points -

Percentage of high-grade aggregate that is recycled and/or secondary aggregate meets minimum % levels

1

0

0

Pre-Requisite

Y

-

1

0

-

WST2: Not typically undertaken as standard practice.

Operational waste

Operational waste -

Dedicated space is provided for the segregation and storage of operational recyclable waste volumes generated by the building/unit

1

1

0

1

1

WEBB GRAY

WST3: Operational waste strategy to be reviewed with the design team. Assumed achievable.

WST5

Adaptation to climate change

Adaptation to climate change -
Conduct a climate change adaptation strategy appraisal for structural and fabric resilience & systematic risk assessment

1	1	0
1	1	

WEBB GRAY /
WATERMANS



WST5: Design report at RIBA Stage 2 with strategy for climate change, to be updated at RIBA Stage 4 confirming the measures that have been implemented.

WST6

Design for disassembly and adaptability

Disassembly and adaptability (recommendations) -
Building-specific functional adaptation and disassembly strategy study has been undertaken by the client & design team

Disassembly and adaptability (implementation) -
Produce a building adaptability and disassembly guide for prospective tenants

2	1	1
1	1	
1	0	1

WEBB GRAY /
WATERMANS /
SAVILLS MEP

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WATERMANS /
SAVILLS MEP/
CONTRACTOR



WST6: Design report at RIBA Stage 2 with strategy for future proofing. Production of an adaptability and disassembly guide could be considered.

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL RESPONSIBILITY

Site selection

Previously occupied land -
75% of the proposed development's footprint is on an area of land which has previously been occupied / developed

Contaminated land -
Site deemed as significantly contaminated & confirmed by contaminated land specialist's site investigation, risk assessment & appraisal

2	1	0
1	1	
1	0	

WEBB GRAY

-

LE1: Land assumed not contaminated.

Identifying & understanding the risks & opportunities for the project

Assessment route selection -
Assessment route selected using BREEAM guidance Note 34 & compliance monitored against all relevant UK and EU legislation relating to ecology of the site

Survey and evaluation -
Establish current & potential ecological value, direct & indirect risks to value, and capacity for enhancement of value

Ecological outcomes -
Avoidance, protection, reduction, on site compensation and enhancement of ecological value

2	2	0
Pre-Requisite	Y	
1	1	
1	1	

DELTA SIMONS / CONTRACTOR

DELTA SIMONS

DELTA SIMONS / CONTRACTOR

LE2: Preliminary Ecological Appraisal required to confirm if existing land is of low ecological value. Ecologist to be engaged to consider the mitigation hierarchy of action (avoid, protect, reduce, etc.).

CREDIT SUMMARY

AVAILABLE TARGETED POTENTIAL

RESPONSIBILITY

Managing negative impacts on ecology

Risks and opportunities-

LE02 achieved & Compliance monitored against all relevant UK and EU legislation relating to ecology of the site

3

3

0

Pre-Requisite

Y

DELTA SIMONS / CONTRACTOR

Planning, liaison, implementation and data -

Roles allocated, site preparation and construction works planned for / implemented at early stage to optimise outputs

1

1

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Managing negative impacts of the project -

Negative impacts from site preparation and construction works have been managed according to the hierarchy (no loss - 2 credits, minimal loss - 1 credit)

2

2

DELTA SIMONS

LE3:

Team to manage impacts of ecology in accordance with the hierarchy of action outlined in LE02.

Change & enhancement of ecological value

Risks and opportunities-

LE03 achieved & Compliance monitored against all relevant UK and EU legislation relating to ecology of the site

4

3

0

Pre-Requisite

Y

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Liaison, implementation and data collation -

Ecological value enhanced on site and where this is not feasible, off site within the zone of influence

1

1

DELTA SIMONS

Enhancement of ecology -

Credits awarded on a scale of 1-3 based on the calculation of the change in ecological value occurring as a result of the project

3

2

DELTA SIMONS

LE4: Ecological enhancement opportunities to be discussed & agreed with ecologist.

Long term ecology management & maintenance

Roles & responsibilities, implementation, statutory obligations -

LE04 achieved & compliance monitored against all relevant UK and EU legislation relating to ecology of the site

2

2

0

Pre-Requisite

Y

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Planning, liaison, data, monitoring, review management & maintenance -

Strategy developed to monitor, report and maintain ecology

1

1

DELTA SIMONS / LOGICOR

Landscape and ecology management plan development -

Plan developed in accordance with BS 42020:2013 covering five years

1

1

DELTA SIMONS

LE5: Strategy to be developed for implementing, monitoring and maintaining ecology throughout the design, construction and operation.

CREDIT SUMMARY

Impact of refrigerants

Impact of refrigerants -

The buildings use of refrigerants within its installed plant/systems is avoided or meet relevant BREEAM design criteria

Leak detection -

Where systems using refrigerants have a permanent automated refrigerant leak detection system installed to isolate leakages

AVAILABLE TARGETED POTENTIAL

3	1	0
2	1	
1	0	

RESPONSIBILITY

SAVILLS MEP

-

POL1: Refrigerants expected to be compliant.

Local air quality

Local air quality -

Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed BREEAM levels

2	2	0
2	2	

SAVILLS MEP

POL2: Electric heating meets requirement by default. Compliance of gas fired water heaters will need to be reviewed against criteria.

Surface water run off

Surface water run-off -

An appropriate consultant is appointed to carry out, demonstrate and/or confirm the surface water design strategy

Flood resilience -

Where a site specific flood risk assessment (FRA) confirms the development is situated in a low / medium risk flood zone

Surface water run-off -

Surface water run-off design solutions must be bespoke taking into account the site specific requirements

Surface water run-off (rate) -

Drainage measures ensure that peak rate of run-off from the site to the watercourses shows a 30% improvement

Surface water run-off (volume)-

Where flooding of property will not occur in the event of local drainage system failure

Minimising watercourse pollution -

There is no discharge for rainfall up to 3mm & an appropriate level of pollution prevention treatment is provided (SUDS)

5	3	0
Pre-requisite		Y
2	1	
Pre-requisite		Y
1	1	
1	1	
1	0	

WATERMANS

WATERMANS /
SPECIALIST

WATERMANS

WATERMANS

WATERMANS

-

POL3: Compliant surface water run off strategy expected.

POL4

Reduction of night time light pollution

Light pollution - External lighting strategy meets ILP Guidance notes without adversely affecting the safety and security of the site and its users

1	1	0
1	1	

SAVILLS MEP



POL4: Standard implementation.

POL5

Reduction of noise pollution

External noise - A noise impact assessment in compliance with BS 4142 has been carried out & does not affect noise sensitive areas within 800m

1	1	0
1	1	

DELTA SIMONS



POL5: Credit assumed achievable.

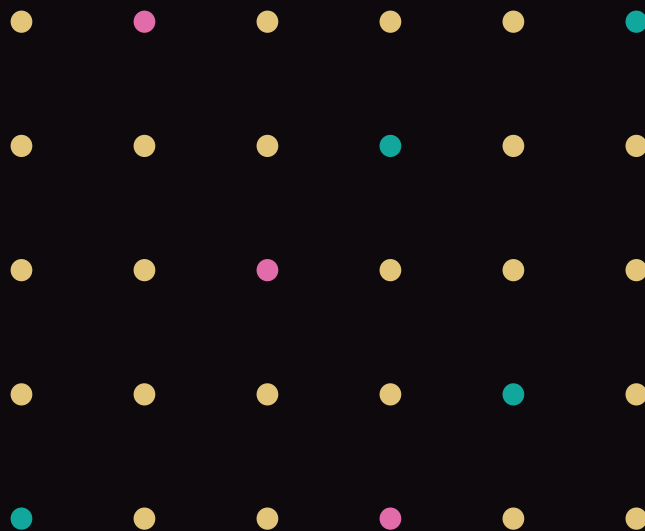
CREDIT SUMMARY

	AVAILABLE	TARGETED	POTENTIAL	RESPONSIBILITY
	10	2	1	
Man 03 Responsible construction practices	1	1		CONTRACTOR
Hea 01 Visual comfort	1	0		-
Hea 02 Indoor air quality	1	0		-
HEA06 Security	1	0		-
Ene 01 Reduction of energy use and carbon emissions	1	0		-
Wat 01 Water consumption	1	0		-
Mat 01 Environmental impacts from construction products (LCA)	1	1		LCA MODELLER
Mat 03 Responsible sourcing of construction products	1	0		-
Wst 01 Construction-site waste management	1	0		-
Wst 02 Use of recycled and sustainably sourced aggregates	1	0		-
Wst 05 Adaptation to climate change	1	0	1	WEB GRAY / WATERMANS
LE02 Ecological risks and opportunities	1	0		-
LE04 Ecological change and enhancement	1	0		-



INN1: Contractor to ensure that they are signed up for Considerate Constructors.

carbon.
climate.
certified.



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