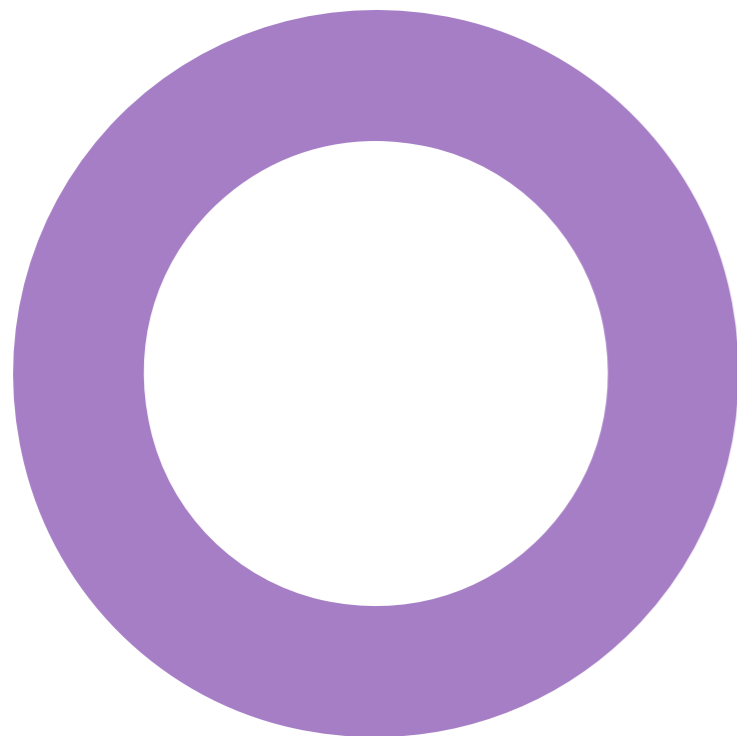


**Cambridge North.  
Cambridge.  
Brookgate.**

**SUSTAINABILITY**  
SUSTAINABILITY STRATEGY

REVISION 04 - 09 JUNE 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	08/04/2022	Draft for comment	D. Petts	J. Quirin	G. Jones
02	21/04/2022	Planning issue	D. Petts	J. Quirin	G. Jones
03	26/05/2022	Update post-review	D. Petts	J. Quirin	G. Jones
04	09/06/2022	Updtae post-final review	D. Petts	J. Quirin	G. Jones

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Project number: 23/23544

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## Forward.

### **Starting with sustainability.**

No longer simply ticking boxes, today sustainability is about making real-term impacts. Increasingly, it has become the starting point – and the heart – of ambitious projects. On each and every project, we take an exciting journey together with clients and project teams to help shape a more sustainable world.

### **A sustainability framework.**

Within the built environment, considering five defined factors and their value is key to a connected approach: the people, the building, the social network, the natural environment, and the economic aspects. These form the basis of our sustainability framework which is tailored to the needs of each project.

### **Stakeholder engagement.**

Working with the project team we actively engage with the planning authorities, local community groups and the general public throughout the planning process. We collaborate with the client and project team as well as key stakeholders to create informed innovative strategies. Each strategy responds to the five elements of our framework, and we make sure we articulate it in an accessible and engaging way no matter the complexity.

### **Ahead of the industry.**

Our team is actively shaping the future of sustainable practices. We conduct in-depth research, author industry guidance, build close links with sector-wide organisations, and sit on influential committees. The result is an unrivalled ability to provide informed, strategic advice that stays ahead of industry changes and is pivotal to our successful input to planning.

### **Purpose of this report**

This Sustainability Strategy has been prepared on behalf of Brookgate (hereafter referred to as the 'Applicant') in support of the hybrid application of detailed and outline components for the Proposed Development of Cambridge North (hereafter referred to as the 'Proposed Development').

The Applicant is preparing proposals for the development of Cambridge North, situated adjacent to the Cambridge North train station at the north east of Cambridge city, within the greater Cambridge area.

The emerging proposals are for office, laboratory and residential development. The strategy is designed to be overarching thus covering all buildings within the development bounds as well as the landscaped areas connecting the buildings. There is more in depth information when referring specifically to buildings S4 (One Milton Avenue) and S6-S7 (1-3 Station Row) as a detailed planning application is being submitted for these specific buildings. One Milton Avenue is comprised solely of office space whilst 1-3 Station Row comprises of a mix between office and laboratory space. The overall site additionally aims to provide public open space improvements including new activity areas and cycle/pedestrian path enhancements.

## Executive summary.

This document presents the Sustainability Strategy for the Proposed Development which has been informed by both national and local policy requirements, the Applicant’s vision and sustainable design and development guidance and frameworks including, but not limited to.

- United Nations Sustainable Development Goals (UN SDGs);
- South Cambridgeshire District Council Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
  - Cambridgeshire flood and water SPD.
  - Sustainable design and construction SPD.
- BREEAM New Construction 2018.
- Client vision.
- The five capitals approach to sustainability.

The SPDs (Supplementary Planning Document) mentioned above summarise the requirements set out in the South Cambridgeshire Local Plan (2018), which set out visions and objectives for the new development of the Greater Cambridge area in order to support the transition to a more environmentally sustainable and successful low carbon economy by 2031. The Plans outline pathways to ensuring carbon emissions, flood risk, pollution and pressure on resources such as water are all minimised across new developments in the region.

To capture the multi-faceted sustainability benefits and values that the Proposed Development can bring to the site, local community, surrounding businesses, and future building users, five defined factors – the people, the building, the social network, the natural environment, and the economic aspects – inform our proposed sustainability framework. These are summarised below:

### Physical capital – “Mobility and Energy”

The Proposed Development will achieve energy efficiency through a fabric first approach and maximisation of the use of renewable energy, particularly air sourced heat pumps and PV panels. This will also be achieved through operational energy modelling and efficient metering in order to gain a better understanding of the energy demand in the building. In addition, sustainable means of transport to the site will be promoted through the provision of enhanced walking and cycling routes, as well as new bus routes and electric vehicles charging points.

### Social capital – “Placemaking”

The Proposed Development seeks to enable community identity and social cohesion through placemaking. To achieve this the Proposed Development will constitute a new economic and social hub, creating employment for the local community and a place for Start-ups to flourish, as well as recreation spaces with the enhancement of the landscaped areas, bringing the residential and commercial areas together. The design will also focus on security needs to ensure occupants safety and wellbeing.

### Economic capital – “A New Economic hub”

The Proposed Development is expected to enable sustainable growth for the city of Cambridge and the wider area through the creation of new full-time equivalent jobs during construction and throughout operational stage. In addition, the procurement of local and sustainable material and workforce will be encouraged. Finally, the design will account for long term costs related to maintenance, energy and potential rectification and will allow for durability, climate change adaptation and adaptability.

### Human capital – “Healthy People”

The Proposed Development’s user health and wellbeing are at the centre of design and specification to ensure a comfortable indoor environment is created and make the Proposed Development a place where people want to live and work – both now and in future climates. Physical and mental health are also promoted through the enhancement of the outdoor spaces, creating new paths to allow for passive recreation.

### Natural capital – “Enhanced Natural Environment”

All aspects of the design, construction and operation of the Proposed Development will be developed to have no negative impact on the environment. Key considerations relate to pollution, local air quality, resource demand, waste and biodiversity. A special attention will be paid to meaningfully reduce the water consumption of the building and rainwater recycling is deemed to be considered.



Figure 1. Approach to sustainability for the Cambridge North development.



## 1. Introduction.

### 1.1 Purpose of the report.

This document has been prepared on behalf of Brookgate, hereafter referred to as the 'Applicant', in support of the Hybrid Planning application for development of Cambridge North, Cambridge hereafter referred to as the 'Proposed Development'.

The Sustainability strategy summarises the pertinent regulatory and planning policies applicable to the Proposed Development; setting out how it addresses the relevant policy requirements.

This report outlines the proposed approach to sustainability. Please to refer to:

- Appendix A: For a Sustainability Checklist showing how the scheme responds to key Cambridgeshire Local Plan sustainability requirements
- Appendix B: For a summary BREEAM pre-assessment.
- Appendix C: For a detailed review of relevant planning policy requirements

### 1.2 Description of development.

The Proposed Development is a hybrid planning application comprising;

- An Outline Application with all matters reserved (except for access and landscaping) for the construction of three new residential buildings of four to eight storeys, providing flexible Class E and Class F uses on the ground floor, and two commercial buildings of five storeys for Use Classes E(g) i (offices), ii (research and development), providing flexible Class E and Class F uses on the ground floor, with associated car and cycle parking and infrastructure works; and
- A Full Application for the construction of three commercial buildings of four and seven storeys for Use Classes E(g) i (offices), ii (research and development), providing flexible Class E and Class F uses on the ground floor, with associated car and cycle parking, a multi-storey car and cycle park and associated landscaping and infrastructure works

### 1.3 Site description.

The Application Site is located within the jurisdiction of South Cambridgeshire District Council. It is located adjacent to Cambridge North train station which runs along its eastern boundary. Figure 2 displays an illustrative view of the site with coded indication to each building.



Figure 2: Illustrative view of the Site with indication to each building.

## 2. Overview of policies and drivers.

### 2.1 The Applicant's vision.

It is understood that the core pillars that should be considered at all stages of the design process are:

- **To respond to the market:** By listening to what the market wants, the development can respond to the rapidly evolving demands of investors, tenants, and homeowners in response to the climate and ecological crisis.
- **To ensure a robust planning submission:** By responding to the local plans of South Cambridgeshire Council, the scheme is far more likely to enjoy a favourable reception, enhanced by highlighting where the scheme aligns with the emerging Area Action Plan for this part of the city.

Some specific goals include:

- Use energy and water efficiently and seek means of reducing consumption through improved management practice and technological upgrades.
- Reduce consumption of materials through re-use rather than disposal, wherever possible.
- Promote recycling and diversion of waste from landfill.
- Understand the risks posed by changing climate patterns and mitigate their effects on the buildings
- Encourage suppliers of goods and services to minimise the impact of their operations on the environment.
- Apply the principles of environmental best practice in the planning, development, refurbishment and decommissioning of the buildings.
- Integrating sustainability considerations early in the process, helps to optimise the design process and to ensure that costly revisions later in the process can be avoided.
- Project teams must refer to the relevant targets outlined in this document and use these to define the strategy for the project, and report back on progress on these during the project.
- Project teams are encouraged to avoid over-specification and should seek to achieve the optimum design response to anticipated end user requirements. A value hierarchy should be utilised, and teams are encouraged to focus on measures that deliver the greatest benefit for each pound invested.
- The project feasibility and design process should consider, as far as is possible, the impact of any medium-term regulatory, physical and market risks on the completed development and through good design seek to manage and reduce the risk of obsolescence and depreciation and protect the value of the asset.

The targets are proposed for a new build development. It is the responsibility of the design team to review each target and determine its feasibility at an early stage.

### 2.2 Relevant national and local policies.

This document has been developed to summarise the requirements set out by the Sustainable Design and Construction SPD which is applicable to Cambridge North development.

Like national policy, the local policy relevant to the development site and proposal will form the minimum performance of the energy and sustainability strategy. The development will be required to respond to following local policy and guidance documents:

- National Planning Policy Framework (NPPF) (July 2021)
- National Building Regulations (2013)
- South Cambridgeshire District Council Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
  - Cambridgeshire flood and water SPD
  - Sustainable design and construction SPD

The SPD summarises the requirements set out in the South Cambridgeshire Local Plan (2018) which set out visions and objectives for the new development of the Greater Cambridge area in order to support the transition to a more environmentally sustainable and successful low carbon economy by 2031.

The Plans outline pathways to ensuring carbon emissions, flood risk, pollution and pressure on resources such as water are all minimised across new developments in the region.

### Key findings

Key targets from these documents are summarised below:

- 10% reduction in regulated CO<sub>2</sub> emissions compared to part L 2021 baseline through onsite renewable or low carbon energy for all new residential developments and major non-residential development.
- All new non-residential buildings with more than 10 parking spaces must have a minimum of one ChargePoint and cable routes for 20% of the total number of spaces.
- All Non-residential development – between 2 and maximum BREEAM credits for Wat01.
- Residential developments to include; charging points (standard or fast where possible) for all private and allocated parking spaces and charging points (Fast or Rapid where possible) for every 10 communal parking spaces.
- Residential development – Homes built to Part L 2021 will emit 31% less CO<sub>2</sub> on average respectively than one built to current standards (Part L 2013).
- All residential development – requirement for potable water use of no more than 110 litres/person/day



Figure 3: Reviewed policy documents.



### 3. Approach to sustainability.

The following strategy addresses a wide range of sustainability subject areas and covers various headline sustainability categories. The strategy confirms the applicable policies and the Applicant’s aspirations and measures of sustainability that will be implemented at the Proposed Development.

The design of the Proposed Development is based on sustainable design and construction principles as informed by planning requirements and industry best practice. It is on this basis that we are utilising a sustainability framework based on five defined factors; i.e., the people, the buildings, the social network, the natural environment, and the economic aspects as illustrated in Figure 4 to capture the multi-faceted sustainability benefits and values that the Proposed Development could bring to the:

- Application Site,
- Local community,
- Surrounding businesses, and
- Future building users.

The original idea for the five capitals was introduced by Forum for the Future and it was designed to assist organisations to develop a vision of what sustainability looks like for their operations, products and services. We have embraced this approach as it promotes a holistic, interdisciplinary approach to sustainability which is aligned with our understanding of sustainable development. Our strategy is based on the concept of realising real term social, economic and environmental benefits to all stakeholders and investors and thereby generating value and wealth in the communities we create.

#### The Delivery Framework

Working with all key stakeholders, an overall vision for the development has been defined. Workshops have been held in collaboration with the client and project team to help create a charter including innovative initiatives and key objectives to be delivered as a result of the project. As illustrated in Figure 4 and Figure 5 the strategy responds to the five elements of our defined framework; and is intended that the agreed objectives are tracked and monitored throughout project delivery and operational phases.

#### Environmental Assessment

In line with local policy drivers and the Applicant’s sustainability aspirations, a BREEAM New Construction pre-assessment has been produced, highlighting how the office and lab spaces of the Proposed Development intend to achieve BREEAM ‘Excellent’ as a minimum, with an aspiration to target ‘Outstanding’ as the design develops. Please refer to Appendix B for summary pre-assessment report with a schedule of the targeted credits and anticipated performance score.

#### Health and Wellbeing Assessment

The Proposed Development seeks to deliver a healthy indoor and outdoor environment in order to promote physical and mental health.

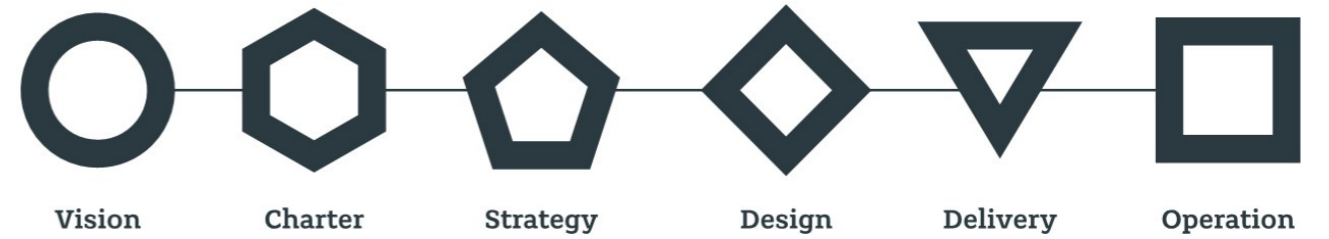


Figure 4: Sustainability strategy – Delivery phase (inception to completion).

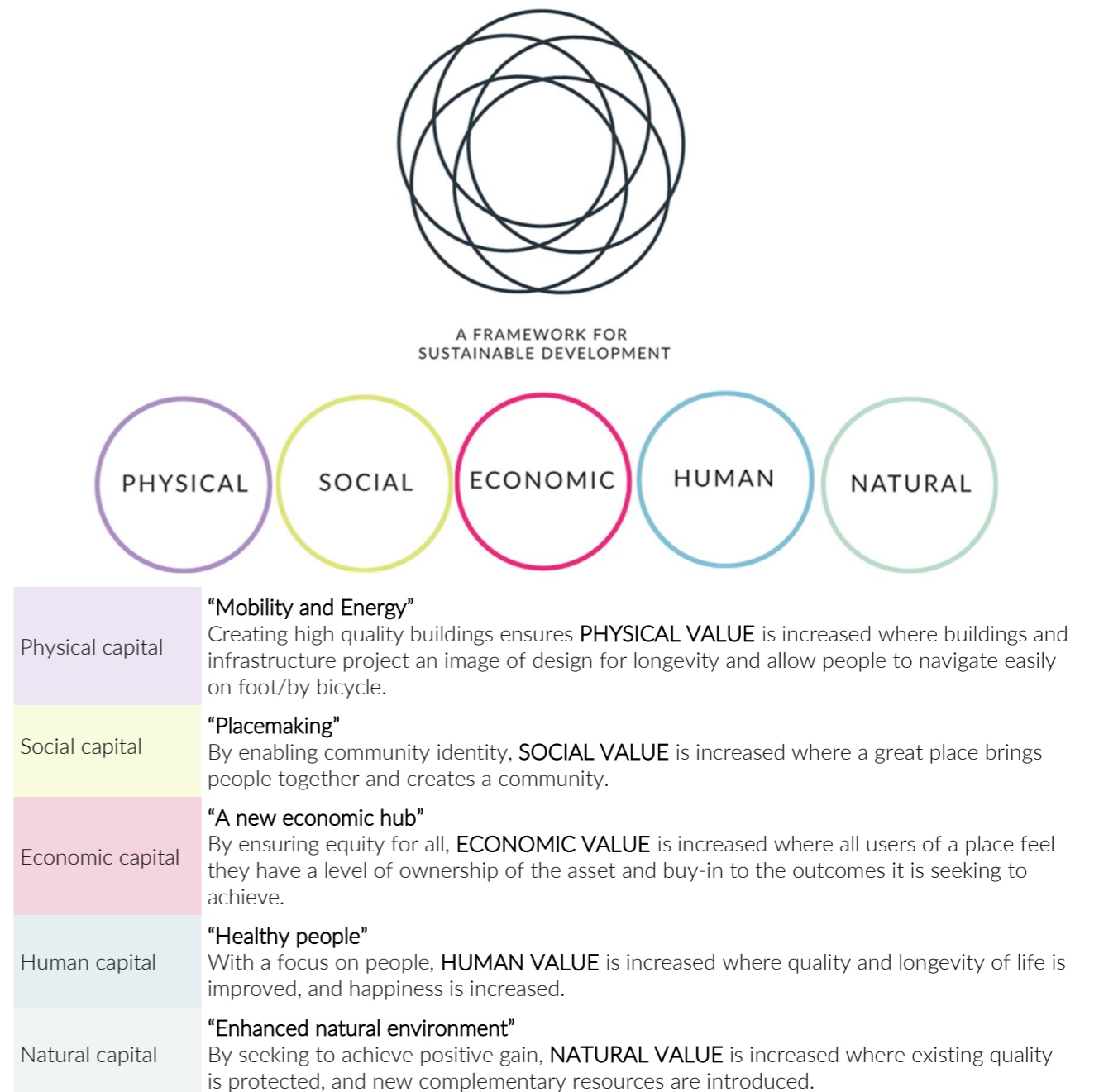


Figure 5: Proposed framework for sustainability – Creating value.



#### 4. Sustainability strategy.

The design of the Proposed Development is based on high sustainability aspirations and is compliant with industry best practice. In addition, it also attempts to push the boundaries of conventional construction by deploying innovative methods and approaches during design and construction. The strategy for the Proposed Development addresses key sustainability challenges and opportunities, responds to the requirements of the applicable policies, and implements the Applicant's aspirations.

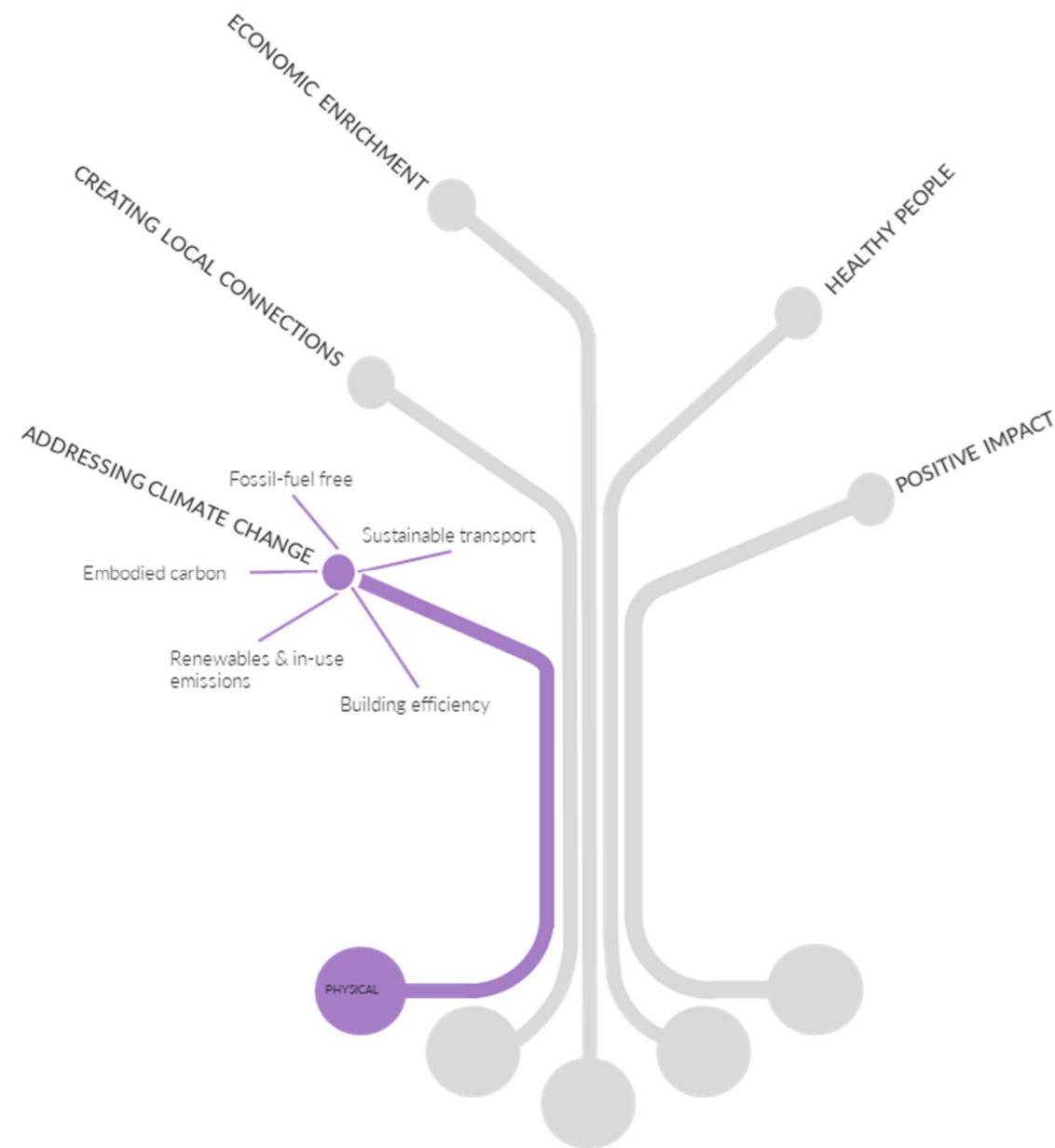
It embraces the Five Capitals framework, responding to the challenges of climate, biodiversity and health and wellbeing, UN sustainable development goals and Applicant vision, aiming to create long term value and generate a flow of environmental, social and economic benefits. Each Capital has been contextualised to the specific needs, challenges and opportunities arising from the Proposed Development, resulting in five themes as follows:

- Physical capital - Addressing climate change
- Social capital - Creating local connections
- Economic capital - Economic enrichment
- Human capital - Healthy people
- Natural capital - Positive impact



Figure 6: The sustainability strategy illustrated – key themes and areas.

#### 4.1 Physical capital – “Addressing climate change”.



##### Passive design and fabric performance

Buildings will be facilitated to reduce the demand for energy as far as possible. Following the energy hierarchy, this will be achieved by deploying building fabric with a high thermal performance, built to rigorous standards to minimise heat loss. The façade of each building will be carefully refined to maximise passive design features including external shading, thermally efficient insulation and deep recesses. Designing with commensurate proportions of glazing will balance the need for good daylight and beneficial solar gain in winter against the need to reduce heat demand and mitigate the risk of summer overheating in a warming climate.

In summary, this approach locks in a high performance façade that is unlikely to deteriorate over time. In addition, all office buildings will have embodied carbon analysis undertaken to maximise material efficiency and reduce the overall carbon impact of the Proposed Development in relation to material choice.

*This is in line with the South Cambridgeshire Local Plan Policy HQ/1*

##### Renewables & in-use emissions

The design team have evaluated potential low and zero carbon technologies (LZCs) and have identified that an all-electric system in combination with onsite electricity generation is the most appropriate option, especially with projected grid decarbonisation. Air source heat pumps and PV panels are proposed. Commissioning plans for all systems will be produced in order to maximise efficiency and ensure a comfortable environment for the building users and occupants.

In combination with careful design and specification of systems, the Proposed Development will reduce the energy consumption related to heating, cooling and ventilation, thus reducing the carbon emissions across the Proposed Development.

The Proposed Development will follow a route to net zero carbon status which is supplemented by the aim of achieving BREEAM ‘Excellent’ as a minimum, with an aspiration to target ‘Outstanding’ as the design develops. All offices will be designed to target an EPC rating of A.LETI 2025, or LETI 2030 targets for in-use emissions in residential buildings will be targeted.

To assess compliance against these targets, monitoring and reporting technologies and practices will be implemented across the development. All buildings will have smart meters to record both energy and water usage. Post-completion, there will be the opportunity to optimise building services and controls to meet the development’s energy targets.

*This is in line with the South Cambridgeshire Local Plan Policy CC/3*

##### Sustainable transport

The site benefits from excellent access to pedestrian and cycle facilities. The development will incorporate new pedestrian and cycle pathways to existing network which already extensively covered the city of Cambridge in high proportion. A Transport Assessment and Travel Plan prepared by PJA indicates the specificities regarding sustainable site mobility. The furthered cycle and pedestrian pathways will encourage the use of sustainable modes of transport to the Site as users will prefer cycling or walking while enjoying the local community and open spaces which benefits wellbeing. Cycle storage will be provided on site and within close proximity from the building entrance with quantity being inline with the number of building users. In addition, building users dedicated cycle storage and cyclist facilities such as lockers, showers and changing rooms will be provided in each buildings in line with BREEAM and Policy requirements. The Proposed Development site will include a transport hub at the base of the S5 building. Initially the hub will include car parking, however in line with the ambitious sustainability goals there will be scope for further development and adaptation in order to facilitate a reduced car future.

For those who are not able to cycle or walk to the Site, sustainable alternatives will be offered. Due to the site’s prime location, the Cambridge North train station is immediately adjacent to the site allowing easy access for regular visitors such as commuters. Furthermore, the prime location of the site paired with the newfound developments amenities and subnational connection links will attract more people to the area of Cambridge whereby the extensive pedestrian and cyclist pathways will promote is outdoor exploration and celebration of the local community, thus additionally supplementing site visitor’s wellbeing.

Dedicated groups for car sharing will be considered in view of facilitating and encouraging building users to car share. Vehicle and cycle parking provision will be in accordance with South Cambridgeshire standards with care taken to not over-provide vehicle parking. Dedicated car spaces could be provided for car sharers that are located nearest the development entrance. An appropriate quantity of electric vehicle charging points will be provided. Finally, public transport access to the Site will be improved with, for example, the creation of new bus routes and bus stops.

*This is in line with the South Cambridgeshire Local Plan Policy TI/2 and Policy TI/3*

#### 4.2 Social capital – “Creating local connections”.



##### Quality Public realm

The Proposed Development seeks to enable community identity and social cohesion through placemaking. This includes ensuring the design incorporates external spaces in a way that contributes to the development of a successful, attractive, safe and inclusive public realm that reinforces the local community, its culture and heritage. Through a holistic lens, the Proposed Development will include both the collaboration with local

community groups to ensure their existing needs are covered within the design, whilst simultaneously implementing new initiatives that enhance the local community further as a whole. The transformation of the existing site into a modern complex is designed to bring life into the space for the benefit of its immediate users and the surrounding area.

Opportunities to engage with the local community will be explored at the design, construction and operational stages of the Proposed Development with the goal of providing a series of flexible and vibrant public spaces which will place community, art, music and culture at the heart of the proposed development. In conjunction with these, the Proposed Development will focus on boosting local community nutrition via assessing the feasibility for external and internal implementation of local produce vendors, fruit and vegetable gardens and lobby cafés.

*This is in line with the Applicant's vision and the United Nations Sustainable Development Goal 11.*

##### Construction impact & suppliers

In order to maximise positive impact on a social, economic and environmental level, a plan will be developed in line with local planning requirements for use of local suppliers, contractors, employees and voluntary, community and social enterprises (VCSEs), with the ambition to exceed this where possible. Furthermore, it will be mandatory that all contracts with suppliers must include modern slavery clauses in order to ensure that no social values are broken at any point of the supply chain. Furthering this ethos, there will be use of the Considerate Constructor Scheme, or a similar style programme, with the aim of minimising construction impact and so strengthening the currently and future relationships between the Proposed Development, its stakeholders and the local community.

*This is in line with the Applicant's vision and the United Nations Sustainable Development Goal 11 and Goal 1.*

##### Positive social value

The Proposed Development will create a new economic and social hub, creating employment for the local community as well as recreation and residential space. The Site is located in a strategic position in Cambridge, the adjacent train station and network of pedestrian and cyclist pathways provides a connection with existing recreation facilities and the wider local area.

The Proposed Development will have a Social Capital Assessment undertaken in order to determine the outcomes of the scheme on the local community. In order to maximise networks and connections, welcome events will be held in order to encourage social links between new and existing local businesses. The development will be completed in phasing and so the welcome events will also encourage seamless integration into the existing community. Furthering this, site tours will be held for local stakeholders in order to take on additional consultation from the community and to allow for any remaining queries to be addressed pre-handover point. Inclusivity will be promoted through key design principles such as disability access points and pathways. Combined, these elements are to ensure the Proposed Development is inclusive and promotes whole community integration.

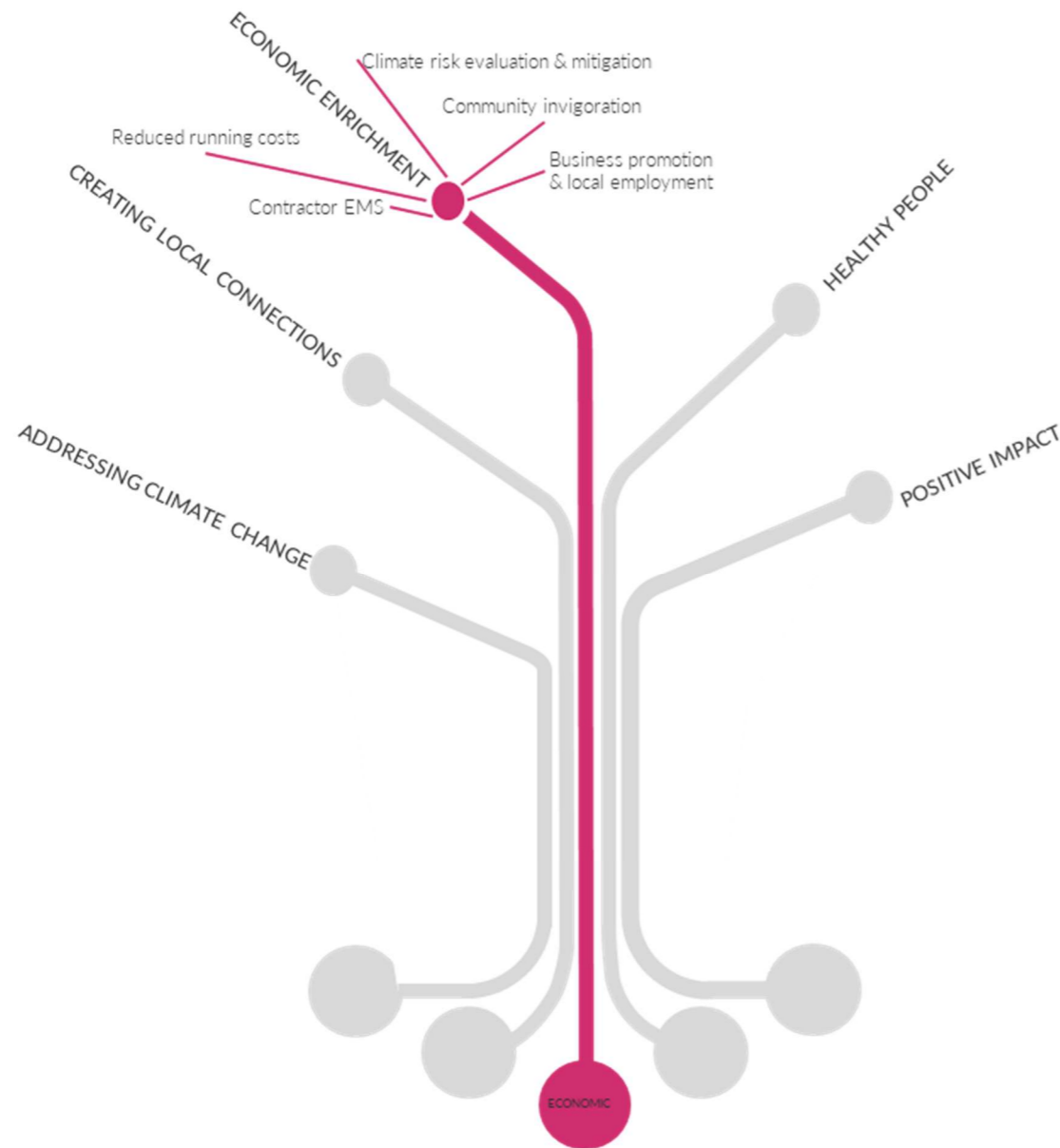
This new strategic place in the local community will support wellbeing through access to nature and social cohesion and engagement.

The Proposed Development improves the outdoor space at ground level whilst simultaneously provide a multistorey setting that is active, inviting and enjoyable.

A safe and legible mix of routes around the site boundary will be provided to open the site up into its local context.

*This is in line with the Applicant's vision and the United Nations Sustainable Development Goal 11.*

### 4.3 Economic capital – “A new economic hub”.



#### Business promotion & local employment

The Proposed Development is expected to enable sustainable growth for the city of Cambridge and the wider area, through the creation of new full-time equivalent jobs during construction and other opportunities for harnessing local talent.

Moreover, the Proposed Development will also generate a significant number of employment opportunities during the construction stages of the development through reinforcing promotion of locally sourced materials and labour. Post-completion, there will be opportunity for new start-up companies and research groups to be based at the new site, thus taking advantage of the increased footfall to explore the newly developed area. For each office building, the aim is to implement a project specific soft-landing plans as to allow for any issues be resolved as they arise. Furthermore, the proposed developments aim to enrich the pre-existing community of business through promotion of local independent businesses on site.

The Proposed Development seeks to craft long-lasting and adaptable spaces that will allow for appropriate and well-considered opportunities for business growth and change as required by the rapidly shifting socio-economic climate.

*This is in line with the Applicant's vision and the United Nations Sustainable Development Goal 8.*

#### Reduced running costs

The Proposed Development has been designed with efficiency in mind, thus also including attention to reduction in running costs. Post occupancy evaluations will be undertaken of all buildings with a view of optimising performance and minimising running costs at the post-construction stage.

In addition, a life cycle cost will be undertaken at key stages of the design in order to ensure the long-term costs related to maintenance, energy and potential rectification are understood at the point of decision making. This together with prediction of operational energy consumption will allow running costs to be understood and therefore reduced through efficient design.

*This is in line with the Applicant's vision.*

#### Climate risk evaluation and mitigation

The Proposed Development includes undertaking a climate change risk assessment on all office buildings, considering risks from flooding and extreme temperatures on buildings, building services and occupants. The findings will be addressed, and the designs ratified under these findings to ensure that the Proposed Development will still be suitable for occupation despite future climate symptoms. The assessment also facilitates anticipation for future costs for the replacement of building elements due to climate related damages. Durability of materials will be included within this ratification to ensure they will withstand environmental conditions and degradation due to normal use such as high traffic areas, trolley movements.

A sustainability strategy with accompanying benchmarks will be provided within the contractor tender pack. It is noted that all tier 1 contractors will also be required to operate third party accredited EMS.

*This is in line with the Applicant's vision and the South Cambridgeshire Local Plan Policy CC/8*

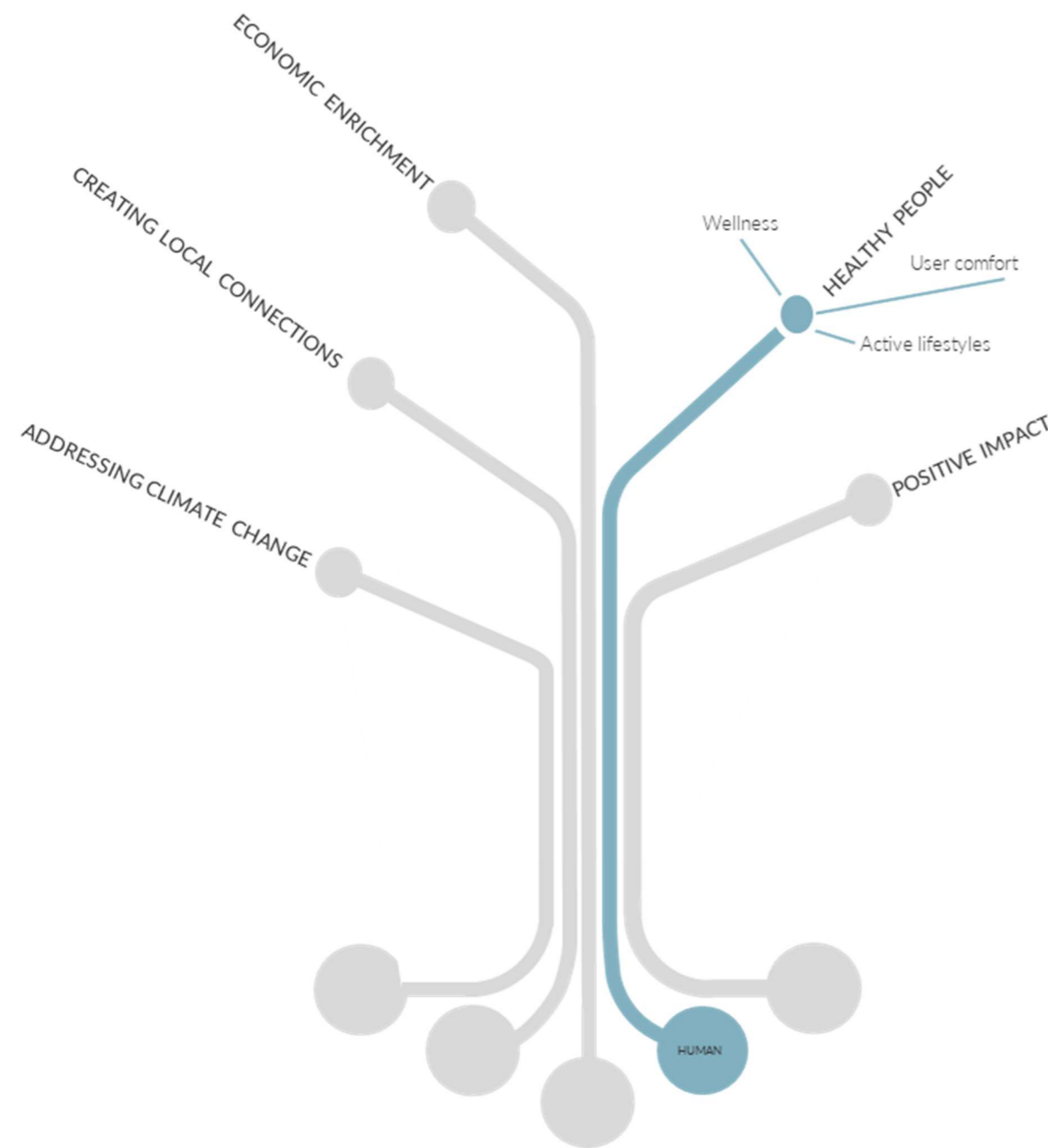
#### Community invigoration

The Proposed Development will achieve all local planning requirements, invigorating the localised economy through providing trainee/apprenticeships in design and contractor project teams and will aim at surpassing this where possible. This will be supplemented by investment in local sustainability community and infrastructure schemes with the hope of placing community wellness through sustainable means at the heart of the development.

*This is in line with the Applicant's vision.*



#### 4.4 Human capital – “Healthy people”.



##### Wellness

Human capital incorporates a wide range of considerations relating to mental and physical health and wellbeing, motivation and capacity for relationships of the individual. The Proposed Development aims to create a positive and healthy place that actively promotes the wellbeing and productivity of its building users with enlivened lower areas and humane workplaces above. To achieve this, the following elements will be placed at the heart of the design:

The Proposed Development is designed with promoting good health in mind; both internal and external connections to nature are proposed with view out being priorities for user satisfaction. Furthermore, the combination of biophilic design and electric led building services will be used to maximise building user connection to nature and minimise negative impacts of environmental factors such as local air quality. Mental health support for all employees and associates with the design, construction and operation will be provided and security needs assessments will be undertaken for all office buildings to ensure user safety whilst on site. This is all with the aim of guaranteeing both the mental and physical health all associated with the Proposed Development

The Proposed Development will seek to provide a positive user experience through continuous monitoring of the building performance and provision of guidance for all building users to improve performance and reduce user frustration.

In order to ensure that wellness stays a keep part of the Proposed Development formal WELL assessments will be undertaken for all office buildings.

*This is in line with the South Cambridgeshire Local Plan Policy SC/2*

##### Active lifestyle

Improving the experience of using the Proposed Development is a key objective; this will be achieved a multi-level approach which creates a stimulating environment to be in.

The Proposed Development will include active design, incorporating elements such as strategic positioning of the stairs and workstations in office buildings with the goal of promoting movement both internally and externally at the site. Further active lifestyle measures may be encouraged; elements such as the possibility to include fitness equipment across the site have been considered, however this will need to be reviewed. All active lifestyle elements are being assessed with the goal of stimulating site users into various forms of physical activity throughout the day. Furthermore, the Proposed Development includes specific spaces for wellness activities and interactions in common areas of office buildings To accompany this, all regular building visitors will have access to free drinking water, and in public spaces water fountains will be provided to facilitate bottle refilling.

Walking paths will be enhanced across the site providing an ideal space for passive recreation. This will promote walking and cycling around the site while enjoying the local community and open spaces which benefits health and wellbeing.

In addition, sufficient cycle storage will be provided on site as well as cyclists facilities such as lockers, showers, changing rooms, etc, for all users in order to encourage activity, which is known to be beneficial for both physical and mental health.

*This is in line with the Applicant's vision*

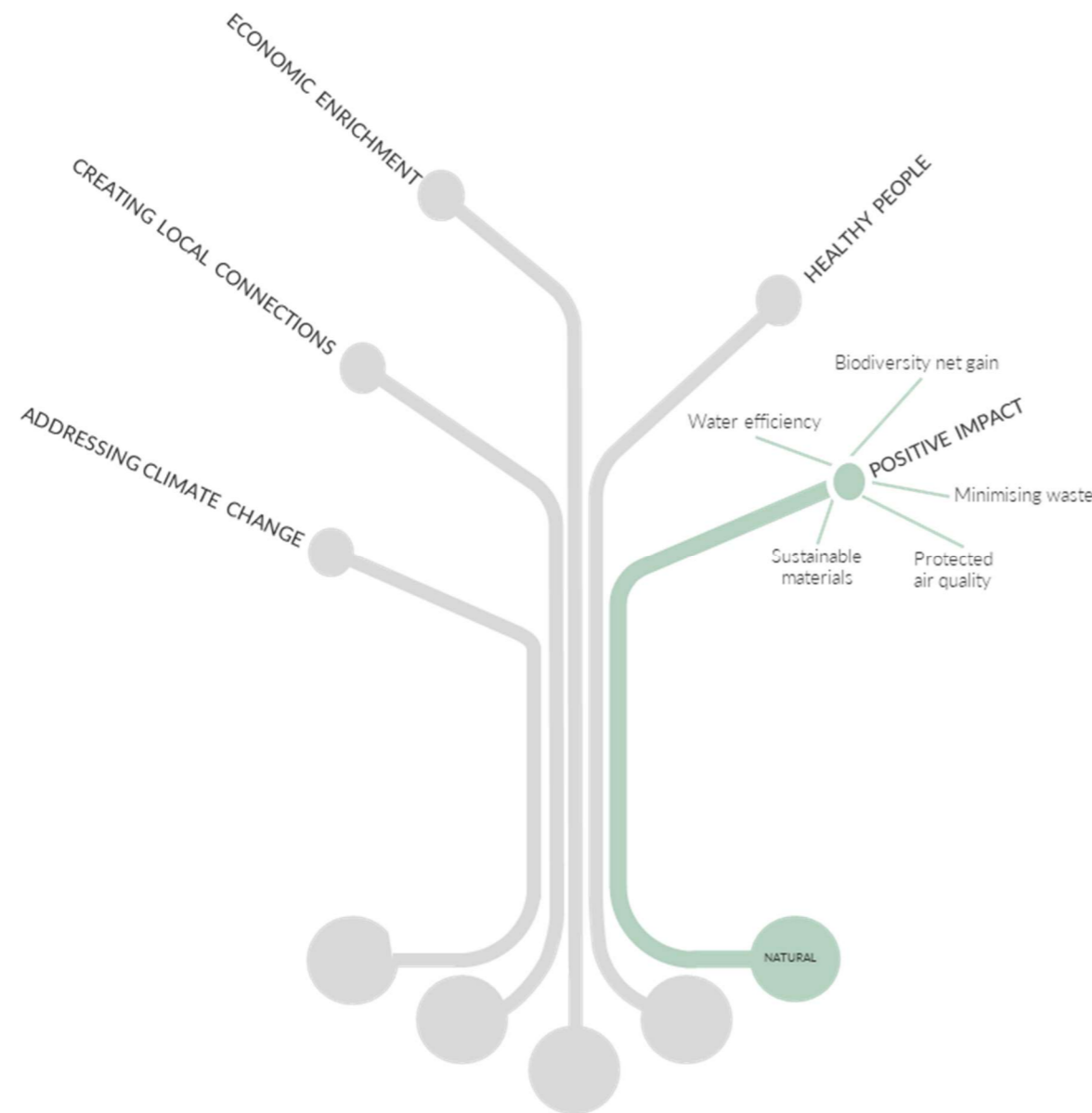
##### User comfort

The Proposed Development will be designed so that occupied spaces will have comfortable thermal conditions and future proofed in order to maximise comfort for future climate changes. This will be achieved though the analysis and incorporation of data from 2050 and 2080 weather files. In addition, building users experience will be enhanced through the provision of controls, allowing users to adapt the thermal environment, lighting levels, blinds, etc to their need.

In addition, user comfort will be maximised in office buildings as well as in homes through prioritising visual comfort; ensuring each building has appropriate access to daylight and providing glare control where necessary. Finally, indoor air quality will be maximised though use of low VOC products and instillation of efficient ventilation systems. The formaldehyde and VOCs concentration in indoor air will also be measured post construction in order to ensure that maximum levels specified by the World Health Organization guidelines for indoor air quality: Selected pollutants, 2010 are not exceeded. Acoustic comfort will be optimised to meet the performance criteria contained in BS 8233:2014.

*This is in line with the Applicant's vision*

#### 4.5 Natural capital – “Enhanced natural environment”.



##### Biodiversity

The Proposed Development will aim to create a distinctive space which integrates the built and natural environment, seamlessly bridging the gap between people and nature. The project’s target is to achieve an uplift in biodiversity units for both area and linear based habitats towards a more resilient, living, breathing ecosystem to nurture the vital relationship between people and nature. The scheme will rehabilitate greenspace and will exceed 10% BNG on site or off-site through off-site enhancements. These measurements include green infrastructure and monitoring of biodiversity net gain and are in accordance with the landscape management plan. Currently, calculations are being completed through the new DEFRA biodiversity metric calculator (v3.1) and are still being finalised. Biodiverse roofs will be included; they assist in moderating overheating and increase the capacity of the site for enhancing biodiversity. Native and locally sourced plants

(from within the UK) will be given preference during the species selection part of the landscape strategy for the public realm. To supplement native and local vegetation, Open Mosaic Habitat ‘mimic’ species, which are nectar rich and ecologically beneficial, will also be implemented, however it is noted that not all will be native.

During the construction stages there will be a focus to mitigate construction impacts on existing biodiversity as to avoid simply reinstating biodiversity that previously existed pre-construction.

Internally, a focus on designing with biophilia in mind will be present. All buildings will be designed with natural elements such as light, space and vegetation in order to connect internal and external aspects of the development with surrounding nature. The project site area will feature both landscaped grounds and rooftop terraces accessible to building users and/or the public community and planting of trees around the site will occur to ensure that the local area is resilient to climate change.

*This is in line with the South Cambridgeshire Local Plan Policy NH/2, Policy NH/4 and Policy NH/6*

##### Water efficiency

Reducing the consumption of water, both in use and during construction will be a key focus of the design. The intention is to achieve this through careful specification of sanitaryware. The building’s main water demands will be from the WC areas as well as the showers provided as part of the cyclists facilities, therefore water use in the building will be relatively low. Flow rates for these elements will be reduced as far as possible while not causing any maintenance issues (i.e. for the WC). It is anticipated that this will result in a minimum of 3 credits under the Wat O1 section of BREEAM to be achieved. This equates to a 40% improvement over the baseline and therefore represent a significant reduction in water consumption. For residential units, fittings specified to reduce water consumption will be implemented in order to facilitate achieving the goal of <110 litres/person/day. In addition the water consumption will be monitored and controlled throughout the construction process as well as in operation through the specification of water meters in all relevant areas.

In addition, the implementation of rainwater recycling will be considered for irrigation purposes. A rainwater harvesting study will be undertaken as the design progresses to confirm whether this is feasible and whether it would be beneficial to the Proposed Development beyond irrigation.

Native and locally sourced trees will be given preference. Drought tolerant species selection, winter planting, and attendance to watering in the first year will reduce the need for irrigation. The proposed Development will have a uniquely devised SUDs strategy, designed to meet the Local Planning Authority defined maximum restricted surface water runoff rate of 2.0 l/s/ha. Some elements involved include; attenuation cells, linear swale features, balancing pond and rain garden kerbs to select planting beds. In total, the Proposed Development will have an extensive, site wide focused drainage strategy which will also aim to provide excess water for increased site biodiversity through implementation of the swale/basin.

*This is in line with the South Cambridgeshire Local Plan Policy CC/4, Policy CC/7, Policy CC/8*

##### Minimising waste & sustainable material use

Key Circular Economy principles will be implemented to ensure efficient use of natural resources. Critical measures include:

- The amount of non-hazardous construction waste generated will be monitored and controlled. A strategy to reduce, reuse and recycle materials will be produced to minimise construction waste generation as far as possible. On site environmental data during the construction phase will be collated, reviewed and verified to promote transparency and accountability.
- A strict sustainable sourcing strategy aligned with industry best practice (e.g. ISO 20400 Sustainable procurement guidance) will be implemented to deliver sustainable outcomes through the whole value chain. This will include targets regarding reuse, recycling and local sourcing of materials.
- Post construction, dedicated spaces will be provided within office buildings and homes in order to promote waste reduction and recycling.

*This is in line with the South Cambridgeshire Local Plan Policy CC/6*

## 5. Conclusion.

This report presents the Sustainability Strategy for the Proposed Development which has been informed by national and local policy requirements, the Applicant’s vision and sustainable design and development guidance and frameworks including, but not limited to:

- National Planning Policy Framework (NPPF) (July 2021)
- National Building Regulations (2013)
- South Cambridgeshire District Council Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
  - Cambridgeshire flood and water SPD.
  - Sustainable design and construction SPD.

To capture the multi-faceted sustainability benefits and values that the Proposed Development can bring to the site, local community, surrounding businesses, and future building users, five defined factors – the people, the building, the social network, the natural environment, and the economic aspects – inform our proposed sustainability framework. These are summarised below:

Physical capital	<ul style="list-style-type: none"> <li>– Implement fabric first approach and maximising the use of renewable energy.</li> <li>– Minimise energy consumption through effective metering and operational energy modelling.</li> <li>– Enhancement of walking and cycling facilities around the site.</li> <li>– Promote sustainable means of transport to the site.</li> </ul>
Social capital	<ul style="list-style-type: none"> <li>– Enable community identity and social cohesion through placemaking.</li> <li>– Create spaces that take into account security needs to ensure occupants safety and wellbeing.</li> <li>– Create a new economic and social hub, creating employment for the local community as well as recreation spaces.</li> </ul>
Economic capital	<ul style="list-style-type: none"> <li>– Enable sustainable growth for the city of Cambridge and the wider area.</li> <li>– ensure the long term costs related to maintenance, energy and potential rectification are understood at the point of decision making.</li> <li>– Encourage the procurement of local and sustainable material and workforce.</li> </ul>
Human capital	<ul style="list-style-type: none"> <li>– Create a positive and healthy place that actively promotes the wellbeing and productivity of its building users.</li> <li>– Provide a positive user experience through continuous monitoring of the building performance and aftercare provision.</li> <li>– Design analysis to be completed to ensure building user comfort (e.g. thermal, acoustic, air quality).</li> <li>– Enhance walking paths to provide access to nature and passive recreation.</li> </ul>
Natural capital	<ul style="list-style-type: none"> <li>– Create a development that is resilient to climate change.</li> <li>– Protect and enhance biodiversity.</li> <li>– Meaningfully reduce potable water consumption.</li> <li>– Minimise construction waste generation.</li> </ul>

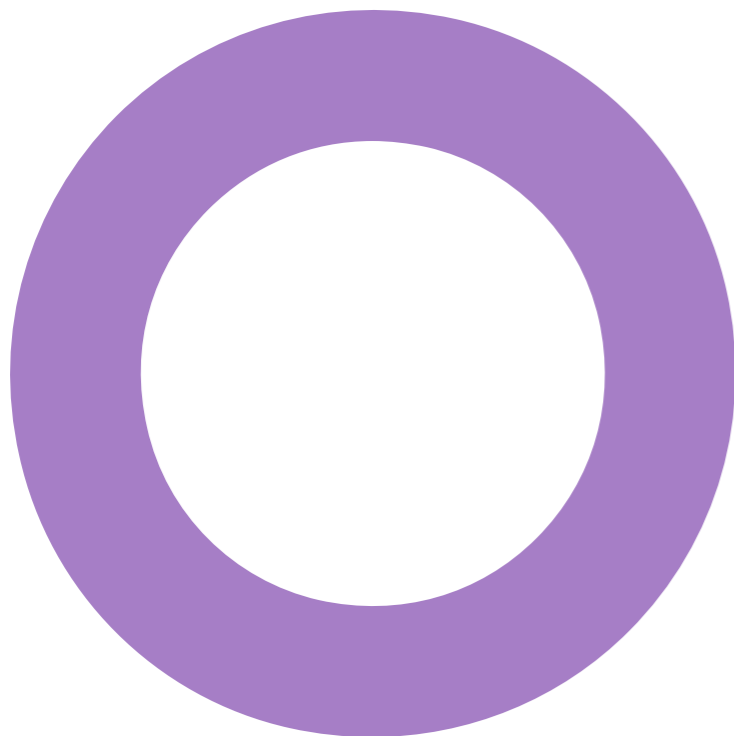
## Appendix A –Sustainability Checklist.



**Cambridge North.  
Cambridge.  
Brookgate.**

**SUSTAINABILITY**  
SUSTAINABILITY CHECKLIST

REVISION 07 - 27 MAY 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	09/12/2021	Issue for comment	D. Petts	J. Quirin	K. Couling
02	22/12/2021	Issue for comment	D. Petts	J. Quirin	K. Couling
03	24/12/2021	Issue for comment	D. Petts	J. Quirin	K. Couling
04	07/04/2022	Issue for comment	D. Petts	J. Quirin	G. Jones
05	13/04/2022	Issue for draft planning report	D. Petts	J. Quirin	G. Jones
06	29/04/2022	Planning issue	D. Petts	J. Quirin	G. Jones
07	27/05/2022	Update post-review	D. Petts	J. Quirin	G. Jones

This document has been prepared for Brookgate only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 23/23544

Document reference: NOTE-2323544-5A-DP-20211221-Sustainability Checklist-Rev 07.docx

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## Checklist

This document has been produced to collate the project team’s responses to the Sustainability Checklist for applications in South Cambridgeshire. This is required to support the planning application of Cambridge North. The final version of this document will be included as an appendix to the Sustainability Statement produced by Hoare Lea as part of the submission

The table below provides the detail of requirements relating to developments within South Cambridgeshire.

Code	Checklist	Summary of approach	Response owner and document reference
<b>TRANSPORT – SPD SECTION 2</b>			
T.1	Have you demonstrated that the development is in the most suitable location for access by public transport, walking and cycling, reducing the need to travel by private car?	The Transport Assessment accompanying the planning application details the site connectivity by walking, cycling and public transport. Being adjacent to Cambridge North Railway Station and the Guided Busway, the site has strong public transport connections. The Chisholm Trail to the south, and future greenway connections will further enhance the walking and cycling connections that are already available once complete.	PJA
T.2	Have you demonstrated how the development proposals give priority for walking and cycling over cars, linking the development with the surrounding walking and cycling network including planned projects?	High quality and direct pedestrian and cycle routes are provided throughout the site, connecting into existing infrastructure on site and in the local area. Priority for cyclists and pedestrians will be provided at side road crossings. Car parking are limited, but extensive high quality cycle parking will be provided to enable employees and visitors to travel by bike.	PJA
T.3	Will the proposed walking and cycling provision be in place by first occupation of the development so that sustainable travel patterns can be established at an early stage?	Yes, and some of the infrastructure on site already exists.	PJA

Code	Checklist	Summary of approach	Response owner and document reference
T.4	Where car parking is provided, has provision been made for electric vehicle charging?	<p>Yes, the current expectation is that 25% of spaces would be provided as active EV charging bays from the outset, with the remainder of spaces provided as passive bays enabling future connection.</p> <p>Currently the EV quantities are as follows:</p> <ul style="list-style-type: none"> <li>• Residential <ul style="list-style-type: none"> <li>○ At least half of the parking bays to be provided with slow EV charge points.</li> <li>○ Installation of passive charge points for all other spaces.</li> </ul> </li> <li>• Commercial <ul style="list-style-type: none"> <li>○ At least one slow EV charge point for every two parking bays.</li> <li>○ Installation of passive charge infrastructure for all other spaces.</li> </ul> </li> </ul> <p>The following breakdown of rapid/fast charge points based upon the latest floor areas we have (referring to above ground GIA floorspace):</p> <ul style="list-style-type: none"> <li>○ S4 – 14 spaces</li> <li>○ S6 – 10 spaces</li> <li>○ S7 – 11 spaces</li> <li>○ S8 – 11 spaces</li> <li>○ S9 – 19 spaces</li> </ul>	PJA
T.5	Have any ‘softer’ measures been included, to encourage uptake of more sustainable modes of transport?	Full Travel Plan has been prepared for One Milton Avenue, 1-3 Station Row and multi-storey car park, and Framework Travel Plan for outline remainder of the site.	PJA



Code	Checklist	Summary of approach	Response owner and document reference
T.6	Does the development inhibit the expansion of high-quality public transport/cycling and walking routes?	No. The proposals connect into existing infrastructure and extend routes through the site to enable future connection to subsequent development phases to the north and west.  The development places high priority on legible pedestrian and cycle circulation, with connections to the wider context, considering both existing destinations (Cambridge North Station and the Cowley Road cycle route) and potential future connections to the north and west. Within the development, pedestrian movement is prioritised in the public realm social spaces, with cycle routes clearly defined.	PJA / Robert Myers
<b>ENERGY AND CARBON REDUCTION – SPD SECTION 3.2</b>			
En.1	Has the 10% CO2 reduction required been established using SAP/SBEM calculations or other appropriate benchmarks?	For the full planning application, the 10% CO2 reduction required been established using benchmark BRUKL data. Using SAP 10.1 carbon factors a 10% reduction has been achieved.	HL/HM
En.2	Has the Energy Statement form been completed (see Appendix 5)?	For the full planning application, please refer to Section 6.4 (page 14) of REP-2323544-05-WN-20220420-Energy statement-Rev01.	HL/HM
En.3	Has initial feasibility work into renewable options for the development been provided?	For the full planning application, please refer to Section 6.1 (page 13) of REP-2323544-05-WN-20220420-Energy statement-Rev01.	HL/HM
En.4	Has the contribution that passive solar design will make to the energy requirements of the development been provided (optional)?	For the full planning application, it is intended that overall, the Proposed Development will achieve a minimum 10% reduction in annual regulated CO2 emissions beyond the baseline	HL/HM

Code	Checklist	Summary of approach	Response owner and document reference
		development via passive design and energy efficiency measures (i.e. before any benefit from low or zero carbon technologies). The passive design measures include refining the fabric performance and façade, specifying mechanical ventilation to recover heat and using LED lighting.	
En.5	Has it been clearly indicated which technology(s) has been chosen and demonstrated how this/these meet the 10% CO2 reduction requirement?	For the full planning application, air source heat pumps and solar PV panels will be provided.	HL/HM
En.6	Has visual information been provided to show the technology(s) has/have been successfully integrated into the development?	Architectural information includes plant screens, PV and any shading that is proposed.	HL/HM
En.7	Have you demonstrated how any adverse impacts on residential amenity (e.g. air quality impacts or noise) can be mitigated in accordance with Section 3.5 of this SPD? Where gas CHP is proposed, evidence will need to be provided to demonstrate that it meets the emissions standards set out in Appendix 3 of this SPD.	No gas or CHP on site, thus reducing its impact on local air quality.  Acoustic report covers impacts of noise from the proposed commercial buildings on nearby receptors. Suitable mitigation measures included in the design. Sitewide acoustic impact being reviewed by Temple Group.	HL/HM
En.8	For large scale development likely to take place over a number of years, have you taken into consideration Government proposals to stop new housing from having gas boilers from 2025?	The development will be all electric therefore Government proposals to stop new housing from having gas boilers from 2025 will be complied with	HL/HM
En.9	For growth areas and new settlements, has consideration been given to site-wide approaches to renewable and low carbon energy provision?	The development will be all electric and air source heat pumps as well as PV technologies will be implemented on site.	HL/HM

Code	Checklist	Summary of approach	Response owner and document reference
<b>WATER EFFICIENCY – SPD SECTION 3.3</b>			
Wat.1	For residential development have you prepared a Sustainability Statement setting out how your proposal will meet the requirement for potable water use of no more than 110 litres/person/day?	For residential units, efficient fittings have been specified to reduce water consumption in view of achieving the <110 litres/person/day target set out in the sustainability strategy	HL
Wat.2	For non-residential development have you included information to demonstrate that your proposal will be able to meet the requirement for achievement of 2 credits from Wat01 of the BREEAM assessment?	Three credits are currently targeted under Wat 01 as agreed at early stage with Emma Davies from Greater Cambridge. In addition to the specification of water efficient fittings in all non-residential buildings, the possibility to re-use rainwater to reduce potable water consumption is being investigated.	HL
Wat.3	Have you given consideration to water re-use as part of the sustainable drainage strategy for the site as part of an integrated approach to water management?	The possibility to re-use rainwater to reduce potable water consumption is being investigated.  Grey water harvesting not currently in scheme but identified as an opportunity we can develop further at later stage.	HL / PJA
<b>CLIMATE CHANGE ADAPTATION – SPD SECTION 3.4</b>			
Ca.1	Have you integrated measures to design out the risk of overheating, giving priority to architectural approaches in line with the cooling hierarchy?	A climate change adaptation strategy appraisal is be undertaken to support BREEAM Wst 05 credit. Any relevant measures highlighted in the appraisal will be implemented. The Proposed Development has sought to follow the cooling hierarchy to limit the effects of heat gains in summer.  The following mitigation methods are be implemented to reduce the amount of heat entering the building in summer at the Proposed Development:	HL/MAKE

Code	Checklist	Summary of approach	Response owner and document reference
		<ul style="list-style-type: none"> <li>- Suitable glazing ratio responding to orientation and space use.</li> <li>- Enhanced solar shading for areas at particular risk of overheating.</li> <li>- Glazing with a suitable g-value to limit solar heat gains (where appropriate).</li> <li>- High levels of insulation and low fabric air permeability will retain cool air during the summer months.</li> <li>- Energy efficient lighting (such as LED or CFL) with low heat output.</li> <li>- Insulation to heating and hot water pipework and minimisation of dead legs to avoid standing heat loss (from pipework to dwellings).</li> <li>- Energy efficient equipment with low heat output</li> </ul> <p>In addition the buildings will be air-conditioned to mitigate overheating in the laboratory / office spaces.</p>	
Ca.2	Have you undertaken overheating analysis following the CIBSE methodology and utilising future climate scenarios?	To inform occupant comfort and satisfy the Councils' requirement, an overheating risk analysis will be undertaken for the Proposed Development once the design is suitability developed to do so. The Proposed Development will be built to meet CIBSE's latest overheating standards (CIBSE Guide A is most relevant) for current (2020) and future (2050 and 2080) weather files. In addition, the BREEAM pre-assessment confirms that all three Hea 04 Thermal comfort credits are targeted, ensuring that the Proposed Development will be futureproofed against a warming climate.	HL

Code	Checklist	Summary of approach	Response owner and document reference
Ca.3	Have you considered the role of green infrastructure and cool materials in enhancing the adaptive capacity of your proposal?	<p>A network of tree planting is proposed across the development, providing shade and cooling to hard surface materials and adjacent buildings. These include:</p> <ul style="list-style-type: none"> <li>- Lines of large-growing (20m+ at maturity) street trees on the primary and secondary routes;</li> <li>- Extensive tree planting within the central residential garden space, including a number of large growing shade trees, a grove of Birch and smaller flowering trees;</li> <li>- Mid-sized trees planted alongside building facades and within raised planters;</li> <li>- A grove of closely space clipped trees providing continuous shade over seating areas; and</li> <li>- Small tree planting in raised planters on the roof.</li> </ul> <p>A large proportion of understory planting along streets, in a linear swale feature and in the residential gardens provides further transpiration and cooling.</p> <p>Across the site, light or pale golden coloured paving in 'oatmeal' and 'cream' dominates that hard surfaces and these aid in keeping paved areas cooler.</p>	HL / Robert Myers / Make
Ca.4	Where there are existing trees on your site, including ancient and veteran trees, how has the retention of these	As a former railway siding, trees are limited in the area south of Cowley Road. Trees and scrub form an important part of the design north of Cowley Road, where the 'wild habitat' is being retained in the	RPS / Robert Myers

Code	Checklist	Summary of approach	Response owner and document reference
	trees informed the layout of your development?	majority, with some selective removal to encourage germination of the ecologically rich Open Mosaic Habitat.	
Ca.5	How have you integrated the planting of new trees into your proposals, giving consideration to the right tree in the right place principle?	New trees are utilised throughout the design, as a structural line on Milton Avenue, as groups of large growing species in hard paving, in between parking bays and as informal vegetation on the banks of the swale on 'Station row'.	RPS / Robert Myers
Ca.6	What other measures have been incorporated into the development to enable it to cope with predicted climate change impacts, without increasing the use energy consuming ventilation and cooling?	<p>A climate change adaptation strategy appraisal is be undertaken to support BREEAM Wst 05 credit. Any relevant measures highlighted in the appraisal is being implemented. The Proposed Development has sought to follow the cooling hierarchy to limit the effects of heat gains in summer.</p> <p>The following mitigation methods are be implemented to reduce the amount of heat entering the building in summer at the Proposed Development:</p> <ul style="list-style-type: none"> <li>- Suitable glazing ratio responding to orientation and space use.</li> <li>- Enhanced solar shading for areas at particular risk of overheating.</li> <li>- Glazing with a suitable g-value to limit solar heat gains (where appropriate).</li> <li>- High levels of insulation and low fabric air permeability will retain cool air during the summer months.</li> <li>- Energy efficient lighting (such as LED or CFL) with low heat output.</li> </ul>	HL

Code	Checklist	Summary of approach	Response owner and document reference
		<p>–Insulation to heating and hot water pipework and minimisation of dead legs to avoid standing heat loss (from pipework to dwellings).</p> <p>–Energy efficient equipment with low heat output</p> <p>In addition the buildings will be air-conditioned to mitigate overheating in the laboratory / office spaces.</p>	
Ca.7	Where you are proposing to utilise thermal mass to help regulate internal temperatures, has this thermal mass been designed to be exposed and what is the strategy to enable night purge ventilation?	This will be considered as part of the climate change adaptation strategy appraisal. The buildings will be provided with variable-air-volume mechanical ventilation which will have the ability to provide night time purge ventilation when conditions allow.	HL / MAKE
<b>BIODIVERSITY AND GEODIVERSITY – SPD SECTION 3.5</b>			
Bio.1	Has a Preliminary Ecological Assessment and Protected Species Scoping Survey been conducted, with sufficient detail given the nature and size of the site and the proposed development?	An ecological appraisal has been conducted and includes a desk study and Phase 1 Habitat Survey and further survey work for invertebrates, bats, reptiles, birds and habitats/plants. Sufficient detail is provided in this report to assess the impact of the development and advise whether any mitigation is required pre and during construction.	RPS
Bio.2	If a protected or priority species and/or habitats have been identified, has a specialist been engaged to conduct a detailed survey? <a href="https://events.cieem.net/ProfessionalDirectory/Professional-Directory.aspx">https://events.cieem.net/ProfessionalDirectory/Professional-Directory.aspx</a>	Suitability experienced ecologists were used to undertake all the survey work required on site.	RPS
Bio.3	Has/will all the relevant information from these surveys been provided?	The ecological appraisal has been submitted to the Council.	RPS

Code	Checklist	Summary of approach	Response owner and document reference
Bio.4	Has the mitigation hierarchy been followed, demonstrating how existing habitats and species have been protected in the proposed ecological and landscape strategy? <a href="http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/">http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/</a>	The approach is captured in the draft Ecological Design Strategy submitted as part of the planning application.	RPS
Bio.5	Has the mitigation hierarchy been followed, demonstrating how any potentially adverse effects have been mitigated?	Mitigation and compensation measures are required and currently being designed into the development	RPS
Bio.6	Has the mitigation hierarchy been followed, demonstrating that adequate compensation measures have been proposed on or offsite, where it is agreed that damage is unavoidable?	Mitigation and compensation measures are required and currently being designed into the development with the aim of delivering BNG uplift of a minimum of 10%. calculations are being completed through the new DEFRA biodiversity metric calculator (v3.1) and are still being finalised	RPS
Bio.7	Has it been demonstrated that the proposals will deliver biodiversity net gain, with use of the DEFRA Biodiversity Offsetting metric?	Calculations are being completed through the new DEFRA biodiversity metric calculator (v3.1) and are still being finalised – currently the BNG uplift exceeds the minimum of 10%	RPS
Bio.8	For major development, has the Natural Cambridgeshire Local Nature Partnership (LNP) Developing with Nature Toolkit been adopted?	We have referred to it and is informing the process	RPS
Bio.9	Has a suitable biodiversity management and monitoring strategy for the site been proposed?	The approach is captured in the draft Ecological Design Strategy submitted as part of the planning application.	RPS
Bio.10	For development likely to affect a European site, what information have you provided to enable the local planning authority, as Competent Authority under the provisions of the Conservation of Habitats and Species	n/a	RPS

Code	Checklist	Summary of approach	Response owner and document reference
	Regulations 2017 (as amended) to record its decision with regard to likely significant effect, including undertaking Appropriate Assessment where necessary?		
<b>POLLUTION – SPD SECTION 3.6</b>			
<b>LIGHT POLLUTION</b>			
Pol.1	For all development with artificial lighting has a statement of the need for lighting been submitted and have the principles of an external lighting strategy that meets the requirements of the local plan policy/SPD been set out?	The range of activity on the Cambridge North Site – ranging across commercial, social and residential, means that to ensure safety and security, artificial light will be required. The principles behind the use of artificial light take full cognisance of the local plan policy/SPD and are detailed in the EQ2 Light Masterplan Report, 0541C_BD02E dated May 2022.	Eq2light
Pol.2	Will the final detailed external lighting design / scheme be in accordance with the guidance and principles set out in the light pollution section of the SPD?	Yes, the completed scheme will be in accordance with the guidance and principles set out in the light pollution section of the SPD. Key external guidance in this respect include relevant Institute of Lighting Professional (ILP) Guidance Notes, most notably 'Guidance Note 1/20 for the reduction of obtrusive light' and LG04 'Guidance on Undertaking Environmental Lighting Impact Assessments'	Eq2light
Pol.3	Has the development taken measures to reduce light pollution impacts on character, residential amenity and biodiversity?	Yes – key elements of the lighting strategy in this respect include minimised Upward Light Output Ratios (ULOR), discreet luminaire optical techniques, spectral outputs that reduced blue end compositions (the spectral outputs that disturb fauna) and part-night performance.	Eq2light

Code	Checklist	Summary of approach	Response owner and document reference
Pol.4	For substantive large-scale lighting installations such as the floodlighting of external recreational and sporting facilities/pitches or transport interchanges has a detailed lighting assessment been undertaken by a qualified Lighting Engineer or lighting company in accordance with Section 3.6.24 of the SPD?	There is no large-scale lighting of this type within the Cambridge North project.	Eq2light
Pol.5	For Environmental Impact Assessment (EIA) development has a lighting impact assessment been undertaken having regard to and in accordance with the Institute of Lighting Professionals 'PLG04 - Guidance on Undertaking Environmental Lighting Impact Assessments'?	Yes, as is indicated above, LG04 'Guidance on Undertaking Environmental Lighting Impact Assessments' forms part of our reference material for Cambridge North. Initial assessments have been undertaken and these will continue through design development.	Eq2light
Pol.6	For any proposal for the display of illuminated advertisements has the relevant information been provided?	Signage does not form part of the EQ2 Light Scope. However, we would expect that any illuminated building signage would be considered within the context of ILP LG05 Brightness of Illuminated Advertisements'	Eq2light
<b>CONTAMINATED LAND</b>			
Pol.7	Is the development site's land use history known? Is the site potentially affected by land contamination (including ground water contamination) that could result in unacceptable risks e.g. a previous potentially contaminative industrial or similar use on site or ground gases?  If yes, as a minimum, has a land contamination desk top study with risk assessment and site walk-over been	The site has historically been used as railway sidings and there is therefore the potential for the presence of contamination in soil and groundwater at the site. A phase 1 geo-environmental desk study, which includes preparation of a preliminary conceptual site model and preliminary qualitative risk assessment, forms part of the planning application.  Summarised, the site is former railway land and Rail sidings. The site is affected by	Brookgate / PJA



Code	Checklist	Summary of approach	Response owner and document reference
	undertaken and included with the application?	contamination which is being assessed through part of EIA.	
<b>NOISE</b>			
Pol.8	For major Noise Sensitive Development (NSD) located in a noisy environment or near to a specific existing noise generating source e.g. near to a busy road, railway line, noisy commercial/industrial premises including building services plant/equipment has an appropriate acoustic assessment /report been undertaken in accordance with the noise assessment process and submission requirements set out in the noise section of the SPD?	Cowley road has been flagged as the specific existing noise generating source. A noise assessment prepared by Temple Group has been produced to ensure the appropriate measures are implemented. HL have further produced specific noise assessments for some of the specific blocks including S4, S6-7 and S9. All assessments have been undertaken in accordance with noise assessment process and submission requirements set out in the noise section of the SPD.	PJA/ TG/ HL
Pol.9	For Noise Generating Development (NGD) such as industrial commercial/trade or business premises and uses including plant and equipment has an appropriate acoustic assessment/report been undertaken in accordance with the noise assessment process and submission requirements set out in the noise section of the SPD?	Hoare Lea have established design limits for Noise Generating Development (i.e. building services plant) in line with the objective limits set down by the Greater Cambridge Shared Planning Service. For the Reserved Matters applications, Hoare Lea have also presented an assessment of the proposals to demonstrate that these limits can be met. The outline planning has also had a high level discussion to assist with the design development.	HL
Pol.10	Has an 'Acoustic Design Statement' been included demonstrating that the principles of good acoustic design and noise mitigation will be followed for both NSD and NGD?	Criterion predating to the acoustic design statement have been achieved within the HL acoustic reports. They promote good acoustic design and noise mitigation for both NSD and NGD	HL

Code	Checklist	Summary of approach	Response owner and document reference
Pol.11	Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site?	1-3 Station Row will act as an acoustic barrier between the railway lines and the other areas of the site. This will automatically aid with reducing noise levels from existing noise sources in the centre of the site, as well as potentially enhancing the existing soundscape.	HM
Pol.12	For all development, has the impact of demolition construction noise/vibration been assessed and mitigation proposed?	Temple group have produced an EIA chapter which covers the assessment of any demolition construction noise/vibration and appropriate mitigation strategies have been suggested where relevant.	TG
Pol.13	For substantial development or infrastructure projects has a Noise and Vibration Demolition and Construction Environmental Management Plan been provided?	Construction Environmental Management Plan and Noise/Vibration Construction Plan to follow. Wates Construction are producing a separate EIA chapter in which covers a Noise and Vibration Demolition and Construction Environmental Management Plan for substantial/infrastructure projects.	TG
Pol.14	If the proposals are likely to generate a significant amount of traffic (defined as road traffic movements greater than 5% of Annual Average Daily Traffic) has a noise impact assessment of any increase in local traffic noise been undertaken?	On the whole the proposal will not lead to an increase in road traffic movement. The only road to exceed a 5% increase is Cowley road in which has had a noise assessment prepared by Temple group to ensure the appropriate measures are taken place.	PJA/ TG
<b>AIR QUALITY</b>			
Pol.15	Air Quality: How have you incorporated practical measures to mitigate the transport impacts of development on local air quality into the development (i.e. Low Emission Strategy for major developments)?	A Low Emission Strategy has been prepared as part of the planning application. The development is proposed to operate within allocated proportions of vehicle trip and car parking budgets	PJA

Code	Checklist	Summary of approach	Response owner and document reference
		determined in connection with the AAP Transport Evidence Base work.	
Pol.16	Have you undertaken an air quality impact assessment if the development is in particularly congested location or where there are particular travel problems, if generating large number of trips, if near or within the Air Quality Management Area?	Temple Group has prepared an Air Quality Assessment.	PJA
<b>ODOUR AND OTHER FUGITIVE EMISSIONS</b>			
Pol.17	For all industrial, commercial or business uses that generate odours or if substantial ventilation or extraction equipment is proposed has an overarching outline ventilation statement/strategy been provided?	Yes, all buildings will have a balanced mechanical supply and extract with heat recovery.  Note: This is mainly for lab tenant fume extract, this may need to be reviewed at the next stage through dispersion modelling.	HL
Pol.18	For low to medium odour risk generating developments such as hot food premises/commercial kitchens has an appropriate odour risk assessment been undertaken including the provision of the information requested in paragraphs 3.6.193 – 3.6.196 of the SPD?	Yes will be completed if relevant.  Note: there are no commercial kitchens on the premises. Retail use currently unknown, risk assessments will be undertaken where relevant.	HL
Pol.19	For higher risk odour generating uses, such as a new sewage treatment works or when odour sensitive uses are proposed near such uses, has a detailed odour assessment been undertaken in accordance with the Institute of Air Quality Management document 'Guidance on the	n/a	-

Code	Checklist	Summary of approach	Response owner and document reference
	assessment of odour for planning (IAQM, Version 1.1 - July 2018)?		
<b>SUSTAINABLE DRAINAGE SYSTEMS - REFER TO THE CAMBRIDGESHIRE FLOOD AND WATER SPD</b>			
SuDS.1	Have you completed the pre-application Checklist (Appendix E) and Surface Water Drainage Pro-forma (Appendix F) of the <a href="#">Cambridgeshire Flood and Water SPD</a>	This can't be completed yet, awaiting feedback from the City Council and LLFA Drainage Officers on our proposals.	PJA
<b>SUSTAINABLE SHOW HOMES - SPD SECTION 3.9</b>			
SuSh.1	For residential developments that will include a show home, have you given consideration to the range of measures that will be incorporated into the Show Home to enable home buyers to purchase additional options to enhance the environmental performance of their new home?	This will be reviewed as the design progresses	Brookgate
<b>HERITAGE ASSETS AND CLIMATE CHANGE - SPD SECTION 3.10</b>			
Ha.1	Where works to a heritage asset to address climate change are proposed, have you undertaken studies to ensure that your proposals are based on a thorough understanding of the building's historic evolution and construction (where these matters relate to the heritage significance of the asset), architectural and historic significance?	n/a	
Ha.2	Have you undertaken an assessment of the building's existing environmental performance, and how have your proposals been informed by this work?	n/a	

Code	Checklist	Summary of approach	Response owner and document reference
Ha.3	Have you developed a building monitoring and management strategy in order to assess the ongoing impact of the implemented measures on the asset's historic fabric?	n/a	
Ha.4	How have you factored in the potential for remediation works should ongoing monitoring identify that measures are leading to harm to the heritage asset?	n/a	
<b>RECYCLING AND WASTE FACILITIES CONSTRUCTION WASTE – SPD SECTION 3.11</b>			
Wr.1	Has the size and location of recycling and waste facilities, both for storage and collection, been factored into the design of the proposals using the requirements set out in the RECAP Waste Management Design Guide SPD and associated Toolkit?	<p>The toolkit involves a two-step process:</p> <p>Step 1 Developers should ensure that they are aware of the minimum requirements the Design Guide places upon them. A 'yes' should be placed in the adjacent box to signify that an issue has been considered at the stage of initial design proposals. Where a standard is not met, the developer must justify why this is the case as part of the Design and Access Statement which will be submitted with the planning application.</p> <p>Step 2 Evidence of design specifications/details should be provided to the Local Authority with reference to the necessary relevant plans</p> <p>Considering that the commercial storage requirements set a minimum expectation of 2600 litres per 1000 sqm gross floor area – this would equate to approximately 33 x 1100 litre Eurobins for S4 alone – therefore it is anticipated that a site wide recycling and waste strategy is to be reviewed and referenced in the respective design and access statements.</p>	ACME / MAKE

Code	Checklist	Summary of approach	Response owner and document reference
Wr.2	Has it been shown that the average and maximum distances for building users to move their waste to the storage/collection points is within the guidelines set out in the relevant guidance? If these targets are exceeded, have justification and mitigation measures been proposed?	A refuse strategy has been developed by Castle Consulting in association with PJA based on twice weekly servicing. The strategy confirms that all relevant guidance has been adhered to. Guidance followed comprises of RECAP Waste Management Design Guide, the SPD, demonstrates compliance with the general objectives of Policies CS16 and CS28 of the Cambridgeshire and Peterborough Minerals and Waste Core Strategy, as enshrined in the Cambridgeshire and Peterborough Minerals and Waste Local Development Framework (LDF).	MAKE
Wr.3	Have measures been put in place to: Reduce the amount of construction waste generated by the proposals, including the use of single-use plastics where alternative options exist; and Re-use and recycle remaining construction waste  (Non-residential schemes should refer to the BREEAM assessment)	<p>In line with BREEAM Wst 01 requirements, a Site Waste Management Plan is being implemented, and specific targets set for:</p> <ul style="list-style-type: none"> <li>- The amount of waste produced on site</li> <li>- The amount of waste (demolition, if applicable and non-demolition) diverted from landfill</li> </ul>	ACME / MAKE
<b>OTHER SUSTAINABILITY CONSIDERATIONS – SPD SECTION 4</b>			
Osc.1	Has a target been set for improving the environmental impact of materials used in constructing the development, with consideration given to the embodied carbon of materials?  Non-residential schemes should refer to the BREEAM assessment. Residential schemes should give consideration to use of the Green Guide to Specification, certification schemes for specific materials with further information available at:	In line with BREEAM Mat 01 requirements, a Life Cycle Assessment has been undertaken. The possibility to procure materials with EPDs is being reviewed.	HL

Code	Checklist	Summary of approach	Response owner and document reference
	<a href="http://www.greenbooklive.com/">http://www.greenbooklive.com/</a>		
Osc.2	Has consideration been given to providing food growing opportunities as part of the development, in the form of a private amenity space of the appropriate size and aspect? Have long term management and maintenance arrangements been considered in the design of these spaces?	Food growing opportunities – allotments – have been designed into the residential plots of the development. There are no food growing opportunities within the commercial plots.  Food growing will be limited due to the commercial nature of the development. Perennial fruiting vines and plants may be used to a limited extent on amenity roof gardens in planters.	ACME / Robert Myers / Brookgate
Osc.3	Have measures been integrated into the design to create healthy indoor environments, given consideration to issues such as daylight, ventilation and humidity control and the use of materials with low toxicity?	Floor to ceiling height, window sizes and opening doors onto terraces have all been considered to improve the indoor environment. In detail design, we will work alongside the services engineer to optimise the control of the space as well as develop the material specification to create a healthy indoor environment.	MAKE
Osc.4	For non-residential development, has consideration been given to creating a healthy indoor working environment, giving consideration to elements such as biophilic design?	There are a number of elements which have been considered at this stage to create a health indoor working environment. Main staircases are all within easy reach of the whole floorplate and are very visible from the central lobby. The structure has been developed to ensure additional, secondary accommodation stairs can be incorporated by the tenant to encourage active use. In addition a number of amenity terraces have been added on multiple levels, providing meaningful outdoor space to the occupants – these incorporate planted areas to be seen from the floorplate and also to be enjoyed externally. A landscape designer has been involved throughout these preliminary stages to ensure the quality of the	MAKE

Code	Checklist	Summary of approach	Response owner and document reference
		landscaped environment throughout the whole masterplan and building design.	
Osc.5	Has consideration been given to the role of smart technologies in the design of your proposals, giving consideration to the role that such technologies could play in both the construction and operational phases of the development?	In line with BREEAM Ene 02 and Wat 02 credits, smart meters will be installed throughout the development to meter key energy and water usage. Further consideration to smart technologies will be given at later stage.	HL / Brookgate
Osc.6	For new settlements covered by policies within Chapter 3 of the Local Plan, how do you plan to meet policy requirements to exceed baseline sustainable design and construction requirements established by the Local Plan? This could include the use of the BREEAM Communities certification scheme in light of the supporting text to policy CC/1	n/a	
Osc.7	Have you considered measures to enable residents/building owners to more easily retrofit their property in the future e.g. low temperature heating systems or 'stage 1 fit' pipework for rainwater harvesting?	In line with BREEAM Wst 06 requirements, the design team have considered various key strategies for Ease of Disassembly (table 1.1) and Functional Adaptability (table 1.2).	HL / ACME / MAKE



**DANIEL PETTS**

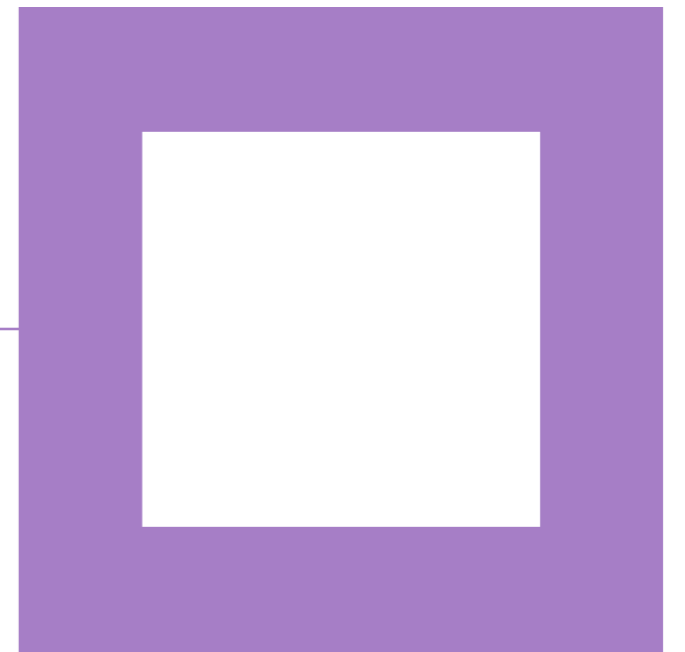
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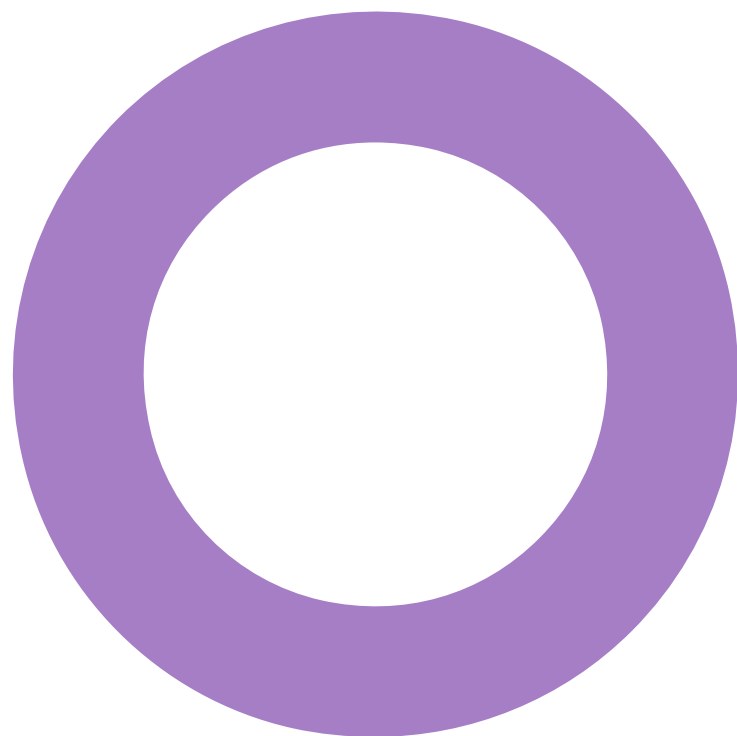


## Appendix B – BREEAM pre-assessment summary.

**One Milton Avenue.  
Cambridge North.  
Brookgate.**

**SUSTAINABILITY**

BREEAM NEW CONSTRUCTION 2018  
PRE-ASSESSMENT REPORT  
REVISION 03 - 08 APRIL 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	14/12/2021	Initial Issue	GZ	JQ	KC
02	09/02/2022	Update following Design Team Meetings	GZ	JQ	KC
03	08/04/2022	Update for planning issue	GZ	JQ	KC

This document has been prepared for Brookgate only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 2323544  
Document reference: REP-2323544-GZ-TPS-20211215- One Milton Avenue - BREEAM 2018 Pre-Assessment-Rev03

## BREEAM Audit box

BRE registration number	TBC
Licensed assessor	Joanne Quirin
Assessor support	Ghena Zakhour
BREEAM scheme	New Construction Offices
BREEAM scheme version	2018
Assessment stage	Pre-Assessment
Technical manual version	SD5078 Issue 3.0
Tier code (internal use only)	Tier 3

## BREEAM Credit filtering box

Building type and sub-group	Office- General office building
Building floor area	13,000m2
Designed to be untreated?	No
Building services (heating)	Wet system
Building services (cooling)	Air-conditioning
Commercial cold storage systems	No
Transportation systems	Yes
Laboratory (type, area and size)	No
Fume cupboards / containment devices	No
Unregulated water uses	Yes
External areas?	Yes
Statutory requirements impacting outdoor space?	No
Unregulated energy load	Yes
Post occupancy ENE01 credits targeted?	No

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## 1. Executive summary

This report provides an indicative BREEAM 2018 New Construction pre-assessment for the proposed Cambridge North - One Milton Avenue development.

The development falls under the BREEAM New Construction Offices category and a Shell and core assessment has been conducted. The proposed development is targeting a BREEAM 'Excellent' rating as a minimum, with an aspiration to achieve 'Outstanding' where possible.

The current anticipated baseline score is 84.42%, equivalent to a BREEAM 'Outstanding' rating, with a difference between the minimum required score for a BREEAM 'Excellent' rating of 70% of 14.42%.

A number of potential credits have also been identified that if included within the assessment strategy could result in the building achieving a potential score of 94.77%, equivalent to a BREEAM 'Outstanding' rating with a difference of 9.77% above the minimum required score.

A margin of at least 3% - 5% is recommended above the minimum required score at this stage to secure the target rating taking into account contingency for design changes and potential constraints identified during the construction stage.

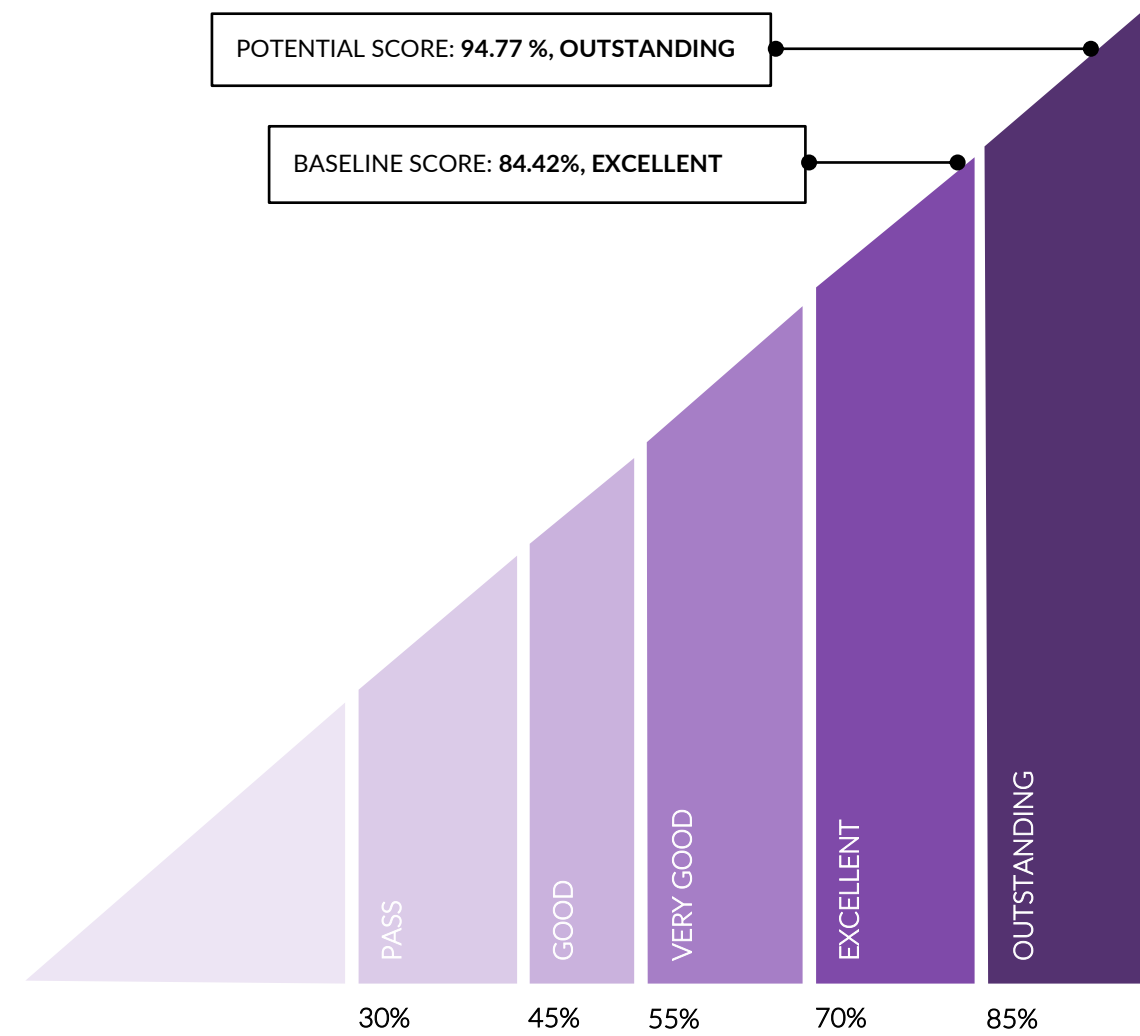


Figure 1: BREEAM 2018 Scale and Anticipated Performance Scores.



## 2. BREEAM Pre-Assessment

### 2.1 Introduction

This report relates to the proposed Cambridge North - One Milton Avenue development. It is recommended the building should be registered under the BREEAM 2018 scheme and assessed using the New Construction Offices criteria. The building is currently considered to be most suitable to be assessed using a Shell and core assessment type. The assessments will be targeting a BREEAM 'Excellent' rating as a minimum.

### 2.2 Initial Pre-Assessment

This pre-assessment has been carried out independently by a qualified BREEAM assessor prior to a review by the project design team. This report sets out a route to achieving the target rating, and highlights the design team members responsible for each credit issue. Credits have been refined by the design team, and each team member has provided feedback, identifying any relevant issues. The report and the predicted scores have been updated accordingly.

The following predicted scores have been calculated based in the initial Pre-Assessment workshop as well as various design team meetings:

- Baseline score / rating: 84.425% equivalent to a BREEAM 'Excellent' rating.
- Potential score / rating: 94.77% equivalent to a BREEAM 'Outstanding' rating.

All mandatory and minimum standards for the BREEAM 'Outstanding' rating have been included within the assessment strategy for the target baseline score.

The following potential credits have been identified that allow a BREEAM 'Outstanding' rating to be achieved with a comfortable margin over the minimum threshold of 85%:

- HEA04-02 Design for future thermal comfort
- TRA02 Sustainable Transport Measures
- WAT01 Water Consumption
- MAT01 Building Life Cycle assessment
- MAT02 Environmental Impacts from Construction Products
- MAT03 Responsible Sourcing of Materials
- WST02-01 Project Aggregates Points
- LE01- Contaminated Land
- LE04 Enhancement of ecology

Refer to Appendix B for detailed credit requirements.

### Project Team Members:

Discipline	Organisation	Abbreviation
Client / Developer	Brookgate	Client
Architect	MAKE	Arch
Landscape Architect	Robert Myers Associates	LA
Building Services Consultant	Hoare Lea	MEP
Civils	TBC	CE
Structural Consultant	Meinhardt	SE
Transport Consultant	PJA	TC
Ecologist	RPS Group	Eco
Planning Consultant	Bidwells	Planning

Table 1: Project Team Members.

### 3. Summary Score Sheet

The summary table below highlights the list of targeted credits for the current BREEAM 2018 pre-assessment. Mandatory credits to achieve a 'Very Good' rating and above are highlighted by **(M<sub>v</sub>)**. Additional mandatory credits for an 'Excellent' or 'Outstanding' rating are highlighted by **(M<sub>e</sub>)** and **(M<sub>o</sub>)** respectively. Exemplary (innovation) credits are written in brackets; e.g. (+1).

Table 2: BREEAM Target Summary.

Category	Issue	Credits		
		Available	Targeted	Potential
Management	Man 01: Project brief and design	4	4	-
	Man 02: Lifecycle cost and service life planning	4	4	-
	Man 03: Responsible construction practices <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	6	6	-
	Man 04: Commissioning and handover <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	4	4	-
	Man 05: Aftercare <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	-	-	-
Health & Wellbeing	Hea 01: Visual comfort	4	2	-
	Hea 02: Indoor air quality	1	1	-
	Hea 04: Thermal comfort	2	2	-
	Hea 05: Acoustic performance	1	1	-
	Hea 06: Security	1	1	-
	Hea 07 Safe and healthy surroundings	2	2	-
Energy	Ene 01: Reduction of energy use and carbon emissions <b>(M<sub>e</sub>) (M<sub>o</sub>)</b>	13	8	+2
	Ene 02: Energy monitoring <b>(M) (M<sub>e</sub>) (M<sub>o</sub>)</b>	2	2	-
	Ene 03: External lighting	1	1	-
	Ene 04: Low carbon design	3	2	-
	Ene 05: Energy efficient cold storage	-	-	-
	Ene 06: Energy efficient transportation systems	2	2	-
	Ene 07 Energy efficient laboratory systems	-	-	-
	Ene 08: Energy efficient equipment	-	-	-
Transport	Tra 01: Transport assessment and travel plan	2	2	-
	Tra 02: Sustainable transport measures	10	9	+1
Water	Wat 01: Water consumption <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	5	3	+2
	Wat 02: Water monitoring <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	1	1	-
	Wat 03: Water leak detection	2	2	-
	Wat 04: Water efficient equipment	1	1	-
Materials	Mat 01: Environmental impacts from construction products - Building life cycle assessment	7	5	-

Category	Issue	Credits		
		Available	Targeted	Potential
	Mat 02: Environmental impacts from construction products	1	0	+1
	Mat 03: Responsible sourcing of construction products <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	4	3	+1
	Mat 05: Designing for durability and resilience	1	1	-
	Mat 06: Material efficiency	1	1	-
Waste	Wst 01: Construction waste management <b>(M<sub>o</sub>)</b>	4	3	-
	Wst 02: Use of recycled and sustainably sourced aggregates	1	0	+1
	Wst 03: Operational waste <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	1	1	-
	Wst 04 Speculative finishes	1	1	-
	Wst 05: Adaptation to climate change	1	1	-
	Wst 06: Design for disassembly and adaptability	2	2	-
Land Use and Ecology	LE 01: Site Selection	2	0	+1
	LE 02: Identifying and understanding the risks and opportunities for the project	2	2	-
	LE 03: Managing negative impacts on ecology	3	3	-
	LE 04: Change and enhancement of ecological value	4	3	+1
	LE 05: Long term ecology management and maintenance	2	2	-
Pollution	Pol 01: Impact of refrigerants	3	2	-
	Pol 02: Local air quality	2	2	-
	Pol 03: Flood and surface water management	5	5	-
	Pol 04: Reduction of night time light pollution	1	1	-
	Pol 05: Reduction of noise pollution	1	1	-
Innovation	Inn 01: Approved innovation and exemplary level credits	20	3	+1
	Targeted weighted score rating:	84.42%, 'Excellent'		
	Potential weighted score rating:	94.77%, 'Outstanding'		

## 4. Conclusion

This pre-assessment has been conducted upon an initial credit review in collaboration with the design team, it is anticipated that the Proposed Development could achieve a score of 85.75%, equivalent to a BREEAM 'Excellent' rating.

Additional potential credits have also been identified which, if targeted, could result in a higher BREEAM performance score and rating; 94.77%, equivalent to a BREEAM 'Outstanding', and providing a comfortable buffer above the 85% threshold for an Outstanding rating. The potential credits include the following credit issues:

- HEA04-02 Design for future thermal comfort
- TRA02 Sustainable Transport Measures
- WAT01 Water Consumption
- MAT01 Building Life Cycle assessment
- MAT02 Environmental Impacts from Construction Products
- MAT03 Responsible Sourcing of Materials
- WST02-01 Project Aggregates Points
- LE01- Contaminated Land
- LE04 Enhancement of ecology

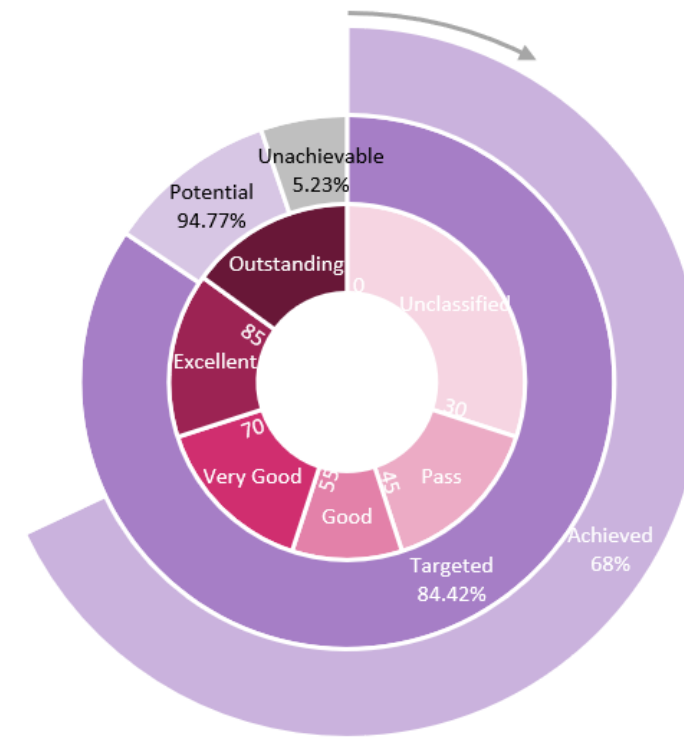


Figure 2 outlines the Proposed Development scores in each category. It also outlines where potential credits could be targeted to increase the assessment score and rating.

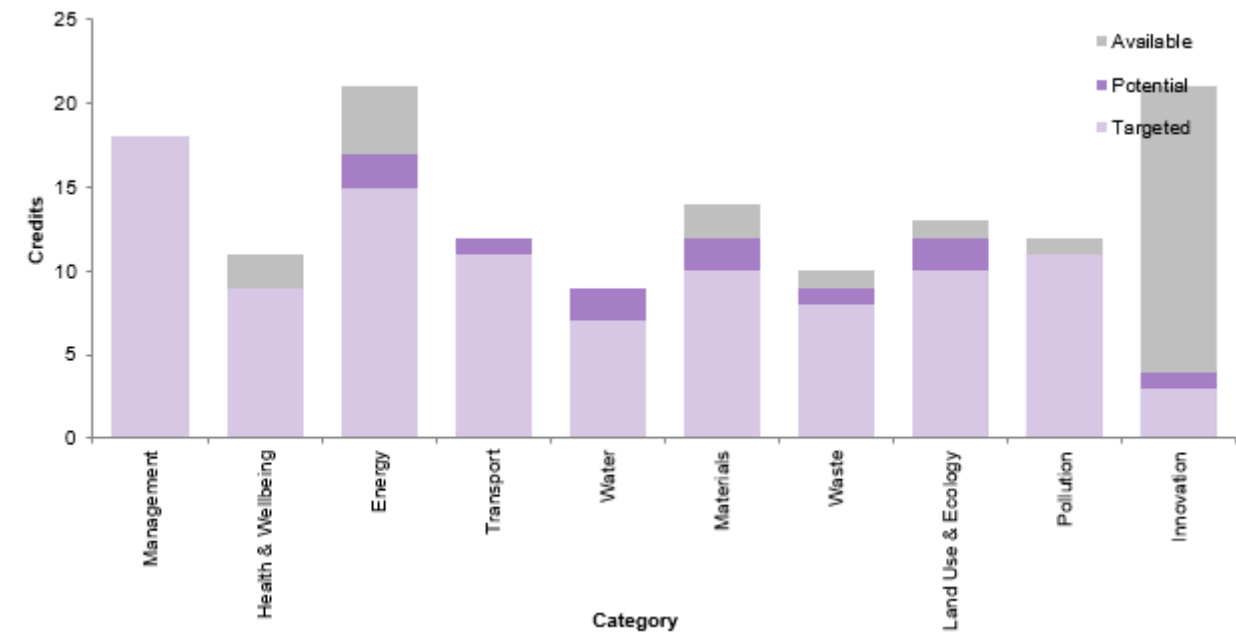


Figure 2: BREEAM Performance Summary and Targeted Credits.

## 5. Appendix A: Early Action Credits

Under the BREEAM, there are a number of credits that are time critical and require early action by the design team in order for the credits to be achieved. For these credits, the actions required prior to end of RIBA Stage 2; and the members of the design team responsible for these are listed below:

Credit Issues	RIBA Stage 2 Actions	Owner
<b>Man 01</b> Project brief and design	<ul style="list-style-type: none"> <li>- <b>First credit:</b> Stakeholder consultation: By the end of Stage 1 – definition and engagement of key stakeholders (incl. team member with significant construction experience) and their roles and responsibilities.</li> <li>- By the end of Stage 2. develop roles, responsibilities and contributions schedule detailing relevant roles throughout the project.</li> <li>- <b>Second credit:</b> Stakeholder consultation by completion of Concept Design.</li> <li>- <b>Third Credit:</b> Hoare Lea sustainability have been appointed to facilitate the setting and achievement of BREEAM performance targets for the project by Stage 2.</li> <li>- Advisory professional: BREEAM performance targets have been formally agreed between the client and design/project team before the end of Concept Design stage (RIBA Stage 2).</li> </ul>	Client BREEAM AP Planning Consultant
<b>Man 02:</b> Life cycle costing and service life planning	<ul style="list-style-type: none"> <li>- An elemental level Life Cycle Cost (LCC) analysis to be conducted based on the proposals developed during RIBA Work Stage 2.</li> </ul>	Cost Consultant
<b>Hea 06</b> Security	<ul style="list-style-type: none"> <li>- Appoint Suitability Qualified Security Specialist (SQSS) to conduct a Security Needs Assessment (SNA).</li> </ul>	SQSS
<b>Ene 04</b> Low carbon design	<ul style="list-style-type: none"> <li>- Conduct a passive design analysis and a renewable energy systems feasibility study.</li> <li>- Conduct an LZC feasibility study</li> </ul>	MEP Sustainability Consultant
<b>Tra 01</b> Transport assessment and travel plan	<ul style="list-style-type: none"> <li>- No later than Stage 2, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form.</li> </ul>	Transport consultant
<b>Mat 01</b> Environmental impacts from construction products - Building life cycle assessment	<ul style="list-style-type: none"> <li>- Conduct outline design LCA assessment and options appraisal. This LCA must be submitted to BRE Global prior to planning application submission.</li> </ul>	LCA Consultant
<b>Mat 03</b> Responsible sourcing of materials	<ul style="list-style-type: none"> <li>- Conduct and use a project sustainable procurement plan for the project.</li> </ul>	Client


Credit Issues	RIBA Stage 2 Actions	Owner
<b>Mat 06</b> Material efficiency	<ul style="list-style-type: none"> <li>- Set targets and report on opportunities and methods to optimise the use of materials. Conduct and record the implementation of material efficiency.</li> </ul>	Architect Structural Engineer Civil engineer
<b>Wst 05</b> Adaptation to climate change	<ul style="list-style-type: none"> <li>- Conduct a climate change adaption strategy appraisal for structural and fabric resistance.</li> </ul>	Architect MEP Structural Engineer
<b>Wst 06</b> Design for disassembly and adaptability	<ul style="list-style-type: none"> <li>- Undertake a building-specific disassembly assessment and functional adaptation strategy study.</li> <li>- Subsequently incorporate adaption measures into the design where practical and cost effective at RIBA Stage 4.</li> </ul>	Architect MEP Structural Engineer
<b>LE 02</b> Identifying and understanding the risks and opportunities for the project	<ul style="list-style-type: none"> <li>- The ecologist must be appointed by RIBA Stage 1 to conduct initial surveys, and subsequently provide recommendations in a report at RIBA Stage 2.</li> <li>- The project team is required to liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites.</li> </ul>	Ecologist Client
<b>LE 03</b> Managing negative impacts on ecology	<ul style="list-style-type: none"> <li>- Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief.</li> </ul>	Ecologist Client

Table 3: BREEAM 2018 Early Action Credits (RIBA Stage 1 and 2)


## 6. Appendix B: Detailed Credit Assessment

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
<b>Management</b>					
Man 01 Project brief and design	<p><b>First credit - Stakeholder consultation (project delivery):</b> Where evidence provided demonstrated that from RIBA stage 2 (design brief) or equivalent the client, building occupier, design team and contractor have met and are involved in contributing to the decision-making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during each key phase. Consideration of contributions must meet specified minimum requirements</p> <p>The project team demonstrates how the project delivery stakeholder contributions and consultation process outcomes influence the following:</p> <ul style="list-style-type: none"> <li>- Initial Project Brief</li> <li>- Project Execution Plan</li> <li>- Communication Strategy</li> <li>- Concept Design</li> </ul>	1	1	<p><b>RIBA Stage 2</b> Development of design responsibility matrix to identify project roles and responsibilities. How allocation of these roles and responsibilities has altered the responsibility matrix is to be identified.</p>	Client
	<p><b>Second credit - Stakeholder consultation (interested parties):</b> Where evidence provided demonstrates that prior to the completion of the Concept Design stage, all relevant interested party stakeholders have been consulted by the design team and this covers the minimum consultation content (including but not limited to functionality, impacts on local community, inclusive and accessible design). The impact this consultation has had on the Project Brief and Concept Design must be demonstrated and consultation feedback has been given to all relevant parties by the developed design stage.</p> <p>A design workshop is undertaken that focuses on operational energy.</p>	1	1	<p><b>RIBA Stage 2</b> External consultation exercise to be performed that included all relevant stakeholders. Stakeholders should have the ability to comment on proposals, with all feasible consultation incorporated. Consultation feedback to be provided to consultee group.</p>	Client
	<p><b>Pre-requisite</b> The project team, early in the design process formally agrees BREEAM targets for the project.</p> <p><b>Third credit - BREEAM AP (concept design):</b> Where evidence provided demonstrates that a BREEAM AP has been appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project and evidence shows that the designed BREEAM performance target(s) has been contractually agreed and demonstrably achieved by project design. The BREEAM AP appointment must be separate to the appointed assessor.</p>	1	1	<p><b>RIBA Stage 2</b> Hoare Lea have been appointed as BREEAM AP to assist in setting the targets for the project. This pre-assessment document includes the agreed target of Excellent as a minimum and an aspiration of achieving an Outstanding.</p>	BREEAM AP
	<p><b>Fourth credit - BREEAM AP (developed design):</b> Where evidence provided demonstrates that the Third credit is achieved and a BREEAM AP is appointed to monitor progress against the agreed BREEAM performance target(s). This is done by attending key project/design team meetings during the developed design and reporting to the client throughout the process.</p>	1	1	<p>Appointment of BREEAM AP to regularly update the design team on the progress of the BREEAM assessment and to consider how design development will impact the score.</p> <p>Note: HL Sustainability have been appointed as BREEAM AP.</p>	BREEAM AP
Man 02 Life cycle impacts	<p><b>First and second credit - Elemental life cycle cost (LCC):</b> Where evidence provided demonstrates that an elemental Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during Process Stage 2 (concept design/RIBA Stage 2) or equivalent.</p> <p>The LCC analysis shows an outline LCC plan for the project, appraising a range of options based on multiple cash flow scenarios e.g. 20, 30, 50, or 60 years and a fabric and servicing strategy for the project outlining services component and fit-out options.</p>	2	2	<p><b>RIBA Stage 2</b> Elemental LCC study to be commissioned to address different design options. The design should incorporate the lowest lifecycle cost design features.</p>	Cost Consultant



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p><b>Third credit - Component level LCC option appraisal:</b> Where evidence provided demonstrates that a component level LCC plan has been developed by end of Process Stage 4 (RIBA Stage 4) including the following component types:</p> <ul style="list-style-type: none"> <li>- Envelope: e.g. cladding, windows, and/or roofing</li> <li>- Services: e.g. heat source cooling source, and/or controls</li> <li>- Finishes: e.g. walls, floors and/or ceilings</li> <li>- External spaces</li> </ul> <p>Demonstrate using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.</p>	1	1	Update to LCC model for the development to identify lowest lifecycle cost design features are incorporated.	Cost Consultant
	<p><b>Fourth credit - Capital cost reporting:</b> Where evidence provided demonstrates reporting of the capital cost for the building in pounds per square metre (£/m<sup>2</sup>) via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.</p>	1	1	Cost consultant to confirm the cost of the project with the relevant inclusions and exclusions.	Cost Consultant
<p>Man 03 (M<sub>e</sub>) (M<sub>o</sub>) Responsible construction practices</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>- One credit (responsible construction management) for Excellent</li> <li>- Two credits (responsible construction management) for Outstanding</li> </ul>	<p><b>Pre-requisite</b> All timber and timber based products used on the project is 'legally' harvested and traded timber</p> <p><b>First credit - Environmental management:</b> Evidence which demonstrates that the principle contractor operates an environmental management system (EMS) covering main operations e.g. third party certified to ISO 14001/EMAS or equivalent standard or have a structure that is in compliance with BS 8555-2003 and has reached stage 4 of implemented stage.</p> <p>Evidence that the principal contractor implements best practice pollution policies and procedures on-site in accordance with Pollution Prevention Guidelines, PPG6. It is understood this document has been withdrawn, however BRE identify this still constitutes best practice.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Pre-requisite</b> The client and contractor formally agree and demonstrate performance targets.</p> <p><b>Second credit - BREEAM AP (site):</b> Evidence which demonstrates that a BREEAM AP is appointed to monitor the project to ensure ongoing compliance with relevant sustainability performance/process criteria. The defined BREEAM performance target forms a requirement of the principal contractor's contract and to achieve this credit in final post construction phase of assessment, the BREEAM-related performance target must be demonstrably achieved by the project.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Third and fourth credit - Responsible construction management:</b></p> <p><b>Using the BREEAM checklist - up to two credits:</b> Appoint a dedicated person to be responsible for monitoring and reporting on activities against risk evaluation documents collected.</p> <p>The principal contractor evaluates the risks (on-site and off-site), plans and implements actions to minimise the identified risks, covering the following, where appropriate:</p> <ul style="list-style-type: none"> <li>- <b>Vehicle movement on and near site</b> <ul style="list-style-type: none"> <li>- Management of construction site entrance (M)</li> <li>- Ensure development footprint is accessible for delivery vehicles with safety features (e.g. Side under run protection)</li> <li>- Identify access routes to the development footprint, including for heavy vehicles to minimise the safety risks and disruption to others.</li> </ul> </li> <li>- <b>Pollution management</b></li> </ul>	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Minimise the risks of air, land and water pollution. (M)</li> <li>- Minimise the risks of nuisance from vibration, light and noise pollution.</li> <li>- <b>Tidiness</b> <ul style="list-style-type: none"> <li>- Practices ensure the development footprint is safe, clean and organised at all times. This includes, but is not limited to, facilities, materials and waste storage. (M)</li> <li>- Ensure clear and safe access in and around the buildings at the point of handover. (M)</li> </ul> </li> <li>- <b>Health and wellbeing</b> <ul style="list-style-type: none"> <li>- Provide processes and equipment required to respond to medical emergencies. (M)</li> <li>- The principal contractor identifies and implements initiatives to promote and maintain the health and wellbeing of all site operatives within the development footprint. This can be via site facilities, site management arrangements, staff policies etc.</li> <li>- Establish management practices and facilities encouraging equality, fair treatment and respect of all site operatives. (M)</li> <li>- Provide secure, clean and organised facilities (e.g. changing and storage facilities) for site operatives within the development footprint.</li> </ul> </li> <li>- <b>Security processes</b> <ul style="list-style-type: none"> <li>- Minimise risks of the site becoming a focus for antisocial behaviour in the local community (e.g. robust perimeter fencing, CCTV, avoid creating dark corners etc.).</li> </ul> </li> <li>- <b>Training, awareness and feedback</b> <ul style="list-style-type: none"> <li>- Aspects of the construction process that might impact the community are communicated regularly, ensuring that nuisance and intrusion are minimised.</li> <li>- Ensure ongoing training is provided, and up to date, for personnel and visitors. (M)</li> <li>- The principal contractor ensures that site operatives are trained for the tasks they are undertaking. (M)</li> <li>- The fleet operators, undertakes driver training and awareness to promote safety within the development footprint and off site.</li> </ul> </li> <li>- <b>Monitoring and reporting</b> <ul style="list-style-type: none"> <li>- The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.</li> <li>- All visitor, workforce and community accidents, incidents and near misses are recorded and action is taken to reduce the likelihood of them reoccurring. (M)</li> <li>- Processes are in place to facilitate collecting and recording feedback from the community and to address any concerns related to the development footprint.</li> </ul> </li> </ul> <p>One credit is achieved for meeting the requirements for all mandatory sections, identified by (M) Two credits are achieved for meeting the requirements for all mandatory and six additional requirements An additional exemplar level credit is available for achieving all requirements within Table 4.1 (identified above)</p>				
	<p><b>Exemplary credit - Responsible construction practices:</b></p> <p>An additional exemplary level credit is available for achieving all requirements within Table 4.1 (identified above)</p>	1	1	<p>All of the items under Table 4.1 (detailed left) are to be achieved by the Contactor. This will require a letter of commitment or a compliant clause in the ER docs and will require full evidence at post construction stage.</p> <p>INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements</p>	Client


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
				documentation to require the contractor to achieve.	
	<p><b>Fifth and sixth credit - Monitoring of construction-site impacts:</b> Where evidence provided demonstrates the responsibility has been assigned to an individual for monitoring, recording and reporting energy use, water consumption and transport data from all on-site construction processes throughout the build programme.</p>	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
<p>Man 04 (M<sub>v</sub>), (M<sub>e</sub>), (M<sub>o</sub>) Commissioning and handover  Mandatory: - One credit (commissioning test schedule and responsibilities) and criterion 11 (Building User Guide for Very Good and above)</p>	<p><b>First credit - Commissioning and testing schedule and responsibilities:</b> - Where evidence provided demonstrates a schedule of commissioning and testing that identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric, and that all commissioning is done in accordance with current Building Regulations, BSRIA and CIBSE guidelines. - An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, testing, and where necessary, re-commissioning on behalf of the client - The principal contractor accounts for the commissioning and testing programmes, responsibilities and criteria within their budget and main programme of works, allowing for sufficient time to complete commissioning and testing prior to handover. - Specific requirements relate to BMS commissioning</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
	<p><b>Second credit - Commissioning - design and preparation:</b> Where evidence provided demonstrates a specialist commissioning manager is appointed during the design stage with responsibility for: - Undertaking design reviews - Providing commissioning management input - Management of commissioning and performance testing.</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
	<p><b>Third credit - Testing and inspecting building fabric:</b> Where credit 1 is achieved and evidence provided demonstrates that the integrity of the building fabric is quality assured through compliant post construction testing and inspection. Any defects identified in the <b>thermographic survey</b> or airtightness testing reports are rectified prior to building handover and close out.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Fourth credit - Handover:</b> - Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non-technical facilities management team/building manager). This must be presented to the building user first and amended to suit the occupier's needs. - A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans in addition to training for building occupiers (non-technical building users).</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	Client
Health and Wellbeing					
Hea 01 Visual comfort	<p><b>Second and third credits - Average daylighting:</b> - Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria as outlined below, in addition to room depth criterion, daylight uniformity or annual illuminance levels.</p> <p><b>Office buildings: two credits</b> - All occupied spaces unless indicated as not relevant: 2.0%, 80% area</p>	2	0	Credit not targeted.	-


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p><b>Fourth credit - View out:</b> Where evidence provided demonstrates that 95% of floor areas in relevant building areas are within 8m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding wall area.</p>	1	1	Based on the current design, it is anticipated that this credit can be targeted.	Architect
	<p><b>Fifth credit - Lighting levels and controls:</b> Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard.</p> <ul style="list-style-type: none"> <li>- For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13, 2.15, 2.20, 6.10 and 6.20.</li> <li>- For external areas, lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas Lighting of roads and public amenity areas<sup>3</sup> and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places.</li> </ul> <p>Lighting should be zoned as follows: In office areas, zones of no more than four workplaces</p> <ul style="list-style-type: none"> <li>- Workstations adjacent to windows/atria and other building areas separately zoned and controlled</li> <li>- Seminar and lecture rooms: zoned for presentation and audience areas</li> <li>- Library spaces: separate zoning of stacks, reading and counter areas</li> <li>- Dining, restaurant, café areas: separate zoning of servery and seating/dining areas</li> </ul> <ul style="list-style-type: none"> <li>- Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5</li> </ul>	1	1	<p>To be included within the Employer's Requirements MEP documentation.</p> <p>It is noted that internal lighting is not assessed as part of a shell and core project.</p>	MEP
	<p><b>Exemplary credits:</b> Up to two credits are available where evidence is provided which demonstrates that the exemplary level daylight requirements and the exemplary level artificial lighting requirements are achieved, as outlined below:</p> <p><b>Daylight: One credit</b> Daylight criteria achieved by either the exemplar daylight factors, or exemplary level minimum and average point illuminance factors.</p> <p><b>Daylight Factors - All building types (excluding retail):</b></p> <ul style="list-style-type: none"> <li>- Functions as identified in the standard criteria (multi storey buildings): 3.0%, 80% area</li> <li>- Functions as identified in the standard criteria (single storey buildings): 4.0%, 80% area</li> <li>- Prisons and court cells: 2.0%, 80% area</li> <li>- Prison internal association/atrium area: 5.0%, 80% area</li> </ul> <p>OR</p> <p><b>Minimum and Point Illuminance Factor - All building types (excluding retail):</b></p> <ul style="list-style-type: none"> <li>- Multi-storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 2,650 hours per year or more, Minimum daylight illuminance at least 90 lux for 2,650 hours per year or more.</li> <li>- Single storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 3,000 hours per year or more, Minimum daylight illuminance at least 120 lux for 3,000 hours per year or more.</li> </ul> <p><b>Artificial Light: One credit</b></p>	2	0	Credits not targeted	-

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	One credit is available where lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise.				
Hea 02 Indoor air quality	<p><b>Prerequisite - Indoor air quality (IAQ) plan:</b> Where evidence provided demonstrates that an indoor air quality plan has been produced no later than the end of concept design stage, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The IAQ must include:</p> <ul style="list-style-type: none"> <li>- Removal of contaminant sources</li> <li>- Dilution and control of contaminant sources <ul style="list-style-type: none"> <li>- Where present, consideration is given to the air quality requirements of specialist areas such as Laboratories</li> </ul> </li> <li>- Procedures for pre-occupancy flush out</li> <li>- Third party testing and analysis</li> <li>- Maintaining good indoor air quality in-use.</li> </ul>	-	-	Indoor air quality plan to be developed for the ventilation design for the project.	IAQ Specialist
	<p><b>First credit - Ventilation:</b> Where fresh air is provided in accordance with the relevant standard for ventilation based on the building type. Ventilation pathways are designed to minimise the ingress and build up of pollutants inside the building. Suitable filtration is provided to reduce the impact of external air pollution.</p> <p>Filtration to be design in accordance with BS EN 13779:2007 Annex A3. The specified filters should achieve a minimum Indoor Air Quality of IDA2.</p> <p>For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution or designed in accordance with BS EN 13779:2007 Annex A2.</p> <p>Areas of the building subject to large and unpredictable or variable occupancy patterns have CO<sub>2</sub> or air quality sensors specified and:</p> <ul style="list-style-type: none"> <li>- In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space.</li> <li>- In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO<sub>2</sub> levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.</li> </ul> <p>For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10</p>	1	1	To achieve this credit, the design should have suitable filtration and separation of extract/supply grilles. Consideration of relevant areas required for CO <sub>2</sub> sensors controlling the ventilation system	Architect & MEP
Hea 04 Thermal comfort	<p><b>First credit: Thermal modelling</b> Where evidence provided demonstrates that thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design (winter) and CIBSE TM52/TM59 methodologies (summer) as appropriate to the building and/or building areas.</p>	1	1	Thermal model based on latest design to be provided to identify compliance with comfort criteria.	Energy Consultant
	<p><b>Second credit: Design for future thermal comfort</b> Where credit 1 is achieved and evidence provided outlines that the thermal modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design, and CIBSE TM52/TM59 for a projected climate change environment.</p>	1	1	Thermal model based on future design to be provided to identify compliance with comfort criteria.	Energy Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Where these levels are not met the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions. Additionally, evidence is provided for air-conditioned buildings, the PMV and PPD indices based on the modelling are reported via the BREEAM assessment scoring and reporting tool.			Thermal model based on latest design to be provided to identify compliance with future thermal comfort criteria.	
Hea 05 Acoustic performance	For Shell and Core assessments, only the indoor ambient noise levels are applicable.  One credit where the following criteria is met where the building meets the appropriate acoustic performance standards and testing requirements defined in the checklists and tables section which defines criteria for the acoustic principles of: - Indoor ambient noise level	1	1	Acoustic assessment of the proposed spaces to feed into architectural and structural design.	Acoustician & Architect
Hea 06 Security	<b>One credit - Security of site and building:</b> Where evidence provided demonstrates that a suitably qualified security specialist (SQSS) conducts an evidence-based Security Needs Assessment during or prior to Concept Design (RIBA Stage 2). The recommendations from the SQSS must be implemented into the design.	1	1	<b>RIBA Stage 2</b> A Security Needs Assessment (SNA) is required to be performed by a Suitability Qualified Security Specialist (SQSS). Following assessment of the scheme, the design incorporates the recommendations of the scheme.	Security Consultant
	<b>Exemplary level criteria</b> A compliant risk based security rating scheme has been used e.g. SABRE. The performance against the scheme has been confirmed by independent assessment and verification.	1	0	Credit not targeted.	-
Hea 07 Safe and healthy surroundings	<b>First credit - Safe access:</b> Where external site areas form part of the assessed development the following apply: - Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. - Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: - The site entrance to the building entrance, - Car parks (where present) to the building entrance - The building to outdoor space - Connecting to off-site paths where applicable. - Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.  Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply: - Delivery areas are not accessed through general parking areas and do not cross or share the following: - pedestrian and cyclist paths - outside amenity areas accessible to building users and general public. - There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. - Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.  <b>Second credit - Outside space</b> There is an outside space providing building users with an external amenity area.  The space must be of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly	2	2	First credit: A technical note demonstrating compliance with all the requirements (detailed left) is to be provided.  Second credit: Anticipated at the current time that the design can incorporate a compliant layout. This will need to be thoroughly considered, as there are a number of interacting criteria.	Architect





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	intended for building staff, but can be used by other building users where relevant and beneficial to the building users. The outside space must: <ul style="list-style-type: none"> <li>- Be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky</li> <li>- Have appropriate seating areas and be non-smoking,</li> <li>- Be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.).</li> </ul>																																				
<b>Energy</b>																																					
<p>Ene 01 (Me) (Mo) Reduction of carbon emissions</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>- Four credits for Excellent</li> <li>- Six credits (energy performance) and 4 credits (energy modelling and reporting) for Outstanding</li> </ul>	<p>Up to nine credits:</p> <p>Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO<sub>2</sub> emissions. The number of credits achieved is determined by comparing the Energy Performance Ratio for New Construction (EPR<sub>NC</sub>) with the benchmarks in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Minimum Standards</th> </tr> <tr> <th>BREEAM credits</th> <th>EPR<sub>NC</sub></th> <th>Rating</th> <th>Minimum Requirements</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.1</td> <td rowspan="3">-</td> <td rowspan="3">Requires a performance improvement progressively better than the relevant national building regulations compliant standard</td> </tr> <tr> <td>2</td> <td>0.2</td> </tr> <tr> <td>3</td> <td>0.3</td> </tr> <tr> <td>4</td> <td>0.4</td> <td rowspan="2">Excellent</td> <td rowspan="2">Requires 4 credits to be achieved (equivalent to an EPR<sub>NC</sub> of at least 0.4).</td> </tr> <tr> <td>5</td> <td>0.5</td> </tr> <tr> <td>6</td> <td>0.6</td> <td rowspan="4">Outstanding</td> <td rowspan="4">Requires 6 credits to be achieved (equivalent to an EPR<sub>NC</sub> of at least 0.6) and 4 credits for Energy modelling and reporting.</td> </tr> <tr> <td>7</td> <td>0.7</td> </tr> <tr> <td>8</td> <td>0.8</td> </tr> <tr> <td>9</td> <td>0.9</td> </tr> </tbody> </table>			Minimum Standards		BREEAM credits	EPR <sub>NC</sub>	Rating	Minimum Requirements	1	0.1	-	Requires a performance improvement progressively better than the relevant national building regulations compliant standard	2	0.2	3	0.3	4	0.4	Excellent	Requires 4 credits to be achieved (equivalent to an EPR <sub>NC</sub> of at least 0.4).	5	0.5	6	0.6	Outstanding	Requires 6 credits to be achieved (equivalent to an EPR <sub>NC</sub> of at least 0.6) and 4 credits for Energy modelling and reporting.	7	0.7	8	0.8	9	0.9	9	4 (+2)	<p>Nine credits applicable to assessment type 4 credits are targeted with the potential to achieve 6 upon review. It is noted that 4 credits are required as a minimum to achieve an Excellent.</p> <p>Energy performance analysis using appropriate simulation tools in order for output parameters to be used. EPR metrics to be provided.</p>	MEP / Sustainability
			Minimum Standards																																		
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	<p>Four credits - Prediction of operational energy consumption</p> <p>Pre-requisite</p> <p>Prior to completion of the concept design, relevant members of the design team hold a preliminary design workshop focusing on operational energy performance.</p> <p>Four credits – Energy modelling and reporting</p> <p>Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures and report predicted energy consumption targets by end use, design assumptions and input data (with justifications). In addition, credits are achieved for completing a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.</p>	4	4	<p>Prediction of operational energy consumption will be undertaken and therefore these credits are targeted. The assessment would require specialist appointment.</p>	MEP / Sustainability																																
	<p>Exemplary level criteria</p> <p>Up to two credits - Beyond zero net regulated carbon</p>	5	0	Credits not targeted.	-																																

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
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	<p>The building achieves an EPR NC <math>\geq 0.9</math> and zero net regulated CO<sub>2</sub> emissions.</p> <p>Energy generation from on-site and near-site LZC sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. Credits are achieved based on the percentage of additional emissions from unregulated energy that are offset by LZC sources.</p> <p><b>Three credits - Carbon negative</b> The building is deemed carbon negative where &gt; 100% (see Table 6.2 below) of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZC sources</p> <table border="1"> <thead> <tr> <th>Exemplary performance credits</th> <th>Equivalent % criteria</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10%</td> </tr> <tr> <td>2</td> <td>50%</td> </tr> <tr> <td>3</td> <td>&gt;100%</td> </tr> </tbody> </table>	Exemplary performance credits	Equivalent % criteria	1	10%	2	50%	3	>100%				
Exemplary performance credits	Equivalent % criteria												
1	10%												
2	50%												
3	>100%												
	<p><b>Two credits - Post-occupancy stage</b> Achieve maximum available credits in Ene02 Energy monitoring. In addition, preschools, primary schools, law courts, prisons and multi-residential buildings must separately monitor relevant function areas or departments in accordance with ENE02 criteria, below.</p> <p>The client or building occupier commits funds to pay for the post occupancy stage. This requires an assessor to be appointed and to report on the actual energy consumption compared with the targets set in criterion 4 above.</p> <p>The energy model (above) is:</p> <ol style="list-style-type: none"> <li>Submitted to BRE and</li> <li>Retained by the building owner.</li> </ol>	2	0	Credits not targeted.	-								
<p>Ene 02 (M), (M<sub>e</sub>), (M<sub>o</sub>) Energy monitoring</p>  <p>Mandatory: One credit for Very Good and above.</p>	<p><b>First credit: Sub-metering of major energy consuming systems</b> Where evidence provided demonstrates that the energy metering systems are installed that enable 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. For buildings with a total useful floor area &gt; 1000m<sup>2</sup> are metered using an appropriate energy monitoring and management system and systems in smaller buildings are metered either with an energy monitoring and management system or separate assessable energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system.</p> <p>The end energy consuming use is identifiable to the building user through labelling or data outputs.</p> <p>Large-scale medical equipment/systems can be excluded when assessing compliance with this issue (although it is recommended that sub-metering is considered in such instances).</p>	1	1	Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP								
	<p><b>Second credit: Sub - metering of high energy load and tenancy areas</b> An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.</p>	1	1	Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP								

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Ene 03 External lighting	<b>One credit:</b> Where evidence provided demonstrates that the external lighting has an average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit watt and that all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1	INCLUDE WITHIN ER DOCUMENTATION The only relevant requirement for this project relates to external lighting design. This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	MEP
Ene 04 Low carbon design	<b>First credit - Passive design analysis:</b> Where the first credit of Hea 04 (Thermal comfort) is achieved and the project team carries out an analysis of the design to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services, and that these solutions are implemented meaningfully into the design.	1	1	<b>RIBA Stage 2</b> Energy Assessment will include Passive Design assessment.	Sustainability
	<b>Second credit - Free cooling:</b> Where the first credit is achieved, the passive design analysis includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. Free cooling solutions might include night time cooling, ground coupled air cooling or surface water cooling (for example); i.e. does not use active cooling.	1	0	Credit not currently targeted  There will be no free cooling technology designed into the development and there will be mechanical cooling system.	MEP / Sustainability
	<b>Third credit - Low zero carbon feasibility study:</b> Where evidence provided demonstrates that a feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2) by an energy specialist to establish the most appropriate recognised local (on- or near-site) low or zero carbon energy source(s) for the development.  A local LZC technology/ies has been specified for the building in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated CO <sub>2</sub> emissions.	1	1	<b>RIBA Stage 2</b> Energy Assessment will include Low Carbon technology feasibility assessment.	MEP / Sustainability
Ene 06 Energy efficient transportation systems	<b>First credit - Energy consumption:</b> Where evidence provided demonstrates that where either lifts, escalators or moving walks are required: <ul style="list-style-type: none"> <li>- An analysis of the transportation demand and usage patterns for the building has been carried out in accordance with BS EN ISO 25745 to determine the optimum number and size of lifts, (including counter-balancing ratio), escalators and/or moving walks.</li> <li>- The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified.</li> <li>- Regenerative drives should be considered.</li> <li>- The transportation system with the lowest energy consumption is specified.</li> </ul>	1	1	Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP
	<b>Second and third credit - Energy efficient features:</b> Where evidence provided demonstrates that the first credit has been achieved and: For lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: <ul style="list-style-type: none"> <li>- The lifts operate in a stand-by condition during off-peak periods.</li> <li>- The lift car uses energy-efficient lighting and display lighting</li> <li>- The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor.</li> </ul> Where regenerative drives are demonstrated to save energy, they are specified.  For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following:	1	1	Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																																																						
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	<ul style="list-style-type: none"> <li>It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.</li> </ul>																																																										
<b>Transport</b>																																																											
<b>Tra 01</b> Transport assessment and travel plan	<p><b>Two credits:</b></p> <ul style="list-style-type: none"> <li>Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users.</li> <li>The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey.</li> <li>The travel plan must include a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns. The travel plan must be demonstrated in action post construction.</li> </ul>	2	2	<p><b>RIBA Stage 2</b></p> <p>A compliant travel plan is required for the development that includes recommendations for reduction of impact resultant from transport. These measures are then incorporated into the design of the development.</p>	Transport Consultant & Architect																																																						
<b>Tra 02</b> Sustainable transport measures	<p><b>Ten credits</b></p> <p>Features included to achieve a Tra02 points score. Credits are achieved based on the site's Accessibility Index and the features provided.</p> <table border="1"> <thead> <tr> <th>Points</th> <th>Points</th> <th>Points</th> <th>Credits</th> </tr> <tr> <th>AI &lt; 25</th> <th>25 ≤ AI &lt; 40 (urban centres)</th> <th>AI of ≥ 40 (metropolitan centre locations)</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td></td><td>1</td></tr> <tr><td>2</td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>2</td><td></td><td>3</td></tr> <tr><td>4</td><td></td><td>2</td><td>4</td></tr> <tr><td>5</td><td>3</td><td></td><td>5</td></tr> <tr><td>6</td><td>4</td><td>3</td><td>6</td></tr> <tr><td>7</td><td>5</td><td></td><td>7</td></tr> <tr><td>8</td><td>6</td><td>5</td><td>8</td></tr> <tr><td>9</td><td>7</td><td>6</td><td>9</td></tr> <tr><td>10</td><td>8</td><td>7</td><td>10</td></tr> </tbody> </table> <p>Sustainability Transport Measures:</p> <table border="1"> <thead> <tr> <th>Public transport measures</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>Public transport measures</td> <td></td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>The existing AI calculated in Tra 01 achieves the following:                             <ul style="list-style-type: none"> <li>≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3</li> <li>≥ 8 for all other building type</li> </ul> </li> </ul> </td> <td>1</td> </tr> </tbody> </table>	Points	Points	Points	Credits	AI < 25	25 ≤ AI < 40 (urban centres)	AI of ≥ 40 (metropolitan centre locations)		1	1		1	2		1	2	3	2		3	4		2	4	5	3		5	6	4	3	6	7	5		7	8	6	5	8	9	7	6	9	10	8	7	10	Public transport measures	Points	Public transport measures		<ul style="list-style-type: none"> <li>The existing AI calculated in Tra 01 achieves the following:                             <ul style="list-style-type: none"> <li>≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3</li> <li>≥ 8 for all other building type</li> </ul> </li> </ul>	1	10	9 (+1)	<p>Ten credits applicable to assessment type Nine credits targeted One additional potential credit</p> <p>Currently anticipated that sufficient features can be incorporated to achieve the targeted credits.</p>	Transport Consultant & Architect
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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development;</li> </ul>	2			
	<ul style="list-style-type: none"> <li>- Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions.</li> </ul>	3			
	<ul style="list-style-type: none"> <li>- Provide a dedicated service, such as a bus route or service</li> </ul>	3			
	<ul style="list-style-type: none"> <li>- Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.</li> </ul>	1			
	<b>Private transport measures</b>				
	<ul style="list-style-type: none"> <li>- Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development.</li> </ul>	1			
	<ul style="list-style-type: none"> <li>- Set up a car sharing group or facility to facilitate and encourage building users to car share.</li> <li>- Raise awareness of the sharing scheme with marketing and communication materials.</li> <li>- Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development.</li> <li>- Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.</li> </ul>	1			
	<b>Active travel measures</b>				
	<ul style="list-style-type: none"> <li>- During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it.</li> <li>- Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public</li> </ul>	2			
	<ul style="list-style-type: none"> <li>- Install compliant cycle storage spaces to meet the minimum levels set out the BREEAM criteria</li> </ul>	1			
	<ul style="list-style-type: none"> <li>- Option 7 has been achieved.</li> <li>- Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type): <ul style="list-style-type: none"> <li>- Showers</li> <li>- Changing facilities</li> <li>- Lockers</li> <li>- Drying spaces.</li> </ul> </li> </ul>	1			
	<p>Existing amenities:</p> <ul style="list-style-type: none"> <li>- At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group.</li> </ul>	1			
	<p>Enhanced amenities:</p> <ul style="list-style-type: none"> <li>- Ensure a minimum of one new accessible amenity is provided.</li> </ul>	2			
	<p>Ensure more than one new accessible amenity, in accordance with Table 7.6 within the BREEAM criteria for the relevant Building Group, is provided.</p>	3			

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member														
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	<table border="1"> <tr> <td colspan="2">Alternative transport measures</td> </tr> <tr> <td>Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.</td> <td>1 - 3</td> </tr> </table>	Alternative transport measures		Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3														
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Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3																		
<b>Water</b>																			
<p>Wat 01 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Water consumption</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>One credit for Good and above.</li> <li>Two credits for Outstanding.</li> </ul>	<p>Up to five credits:</p> <p>Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model:</p> <table border="1"> <thead> <tr> <th>% Improvement</th> <th>No. of BREEAM Credits</th> </tr> </thead> <tbody> <tr> <td>12.5%</td> <td>1</td> </tr> <tr> <td>25%</td> <td>2</td> </tr> <tr style="border: 2px solid red;"> <td>40%</td> <td>3</td> </tr> <tr> <td>50%</td> <td>4</td> </tr> <tr> <td>55%</td> <td>5</td> </tr> <tr> <td>65%</td> <td>Exemplary performance</td> </tr> </tbody> </table>	% Improvement	No. of BREEAM Credits	12.5%	1	25%	2	40%	3	50%	4	55%	5	65%	Exemplary performance	5	3 (+2)	<p>Five credits applicable to assessment type</p> <p>Three credits targeted</p> <p>Two additional potential credits</p> <p>It was agreed that this would be targeted and Specification of low flow sanitary appliances is to be provided. HL Sustainability will help review this to maximise the number of credits that can be achieved.</p>	MEP & Architect
% Improvement	No. of BREEAM Credits																		
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<p>Wat 02 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Water monitoring</p>  <p>Mandatory:</p> <p>Criterion 1 only for Good and above.</p>	<p>One credit:</p> <ul style="list-style-type: none"> <li>Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit.</li> <li>Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. (Not applicable to Shell Only Assessments).</li> <li>Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption.</li> <li>If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.</li> </ul> <p><b>Additionally, for those pursuing a post occupancy stage certification:</b></p> <ul style="list-style-type: none"> <li>The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.</li> </ul>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.</p>	MEP														
<p>Wat 03</p> <p>Water leak detection</p>	<p><b>First credit - Leak detection system:</b></p> <p>Where evidence provided demonstrates that a leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is provided.</p>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings.</p>	MEP														
	<p><b>Second credit - Flow control devices:</b></p> <p>Where evidence provided demonstrates that flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings)</p>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings.</p>	MEP														
<p>Wat 04</p>	<p><b>First credit</b></p> <p>The design team has identified all unregulated water demands that could be realistically mitigated or reduced.</p>	1	1	<p>Confirmed no unregulated water sources at the scheme.</p>	Landscape Architect														




Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Water efficient equipment	<p>System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building.</p> <p>Unregulated water uses include (but are not limited to):</p> <ul style="list-style-type: none"> <li>- Swimming pools</li> <li>- Recreational hot tubs and hydrotherapy pools</li> <li>- Equipment used for irrigation</li> <li>- Vehicle wash equipment</li> <li>- Project-specific industrial processes</li> <li>- Water filtration and treatment processes</li> <li>- Building services (e.g. cooling towers and humidification systems)</li> </ul> <p>Credit is not applicable and will be filtered out where there is no water demand from uses other than domestic scale and sanitary use components.</p>				
<b>Materials</b>					
<p><b>Mat 01</b> Environmental impacts from construction products - Building life cycle assessment (LCA)</p>	<p><b>One - six credits: LCA superstructure</b> Up to six credits are available for development of a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or a Compliant LCA tool during concept design stage.</p> <ul style="list-style-type: none"> <li>- Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options throughout the design development, using a building LCA tool that is recognised by BREEAM</li> <li>- Submit to BRE at concept design stage <b>prior to planning submission.</b></li> <li>- Submit updated LCA assessment to BRE at technical design stage.</li> </ul> <p><b>One credit LCA substructure</b> Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping).</p>	7	4	<p><b>RIBA Stage 2</b> Seven credits applicable to assessment type Four credits targeted.</p> <p>An LCA assessment is currently being undertaken. LCA results will be submitted to BRE before planning submission.</p>	Architect / Structural Engineer / Civil Engineer / QS
	<p><b>Exemplary level criteria</b> <b>One credit - Core building services options appraisal during concept design</b> Carry out building LCA options appraisal of at least 3 significantly different core building services design options, using a building LCA tool that is recognised by BREEAM</p> <p><b>One credit - LCA and LCC alignment</b></p> <ul style="list-style-type: none"> <li>- Achieve Elemental LCC plan and Component Level LCC options appraisal credits include design options appraised as part of the LCA within the Elemental and Component LCC models.</li> <li>- Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'.</li> </ul>	3	1 (+1)	<p><b>RIBA Stage 2</b> An LCA assessment is being undertaken and the results will be submitted prior to submission of planning permission. LCA to be submitted to BRE and assessed at the developed design stage.</p> <p>Hoare Lea can be considered a suitably qualified third party and can therefore claim the credit for completion of the LCA assessment.</p>	Architect / Structural Engineer / Civil Engineer / QS
<p><b>Mat 02</b> Environmental impacts from construction products - Environmental Product Declarations (EPD)</p>	<p><b>One credit:</b> Where evidence provided demonstrates the designs features construction products with EPD that achieve a total EPD points score of at least 20, according to the BRE calculation methodology.</p>	1	0 (+1)	<p>It was agreed that this would be reviewed at a later stage. This requires specifying products with EPDs to achieve a minimum of 20 points in the Mat 02 table (HL can send out the template). Requirements to be included within the Employer's Requirements documentation for the evidence at design stage.</p>	Architect

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<p>Mat 03 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Responsible sourcing of construction products</p>  <p>Mandatory: Criterion 1 sustainable timber sourcing for all ratings</p>	<p><b>Pre-requisite</b></p> <p>All timber and timber based products used on the project are 'legally harvested and traded timber'</p> <p><b>First credit: Enabling sustainable procurement</b></p> <p>Where evidence provided demonstrates that a sustainability procurement plan is in place at by the concept design stage and is used by the design team to guide specification towards sustainable construction products.</p>	1	1	<p><b>RIBA Stage 2</b></p> <p>Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting. Project team will be required to develop a sustainable procurement plan now for use throughout the project.</p>	Architect & Contractor												
	<p><b>Up to three credits:</b></p> <p>Where evidence provided demonstrates the available responsible sourcing of materials (RSM) can be awarded where the applicable building materials are responsibility sourced in accordance with the BREEAM methodology.</p> <table border="1" data-bbox="498 772 1715 991"> <thead> <tr> <th>RSM credits</th> <th>% of available RSM points achieved</th> <th>MAT03 Scope</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>≥ 10%</td> <td>Superstructure</td> </tr> <tr style="border: 2px solid red;"> <td>2</td> <td>≥ 20%</td> <td>As above, plus - Internal finishes</td> </tr> <tr> <td>3</td> <td>≥ 30%</td> <td>- Substructure and hard landscaping</td> </tr> </tbody> </table>	RSM credits	% of available RSM points achieved	MAT03 Scope	1	≥ 10%	Superstructure	2	≥ 20%	As above, plus - Internal finishes	3	≥ 30%	- Substructure and hard landscaping	3	2 (+1)	<p>Three credits applicable to assessment type</p> <p>Two credits targeted and one potential to be reviewed as the design progresses.</p> <p>Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting.</p>	Architect
	RSM credits	% of available RSM points achieved	MAT03 Scope														
	1	≥ 10%	Superstructure														
2	≥ 20%	As above, plus - Internal finishes															
3	≥ 30%	- Substructure and hard landscaping															
<p><b>Exemplary credit:</b></p> <p>Where evidence provided demonstrates that at least 50% of the available RSM points are achieved. Scope also includes core building services.</p>	1	0	Credit not targeted.	-													
<p>Mat 05</p> <p>Designing for durability and resilience</p>	<p><b>One credit:</b></p> <p>PART A: Protecting vulnerable parts of the building from damage</p> <ul style="list-style-type: none"> <li>- Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: <ul style="list-style-type: none"> <li>- Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).</li> <li>- Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.</li> <li>- External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails.</li> <li>- Potential malicious damage to building materials and finishes, in public and common areas where appropriate.</li> </ul> </li> </ul> <p>PART B: Protecting exposed parts of the building from material degradation</p> <ul style="list-style-type: none"> <li>- Key exposed building elements have been designed and specified to limit long and short-term degradation due to environmental factors. This can be demonstrated through one of the following: <ul style="list-style-type: none"> <li>- The element or product achieving an appropriate quality or durability standard or design guide</li> </ul> </li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>- A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.</li> <li>- Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.</li> <li>- Design the roof and façade to prevent water damage, ingress and detrimental ponding.</li> </ul>	1	1	<p>Consideration for wear and damage to be made in addition to consideration for where (and how) protection measures will be included.</p> <p>Environmental degradation assessment to be undertaken to identify how materials will be likely to be impacted by environmental hazards.</p>	Architect												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																	
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<p>Mat 06 Material efficiency</p>	<p><b>One credit:</b> At the preparation and brief and concept design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages</p> <ul style="list-style-type: none"> <li>- Preparation and brief</li> <li>- Concept design</li> <li>- Developed design</li> <li>- Technical design</li> <li>- Construction</li> </ul> <p>Develop and record the implementation of material efficiency</p> <ul style="list-style-type: none"> <li>- Developed design</li> <li>- Technical design</li> <li>- Construction</li> </ul>	1	1	<p><b>RIBA Stage 1 and Stage 2</b> Stages 1, 2, 3, 4 to be completed by team. Stage 5, 6 to be included within Employer's Requirements documentation.</p>	Architect																	
Waste																						
<p>Wst 01 (M<sub>o</sub>) Construction waste management</p>  <p>Mandatory: One credit for Outstanding</p>	<p><b>One credit - Pre-demolition audit</b> Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope:</p> <ul style="list-style-type: none"> <li>- Be carried out at Concept Design stage (RIBA Stage 2) by a competent person prior to strip-out or demolition works</li> <li>- Guide the design, consider materials for reuse and set targets for waste management</li> <li>- Engage all contractors in the process of maximising high-grade reuse and recycling opportunities</li> <li>- Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets.</li> </ul> <p><b>Three credits - Construction resource efficiency:</b></p> <ul style="list-style-type: none"> <li>- Where a Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication.</li> <li>- In addition, evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks:</li> </ul> <table border="1" data-bbox="498 1444 1730 1749"> <thead> <tr> <th rowspan="2">BREEAM Credits</th> <th colspan="2">Amount of waste generated per 100m<sup>2</sup> (gross internal floor area)</th> </tr> <tr> <th colspan="2">m<sup>3</sup></th> </tr> </thead> <tbody> <tr> <td>One credit</td> <td>≤ 13.3</td> <td>≤ 11.1</td> </tr> <tr style="border: 2px solid red;"> <td>Two credits</td> <td>≤ 7.5</td> <td>≤ 6.5</td> </tr> <tr> <td>Three credits</td> <td>≤ 3.4</td> <td>≤ 3.2</td> </tr> <tr> <td>Exemplary level</td> <td>≤ 1.6</td> <td>≤ 1.9</td> </tr> </tbody> </table>	BREEAM Credits	Amount of waste generated per 100m <sup>2</sup> (gross internal floor area)		m <sup>3</sup>		One credit	≤ 13.3	≤ 11.1	Two credits	≤ 7.5	≤ 6.5	Three credits	≤ 3.4	≤ 3.2	Exemplary level	≤ 1.6	≤ 1.9	5	2	<p>Pre-demolition audit: <b>RIBA Stage 2</b> Credit targeted. Construction resource efficiency: Three credits applicable to assessment type Two credits targeted</p> <p><b>RIBA Stage 2</b> Any demolition for the site must be accompanied with a pre-demolition survey of the demolished buildings.</p> <p>The low waste benchmark levels will be required within the Employer's Requirements documentation. These requirements can also identify that the diversion from landfill targets must be achieved.</p> <p>Exemplary credit: Credit not targeted</p>	Contractor
BREEAM Credits	Amount of waste generated per 100m <sup>2</sup> (gross internal floor area)																					
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	<p><b>Fifth credit - Diversion of resources from landfill:</b> Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill:</p>	1	1	As identified above, requirements to achieve these levels of diversion from landfill will be	Contractor																	

Issue	Credit Requirements				Credits		Comments / Actions	Responsible Team Member																					
					Available	Targeted (Potential)																							
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	Excavation	95%	95%																										
<p><b>Wst 02</b> Use of recycled and sustainably sourced aggregates</p>	<p><b>Pre-requisite</b> If demolition occurs on site, to encourage the reuse of site-won material on site, complete a pre-demolition audit of any existing buildings, structures or hard surfaces in accordance with Wst01 requirements.</p> <p><b>One credit: Project sustainable aggregate points</b> Where evidence provided identifies amounts of aggregate used for the project, the types of aggregate, its source (location) and the transport type. This information is used to calculate the Sustainable Aggregate points score. Credits are scored as follows:</p> <table border="1"> <thead> <tr> <th>Project Sustainable Aggregate Credits</th> <th>Project Sustainable Aggregate points</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3.5-6.0</td> </tr> <tr> <td>1 exemplary performance credit</td> <td>&gt; 6.0</td> </tr> </tbody> </table> <p>The calculation is based on the following aggregate uses:</p> <ul style="list-style-type: none"> <li>- Engineered fill</li> <li>- Concrete coarse aggregate</li> <li>- Concrete fine aggregate</li> <li>- Asphalt aggregate</li> <li>- Granular bedding for pipes</li> <li>- Granular bedding for hard landscape products</li> <li>- Hydraulically bound materials</li> </ul>	Project Sustainable Aggregate Credits	Project Sustainable Aggregate points	1	3.5-6.0	1 exemplary performance credit	> 6.0	1	0 (+1)	Calculations required to identify the total amount of aggregate required for the project and the levels of recycled aggregate required to achieve compliance with the BREEAM criteria. It is anticipated that there is opportunity to achieve the standard level criteria, but due to the location, potentially not the exemplar level credit.	Civil / Structural Engineer																		
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	<p><b>Exemplary level criteria:</b> As above</p>	1	0	Credit not targeted.  Calculations required to identify the total amount of aggregate required for the project and the levels of recycled aggregate required to achieve compliance with the BREEAM criteria. It	Civil / Structural Engineer																								

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
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				is anticipated that there is opportunity to achieve the standard level criteria, but due to the location, potentially not the exemplar level credit.	
<p>Wst 03 (M<sub>a</sub>) (M<sub>o</sub>) Operational waste</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>One credit for Excellent and above</li> </ul>	<p><b>One credit:</b> Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities.</p> <p>The dedicated space(s) must be:</p> <ul style="list-style-type: none"> <li>Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams</li> <li>Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors</li> <li>Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.</li> <li>The specified/installed operational waste facilities are compliant with the relevant NHS guidelines for that part of the UK.</li> </ul> <p>Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must be provided as part of its waste management strategy:</p> <ul style="list-style-type: none"> <li>Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space.</li> <li>Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility.</li> <li>Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.</li> </ul>	1	1	<p>A waste storage area of sufficient footprint area is required to be provided. This will have specific areas for recyclable waste and general waste and will comply with the area requirements of the BREEAM criteria.</p> <p>The likelihood for a baler to be of use needs to be considered at the site. If may be required that a baler is provided.</p>	Architect
<p>Wst 04 Speculative floor and ceiling finishes</p>	<p><b>One credit</b> For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only.</p> <p>In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.</p>	1	1	It was agreed that this would be targeted.	Client
<p>Wst 05 Adaptation to climate change</p>	<p><b>One credit - Structural and fabric resilience:</b> Where evidence provided demonstrates that a climate change adaptation strategy appraisal for structural and fabric resilience has been conducted by the end of Concept design (RIBA Stage 2) covering hazard identification and assessment, risk estimation, evaluation and management. Appraisal to identify &amp; evaluate impact on the building over its life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts</p> <p>ID hazards taking into account the following: structural stability, robustness, weather proofing and detailing, material durability, health and safety of occupants, impact on building contents and business continuity</p>	1	1	<p><b>RIBA Stage 2</b> A climate change adaptation plan is required to be developed. This plan and report are required to be concluded at RIBA Stage 2. As a result of this, the reporting against the requirements need to be commenced now.</p>	Architect & Structural Engineer
	<p><b>Exemplary credit:</b> A holistic approach to the design and construction of the current building's life cycle, to mitigate against the impacts of climate change, is represented by the achievement of these criteria.</p> <p>In addition to achieving the first credit above, the following must also be achieved:</p>	1	1	It was agreed that this would be targeted.	Architect & Structural Engineer

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Hea 04 – Thermal comfort: Project team demonstrate how the building has been adapted, or designed to be easily adapted in future using passive design solutions</li> <li>- Ene 01 – Reduction in energy use and carbon emissions At least 6 credits in this issue have been achieved</li> <li>- Ene 04 – Low carbon design Passive design analysis credit has been achieved</li> <li>- Wat 01 – Water consumption Minimum of three credits in this issue have been achieved</li> <li>- Mat 05 – Designing for durability and resilience Building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors</li> <li>- Pol 03 Surface water run off Flood risk- A minimum of one credit has been achieved. Surface water run off- Two credits have been achieved.</li> </ul>				
Wst 06 Design for disassembly and adaptability	<p><b>One credit - Design for disassembly and functional adaptability - recommendations</b> Where evidence provided demonstrates that the design team conducts a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios. Recommendations are required to be developed at the concept design stage.</p>	1	1	<p><b>RIBA Stage 2</b> A functional adaptability report is required for the project that identifies how the development can be adapted for future use. The report should be undertaken now.</p>	Architect
	<p><b>One credit - Disassembly and functional adaptability – implementation</b> Provide an update, during Technical Design, on:</p> <ul style="list-style-type: none"> <li>- How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor.</li> <li>- Changes to the recommendations and solutions during the development of the Technical Design.</li> </ul> <p>Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.</p>	1	1	Anticipated that the report recommendations can be incorporated into the design.	Architect
<b>Land Use and Ecology</b>					
LE 01 Site selection	<p><b>First credit - Previously occupied land:</b> Where evidence is provided to demonstrate that at least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.</p>	1	0	Credit not targeted.	-
	<p><b>Second credit - Contaminated land:</b> - Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.</p>	1	0 (+1)	<p>It was agreed that this credit could be added as a potential credit as long as the contaminated land is remediated. Added to potential targets accordingly.</p> <p>Remediation report to be provided once complete.</p>	Client
LE 02 Identifying and understanding the risks and opportunities for the project	<p><b>Pre-requisite - Assessment route selection</b> An assessment route for the project has been determined using BREEAM Guidance Note GN34 BREEAM Ecological Risk Evaluation Checklist.</p> <p>The client or contractor confirms compliance will be and is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.</p>	2	2	<p><b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.</p>	Ecologist



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
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	<p>Up to two credits</p> <p>Depending on the route for compliance taken the following number of credits are available.</p> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Survey and evaluation</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Determining the ecological outcomes for the site</td> <td></td> <td>1 credit</td> </tr> </tbody> </table> <p><b>Survey and evaluation</b></p> <p><b>Route 1</b> Completion of the BREEAM Ecological Risk Evaluation Checklist indicates Assessment route 1 can be used as the assessment</p> <p><b>Route 2</b></p> <ul style="list-style-type: none"> <li>- An appropriate individual is appointed at a project stage that ensures early involvement in site configuration and, where necessary, can influence strategic planning decisions.</li> <li>- Prior to the completion of the preparation and brief, an appropriate level of survey and evaluation:</li> <li>- For sites where complex ecological systems are likely to be present) has been carried out to determine the ecological baseline of the site, taking account of the zone of influence to establish: <ul style="list-style-type: none"> <li>- Current and potential ecological value and condition of the site, and related areas within the zone of influence.</li> <li>- Direct and indirect risks to current ecological value</li> <li>- Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence.</li> </ul> </li> <li>- Data are collated and shared with project team to inform the site preparation, design or construction works.</li> </ul> <p><b>Determining the ecological outcomes for the site (Routes 1 and 2)</b></p> <ul style="list-style-type: none"> <li>- Survey and evaluation criteria (criteria 3-6 above) relevant to the chosen route have been achieved.</li> <li>- During Concept Design, the project team liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites (appropriate to the scale and type of development) for the project.</li> <li>- When determining the ecological outcome for the site, this must involve the identification, appraisal and selection of specific solutions and measures sufficiently early to influence key project planning decisions. This must be done in accordance with the following hierarchy of action: <ul style="list-style-type: none"> <li>- avoidance</li> <li>- protection</li> <li>- reduction or limitation of negative impacts</li> <li>- on site compensation and,</li> <li>- enhancement, considering the capacity and feasibility within the site, or where viable, off-site.</li> </ul> </li> <li>- Following this the optimal ecological outcome for the site is selected after liaising with representative stakeholders and the project team.</li> </ul> <p>Exemplary level criteria</p> <p><b>Determine the ecological outcomes for the site (sustainability-related activities)</b> When determining the optimal ecological outcome for the site consider, in addition to those outlined above, the wider site sustainability-related activities and the potential for ecosystem service related benefits.</p>		Project team member route (Route 1)	Ecologist route (Route 2)	Survey and evaluation	1 credit	1 credit	Determining the ecological outcomes for the site		1 credit				
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LE 03	Pre-requisite – Identification and understanding the risks and opportunities for the site	3	3	RIBA Stage 2	Ecologist									

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
Managing negative impacts on ecology	<ul style="list-style-type: none"> <li>The client or contractor has confirmed that compliance is monitored against all relevant UK, and EU or International legislation relating to the ecology of the site</li> <li>LE02 has been achieved</li> </ul> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist Route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Planning, liaison and implementation</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Managing negative impacts of the project (limitation or compensation)</td> <td>1 credit</td> <td>1 or 2 credits</td> </tr> </tbody> </table> <p><b>One credit - Planning, liaison, implementation and data</b></p> <ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief.</li> <li>Site preparation and construction works have been planned for and are implemented at an early project stage to optimise benefits and outputs.</li> <li>The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions, and measures have been selected</li> </ul> <p><b>Up to two credits - Managing negative impacts of the project</b></p> <p><b>Route 1 (one credit)</b> Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net impact has resulted.</p> <p><b>Route 2 (up to two credits)</b> Negative impacts from site preparation and construction works have been managed according to the hierarchy:</p> <p>For sites where complex ecological systems are likely to be present) and either:</p> <ul style="list-style-type: none"> <li>No overall loss of ecological value has occurred (2 credits) OR,</li> <li>The loss of ecological value has been limited as far as possible (1 credit)</li> </ul>		Project team member route (Route 1)	Ecologist Route (Route 2)	Planning, liaison and implementation	1 credit	1 credit	Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits			Ecology report to be commissioned/provided in order to consider how this credit can be approached.	
	Project team member route (Route 1)	Ecologist Route (Route 2)												
Planning, liaison and implementation	1 credit	1 credit												
Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits												
LE 04 Change and enhancement of ecological value	<p><b>Pre-requisite - Identifying and understanding the risks and opportunities for the project</b></p> <ul style="list-style-type: none"> <li>LE 03 has been achieved. Including the following, specific to the aims of this issue: <ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes</li> <li>Site preparation and construction works have been planned for and implemented at a stage that is sufficiently early in the project to optimise benefits and outputs.</li> </ul> </li> <li>The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.</li> </ul> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Liaison, implementation and data</td> <td>N/A</td> <td>1 credit</td> </tr> <tr> <td>Enhancement of ecology</td> <td>1 credit</td> <td>up to 3 credits</td> </tr> </tbody> </table>		Project team member route (Route 1)	Ecologist route (Route 2)	Liaison, implementation and data	N/A	1 credit	Enhancement of ecology	1 credit	up to 3 credits	4	3 (+1)	<b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.	Ecologist & Client
	Project team member route (Route 1)	Ecologist route (Route 2)												
Liaison, implementation and data	N/A	1 credit												
Enhancement of ecology	1 credit	up to 3 credits												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
	<p><b>Route 1</b> One credit - Enhancement of ecology</p> <ul style="list-style-type: none"> <li>The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions and measures based on recommendations from recognised 'local' ecological expertise, specialist input and guidance to inform the adoption of locally relevant ecological solutions and measures which enhance the site.</li> <li>Data collated is provided to the local environmental records centres nearest to, or relevant for, the site.</li> </ul> <p><b>Route 2</b> One credit - Liaison, implementation and data collation</p> <ul style="list-style-type: none"> <li>The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented the solutions and measures selected in a way that enhances ecological value in the following order:                             <ul style="list-style-type: none"> <li>On site, and where this is not feasible,</li> <li>Off site within the zone of influence.</li> </ul> </li> </ul> <p>Up to three credits - Enhancement of ecology</p> <ul style="list-style-type: none"> <li>Credits are awarded on a scale of 1 to 3, based on the calculation of the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in either GN 35 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues - Route 1 or GN 36 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues</li> </ul>													
<p><b>LE 05</b> Long term ecology management and maintenance</p>	<p>Pre-requisite - Roles and responsibilities, implementation, statutory obligations</p> <ul style="list-style-type: none"> <li>The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.</li> <li>Where pursued, LE 04 has been achieved, including the following specific aims of this issue:                             <ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes.</li> <li>Site preparation and construction works have been planned for and implemented at a stage that is sufficiently early in the project to optimise benefits and outputs.</li> </ul> </li> </ul> <p>Up to two credits are available depending on the route selected.</p> <p>One credit - Planning, liaison, data, monitoring and review management and maintenance</p> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Liaison, monitoring implementation and evolving management and maintenance solutions</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Landscape and habitat management plan</td> <td></td> <td>1 credit</td> </tr> </tbody> </table> <p>One credit - Planning, liaison, data, monitoring and review management and maintenance</p>		Project team member route (Route 1)	Ecologist route (Route 2)	Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit	Landscape and habitat management plan		1 credit	2	2	<p><b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.</p>	Ecologist & Contractor
	Project team member route (Route 1)	Ecologist route (Route 2)												
Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit												
Landscape and habitat management plan		1 credit												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- The project team liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, on solutions and measures implemented to:               <ul style="list-style-type: none"> <li>- monitor and review implementation and the effectiveness</li> <li>- develop and review management and maintenance solutions, actions or measures.</li> </ul> </li> <li>- In support of the above and to help ensure their continued relevance over the period of the project the following should be considered:               <ul style="list-style-type: none"> <li>- Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage</li> <li>- Monitoring and reporting of outcomes and successes from the project</li> <li>- Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site)</li> <li>- Maintaining the ecological value of the site and its relationship or connection to its zone of influence</li> <li>- Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02).</li> <li>- Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04.</li> </ul> </li> <li>- As part of the tenant or building owner information supplied, include a section on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.</li> </ul> <p>One credit - Landscape and ecology management plan (or similar) development</p> <ul style="list-style-type: none"> <li>- Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013(210) covering as a minimum the first five years after project completion and includes:               <ul style="list-style-type: none"> <li>- Actions and responsibilities, prior to handover, to give to relevant individuals</li> <li>- The ecological value and condition of the site over the development life.</li> <li>- Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework</li> <li>- Identification and guidance s to trigger appropriate remedial actions to address previously unforeseen impacts</li> <li>- Clearly defined and allocated roles and responsibilities.</li> </ul> </li> <li>- The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.</li> </ul>				
Pollution					
Pol 01 Impact of refrigerants	<p><b>Pre-requisite:</b> All systems (with electronic compressors) must comply with the requirements of BS EN 378:2008, and where refrigeration systems containing ammonia are installed, they must comply with the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.</p> <p><b>Three credits: No refrigerant</b> Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant.</p> <p><b>Two credits: DELC</b> Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO<sub>2</sub> equivalent emissions (DELC CO<sub>2e</sub>) of ≤100 kgCO<sub>2e</sub>/kW cooling/heating capacity.</p> <p>OR</p>	2	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) <math>\leq 10</math>.</p> <p><b>One credit:</b> Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO<sub>2</sub> equivalent emissions of (DELCO<sub>2e</sub>) of <math>\leq 1000</math> kgCO<sub>2e</sub>/kW cooling/heating capacity.</p>				
	<p><b>One credit: Refrigerant leak detection</b> Where evidence provided demonstrates that the systems using refrigerants have a permanent automated refrigerant leak detection system installed, capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
Pol 02 Local air quality	<p><b>Up to two credits:</b> All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity</p> <p>OR alternatively; Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 within the BREEAM Criteria document. The measurements must be provided by manufacturers, following the labelling requirements of the European directive 2009/125/EC. No credits can be awarded for Pol 02 if any of the combustion appliances are not covered in Table 12.4 and Table 12.5 within the BREEAM.</p> <p>Emissions from all installed combustion plant that provide space heating and domestic hot water are required to not exceed the levels set in Table 1.21 and Table 1.22 within the BREEAM criteria.</p>	2	2	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
Pol 03 Surface water run off	<p><b>Pre-requisite</b> An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.</p> <p><b>Part 1: Flood resilience (Up to Two credits)</b> <b>Two credits - Low flood risk:</b> A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration. These sources include:  <ul style="list-style-type: none"> <li>- Fluvial (rivers)</li> <li>- Tidal</li> <li>- Surface water: sheet run-off from adjacent land (urban or rural)</li> <li>- Groundwater: most common in low-lying areas underlain by permeable rock (aquifers)</li> <li>- Sewers: combined, foul or surface water sewers</li> <li>- Reservoirs, canals and other artificial sources</li> </ul> </p> <p><b>One credit - Medium/high flood risk:</b> Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is at least 600mm above the design flood level of the flood zone for the site's location OR the final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017</p>	2	2	Flood Risk Assessment to be provided/commissioned that identifies the site's flood risk. It is currently anticipated that there is a low flood risk at the site.	Drainage Consultant
	<p><b>Part 2: Surface water run-off</b> <b>Pre-requisite:</b></p>	2	2	Two credits targeted and a copy of a drainage report is to be provided.	Drainage Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site.</p> <p><b>First credit:</b> Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events, including allowance for climate change.</p> <p>Additionally, relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDs are in place.</p> <p><b>Second credit:</b> Where evidence provided demonstrates that the consultant has confirmed that there is no risk of flooding of property in the event of a local drainage system failure, AND</p> <p>EITHER</p> <ul style="list-style-type: none"> <li>- The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development, including an allowance for climate change.</li> <li>- Any additional predicted volume of run-off for the 100-year 6-hour event must be prevented from leaving the site by using infiltration or other Surface Drainage System (SUDs) techniques</li> </ul> <p>OR (only where criterion no. 9 or 10 for this credit cannot be achieved)</p> <ul style="list-style-type: none"> <li>- Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SUDS techniques are not technically viable options.</li> <li>- The post development peak rate of run-off is reduced to a limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: <ul style="list-style-type: none"> <li>- The pre-development one-year peak flow rate</li> <li>- The mean annual flow rate (Qbar)</li> <li>- 2L/s/ha.</li> </ul> </li> </ul>				
	<p><b>Part 3: Minimising watercourse pollution</b> <b>One credit:</b> Where evidence provided demonstrates that the following water course pollution prevention measures are covered:</p> <ul style="list-style-type: none"> <li>- Appropriate Consultant confirms that there will be no discharge from the developed site for rainfall up to 5mm.</li> <li>- Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches</li> <li>- Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances</li> <li>- Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system</li> <li>- All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SUDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site.</li> <li>- A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.</li> <li>- Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDS must be in place.</li> </ul>	1	1	Credit targeted and a copy of a drainage report is to be provided.	Drainage Consultant



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance</li> </ul>				
<p><b>Pol 04</b> Reduction in night time light pollution</p>	<p><b>One credit:</b> Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements:</p> <ul style="list-style-type: none"> <li>- The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2011.</li> <li>- All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.</li> <li>- If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier.</li> <li>- Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 - The Brightness of Illuminated Advertisements.</li> </ul>	1	1	<p>INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements (MEP) documentation to require the contractor to achieve.</p>	MEP
<p><b>Pol 05</b> Reduction of noise pollution</p>	<p><b>One credit:</b> Where evidence provided demonstrates that there is either no noise-sensitive areas or buildings within 800m radius of the assessed development</p> <p>OR</p> <p>Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 4142:2014 has been carried out and the following noise levels measured/determined:</p> <ul style="list-style-type: none"> <li>- Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar.</li> <li>- The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00).</li> </ul>	1	1	Noise Impact assessment to be undertaken for the site identifying that building services noise will be limited in line with background noise levels.	Acoustician
<b>Innovation</b>					
<p><b>Exemplary credits summary</b></p>	<p><b>Exemplary credits</b> Up to a maximum of ten credits are available:</p> <p>Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues:</p> <ul style="list-style-type: none"> <li>- Man 03 Responsible construction practices</li> <li>- Hea 01 Visual comfort</li> <li>- Hea 02 Indoor air quality</li> <li>- Ene 01 Reduction of energy use and carbon emissions</li> <li>- Wat 01 Water consumption</li> <li>- Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)</li> <li>- Mat 03 Responsible sourcing of construction products</li> <li>- Wst 01 Construction waste management</li> <li>- Wst 02 Use of recycled and sustainably sourced aggregates</li> <li>- Wst 05 Adaptation to climate change</li> </ul>	10	2 (+2)	<p>The following exemplary level credits have included in the BREEAM target strategy:</p> <ul style="list-style-type: none"> <li>- MAN03-06 Considerate Construction</li> <li>- MAT01 Building Life Cycle assessment Third party verification</li> </ul> <p>The following exemplary level credits have included in the BREEAM potential strategy:</p> <ul style="list-style-type: none"> <li>- MAT01 Building Life Cycle assessment LCA and LCC alignment</li> <li>- WST05 Responding to Climate Change</li> </ul>	Contractor & Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with.</p> <p><a href="#">Approved Innovations</a> One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an Approved Innovation application form.</p>				

## 7. Appendix C: Credit Weightings BREEAM 2018

The weightings for the associated credits depending on the assessment route are shown in Table D1 below.

Section	Section Weighting			No. of credits available	Value of Each Credit
	Fully-fitted	Shell only	Shell and core	Shell and core	
Management	11.0%	12.0%	11.0%	18	0.61%
Health and Wellbeing	14.0%	7.0%	8.0%	11	0.73%
Energy	16.0%	9.5%	14.0%	26	0.54%
Transport	10.0%	14.5%	11.5.0%	12	0.96%
Water	7.0%	2.0%	7.0%	9	0.78%
Materials	15.0%	22.0%	17.5%	14	1.25%
Waste	6.0%	8.0%	7.0%	10	0.64%
Land Use and Ecology	13.0%	19.0%	15.0%	13	1.15%
Pollution	8.0%	6.0%	9.0%	12	0.75%
Innovation	10.0%	10.0%	10.0%	10	1.00%

Table D1: BREEAM Credit Weightings

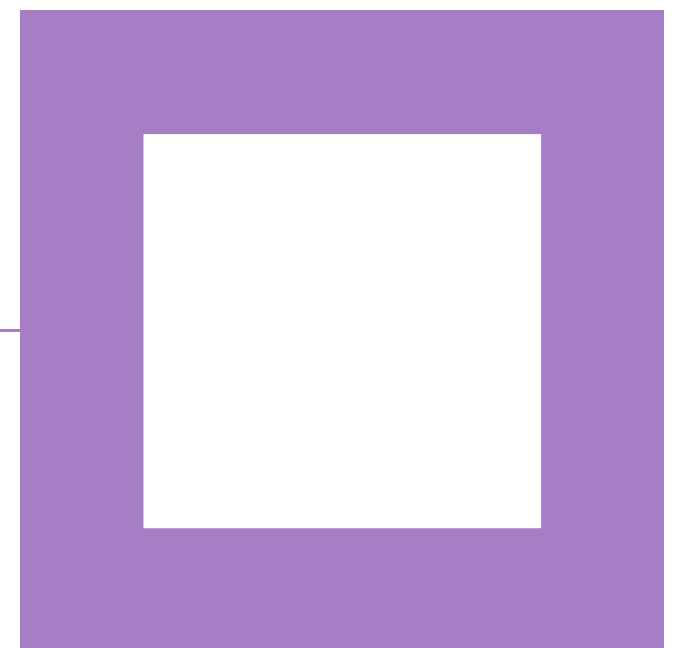


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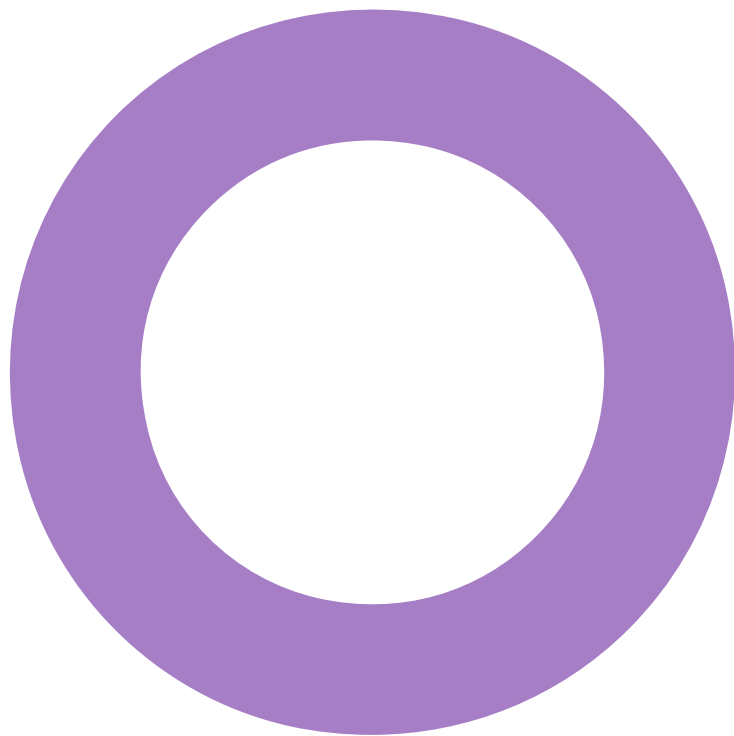
Old Iron Works  
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**1-3 STATION ROW.**  
**Cambridge North.**  
**Brookgate.**

**SUSTAINABILITY**

BREEAM NEW CONSTRUCTION 2018  
PRE-ASSESSMENT REPORT  
REVISION 04 - 22 APRIL 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	14/12/2021	Initial Issue	GZ	JQ	KC
02	09/02/2022	Update following Design Team Meetings	GZ	JQ	KC
03	08/04/2022	Update for planning issue	GZ	JQ	KC
04	22/04/2022	Planning issue	JQ	JQ	GJ

This document has been prepared for Brookgate only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 2323544  
Document reference: REP-2323544-GZ-TPS-20211207-1-3 Station Row - BREEAM 2018 Pre-Assessment-Rev04.docx

## BREEAM Audit box

BRE registration number	TBC
Licensed assessor	Joanne Quirin
Assessor support	Ghena Zakhour
BREEAM scheme	New Construction Offices
BREEAM scheme version	2018
Assessment stage	Pre-Assessment
Technical manual version	SD5078 Issue 3.0
Tier code (internal use only)	Tier 3

## BREEAM Credit filtering box

Building type and sub-group	Office Offices with research and development areas
Building floor area	S6: 10,500m2, S7: 13,000m2
Designed to be untreated?	No
Building services (heating)	Wet system
Building services (cooling)	Air-conditioning
Commercial cold storage systems	No
Transportation systems	Yes
Laboratory (type, area and size)	Yes, ≥ 25% of total area.
Fume cupboards / containment devices	Yes
Unregulated water uses	Yes
External areas?	Yes
Statutory requirements impacting outdoor space?	No
Unregulated energy load	Yes
Post occupancy ENE01 credits targeted?	No

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## 1. Executive summary

This report provides an indicative BREEAM 2018 New Construction pre-assessment for the proposed Cambridge North - 1-3 Station Row development.

The development falls under the BREEAM New Construction Offices category and a Shell and core assessment has been conducted. The proposed development is targeting a BREEAM 'Excellent' rating as a minimum, with an aspiration to achieve 'Outstanding' where possible.

The current anticipated baseline score is 84.42%, equivalent to a BREEAM 'Excellent' rating, with a difference between the minimum required score for a BREEAM 'Excellent' rating of 70% of 14.42%.

A number of potential credits have also been identified that if included within the assessment strategy could result in the building achieving a potential score of 94.77%, equivalent to a BREEAM 'Outstanding' rating with a difference of 9.77% above the minimum required score.

A margin of at least 3% - 5% is recommended above the minimum required score at this stage to secure the target rating taking into account contingency for design changes and potential constraints identified during the construction stage.

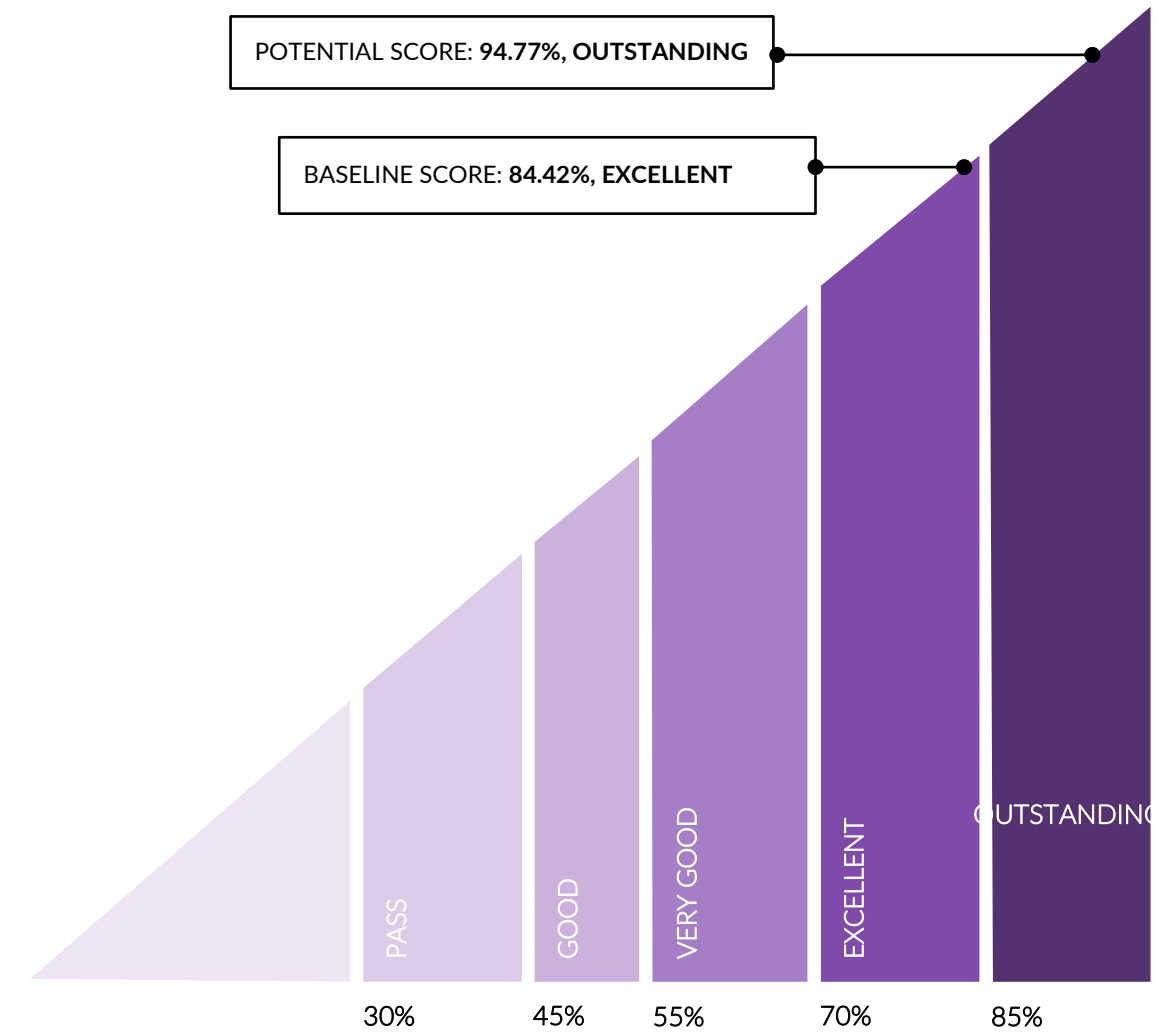


Figure 1: BREEAM 2018 Scale and Anticipated Performance Scores.

## 2. BREEAM Pre-Assessment

### 2.1 Introduction

This report relates to the proposed Cambridge North - 1-3 1-3 Station Row. It is recommended the buildings should be registered under the BREEAM 2018 scheme and assessed using the New Construction Offices criteria. The buildings are currently considered to be most suitable to be assessed using a Shell and core assessment type. The assessments will be targeting a BREEAM 'Excellent' rating as a minimum.

### 2.2 Initial Pre-Assessment

This pre-assessment has been carried out independently by a qualified BREEAM assessor prior to a review by the project design team. This report sets out a route to achieving the target rating, and highlights the design team members responsible for each credit issue. Credits have been refined by the design team, and each team member has provided feedback, identifying any relevant issues. The report and the predicted scores have been updated accordingly. The following predicted scores have been calculated based on the initial Pre-Assessment workshop with the design team:

- Baseline score / rating: 84.42% equivalent to a BREEAM 'Excellent' rating.
- Potential score / rating: 94.77% equivalent to a BREEAM 'Outstanding' rating.

All mandatory and minimum standards for the BREEAM 'Outstanding' rating have been included within the assessment strategy for the target baseline score.

The following potential credits have been identified that allow a BREEAM 'Outstanding' rating to be achieved with a comfortable margin over the minimum threshold of 85%:

HEA04-02 Design for future thermal comfort

TRA02 Sustainable Transport Measures

WAT01 Water Consumption

MAT01 Building Life Cycle assessment

MAT02 Environmental Impacts from Construction Products

MAT03 Responsible Sourcing of Materials

WST02-01 Project Aggregates Points

LE01 Contaminated Land

LE04 Enhancement of ecology

Refer to Appendix B for detailed credit requirements.

### Project Team Members:

Table 1: Project Team Members.

Discipline	Organisation	Abbreviation
Client / Developer	Brookgate	Client
Architect	MAKE	Arch
Landscape Architect	Robert Myers Associates	LA
Building Services Consultant	Hoare Lea	MEP
Civils	TBC	CE
Structural Consultant	Meinhardt	SE
Transport Consultant	PJA	TC
Ecologist	RPS Group	Eco
Planning Consultant	Bidwells	Planning

### 3. Summary Score Sheet

The summary table below highlights the list of targeted credits for the current BREEAM 2018 pre-assessment. Mandatory credits to achieve a 'Very Good' rating and above are highlighted by **(M<sub>v</sub>)**. Additional mandatory credits for an 'Excellent' or 'Outstanding' rating are highlighted by **(M<sub>e</sub>)** and **(M<sub>o</sub>)** respectively. Exemplary (innovation) credits are written in brackets; e.g. (+1).

Table 2: BREEAM Target Summary.

Category	Issue	Credits		
		Available	Targeted	Potential
Management	Man 01: Project brief and design	4	4	-
	Man 02: Lifecycle cost and service life planning	4	4	-
	Man 03: Responsible construction practices <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	6	6	-
	Man 04: Commissioning and handover <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	4	4	-
	Man 05: Aftercare <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	-	-	-
Health & Wellbeing	Hea 01: Visual comfort	4	2	-
	Hea 02: Indoor air quality	1	1	-
	Hea 04: Thermal comfort	2	2	-
	Hea 05: Acoustic performance	1	1	-
	Hea 06: Security	1	1	-
Energy	Hea 07 Safe and healthy surroundings	2	2	-
	Ene 01: Reduction of energy use and carbon emissions <b>(M<sub>e</sub>) (M<sub>o</sub>)</b>	13	8	+2
	Ene 02: Energy monitoring <b>(M) (M<sub>e</sub>) (M<sub>o</sub>)</b>	2	2	-
	Ene 03: External lighting	1	1	-
	Ene 04: Low carbon design	3	2	-
	Ene 05: Energy efficient cold storage	-	-	-
	Ene 06: Energy efficient transportation systems	2	2	-
	Ene 07 Energy efficient laboratory systems	-	-	-
Ene 08: Energy efficient equipment	-	-	-	
Transport	Tra 01: Transport assessment and travel plan	2	2	-
	Tra 02: Sustainable transport measures	10	9	+1
Water	Wat 01: Water consumption <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	5	3	+2
	Wat 02: Water monitoring <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	1	1	-
	Wat 03: Water leak detection	2	2	-
	Wat 04: Water efficient equipment	1	1	-
Materials	Mat 01: Environmental impacts from construction products - Building life cycle assessment	7	5	-

Category	Issue	Credits		
		Available	Targeted	Potential
	Mat 02: Environmental impacts from construction products	1	0	+1
	Mat 03: Responsible sourcing of construction products <b>(M<sub>v</sub>) (M<sub>e</sub>) (M<sub>o</sub>)</b>	4	3	+1
	Mat 05: Designing for durability and resilience	1	1	-
	Mat 06: Material efficiency	1	1	-
Waste	Wst 01: Construction waste management <b>(M<sub>o</sub>)</b>	5	4	-
	Wst 02: Use of recycled and sustainably sourced aggregates	1	0	+1
	Wst 03: Operational waste <b>(M<sub>e</sub>), (M<sub>o</sub>)</b>	1	1	-
	Wst 04 Speculative finishes	1	1	-
	Wst 05: Adaptation to climate change	1	1	-
	Wst 06: Design for disassembly and adaptability	2	2	-
Land Use and Ecology	LE 01: Site Selection	2	1	+1
	LE 02: Identifying and understanding the risks and opportunities for the project	2	2	-
	LE 03: Managing negative impacts on ecology	3	3	-
	LE 04: Change and enhancement of ecological value	4	3	+1
	LE 05: Long term ecology management and maintenance	2	2	-
Pollution	Pol 01: Impact of refrigerants	3	2	-
	Pol 02: Local air quality	2	2	-
	Pol 03: Flood and surface water management	5	5	-
	Pol 04: Reduction of night time light pollution	1	1	-
	Pol 05: Reduction of noise pollution	1	1	-
Innovation	Inn 01: Approved innovation and exemplary level credits	20	3	+1
	Targeted weighted score rating:	84.42%, 'Excellent'		
	Potential weighted score rating:	94.77%, 'Outstanding'		

## 4. Conclusion

This pre-assessment has been conducted upon an initial credit review in collaboration with the design team, it is anticipated that the Proposed Development could achieve a score of 84.42%, equivalent to a BREEAM 'Excellent' rating.

Additional potential credits have also been identified which, if targeted, could result in a higher BREEAM performance score and rating; 94.77%, equivalent to a BREEAM 'Outstanding', and providing a comfortable buffer above the 85% threshold for an Outstanding rating. The potential credits include the following credit issues:

- HEA04-02 Design for future thermal comfort
- TRA02 Sustainable Transport Measures
- WAT01 Water Consumption
- MAT01 Building Life Cycle assessment
- MAT02 Environmental Impacts from Construction Products
- MAT03 Responsible Sourcing of Materials
- WST02-01 Project Aggregates Points
- LE01 Contaminated Land
- LE04 Enhancement of ecology

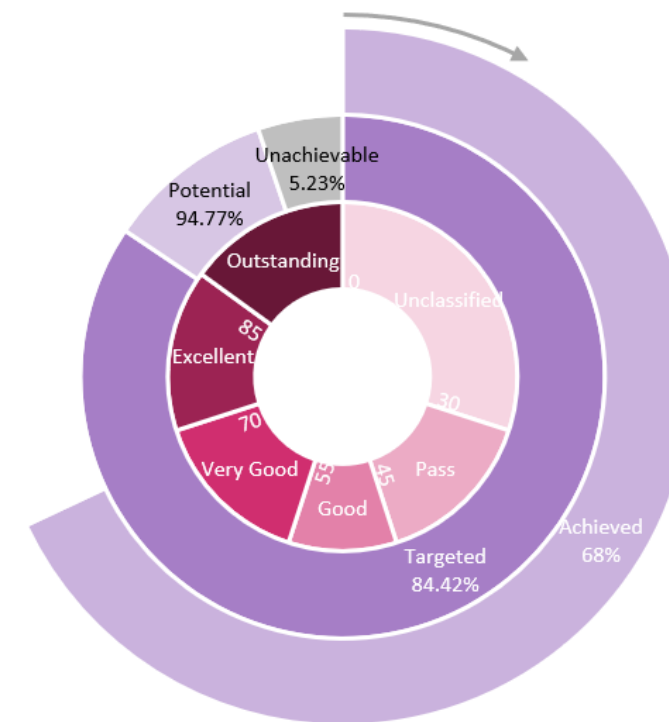


Figure 2 outlines the Proposed Development scores in each category. It also outlines where potential credits could be targeted to increase the assessment score and rating.

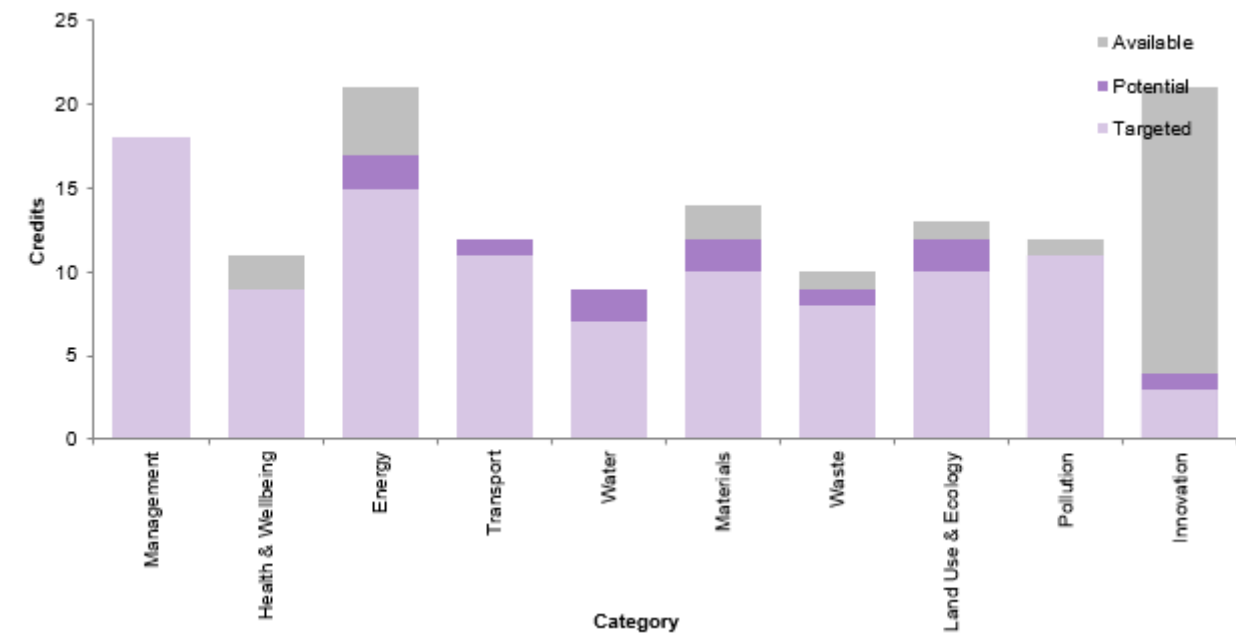


Figure 2: BREEAM Performance Summary and Targeted Credits.

## 5. Appendix A: Early Action Credits

Under the BREEAM, there are a number of credits that are time critical and require early action by the design team in order for the credits to be achieved. For these credits, the actions required prior to end of RIBA Stage 2; and the members of the design team responsible for these are listed below:

Table 3: BREEAM 2018 Early Action Credits


Credit Issues	RIBA Stage 2 Actions	Owner
<b>Man 01</b> Project brief and design	<ul style="list-style-type: none"> <li><b>First credit:</b> Stakeholder consultation: By the end of Stage 1 – definition and engagement of key stakeholders (incl. team member with significant construction experience) and their roles and responsibilities.</li> <li>By the end of Stage 2. develop roles, responsibilities and contributions schedule detailing relevant roles throughout the project.</li> <li><b>Second credit:</b> Stakeholder consultation by completion of Concept Design.</li> <li><b>Third Credit:</b> Hoare Lea sustainability have been appointed to facilitate the setting and achievement of BREEAM performance targets for the project by Stage 2.</li> <li>Advisory professional: BREEAM performance targets have been formally agreed between the client and design/project team before the end of Concept Design stage (RIBA Stage 2).</li> </ul>	Client BREEAM AP Planning Consultant
<b>Man 02:</b> Life cycle costing and service life planning	<ul style="list-style-type: none"> <li>An elemental level Life Cycle Cost (LCC) analysis to be conducted based on the proposals developed during RIBA Work Stage 2.</li> </ul>	Cost Consultant
<b>Hea 06</b> Security	<ul style="list-style-type: none"> <li>Appoint Suitability Qualified Security Specialist (SQSS) to conduct a Security Needs Assessment (SNA).</li> </ul>	SQSS
<b>Ene 04</b> Low carbon design	<ul style="list-style-type: none"> <li>Conduct a passive design analysis and a renewable energy systems feasibility study.</li> <li>Conduct an LZC feasibility study</li> </ul>	MEP Sustainability Consultant
<b>Tra 01</b> Transport assessment and travel plan	<ul style="list-style-type: none"> <li>No later than Stage 2, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form.</li> </ul>	Transport consultant
<b>Mat 01</b> Environmental impacts from construction products - Building life cycle assessment	<ul style="list-style-type: none"> <li>Conduct outline design LCA assessment and options appraisal. This LCA must be submitted to BRE Global prior to planning application submission.</li> </ul>	LCA Consultant
<b>Mat 03</b> Responsible sourcing of materials	<ul style="list-style-type: none"> <li>Conduct and use a project sustainable procurement plan for the project.</li> </ul>	Client

Credit Issues	RIBA Stage 2 Actions	Owner
<b>Mat 06</b> Material efficiency	<ul style="list-style-type: none"> <li>Set targets and report on opportunities and methods to optimise the use of materials. Conduct and record the implementation of material efficiency.</li> </ul>	Architect Structural Engineer Civil engineer
<b>Wst01</b> Construction waste management	<ul style="list-style-type: none"> <li>Carry out a pre-demolition audit.</li> </ul>	Demolition contractor Client
<b>Wst 05</b> Adaptation to climate change	<ul style="list-style-type: none"> <li>Conduct a climate change adaption strategy appraisal for structural and fabric resistance.</li> </ul>	Architect MEP Structural Engineer
<b>Wst 06</b> Design for disassembly and adaptability	<ul style="list-style-type: none"> <li>Undertake a building-specific disassembly assessment and functional adaptation strategy study.</li> <li>Subsequently incorporate adaption measures into the design where practical and cost effective at RIBA Stage 4.</li> </ul>	Architect MEP Structural Engineer
<b>LE 02</b> Identifying and understanding the risks and opportunities for the project	<ul style="list-style-type: none"> <li>The ecologist must be appointed by RIBA Stage 1 to conduct initial surveys, and subsequently provide recommendations in a report at RIBA Stage 2.</li> <li>The project team is required to liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites.</li> </ul>	Ecologist Client
<b>LE 03</b> Managing negative impacts on ecology	<ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief.</li> </ul>	Ecologist Client

Table 3: BREEAM 2018 Early Action Credits (RIBA Stage 1 and 2)


## 6. Appendix B: Detailed Credit Assessment

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
<b>Management</b>					
Man 01 Project brief and design	<p><b>First credit - Stakeholder consultation (project delivery):</b> Where evidence provided demonstrated that from RIBA stage 2 (design brief) or equivalent the client, building occupier, design team and contractor have met and are involved in contributing to the decision-making process for the project. As a minimum this includes meeting to identify and define their roles, responsibilities and contributions during each key phase. Consideration of contributions must meet specified minimum requirements</p> <p>The project team demonstrates how the project delivery stakeholder contributions and consultation process outcomes influence the following:</p> <ul style="list-style-type: none"> <li>- Initial Project Brief</li> <li>- Project Execution Plan</li> <li>- Communication Strategy</li> <li>- Concept Design</li> </ul>	1	1	<p><b>RIBA Stage 2</b> Development of design responsibility matrix to identify project roles and responsibilities. How allocation of these roles and responsibilities has altered the responsibility matrix is to be identified.</p>	Client
	<p><b>Second credit - Stakeholder consultation (interested parties):</b> Where evidence provided demonstrates that prior to the completion of the Concept Design stage, all relevant interested party stakeholders have been consulted by the design team and this covers the minimum consultation content (including but not limited to functionality, impacts on local community, inclusive and accessible design). The impact this consultation has had on the Project Brief and Concept Design must be demonstrated and consultation feedback has been given to all relevant parties by the developed design stage.</p> <p>A design workshop is undertaken that focuses on operational energy.</p>	1	1	<p><b>RIBA Stage 2</b> External consultation exercise to be performed that included all relevant stakeholders. Stakeholders should have the ability to comment on proposals, with all feasible consultation incorporated. Consultation feedback to be provided to consultee group.</p>	Client
	<p><b>Pre-requisite</b> The project team, early in the design process formally agrees BREEAM targets for the project.</p> <p><b>Third credit - BREEAM AP (concept design):</b> Where evidence provided demonstrates that a BREEAM AP has been appointed to facilitate the setting and achievement of BREEAM performance target(s) for the project and evidence shows that the designed BREEAM performance target(s) has been contractually agreed and demonstrably achieved by project design. The BREEAM AP appointment must be separate to the appointed assessor.</p>	1	1	<p><b>RIBA Stage 2</b> Hoare Lea have been appointed as BREEAM AP to assist in setting the targets for the project. This pre-assessment document includes the agreed target of Excellent as a minimum and an aspiration of achieving an Outstanding.</p>	BREEAM AP
	<p><b>Fourth credit - BREEAM AP (developed design):</b> Where evidence provided demonstrates that the Third credit is achieved and a BREEAM AP is appointed to monitor progress against the agreed BREEAM performance target(s). This is done by attending key project/design team meetings during the developed design and reporting to the client throughout the process.</p>	1	1	<p>Appointment of BREEAM AP to regularly update the design team on the progress of the BREEAM assessment and to consider how design development will impact the score.</p> <p>Note: HL Sustainability have been appointed as BREEAM AP.</p>	BREEAM AP
Man 02 Life cycle impacts	<p><b>First and second credit - Elemental life cycle cost (LCC):</b> Where evidence provided demonstrates that an elemental Life Cycle Cost (LCC) analysis has been carried out based on the proposals developed during Process Stage 2 (concept design/RIBA Stage 2) or equivalent.</p> <p>The LCC analysis shows an outline LCC plan for the project, appraising a range of options based on multiple cash flow scenarios e.g. 20, 30, 50, or 60 years and a fabric and servicing strategy for the project outlining services component and fit-out options.</p>	2	2	<p><b>RIBA Stage 2</b> Elemental LCC study to be commissioned to address different design options. The design should incorporate the lowest lifecycle cost design features.</p>	Cost Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p><b>Third credit - Component level LCC option appraisal:</b> Where evidence provided demonstrates that a component level LCC plan has been developed by end of Process Stage 4 (RIBA Stage 4) including the following component types:</p> <ul style="list-style-type: none"> <li>- Envelope: e.g. cladding, windows, and/or roofing</li> <li>- Services: e.g. heat source cooling source, and/or controls</li> <li>- Finishes: e.g. walls, floors and/or ceilings</li> <li>- External spaces</li> </ul> <p>Demonstrate using appropriate examples provided by the design team, how the component level LCC plan has been used to influence building and systems design/specification to minimise life cycle costs and maximise critical value.</p>	1	1	Update to LCC model for the development to identify lowest lifecycle cost design features are incorporated.	Cost Consultant
	<p><b>Fourth credit - Capital cost reporting:</b> Where evidence provided demonstrates reporting of the capital cost for the building in pounds per square metre (£/m<sup>2</sup>) via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.</p>	1	1	Cost consultant to confirm the cost of the project with the relevant inclusions and exclusions.	Cost Consultant
<p>Man 03 (M<sub>e</sub>) (M<sub>o</sub>) Responsible construction practices</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>- One credit (responsible construction management) for Excellent</li> <li>- Two credits (responsible construction management) for Outstanding</li> </ul>	<p><b>Pre-requisite</b> All timber and timber based products used on the project is 'legally' harvested and traded timber</p> <p><b>First credit - Environmental management:</b> Evidence which demonstrates that the principle contractor operates an environmental management system (EMS) covering main operations e.g. third party certified to ISO 14001/EMAS or equivalent standard or have a structure that is in compliance with BS 8555-2003 and has reached stage 4 of implemented stage.</p> <p>Evidence that the principal contractor implements best practice pollution policies and procedures on-site in accordance with Pollution Prevention Guidelines, PPG6. It is understood this document has been withdrawn, however BRE identify this still constitutes best practice.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Pre-requisite</b> The client and contractor formally agree and demonstrate performance targets.</p> <p><b>Second credit - BREEAM AP (site):</b> Evidence which demonstrates that a BREEAM AP is appointed to monitor the project to ensure ongoing compliance with relevant sustainability performance/process criteria. The defined BREEAM performance target forms a requirement of the principal contractor's contract and to achieve this credit in final post construction phase of assessment, the BREEAM-related performance target must be demonstrably achieved by the project.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Third and fourth credit - Responsible construction management:</b></p> <p><b>Using the BREEAM checklist - up to two credits:</b> Appoint a dedicated person to be responsible for monitoring and reporting on activities against risk evaluation documents collected.</p> <p>The principal contractor evaluates the risks (on-site and off-site), plans and implements actions to minimise the identified risks, covering the following, where appropriate:</p> <ul style="list-style-type: none"> <li>- <b>Vehicle movement on and near site</b> <ul style="list-style-type: none"> <li>- Management of construction site entrance (M)</li> <li>- Ensure development footprint is accessible for delivery vehicles with safety features (e.g. Side under run protection)</li> <li>- Identify access routes to the development footprint, including for heavy vehicles to minimise the safety risks and disruption to others.</li> </ul> </li> <li>- <b>Pollution management</b></li> </ul>	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client




Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Minimise the risks of air, land and water pollution. (M)</li> <li>- Minimise the risks of nuisance from vibration, light and noise pollution.</li> <li>- <b>Tidiness</b> <ul style="list-style-type: none"> <li>- Practices ensure the development footprint is safe, clean and organised at all times. This includes, but is not limited to, facilities, materials and waste storage. (M)</li> <li>- Ensure clear and safe access in and around the buildings at the point of handover. (M)</li> </ul> </li> <li>- <b>Health and wellbeing</b> <ul style="list-style-type: none"> <li>- Provide processes and equipment required to respond to medical emergencies. (M)</li> <li>- The principal contractor identifies and implements initiatives to promote and maintain the health and wellbeing of all site operatives within the development footprint. This can be via site facilities, site management arrangements, staff policies etc.</li> <li>- Establish management practices and facilities encouraging equality, fair treatment and respect of all site operatives. (M)</li> <li>- Provide secure, clean and organised facilities (e.g. changing and storage facilities) for site operatives within the development footprint.</li> </ul> </li> <li>- <b>Security processes</b> <ul style="list-style-type: none"> <li>- Minimise risks of the site becoming a focus for antisocial behaviour in the local community (e.g. robust perimeter fencing, CCTV, avoid creating dark corners etc.).</li> </ul> </li> <li>- <b>Training, awareness and feedback</b> <ul style="list-style-type: none"> <li>- Aspects of the construction process that might impact the community are communicated regularly, ensuring that nuisance and intrusion are minimised.</li> <li>- Ensure ongoing training is provided, and up to date, for personnel and visitors. (M)</li> <li>- The principal contractor ensures that site operatives are trained for the tasks they are undertaking. (M)</li> <li>- The fleet operators, undertakes driver training and awareness to promote safety within the development footprint and off site.</li> </ul> </li> <li>- <b>Monitoring and reporting</b> <ul style="list-style-type: none"> <li>- The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.</li> <li>- All visitor, workforce and community accidents, incidents and near misses are recorded and action is taken to reduce the likelihood of them reoccurring. (M)</li> <li>- Processes are in place to facilitate collecting and recording feedback from the community and to address any concerns related to the development footprint.</li> </ul> </li> </ul> <p>One credit is achieved for meeting the requirements for all mandatory sections, identified by (M) Two credits are achieved for meeting the requirements for all mandatory and six additional requirements An additional exemplar level credit is available for achieving all requirements within Table 4.1 (identified above)</p>				
	<p><b>Exemplary credit - Responsible construction practices:</b></p> <p>An additional exemplary level credit is available for achieving all requirements within Table 4.1 (identified above)</p>	1	1	<p>It was agreed that this would be targeted. Therefore, all of the items under Table 4.1 (detailed left) must be achieved by the Contactor. This will require a letter of commitment or a compliant clause in the ER docs and will require full evidence at post construction stage.</p> <p>INCLUDE WITHIN ER DOCUMENTATION</p>	Client


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
				This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	
	<p><b>Fifth and sixth credit - Monitoring of construction-site impacts:</b> Where evidence provided demonstrates the responsibility has been assigned to an individual for monitoring, recording and reporting energy use, water consumption and transport data from all on-site construction processes throughout the build programme.</p>	2	2	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
<p>Man 04 (M<sub>v</sub>), (M<sub>e</sub>), (M<sub>o</sub>) Commissioning and handover  Mandatory: - One credit (commissioning test schedule and responsibilities) and criterion 11 (Building User Guide for Very Good and above)</p>	<p><b>First credit - Commissioning and testing schedule and responsibilities:</b> - Where evidence provided demonstrates a schedule of commissioning and testing that identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric, and that all commissioning is done in accordance with current Building Regulations, BSRIA and CIBSE guidelines. - An appropriate project team member(s) is appointed to monitor and programme pre-commissioning, testing, and where necessary, re-commissioning on behalf of the client - The principal contractor accounts for the commissioning and testing programmes, responsibilities and criteria within their budget and main programme of works, allowing for sufficient time to complete commissioning and testing prior to handover. - Specific requirements relate to BMS commissioning</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
	<p><b>Second credit - Commissioning - design and preparation:</b> Where evidence provided demonstrates a specialist commissioning manager is appointed during the design stage with responsibility for: - Undertaking design reviews - Providing commissioning management input - Management of commissioning and performance testing.</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
	<p><b>Third credit - Testing and inspecting building fabric:</b> Where credit 1 is achieved and evidence provided demonstrates that the integrity of the building fabric is quality assured through compliant post construction testing and inspection. Any defects identified in the <b>thermographic survey</b> or airtightness testing reports are rectified prior to building handover and close out.</p>	1	1	INCLUDE WITHIN ER DOCUMENTATION This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	Client
	<p><b>Fourth credit - Handover:</b> - Where evidence provided demonstrates that Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non-technical facilities management team/building manager). This must be presented to the building user first and amended to suit the occupier's needs. - A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans in addition to training for building occupiers (non-technical building users).</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	Client
Health and Wellbeing					
<p>Hea 01 Visual comfort</p>	<p><b>Second and third credits - Average daylighting:</b> - Where evidence provided demonstrates that the relevant building areas meet good practice daylighting criteria as outlined below, in addition to room depth criterion, daylight uniformity or annual illuminance levels.  <b>Office buildings: two credits</b> - All occupied spaces unless indicated as not relevant: 2.0%, 80% area</p>	2	0	Credits not targeted.	-

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p><b>Fourth credit - View out:</b> Where evidence provided demonstrates that 95% of floor areas in relevant building areas are within 8m of a wall which has a window or permanent opening that provides an adequate view out. The window/opening must be ≥20% of the surrounding wall area.</p>	1	1	Based on the current design, it is anticipated that this credit can be targeted.	Architect
	<p><b>Fifth credit - Lighting levels and controls:</b> Where evidence provided demonstrates that internal and external lighting is designed in accordance with the required standard.</p> <ul style="list-style-type: none"> <li>- For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13, 2.15, 2.20, 6.10 and 6.20.</li> <li>- For external areas, lighting provided is specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas Lighting of roads and public amenity areas<sup>3</sup> and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places.</li> </ul> <p>Lighting should be zoned as follows: In office areas, zones of no more than four workplaces</p> <ul style="list-style-type: none"> <li>- Workstations adjacent to windows/atria and other building areas separately zoned and controlled</li> <li>- Seminar and lecture rooms: zoned for presentation and audience areas</li> <li>- Library spaces: separate zoning of stacks, reading and counter areas</li> <li>- Dining, restaurant, café areas: separate zoning of servery and seating/dining areas</li> </ul> <ul style="list-style-type: none"> <li>- Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5</li> </ul>	1	1	<p>To be included within the Employer's Requirements MEP documentation.</p> <p>It is noted that internal lighting is not assessed as part of a shell and core project.</p>	MEP
	<p><b>Exemplary credits:</b> Up to two credits are available where evidence is provided which demonstrates that the exemplary level daylight requirements and the exemplary level artificial lighting requirements are achieved, as outlined below:</p> <p><b>Daylight: One credit</b> Daylight criteria achieved by either the exemplar daylight factors, or exemplary level minimum and average point illuminance factors.</p> <p><b>Daylight Factors - All building types (excluding retail):</b></p> <ul style="list-style-type: none"> <li>- Functions as identified in the standard criteria (multi storey buildings): 3.0%, 80% area</li> <li>- Functions as identified in the standard criteria (single storey buildings): 4.0%, 80% area</li> <li>- Prisons and court cells: 2.0%, 80% area</li> <li>- Prison internal association/atrium area: 5.0%, 80% area</li> </ul> <p>OR</p> <p><b>Minimum and Point Illuminance Factor - All building types (excluding retail):</b></p> <ul style="list-style-type: none"> <li>- Multi-storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 2,650 hours per year or more, Minimum daylight illuminance at least 90 lux for 2,650 hours per year or more.</li> <li>- Single storey buildings: 80% area. Average daylight illuminance: At least 300 lux for 3,000 hours per year or more, Minimum daylight illuminance at least 120 lux for 3,000 hours per year or more.</li> </ul> <p><b>Artificial Light: One credit</b></p>	2	0	Credits not targeted.	-

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	One credit is available where lighting in each zone can be manually dimmed by occupants down to 20% of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise.				
Hea 02 Indoor air quality	<p><b>Prerequisite - Indoor air quality (IAQ) plan:</b> Where evidence provided demonstrates that an indoor air quality plan has been produced no later than the end of concept design stage, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The IAQ must include:</p> <ul style="list-style-type: none"> <li>- Removal of contaminant sources</li> <li>- Dilution and control of contaminant sources                             <ul style="list-style-type: none"> <li>- Where present, consideration is given to the air quality requirements of specialist areas such as Laboratories</li> </ul> </li> <li>- Procedures for pre-occupancy flush out</li> <li>- Third party testing and analysis</li> <li>- Maintaining good indoor air quality in-use.</li> </ul>	-	-	Indoor air quality plan to be developed for the ventilation design for the project.	Energy Consultant
	<p><b>First credit - Ventilation:</b> Where fresh air is provided in accordance with the relevant standard for ventilation based on the building type. Ventilation pathways are designed to minimise the ingress and build up of pollutants inside the building. Suitable filtration is provided to reduce the impact of external air pollution.</p> <p>Filtration to be design in accordance with BS EN 13779:2007 Annex A3. The specified filters should achieve a minimum Indoor Air Quality of IDA2.</p> <p>For air-conditioned and mixed-mode buildings: the building's air intakes and exhausts are over 10m apart to minimise recirculation and intakes are over 20m from sources of external pollution or designed in accordance with BS EN 13779:2007 Annex A2.</p> <p>Areas of the building subject to large and unpredictable or variable occupancy patterns have CO<sub>2</sub> or air quality sensors specified and:</p> <ul style="list-style-type: none"> <li>- In mechanically ventilated spaces, the sensor(s) are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space.</li> <li>- In naturally ventilated spaces, the sensors either have the ability to alert the building owner/manager when CO<sub>2</sub> levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, i.e. automatic opening windows/roof vents.</li> </ul> <p>For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10</p>	1	1	Design to include suitable filtration and separation of extract/supply grilles. Consideration of relevant areas required for CO <sub>2</sub> sensors controlling the ventilation system	Architect & MEP
Hea 04 Thermal comfort	<p><b>First credit: Thermal modelling</b> Where evidence provided demonstrates that thermal modelling has been carried out using software in accordance with CIBSE AM11. The modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design (winter) and CIBSE TM52/TM59 methodologies (summer) as appropriate to the building and/or building areas.</p>	1	1	Thermal model based on latest design to be provided to identify compliance with comfort criteria.	Energy Consultant
	<p><b>Second credit: Design for future thermal comfort</b> Where credit 1 is achieved and evidence provided outlines that the thermal modelling demonstrates that the building design and services strategy can deliver thermal comfort levels in occupied spaces in accordance with the criteria set out in CIBSE Guide A Environmental Design, and CIBSE TM52/TM59 for a projected climate change environment.</p>	1	1	Thermal model based on future design to be provided to identify compliance with comfort criteria.	Energy Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	Where these levels are not met the project team demonstrates how the building has been adapted or designed to be easily adapted in future using passive design solutions. Additionally, evidence is provided for air-conditioned buildings, the PMV and PPD indices based on the modelling are reported via the BREEAM assessment scoring and reporting tool.			Thermal model based on latest design to be provided to identify compliance with future thermal comfort criteria.	
Hea 05 Acoustic performance	For Shell and Core assessments, only the indoor ambient noise levels are applicable.  One credit where the following criteria is met where the building meets the appropriate acoustic performance standards and testing requirements defined in the checklists and tables section which defines criteria for the acoustic principles of: - Indoor ambient noise level	1	1	Acoustic assessment of the proposed spaces to feed into architectural and structural design.	Acoustician & Architect
Hea 06 Security	<b>One credit - Security of site and building:</b> Where evidence provided demonstrates that a suitably qualified security specialist (SQSS) conducts an evidence-based Security Needs Assessment during or prior to Concept Design (RIBA Stage 2). The recommendations from the SQSS must be implemented into the design.	1	1	<b>RIBA Stage 2</b> A Security Needs Assessment (SNA) is required to be performed by a Suitability Qualified Security Specialist (SQSS). Following assessment of the scheme, the design incorporates the recommendations of the scheme.	Security Consultant
	<b>Exemplary level criteria</b> A compliant risk based security rating scheme has been used e.g. SABRE. The performance against the scheme has been confirmed by independent assessment and verification.	1	0	Credit not targeted.	-
Hea 07 Safe and healthy surroundings	<b>First credit - Safe access:</b> Where external site areas form part of the assessed development the following apply: - Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. - Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: - The site entrance to the building entrance, - Car parks (where present) to the building entrance - The building to outdoor space - Connecting to off-site paths where applicable. - Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.  Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply: - Delivery areas are not accessed through general parking areas and do not cross or share the following: - pedestrian and cyclist paths - outside amenity areas accessible to building users and general public. - There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. - Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.  <b>Second credit - Outside space</b> There is an outside space providing building users with an external amenity area.  The space must be of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly	2	2	First credit: It was agreed that this would be targeted. A technical note demonstrating compliance with all the requirements (detailed left) is to be provided.  Second credit: Anticipated at the current time that the design can incorporate a compliant layout. This will need to be thoroughly considered, as there are a number of interacting criteria.	Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																																
		Available	Targeted (Potential)																																		
	intended for building staff, but can be used by other building users where relevant and beneficial to the building users. The outside space must: <ul style="list-style-type: none"> <li>- Be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky</li> <li>- Have appropriate seating areas and be non-smoking,</li> <li>- Be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.).</li> </ul>																																				
<b>Energy</b>																																					
<p>Ene 01 (Me) (Mo) Reduction of carbon emissions</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>- Four credits for Excellent</li> <li>- Six credits (energy performance) and 4 credits (energy modelling and reporting) for Outstanding</li> </ul>	<p>Up to nine credits:</p> <p>Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO<sub>2</sub> emissions. The number of credits achieved is determined by comparing the Energy Performance Ratio for New Construction (EPR<sub>NC</sub>) with the benchmarks in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Minimum Standards</th> </tr> <tr> <th>BREEAM credits</th> <th>EPR<sub>NC</sub></th> <th>Rating</th> <th>Minimum Requirements</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.1</td> <td rowspan="3">-</td> <td rowspan="3">Requires a performance improvement progressively better than the relevant national building regulations compliant standard</td> </tr> <tr> <td>2</td> <td>0.2</td> </tr> <tr> <td>3</td> <td>0.3</td> </tr> <tr> <td>4</td> <td>0.4</td> <td rowspan="2">Excellent</td> <td rowspan="2">Requires 4 credits to be achieved (equivalent to an EPR<sub>NC</sub> of at least 0.4).</td> </tr> <tr> <td>5</td> <td>0.5</td> </tr> <tr> <td>6</td> <td>0.6</td> <td rowspan="4">Outstanding</td> <td rowspan="4">Requires 6 credits to be achieved (equivalent to an EPR<sub>NC</sub> of at least 0.6) and 4 credits for Energy modelling and reporting.</td> </tr> <tr> <td>7</td> <td>0.7</td> </tr> <tr> <td>8</td> <td>0.8</td> </tr> <tr> <td>9</td> <td>0.9</td> </tr> </tbody> </table>			Minimum Standards		BREEAM credits	EPR <sub>NC</sub>	Rating	Minimum Requirements	1	0.1	-	Requires a performance improvement progressively better than the relevant national building regulations compliant standard	2	0.2	3	0.3	4	0.4	Excellent	Requires 4 credits to be achieved (equivalent to an EPR <sub>NC</sub> of at least 0.4).	5	0.5	6	0.6	Outstanding	Requires 6 credits to be achieved (equivalent to an EPR <sub>NC</sub> of at least 0.6) and 4 credits for Energy modelling and reporting.	7	0.7	8	0.8	9	0.9	9	4 (+2)	<p>Nine credits applicable to assessment type 4 credits are targeted with the potential to achieve 6 upon review. It is noted that 4 credits are required as a minimum to achieve an Excellent.</p> <p>Energy performance analysis using appropriate simulation tools in order for output parameters to be used. EPR metrics to be provided.</p>	MEP / Sustainability
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	<p>Four credits - Prediction of operational energy consumption</p> <p>Pre-requisite</p> <p>Prior to completion of the concept design, relevant members of the design team hold a preliminary design workshop focusing on operational energy performance.</p> <p>Four credits – Energy modelling and reporting</p> <p>Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures and report predicted energy consumption targets by end use, design assumptions and input data (with justifications). In addition, credits are achieved for completing a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.</p>	4	4	<p>Prediction of operational energy consumption will be undertaken and therefore these credits are targeted. The assessment would require specialist appointment.</p>	MEP / Sustainability																																
	<p>Exemplary level criteria</p> <p>Up to two credits - Beyond zero net regulated carbon</p>	5	0	Credits not targeted.	-																																



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member								
		Available	Targeted (Potential)										
	<p>The building achieves an EPR NC <math>\geq 0.9</math> and zero net regulated CO<sub>2</sub> emissions.</p> <p>Energy generation from on-site and near-site LZC sources is sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. Credits are achieved based on the percentage of additional emissions from unregulated energy that are offset by LZC sources.</p> <p><b>Three credits - Carbon negative</b> The building is deemed carbon negative where &gt; 100% (see Table 6.2 below) of carbon emissions from unregulated (and regulated) energy use are offset by energy generated from on-site and near-site LZC sources</p> <table border="1"> <thead> <tr> <th>Exemplary performance credits</th> <th>Equivalent % criteria</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10%</td> </tr> <tr> <td>2</td> <td>50%</td> </tr> <tr> <td>3</td> <td>&gt;100%</td> </tr> </tbody> </table>	Exemplary performance credits	Equivalent % criteria	1	10%	2	50%	3	>100%				
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2	50%												
3	>100%												
	<p><b>Two credits - Post-occupancy stage</b> Achieve maximum available credits in Ene02 Energy monitoring. In addition, preschools, primary schools, law courts, prisons and multi-residential buildings must separately monitor relevant function areas or departments in accordance with ENE02 criteria, below.</p> <p>The client or building occupier commits funds to pay for the post occupancy stage. This requires an assessor to be appointed and to report on the actual energy consumption compared with the targets set in criterion 4 above.</p> <p>The energy model (above) is:</p> <ol style="list-style-type: none"> <li>Submitted to BRE and</li> <li>Retained by the building owner.</li> </ol>	2	0	Credits not targeted.	-								
<p>Ene 02 (M), (Me), (Mo) Energy monitoring</p>  <p>Mandatory: One credit for Very Good and above.</p>	<p><b>First credit: Sub-metering of major energy consuming systems</b> Where evidence provided demonstrates that the energy metering systems are installed that enable 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. For buildings with a total useful floor area &gt; 1000m<sup>2</sup> are metered using an appropriate energy monitoring and management system and systems in smaller buildings are metered either with an energy monitoring and management system or separate assessable energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system.</p> <p>The end energy consuming use is identifiable to the building user through labelling or data outputs.</p> <p>Large-scale medical equipment/systems can be excluded when assessing compliance with this issue (although it is recommended that sub-metering is considered in such instances).</p>	1	1	Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP								
	<p><b>Second credit: Sub - metering of high energy load and tenancy areas</b> An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.</p>	1	1	Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.	MEP								




Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Ene 03 External lighting	<b>One credit:</b> Where evidence provided demonstrates that the external lighting has an average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit watt and that all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1	INCLUDE WITHIN ER DOCUMENTATION The only relevant requirement for this project relates to external lighting design. This requirement can be incorporated into the project's employer's requirements documentation to require the contractor to achieve.	MEP
Ene 04 Low carbon design	<b>First credit - Passive design analysis:</b> Where the first credit of Hea 04 (Thermal comfort) is achieved and the project team carries out an analysis of the design to identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services, and that these solutions are implemented meaningfully into the design.	1	1	<b>RIBA Stage 2</b> Energy Assessment will include Passive Design assessment.	Sustainability
	<b>Second credit - Free cooling:</b> Where the first credit is achieved, the passive design analysis includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions. Free cooling solutions might include night time cooling, ground coupled air cooling or surface water cooling (for example); i.e. does not use active cooling.	1	0	Credit not currently targeted  There will be no free cooling technology designed into the development and there will be mechanical cooling system.	MEP / Sustainability
	<b>Third credit - Low zero carbon feasibility study:</b> Where evidence provided demonstrates that a feasibility study has been carried out by the completion of the Concept Design stage (RIBA Stage 2) by an energy specialist to establish the most appropriate recognised local (on- or near-site) low or zero carbon energy source(s) for the development.  A local LZC technology/ies has been specified for the building in line with the recommendations of this feasibility study and this method of supply results in a meaningful reduction in regulated CO <sub>2</sub> emissions.	1	1	<b>RIBA Stage 2</b> Energy Assessment will include Low Carbon technology feasibility assessment.	MEP / Sustainability
Ene 06 Energy efficient transportation systems	<b>First credit - Energy consumption:</b> Where evidence provided demonstrates that where either lifts, escalators or moving walks are required: <ul style="list-style-type: none"> <li>- An analysis of the transportation demand and usage patterns for the building has been carried out in accordance with BS EN ISO 25745 to determine the optimum number and size of lifts, (including counter-balancing ratio), escalators and/or moving walks.</li> <li>- The energy consumption has been estimated for different types and the lift/escalator/moving walk system/strategy with the lowest energy consumption has been specified.</li> <li>- Regenerative drives should be considered.</li> <li>- The transportation system with the lowest energy consumption is specified.</li> </ul>	1	1	Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP
	<b>Second and third credit - Energy efficient features:</b> Where evidence provided demonstrates that the first credit has been achieved and: For lifts, of the following energy-efficient features the three that offer the greatest potential energy savings are specified: <ul style="list-style-type: none"> <li>- The lifts operate in a stand-by condition during off-peak periods.</li> <li>- The lift car uses energy-efficient lighting and display lighting</li> <li>- The lift uses a drive controller capable of variable-speed, variable-voltage, variable frequency (VVVF) control of the drive motor.</li> </ul> Where regenerative drives are demonstrated to save energy, they are specified.  For escalators and/or moving walks, each escalator and/or moving walk complies with EITHER of the following:	1	1	Second credit: Credit targeted.  Third credit: Credit not applicable to assessment type  Lift energy analysis to be completed to guide selection of most appropriate lift system.	MEP


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																																																						
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	<ul style="list-style-type: none"> <li>It is fitted with a load sensing device that synchronises motor output to passenger demand through a variable speed drive. OR It is fitted with a passenger sensing device for automated operation (auto walk), so the escalator operates in stand-by mode when there is no passenger demand.</li> </ul>																																																										
<b>Transport</b>																																																											
Tra 01 Transport assessment and travel plan	<p><b>Two credits:</b></p> <ul style="list-style-type: none"> <li>Where evidence provided demonstrates that a travel plan has been developed as part of the feasibility and design stages which considers all types of travel relevant to the building type and users.</li> <li>The travel plan must be structured to the needs of the particular site and takes into consideration the findings of a site-specific transport survey.</li> <li>The travel plan must include a package of measures that have been used to steer the design of the development in order to meet the travel plan objectives and minimise car-based travel patterns. The travel plan must be demonstrated in action post construction.</li> </ul>	2	2	<p><b>RIBA Stage 2</b></p> <p>A compliant travel plan is required for the development that includes recommendations for reduction of impact resultant from transport. These measures are then incorporated into the design of the development.</p>	Transport Consultant & Architect																																																						
Tra 02 Sustainable transport measures	<p><b>Ten credits</b></p> <p>Features included to achieve a Tra02 points score. Credits are achieved based on the site's Accessibility Index and the features provided.</p> <table border="1"> <thead> <tr> <th>Points</th> <th>Points</th> <th>Points</th> <th>Credits</th> </tr> <tr> <th>AI &lt; 25</th> <th>25 ≤ AI &lt; 40 (urban centres)</th> <th>AI of ≥ 40 (metropolitan centre locations)</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td></td><td>1</td></tr> <tr><td>2</td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>2</td><td></td><td>3</td></tr> <tr><td>4</td><td></td><td>2</td><td>4</td></tr> <tr><td>5</td><td>3</td><td></td><td>5</td></tr> <tr><td>6</td><td>4</td><td>3</td><td>6</td></tr> <tr><td>7</td><td>5</td><td></td><td>7</td></tr> <tr><td>8</td><td>6</td><td>5</td><td>8</td></tr> <tr><td>9</td><td>7</td><td>6</td><td>9</td></tr> <tr><td>10</td><td>8</td><td>7</td><td>10</td></tr> </tbody> </table> <p>Sustainability Transport Measures:</p> <table border="1"> <thead> <tr> <th>Public transport measures</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>Public transport measures</td> <td></td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>The existing AI calculated in Tra 01 achieves the following:                             <ul style="list-style-type: none"> <li>≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3</li> <li>≥ 8 for all other building type</li> </ul> </li> </ul> </td> <td>1</td> </tr> </tbody> </table>	Points	Points	Points	Credits	AI < 25	25 ≤ AI < 40 (urban centres)	AI of ≥ 40 (metropolitan centre locations)		1	1		1	2		1	2	3	2		3	4		2	4	5	3		5	6	4	3	6	7	5		7	8	6	5	8	9	7	6	9	10	8	7	10	Public transport measures	Points	Public transport measures		<ul style="list-style-type: none"> <li>The existing AI calculated in Tra 01 achieves the following:                             <ul style="list-style-type: none"> <li>≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3</li> <li>≥ 8 for all other building type</li> </ul> </li> </ul>	1	10	9 (+1)	<p>Ten credits applicable to assessment type Nine credits targeted One additional potential credit</p> <p>Currently anticipated that sufficient features can be incorporated to achieve the targeted credits.</p>	Transport Consultant & Architect
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Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Demonstrate an increase over the existing Accessibility Index through negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development;</li> </ul>	2			
	<ul style="list-style-type: none"> <li>- Demonstrate an increase over the existing Accessibility Index. This could be through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions.</li> </ul>	3			
	<ul style="list-style-type: none"> <li>- Provide a dedicated service, such as a bus route or service</li> </ul>	3			
	<ul style="list-style-type: none"> <li>- Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.</li> </ul>	1			
	<b>Private transport measures</b>				
	<ul style="list-style-type: none"> <li>- Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development.</li> </ul>	1			
	<ul style="list-style-type: none"> <li>- Set up a car sharing group or facility to facilitate and encourage building users to car share.</li> <li>- Raise awareness of the sharing scheme with marketing and communication materials.</li> <li>- Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development.</li> <li>- Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.</li> </ul>	1			
	<b>Active travel measures</b>				
	<ul style="list-style-type: none"> <li>- During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it.</li> <li>- Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public</li> </ul>	2			
	<ul style="list-style-type: none"> <li>- Install compliant cycle storage spaces to meet the minimum levels set out the BREEAM criteria</li> </ul>	1			
	<ul style="list-style-type: none"> <li>- Option 7 has been achieved.</li> <li>- Provide at least two compliant cyclists' facilities for the building users, (including pupils where appropriate to the building type):                             <ul style="list-style-type: none"> <li>- Showers</li> <li>- Changing facilities</li> <li>- Lockers</li> <li>- Drying spaces.</li> </ul> </li> </ul>	1			
	Existing amenities: <ul style="list-style-type: none"> <li>- At least three existing accessible amenities are present, see Table 7.6 on page 179, where relevant for a Building Group.</li> </ul>	1			
	Enhanced amenities: <ul style="list-style-type: none"> <li>- Ensure a minimum of one new accessible amenity is provided.</li> </ul>	2			
	Ensure more than one new accessible amenity, in accordance with Table 7.6 within the BREEAM criteria for the relevant Building Group, is provided.	3			

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member														
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	<p>Alternative transport measures</p> <table border="1"> <tr> <td>Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.</td> <td>1 - 3</td> </tr> </table>	Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3																
Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit these for review by BRE.	1 - 3																		
<b>Water</b>																			
<p>Wat 01 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Water consumption</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>One credit for Good and above.</li> <li>Two credits for Outstanding.</li> </ul>	<p>Up to five credits:</p> <p>Where evidence provided demonstrates that water consumption has been reduced to the following levels compared against the baseline building model:</p> <table border="1"> <thead> <tr> <th>% Improvement</th> <th>No. of BREEAM Credits</th> </tr> </thead> <tbody> <tr> <td>12.5%</td> <td>1</td> </tr> <tr> <td>25%</td> <td>2</td> </tr> <tr style="border: 2px solid red;"> <td>40%</td> <td>3</td> </tr> <tr> <td>50%</td> <td>4</td> </tr> <tr> <td>55%</td> <td>5</td> </tr> <tr> <td>65%</td> <td>Exemplary performance</td> </tr> </tbody> </table>	% Improvement	No. of BREEAM Credits	12.5%	1	25%	2	40%	3	50%	4	55%	5	65%	Exemplary performance	5	3 (+2)	<p>Five credits applicable to assessment type</p> <p>Three credits targeted</p> <p>Two additional potential credits</p> <p>It was agreed that this would be targeted and Specification of low flow sanitary appliances is to be provided. HL Sustainability can help review this to maximise the number of credits that can be achieved.</p>	MEP & Architect
% Improvement	No. of BREEAM Credits																		
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<p>Wat 02 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Water monitoring</p>  <p>Mandatory:</p> <p>Criterion 1 only for Good and above.</p>	<p>One credit:</p> <ul style="list-style-type: none"> <li>Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit.</li> <li>Water-consuming plant or building areas, consuming 10% or more of the building's total water demand, need to be fitted with either sub meters or have water monitoring equipment integral to the plant or area. (Not applicable to Shell Only Assessments).</li> <li>Each meter (main and sub) must have a pulsed output to enable connection to a Building Management System (BMS) for the monitoring of water consumption.</li> <li>If the site on which the building is located has an existing BMS, managed by the same occupier/owner (as the new building), the pulsed water meter(s) for the new building must be connected to the existing BMS.</li> </ul> <p><b>Additionally, for those pursuing a post occupancy stage certification:</b></p> <ul style="list-style-type: none"> <li>The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day), if a post occupancy stage certification is sought.</li> </ul>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings. Metering strategy to be confirmed prior to issue.</p>	MEP														
<p>Wat 03</p> <p>Water leak detection</p>	<p><b>First credit - Leak detection system:</b></p> <p>Where evidence provided demonstrates that a leak detection system which is capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter is provided.</p>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings.</p>	MEP														
	<p><b>Second credit - Flow control devices:</b></p> <p>Where evidence provided demonstrates that flow control devices that regulate the supply of water to each WC area/facility according to demand are installed (and therefore minimise water leaks and wastage from sanitary fittings)</p>	1	1	<p>Requirements to be included within the Employer's Requirements MEP documentation and drawings.</p>	MEP														
<p>Wat 04</p>	<p><b>First credit</b></p> <p>The design team has identified all unregulated water demands that could be realistically mitigated or reduced.</p>	1	1	<p>Confirmed no unregulated water sources at the scheme.</p>	Landscape Architect														


Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
Water efficient equipment	<p>System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building.</p> <p>Unregulated water uses include (but are not limited to):</p> <ul style="list-style-type: none"> <li>- Swimming pools</li> <li>- Recreational hot tubs and hydrotherapy pools</li> <li>- Equipment used for irrigation</li> <li>- Vehicle wash equipment</li> <li>- Project-specific industrial processes</li> <li>- Water filtration and treatment processes</li> <li>- Building services (e.g. cooling towers and humidification systems)</li> </ul> <p>Credit is not applicable and will be filtered out where there is no water demand from uses other than domestic scale and sanitary use components.</p>				
<b>Materials</b>					
<p><b>Mat 01</b> Environmental impacts from construction products - Building life cycle assessment (LCA)</p>	<p><b>One - six credits: LCA superstructure</b> Up to six credits are available for development of a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or a Compliant LCA tool during concept design stage.</p> <ul style="list-style-type: none"> <li>- Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options throughout the design development, using a building LCA tool that is recognised by BREEAM</li> <li>- Submit to BRE at concept design stage <b>prior to planning submission.</b></li> <li>- Submit updated LCA assessment to BRE at technical design stage.</li> </ul> <p><b>One credit LCA substructure</b> Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping).</p>	7	4	<p><b>RIBA Stage 2</b> Seven credits applicable to assessment type Four credits targeted.</p> <p>An LCA assessment is currently being undertaken. LCA results will be submitted to BRE before planning submission.</p>	Architect / Structural Engineer / Civil Engineer / QS
	<p><b>Exemplary level criteria</b> <b>One credit - Core building services options appraisal during concept design</b> Carry out building LCA options appraisal of at least 3 significantly different core building services design options, using a building LCA tool that is recognised by BREEAM</p> <p><b>One credit - LCA and LCC alignment</b></p> <ul style="list-style-type: none"> <li>- Achieve Elemental LCC plan and Component Level LCC options appraisal credits include design options appraised as part of the LCA within the Elemental and Component LCC models.</li> <li>- Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'.</li> </ul>	3	1 (+1)	<p><b>RIBA Stage 2</b> LCA assessment is being undertaken and the results will be submitted prior to submission of planning permission. LCA to be submitted to BRE and assessed at the developed design stage.</p> <p>Hoare Lea can be considered a suitably qualified third party and can therefore claim the credit for completion of the LCA assessment.</p>	Architect / Structural Engineer / Civil Engineer / QS
<p><b>Mat 02</b> Environmental impacts from construction products - Environmental Product Declarations (EPD)</p>	<p><b>One credit:</b> Where evidence provided demonstrates the designs features construction products with EPD that achieve a total EPD points score of at least 20, according to the BRE calculation methodology.</p>	1	0 (+1)	<p>It was agreed that this would be reviewed at a later stage. This requires specifying products with EPDs to achieve a minimum of 20 points in the Mat 02 table (HL can send out the template). Requirements to be included within the Employer's Requirements documentation for the evidence at design stage.</p>	Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member												
		Available	Targeted (Potential)														
<p>Mat 03 (M), (M<sub>e</sub>), (M<sub>o</sub>)</p> <p>Responsible sourcing of construction products</p>  <p>Mandatory: Criterion 1 sustainable timber sourcing for all ratings</p>	<p><b>Pre-requisite</b></p> <p>All timber and timber based products used on the project are 'legally harvested and traded timber'</p> <p><b>First credit: Enabling sustainable procurement</b></p> <p>Where evidence provided demonstrates that a sustainability procurement plan is in place at by the concept design stage and is used by the design team to guide specification towards sustainable construction products.</p>	1	1	<p><b>RIBA Stage 2</b></p> <p>Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting. Project team will be required to develop a sustainable procurement plan now for use throughout the project.</p>	Architect & Contractor												
	<p><b>Up to three credits:</b></p> <p>Where evidence provided demonstrates the available responsible sourcing of materials (RSM) can be awarded where the applicable building materials are responsibility sourced in accordance with the BREEAM methodology.</p> <table border="1" data-bbox="498 772 1715 991"> <thead> <tr> <th>RSM credits</th> <th>% of available RSM points achieved</th> <th>MAT03 Scope</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>≥ 10%</td> <td>Superstructure</td> </tr> <tr> <td>2</td> <td>≥ 20%</td> <td>As above, plus - Internal finishes - Substructure and hard landscaping</td> </tr> <tr> <td>3</td> <td>≥ 30%</td> <td></td> </tr> </tbody> </table>	RSM credits	% of available RSM points achieved	MAT03 Scope	1	≥ 10%	Superstructure	2	≥ 20%	As above, plus - Internal finishes - Substructure and hard landscaping	3	≥ 30%		3	2 (+1)	<p>Three credits applicable to assessment type</p> <p>Two credits targeted and one potential to be reviewed as the design progresses.</p> <p>Requirements to be included within the Employer's Requirements documentation. Contractor will be required to develop suitable reporting.</p>	Architect
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	1	≥ 10%	Superstructure														
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<p><b>Exemplary credit:</b></p> <p>Where evidence provided demonstrates that at least 50% of the available RSM points are achieved. Scope also includes core building services.</p>	1	0	Credit not currently targeted	-													
<p>Mat 05</p> <p>Designing for durability and resilience</p>	<p><b>One credit:</b></p> <p>PART A: Protecting vulnerable parts of the building from damage</p> <ul style="list-style-type: none"> <li>- Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: <ul style="list-style-type: none"> <li>- Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.).</li> <li>- Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas.</li> <li>- External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails.</li> <li>- Potential malicious damage to building materials and finishes, in public and common areas where appropriate.</li> </ul> </li> </ul> <p>PART B: Protecting exposed parts of the building from material degradation</p> <ul style="list-style-type: none"> <li>- Key exposed building elements have been designed and specified to limit long and short-term degradation due to environmental factors. This can be demonstrated through one of the following: <ul style="list-style-type: none"> <li>- The element or product achieving an appropriate quality or durability standard or design guide</li> </ul> </li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>- A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.</li> <li>- Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.</li> <li>- Design the roof and façade to prevent water damage, ingress and detrimental ponding.</li> </ul>	1	1	<p>Consideration for wear and damage to be made in addition to consideration for where (and how) protection measures will be included.</p> <p>Environmental degradation assessment to be undertaken to identify how materials will be likely to be impacted by environmental hazards.</p>	Architect												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																	
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<p>Mat 06 Material efficiency</p>	<p><b>One credit:</b> At the preparation and brief and concept design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages</p> <ul style="list-style-type: none"> <li>- Preparation and brief</li> <li>- Concept design</li> <li>- Developed design</li> <li>- Technical design</li> <li>- Construction</li> </ul> <p>Develop and record the implementation of material efficiency</p> <ul style="list-style-type: none"> <li>- Developed design</li> <li>- Technical design</li> <li>- Construction</li> </ul>	1	1	<p><b>RIBA Stage 1 and Stage 2</b> Stages 1, 2, 3, 4 to be completed by team. Stage 5, 6 to be included within Employer's Requirements documentation.</p>	Architect																	
Waste																						
<p>Wst 01 (M<sub>o</sub>) Construction waste management</p>  <p>Mandatory: One credit for Outstanding</p>	<p><b>One credit - Pre-demolition audit</b> Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope:</p> <ul style="list-style-type: none"> <li>- Be carried out at Concept Design stage (RIBA Stage 2) by a competent person prior to strip-out or demolition works</li> <li>- Guide the design, consider materials for reuse and set targets for waste management</li> <li>- Engage all contractors in the process of maximising high-grade reuse and recycling opportunities</li> <li>- Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets.</li> </ul> <p><b>Three credits - Construction resource efficiency:</b></p> <ul style="list-style-type: none"> <li>- Where a Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and dedicated off-site manufacture or fabrication.</li> <li>- In addition, evidence provided demonstrates that non-hazardous construction waste (excluding demolition and excavation waste) generated by the building's design and construction meets or exceeds the following resource efficiency benchmarks:</li> </ul> <table border="1" data-bbox="498 1444 1730 1749"> <thead> <tr> <th rowspan="2">BREEAM Credits</th> <th colspan="2">Amount of waste generated per 100m<sup>2</sup> (gross internal floor area)</th> </tr> <tr> <th colspan="2">m<sup>3</sup></th> </tr> </thead> <tbody> <tr> <td>One credit</td> <td>≤ 13.3</td> <td>≤ 11.1</td> </tr> <tr style="border: 2px solid red;"> <td>Two credits</td> <td>≤ 7.5</td> <td>≤ 6.5</td> </tr> <tr> <td>Three credits</td> <td>≤ 3.4</td> <td>≤ 3.2</td> </tr> <tr> <td>Exemplary level</td> <td>≤ 1.6</td> <td>≤ 1.9</td> </tr> </tbody> </table>	BREEAM Credits	Amount of waste generated per 100m <sup>2</sup> (gross internal floor area)		m <sup>3</sup>		One credit	≤ 13.3	≤ 11.1	Two credits	≤ 7.5	≤ 6.5	Three credits	≤ 3.4	≤ 3.2	Exemplary level	≤ 1.6	≤ 1.9	5	3	<p>Pre-demolition audit: <b>RIBA Stage 2</b> Credit targeted. Construction resource efficiency: Three credits applicable to assessment type Two credits targeted</p> <p><b>RIBA Stage 2</b> Any demolition for the site must be accompanied with a pre-demolition survey of the demolished buildings.</p> <p>The low waste benchmark levels will be required within the Employer's Requirements documentation. These requirements can also identify that the diversion from landfill targets must be achieved.</p> <p>Exemplary credit: Credit not targeted</p>	Contractor
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	<p><b>Fifth credit - Diversion of resources from landfill:</b> Where evidence provided demonstrates that the following percentages of non-hazardous construction and demolition waste (where applicable) generated by the project have been diverted from landfill:</p>	1	1	As identified above, requirements to achieve these levels of diversion from landfill will be	Contractor																	



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member																								
		Available	Targeted (Potential)																										
	<table border="1"> <thead> <tr> <th>BREEAM credits</th> <th>Type of Waste</th> <th>Volume</th> <th>Tonnage</th> </tr> </thead> <tbody> <tr> <td rowspan="3">One credit</td> <td>Non-demolition</td> <td>70%</td> <td>80%</td> </tr> <tr> <td>Demolition</td> <td>80%</td> <td>90%</td> </tr> <tr> <td>Excavation</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td rowspan="3">Exemplary level</td> <td>Non-demolition</td> <td>85%</td> <td>90%</td> </tr> <tr> <td>Demolition</td> <td>85%</td> <td>95%</td> </tr> <tr> <td>Excavation</td> <td>95%</td> <td>95%</td> </tr> </tbody> </table>	BREEAM credits	Type of Waste	Volume	Tonnage	One credit	Non-demolition	70%	80%	Demolition	80%	90%	Excavation	N/A	N/A	Exemplary level	Non-demolition	85%	90%	Demolition	85%	95%	Excavation	95%	95%			required to be included with Employer's Requirements documentation.	
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<p><b>Wst 02</b> Use of recycled and sustainably sourced aggregates</p>	<p><b>Pre-requisite</b> If demolition occurs on site, to encourage the reuse of site-won material on site, complete a pre-demolition audit of any existing buildings, structures or hard surfaces in accordance with Wst01 requirements.</p> <p><b>One credit: Project sustainable aggregate points</b> Where evidence provided identifies amounts of aggregate used for the project, the types of aggregate, its source (location) and the transport type. This information is used to calculate the Sustainable Aggregate points score. Credits are scored as follows:</p> <table border="1"> <thead> <tr> <th>Project Sustainable Aggregate Credits</th> <th>Project Sustainable Aggregate points</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3.5-6.0</td> </tr> <tr> <td>1 exemplary performance credit</td> <td>&gt; 6.0</td> </tr> </tbody> </table> <p>The calculation is based on the following aggregate uses:</p> <ul style="list-style-type: none"> <li>- Engineered fill</li> <li>- Concrete coarse aggregate</li> <li>- Concrete fine aggregate</li> <li>- Asphalt aggregate</li> <li>- Granular bedding for pipes</li> <li>- Granular bedding for hard landscape products</li> <li>- Hydraulically bound materials</li> </ul>	Project Sustainable Aggregate Credits	Project Sustainable Aggregate points	1	3.5-6.0	1 exemplary performance credit	> 6.0	1	0 (+1)	Calculations required to identify the total amount of aggregate required for the project and the levels of recycled aggregate required to achieve compliance with the BREEAM criteria. It is anticipated that there is opportunity to achieve the standard level criteria, but due to the location, potentially not the exemplar level credit.	Civil / Structural Engineer																		
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	<p><b>Exemplary level criteria:</b> As above</p>	1	0	Credit not targeted  Calculations required to identify the total amount of aggregate required for the project and the levels of recycled aggregate required to achieve compliance with the BREEAM criteria. It	Civil / Structural Engineer																								

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
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				is anticipated that there is opportunity to achieve the standard level criteria, but due to the location, potentially not the exemplar level credit.	
<p>Wst 03 (M<sub>a</sub>) (M<sub>o</sub>) Operational waste</p>  <p>Mandatory:</p> <ul style="list-style-type: none"> <li>One credit for Excellent and above</li> </ul>	<p><b>One credit:</b> Where evidence provided demonstrates that there is dedicated space(s) to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities.</p> <p>The dedicated space(s) must be:</p> <ul style="list-style-type: none"> <li>Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams</li> <li>Accessible to building occupants / facilities operators for the deposit of materials and collections by waste management contractors</li> <li>Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.</li> <li>The specified/installed operational waste facilities are compliant with the relevant NHS guidelines for that part of the UK.</li> </ul> <p>Where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must be provided as part of its waste management strategy:</p> <ul style="list-style-type: none"> <li>Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space.</li> <li>Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility.</li> <li>Where organic waste is to be stored/ composted on site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes.</li> </ul>	1	1	<p>A waste storage area of sufficient footprint area is required to be provided. This will have specific areas for recyclable waste and general waste and will comply with the area requirements of the BREEAM criteria.</p> <p>The likelihood for a baler to be of use needs to be considered at the site. It may be required that a baler is provided.</p>	Architect
<p>Wst 04 Speculative floor and ceiling finishes</p>	<p><b>One credit</b> For tenanted areas (where the future occupant is not known), prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only.</p> <p>In a building developed for a specific occupant, that occupant has selected (or agreed to) the specified floor and ceiling finishes.</p>	1	1	It was agreed at the initial meeting (01/12/2021) that this would be reviewed as part of the strategy to achieve an Outstanding.	Client
<p>Wst 05 Adaptation to climate change</p>	<p><b>One credit - Structural and fabric resilience:</b> Where evidence provided demonstrates that a climate change adaptation strategy appraisal for structural and fabric resilience has been conducted by the end of Concept design (RIBA Stage 2) covering hazard identification and assessment, risk estimation, evaluation and management. Appraisal to identify &amp; evaluate impact on the building over its life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts</p> <p>ID hazards taking into account the following: structural stability, robustness, weather proofing and detailing, material durability, health and safety of occupants, impact on building contents and business continuity</p>	1	1	<p><b>RIBA Stage 2</b> A climate change adaptation plan is required to be developed. This plan and report are required to be concluded at RIBA Stage 2. As a result of this, the reporting against the requirements need to be commenced now.</p>	Architect & Structural Engineer
	<p><b>Exemplary credit:</b> A holistic approach to the design and construction of the current building's life cycle, to mitigate against the impacts of climate change, is represented by the achievement of these criteria.</p> <p>In addition to achieving the first credit above, the following must also be achieved:</p>	1	1	All credits listed left must be awarded in order to achieve this credit.	Architect & Structural Engineer

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- Hea 04 – Thermal comfort: Project team demonstrate how the building has been adapted, or designed to be easily adapted in future using passive design solutions</li> <li>- Ene 01 – Reduction in energy use and carbon emissions At least 6 credits in this issue have been achieved</li> <li>- Ene 04 – Low carbon design Passive design analysis credit has been achieved</li> <li>- Wat 01 – Water consumption Minimum of three credits in this issue have been achieved</li> <li>- Mat 05 – Designing for durability and resilience Building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors</li> <li>- Pol 03 Surface water run off Flood risk- A minimum of one credit has been achieved. Surface water run off- Two credits have been achieved.</li> </ul>				
Wst 06 Design for disassembly and adaptability	<p><b>One credit - Design for disassembly and functional adaptability - recommendations</b> Where evidence provided demonstrates that the design team conducts a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios. Recommendations are required to be developed at the concept design stage.</p>	1	1	<p><b>RIBA Stage 2</b> A functional adaptability report is required for the project that identifies how the development can be adapted for future use. The report should be undertaken now.</p>	Architect
	<p><b>One credit - Disassembly and functional adaptability – implementation</b> Provide an update, during Technical Design, on:</p> <ul style="list-style-type: none"> <li>- How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor.</li> <li>- Changes to the recommendations and solutions during the development of the Technical Design.</li> </ul> <p>Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.</p>	1	1	Anticipated that the report recommendations can be incorporated into the design.	Architect
<b>Land Use and Ecology</b>					
LE 01 Site selection	<p><b>First credit - Previously occupied land:</b> Where evidence is provided to demonstrate that at least 75% of the proposed development's footprint is on an area of land which has previously been developed for use by industrial, commercial or domestic purposes in the last 50 years.</p>	1	1	Site Investigation reports to be provided that identify that the project has been at least 75% by areas previously developed.	Architect
	<p><b>Second credit - Contaminated land:</b> - Where evidence provided demonstrates that the site is significantly contaminated as confirmed by a contaminated land specialist's site investigation, risk assessment and appraisal. The client or principal contractor must confirm that remediation of the site will be carried out in accordance with the remediation strategy and its implementation plan.</p>	1	0 (+1)	<p>It was agreed that this credit could be added as a potential credit as long as the contaminated land is remediated. Added to potential targets accordingly.</p> <p>Remediation report to be provided once complete.</p>	Client
LE 02 Identifying and understanding the risks and opportunities for the project	<p><b>Pre-requisite - Assessment route selection</b> An assessment route for the project has been determined using BREEAM Guidance Note GN34 BREEAM Ecological Risk Evaluation Checklist.</p> <p>The client or contractor confirms compliance will be and is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.</p>	2	2	<p><b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.</p>	Ecologist

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
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	<p>Up to two credits</p> <p>Depending on the route for compliance taken the following number of credits are available.</p> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Survey and evaluation</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Determining the ecological outcomes for the site</td> <td></td> <td>1 credit</td> </tr> </tbody> </table> <p><b>Survey and evaluation</b></p> <p><b>Route 1</b> Completion of the BREEAM Ecological Risk Evaluation Checklist indicates Assessment route 1 can be used as the assessment</p> <p><b>Route 2</b></p> <ul style="list-style-type: none"> <li>- An appropriate individual is appointed at a project stage that ensures early involvement in site configuration and, where necessary, can influence strategic planning decisions.</li> <li>- Prior to the completion of the preparation and brief, an appropriate level of survey and evaluation:</li> <li>- For sites where complex ecological systems are likely to be present) has been carried out to determine the ecological baseline of the site, taking account of the zone of influence to establish: <ul style="list-style-type: none"> <li>- Current and potential ecological value and condition of the site, and related areas within the zone of influence.</li> <li>- Direct and indirect risks to current ecological value</li> <li>- Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence.</li> </ul> </li> <li>- Data are collated and shared with project team to inform the site preparation, design or construction works.</li> </ul> <p><b>Determining the ecological outcomes for the site (Routes 1 and 2)</b></p> <ul style="list-style-type: none"> <li>- Survey and evaluation criteria (criteria 3-6 above) relevant to the chosen route have been achieved.</li> <li>- During Concept Design, the project team liaise and collaborate with representative stakeholders to identify and consider ecological outcome for the sites (appropriate to the scale and type of development) for the project.</li> <li>- When determining the ecological outcome for the site, this must involve the identification, appraisal and selection of specific solutions and measures sufficiently early to influence key project planning decisions. This must be done in accordance with the following hierarchy of action: <ul style="list-style-type: none"> <li>- avoidance</li> <li>- protection</li> <li>- reduction or limitation of negative impacts</li> <li>- on site compensation and,</li> <li>- enhancement, considering the capacity and feasibility within the site, or where viable, off-site.</li> </ul> </li> <li>- Following this the optimal ecological outcome for the site is selected after liaising with representative stakeholders and the project team.</li> </ul> <p>Exemplary level criteria</p> <p><b>Determine the ecological outcomes for the site (sustainability-related activities)</b> When determining the optimal ecological outcome for the site consider, in addition to those outlined above, the wider site sustainability-related activities and the potential for ecosystem service related benefits.</p>		Project team member route (Route 1)	Ecologist route (Route 2)	Survey and evaluation	1 credit	1 credit	Determining the ecological outcomes for the site		1 credit				
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LE 03	Pre-requisite – Identification and understanding the risks and opportunities for the site	3	3	RIBA Stage 2	Ecologist									

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
Managing negative impacts on ecology	<ul style="list-style-type: none"> <li>The client or contractor has confirmed that compliance is monitored against all relevant UK, and EU or International legislation relating to the ecology of the site</li> <li>LE02 has been achieved</li> </ul> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist Route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Planning, liaison and implementation</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Managing negative impacts of the project (limitation or compensation)</td> <td>1 credit</td> <td>1 or 2 credits</td> </tr> </tbody> </table> <p><b>One credit - Planning, liaison, implementation and data</b></p> <ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes at an early enough stage to influence the concept design or design brief.</li> <li>Site preparation and construction works have been planned for and are implemented at an early project stage to optimise benefits and outputs.</li> <li>The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions, and measures have been selected</li> </ul> <p><b>Up to two credits - Managing negative impacts of the project</b></p> <p><b>Route 1 (one credit)</b> Negative impacts from site preparation and construction works have been managed according to the hierarchy and no net impact has resulted.</p> <p><b>Route 2 (up to two credits)</b> Negative impacts from site preparation and construction works have been managed according to the hierarchy:</p> <p>For sites where complex ecological systems are likely to be present) and either:</p> <ul style="list-style-type: none"> <li>No overall loss of ecological value has occurred (2 credits) OR,</li> <li>The loss of ecological value has been limited as far as possible (1 credit)</li> </ul>		Project team member route (Route 1)	Ecologist Route (Route 2)	Planning, liaison and implementation	1 credit	1 credit	Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits			Ecology report to be commissioned/provided in order to consider how this credit can be approached.	
	Project team member route (Route 1)	Ecologist Route (Route 2)												
Planning, liaison and implementation	1 credit	1 credit												
Managing negative impacts of the project (limitation or compensation)	1 credit	1 or 2 credits												
LE 04 Change and enhancement of ecological value	<p><b>Pre-requisite - Identifying and understanding the risks and opportunities for the project</b></p> <ul style="list-style-type: none"> <li>LE 03 has been achieved. Including the following, specific to the aims of this issue: <ul style="list-style-type: none"> <li>Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes</li> <li>Site preparation and construction works have been planned for and implemented at a stage that is sufficiently early in the project to optimise benefits and outputs.</li> </ul> </li> <li>The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.</li> </ul> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Liaison, implementation and data</td> <td>N/A</td> <td>1 credit</td> </tr> <tr> <td>Enhancement of ecology</td> <td>1 credit</td> <td>up to 3 credits</td> </tr> </tbody> </table>		Project team member route (Route 1)	Ecologist route (Route 2)	Liaison, implementation and data	N/A	1 credit	Enhancement of ecology	1 credit	up to 3 credits	4	3 (+1)	<b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.	Ecologist & Client
	Project team member route (Route 1)	Ecologist route (Route 2)												
Liaison, implementation and data	N/A	1 credit												
Enhancement of ecology	1 credit	up to 3 credits												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member									
		Available	Targeted (Potential)											
	<p><b>Route 1</b> One credit - Enhancement of ecology</p> <ul style="list-style-type: none"> <li>- The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented solutions and measures based on recommendations from recognised 'local' ecological expertise, specialist input and guidance to inform the adoption of locally relevant ecological solutions and measures which enhance the site.</li> <li>- Data collated is provided to the local environmental records centres nearest to, or relevant for, the site.</li> </ul> <p><b>Route 2</b> One credit - Liaison, implementation and data collation</p> <ul style="list-style-type: none"> <li>- The project team liaising and collaborating with representative stakeholders, taking into consideration data collated and shared, have implemented the solutions and measures selected in a way that enhances ecological value in the following order: <ul style="list-style-type: none"> <li>- On site, and where this is not feasible,</li> <li>- Off site within the zone of influence.</li> </ul> </li> </ul> <p>Up to three credits - Enhancement of ecology</p> <ul style="list-style-type: none"> <li>- Credits are awarded on a scale of 1 to 3, based on the calculation of the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in either GN 35 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues - Route 1 or GN 36 - BREEAM, CEEQUAL, HQM Ecology Assessment Issues</li> </ul>													
<p>LE 05 Long term ecology management and maintenance</p>	<p>Pre-requisite - Roles and responsibilities, implementation, statutory obligations</p> <ul style="list-style-type: none"> <li>- The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.</li> <li>- Where pursued, LE 04 has been achieved, including the following specific aims of this issue: <ul style="list-style-type: none"> <li>- Roles and responsibilities have been clearly defined, allocated and implemented to support successful delivery of project outcomes.</li> <li>- Site preparation and construction works have been planned for and implemented at a stage that is sufficiently early in the project to optimise benefits and outputs.</li> </ul> </li> </ul> <p>Up to two credits are available depending on the route selected.</p> <p>One credit - Planning, liaison, data, monitoring and review management and maintenance</p> <table border="1"> <thead> <tr> <th></th> <th>Project team member route (Route 1)</th> <th>Ecologist route (Route 2)</th> </tr> </thead> <tbody> <tr> <td>Liaison, monitoring implementation and evolving management and maintenance solutions</td> <td>1 credit</td> <td>1 credit</td> </tr> <tr> <td>Landscape and habitat management plan</td> <td></td> <td>1 credit</td> </tr> </tbody> </table> <p>One credit - Planning, liaison, data, monitoring and review management and maintenance</p>		Project team member route (Route 1)	Ecologist route (Route 2)	Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit	Landscape and habitat management plan		1 credit	2	2	<p><b>RIBA Stage 2</b> Ecology report to be commissioned/provided in order to consider how this credit can be approached.</p>	Ecologist & Contractor
	Project team member route (Route 1)	Ecologist route (Route 2)												
Liaison, monitoring implementation and evolving management and maintenance solutions	1 credit	1 credit												
Landscape and habitat management plan		1 credit												

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- The project team liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, on solutions and measures implemented to:                             <ul style="list-style-type: none"> <li>- monitor and review implementation and the effectiveness</li> <li>- develop and review management and maintenance solutions, actions or measures.</li> </ul> </li> <li>- In support of the above and to help ensure their continued relevance over the period of the project the following should be considered:                             <ul style="list-style-type: none"> <li>- Monitoring and reporting of on the ecological outcomes for site implemented at the design and construction stage</li> <li>- Monitoring and reporting of outcomes and successes from the project</li> <li>- Arrangements for the ongoing management of landscape and habitat connected to the project (on and, where relevant, off site)</li> <li>- Maintaining the ecological value of the site and its relationship or connection to its zone of influence</li> <li>- Maintaining the site in line with the any sustainability linked activities, e.g. ecosystems benefits (LE 02).</li> <li>- Remedial or other management actions are carried out which relate to those identified in LE 02, LE 03 and LE 04.</li> </ul> </li> <li>- As part of the tenant or building owner information supplied, include a section on Ecology and Biodiversity to inform the owner or occupant of local ecological features, value and biodiversity on or near the site.</li> </ul> <p>One credit - Landscape and ecology management plan (or similar) development</p> <ul style="list-style-type: none"> <li>- Landscape and ecology management plan, or similar, is developed in accordance with BS 42020:2013(210) covering as a minimum the first five years after project completion and includes:                             <ul style="list-style-type: none"> <li>- Actions and responsibilities, prior to handover, to give to relevant individuals</li> <li>- The ecological value and condition of the site over the development life.</li> <li>- Identification of opportunities for ongoing alignment with activities external to the development project and which supports the aims of BREEAM's Strategic Ecology Framework</li> <li>- Identification and guidance s to trigger appropriate remedial actions to address previously unforeseen impacts</li> <li>- Clearly defined and allocated roles and responsibilities.</li> </ul> </li> <li>- The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.</li> </ul>				
Pollution					
Pol 01 Impact of refrigerants	<p><b>Pre-requisite:</b> All systems (with electronic compressors) must comply with the requirements of BS EN 378:2008, and where refrigeration systems containing ammonia are installed, they must comply with the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.</p> <p><b>Three credits: No refrigerant</b> Where evidence provided demonstrates that the building does not require the use of refrigerant within its building services or plant.</p> <p><b>Two credits: DELC</b> Where evidence provided demonstrates that the systems specified using refrigerants have Direct Effect Life Cycle CO<sub>2</sub> equivalent emissions (DELC CO<sub>2e</sub>) of ≤100 kgCO<sub>2e</sub>/kW cooling/heating capacity.</p> <p>OR</p>	2	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP



Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) <math>\leq 10</math>.</p> <p><b>One credit:</b> Where evidence provided demonstrates that the systems using refrigerants have Direct Effect Life Cycle CO<sub>2</sub> equivalent emissions of (DELCO<sub>2e</sub>) of <math>\leq 1000</math> kgCO<sub>2e</sub>/kW cooling/heating capacity.</p>				
	<p><b>One credit: Refrigerant leak detection</b> Where evidence provided demonstrates that the systems using refrigerants have a permanent automated refrigerant leak detection system installed, capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident.</p>	1	1	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
Pol 02 Local air quality	<p><b>Up to two credits:</b> All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity</p> <p>OR alternatively; Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5 within the BREEAM Criteria document. The measurements must be provided by manufacturers, following the labelling requirements of the European directive 2009/125/EC. No credits can be awarded for Pol 02 if any of the combustion appliances are not covered in Table 12.4 and Table 12.5 within the BREEAM.</p> <p>Emissions from all installed combustion plant that provide space heating and domestic hot water are required to not exceed the levels set in Table 1.21 and Table 1.22 within the BREEAM criteria.</p>	2	2	To be included within the Employer's Requirements Preliminaries and MEP documentation.	MEP
Pol 03 Surface water run off	<p><b>Pre-requisite</b> An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.</p> <p><b>Part 1: Flood resilience (Up to Two credits)</b> <b>Two credits - Low flood risk:</b> A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration. These sources include:  <ul style="list-style-type: none"> <li>- Fluvial (rivers)</li> <li>- Tidal</li> <li>- Surface water: sheet run-off from adjacent land (urban or rural)</li> <li>- Groundwater: most common in low-lying areas underlain by permeable rock (aquifers)</li> <li>- Sewers: combined, foul or surface water sewers</li> <li>- Reservoirs, canals and other artificial sources</li> </ul> </p> <p><b>One credit - Medium/high flood risk:</b> Where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is at least 600mm above the design flood level of the flood zone for the site's location OR the final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017</p>	2	2	Flood Risk Assessment to be provided/commissioned that identifies the site's flood risk. It is currently anticipated that there is a low flood risk at the site.	Drainage Consultant
	<p><b>Part 2: Surface water run-off</b> <b>Pre-requisite:</b></p>	2	2	Two credits targeted and a copy of a drainage report is to be provided.	Drainage Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site.</p> <p><b>First credit:</b> Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events, including allowance for climate change.</p> <p>Additionally, relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDs are in place.</p> <p><b>Second credit:</b> Where evidence provided demonstrates that the consultant has confirmed that there is no risk of flooding of property in the event of a local drainage system failure, AND</p> <p>EITHER</p> <ul style="list-style-type: none"> <li>- The post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development, including an allowance for climate change.</li> <li>- Any additional predicted volume of run-off for the 100-year 6-hour event must be prevented from leaving the site by using infiltration or other Surface Drainage System (SUDs) techniques</li> </ul> <p>OR (only where criterion no. 9 or 10 for this credit cannot be achieved)</p> <ul style="list-style-type: none"> <li>- Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved i.e. where infiltration or other SUDS techniques are not technically viable options.</li> <li>- The post development peak rate of run-off is reduced to a limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: <ul style="list-style-type: none"> <li>- The pre-development one-year peak flow rate</li> <li>- The mean annual flow rate (Qbar)</li> <li>- 2L/s/ha.</li> </ul> </li> </ul>				
	<p><b>Part 3: Minimising watercourse pollution</b> <b>One credit:</b> Where evidence provided demonstrates that the following water course pollution prevention measures are covered:</p> <ul style="list-style-type: none"> <li>- Appropriate Consultant confirms that there will be no discharge from the developed site for rainfall up to 5mm.</li> <li>- Specification of Sustainable Drainage Systems (SUDs) or source control systems such as permeable surfaces or infiltration trenches</li> <li>- Specification of oil/petrol separators (or equivalent system) in surface water drainage systems, where there is a high risk of contamination or spillage of substances</li> <li>- Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system</li> <li>- All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SUDS manual and other relevant industry best practice. They must be bespoke solutions taking account of the specific site requirements and natural or man-made environment of and surrounding the site.</li> <li>- A comprehensive and up-to-date drainage plan of the site will be made available for the building/site occupiers.</li> <li>- Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SUDS must be in place.</li> </ul>	1	1	Credit targeted and a copy of a drainage report is to be provided.	Drainage Consultant

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<ul style="list-style-type: none"> <li>- All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance</li> </ul>				
<p>Pol 04</p> <p>Reduction in night time light pollution</p>	<p><b>One credit:</b> Where evidence provided demonstrates that the lighting system has been designed in accordance with the following requirements:</p> <ul style="list-style-type: none"> <li>- The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2011.</li> <li>- All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.</li> <li>- If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILE's Guidance notes, for example by using an automatic switch to reduce the lighting levels at 2300 or earlier.</li> <li>- Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 - The Brightness of Illuminated Advertisements.</li> </ul>	1	1	<p>INCLUDE WITHIN ER DOCUMENTATION</p> <p>This requirement can be incorporated into the project's employer's requirements (MEP) documentation to require the contractor to achieve.</p>	MEP
<p>Pol 05</p> <p>Reduction of noise pollution</p>	<p><b>One credit:</b> Where evidence provided demonstrates that there is either no noise-sensitive areas or buildings within 800m radius of the assessed development</p> <p>OR</p> <p>Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 4142:2014 has been carried out and the following noise levels measured/determined:</p> <ul style="list-style-type: none"> <li>- Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development or at a location where background condition can be argued to be similar.</li> <li>- The noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00).</li> </ul>	1	1	Noise Impact assessment to be undertaken for the site identifying that building services noise will be limited in line with background noise levels.	Acoustician
<b>Innovation</b>					
<p>Exemplary credits summary</p>	<p><b>Exemplary credits</b> Up to a maximum of ten credits are available:</p> <p>Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues:</p> <ul style="list-style-type: none"> <li>- Man 03 Responsible construction practices</li> <li>- Hea 01 Visual comfort</li> <li>- Hea 02 Indoor air quality</li> <li>- Ene 01 Reduction of energy use and carbon emissions</li> <li>- Wat 01 Water consumption</li> <li>- Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)</li> <li>- Mat 03 Responsible sourcing of construction products</li> <li>- Wst 01 Construction waste management</li> <li>- Wst 02 Use of recycled and sustainably sourced aggregates</li> <li>- Wst 05 Adaptation to climate change</li> </ul>	10	2 (+2)	<p>The following exemplary level credits have included in the BREEAM target strategy:</p> <ul style="list-style-type: none"> <li>- MAN03-06 Considerate Construction</li> <li>- MAT01 Building Life Cycle assessment Third party verification</li> </ul> <p>The following exemplary level credits have included in the BREEAM potential strategy:</p> <ul style="list-style-type: none"> <li>- MAT 01 Building Life Cycle assessment LCA and LCC alignment</li> <li>- WST05 Responding to Climate Change</li> </ul>	Contractor & Architect

Issue	Credit Requirements	Credits		Comments / Actions	Responsible Team Member
		Available	Targeted (Potential)		
	<p>One innovation credit can be awarded for each individual BREEAM issue exemplary performance level complied with.</p> <p><u>Approved Innovations</u> One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an Approved Innovation application form.</p>				

## 7. Appendix C: Credit Weightings BREEAM 2018

The weightings for the associated credits depending on the assessment route are shown in Table D1 below.

Section	Section Weighting			No. of credits available	Value of Each Credit
	Fully-fitted	Shell only	Shell and core	Shell and core	
Management	11.0%	12.0%	11.0%	18	0.61%
Health and Wellbeing	14.0%	7.0%	8.0%	11	0.73%
Energy	16.0%	9.5%	14.0%	26	0.54%
Transport	10.0%	14.5%	11.5.0%	12	0.96%
Water	7.0%	2.0%	7.0%	9	0.78%
Materials	15.0%	22.0%	17.5%	14	1.25%
Waste	6.0%	8.0%	7.0%	11	0.64%
Land Use and Ecology	13.0%	19.0%	15.0%	13	1.15%
Pollution	8.0%	6.0%	9.0%	12	0.75%
Innovation	10.0%	10.0%	10.0%	10	1.00%

Table D1: BREEAM Credit Weightings

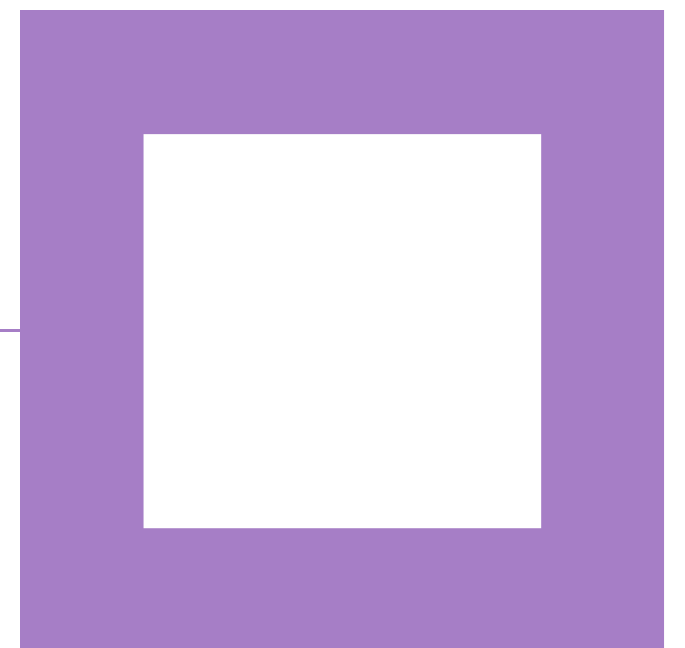


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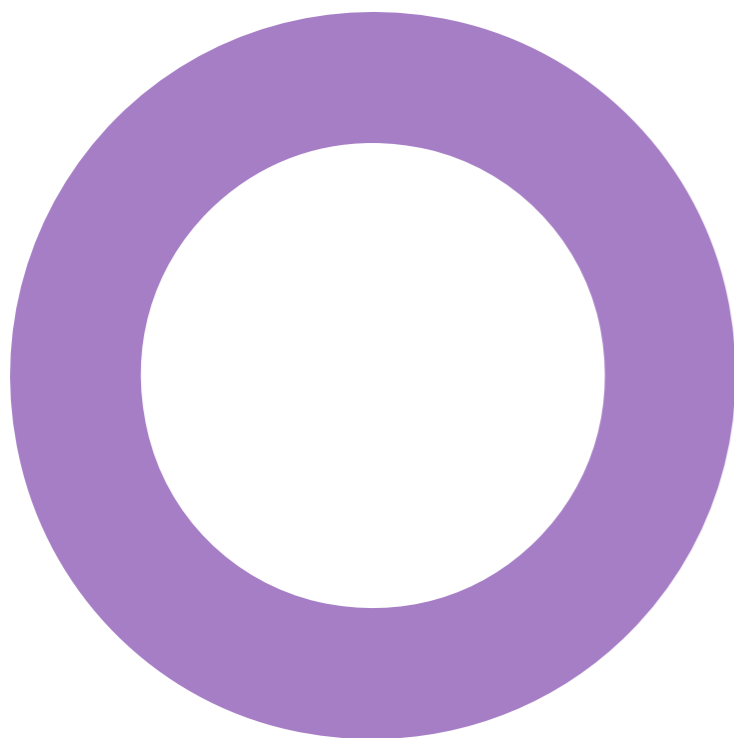
## Appendix C – Policy context review.



**Cambridge North.**  
**Cambridge.**  
**Brookgate.**

**SUSTAINABILITY**

GREATER CAMBRIDGE PLANNING CONTEXT  
ISSUE FOR COMMENT  
REVISION 4 - 26 MAY 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
0	14/07/2020	For issue	AS	GK	KC
1	07/04/2022	Issue for comment	D. Petts	J. Quirin	G. Jones
2	12/04/2022	Issue for comment	D. Petts	J. Quirin	G. Jones
3	20/04/2022	Planning issue	D. Petts	J. Quirin	G. Jones
4	26/05/2022	Update post-review	D. Petts	J. Quirin	G. Jones

This document has been prepared for Brookgate only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 23/23544

Document reference: REP-2323544-05-DP-2021121-Greater Cambridge Policy Context Rev 04.docx

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## 1. Introduction

This document has been developed to summarise the requirements set out by the Greater Cambridge SPD which is applicable to Cambridge North development.

Like national policy, the local policy relevant to the development site and proposal will form the minimum performance of the energy and sustainability strategy. The development will be required to respond to following local policy and guidance documents:

- National Planning Policy Framework (NPPF) (2021)
- National Building Regulations (2013)
- North East Cambridge Area Action Plan (NECAAP) (2021)
- Supplementary Planning Documents and Guidance (SPD) (2020)
- South Cambridgeshire District Local Plan (2018)
  - o Cambridgeshire flood and water SPD
  - o Sustainable design and construction SPD

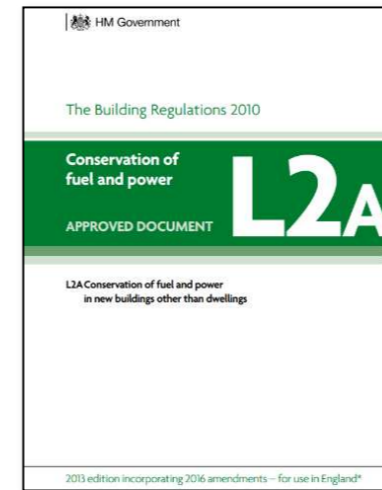
The SPD summarises the requirements set out in the South Cambridgeshire Local Plans (2018) which in itself sets out visions and objectives for the new development of the Greater Cambridge area in order to support the transition to a more environmentally sustainable and successful low carbon economy by 2031.

The Plans outline pathways to ensuring carbon emissions, flood risk, pollution and pressure on resources such as water are all minimised across new developments in the region.

## 2. National policy

### 2.1 Building Regulations Part L.

Part L of the Building Regulations is the mechanism by which government is driving reductions in the regulated CO<sub>2</sub> emissions from new buildings.



#### Current Requirements: Part L2A 2013

The Building Regulations Part L covers the conservation of fuel and power. Alterations to new non-domestic buildings fall under the Building Regulations Part L2A 2013.

**Criterion 1** - Achieving the Target Emission Rate (TER)

**Criterion 2** - Limits on design flexibility

**Criterion 3** - Limiting the effects of solar gains in summer

**Criterion 4** - Building performance consistent with the Building Emission Rate (BER)

**Criterion 5** - Provision for energy efficient operation of the building

#### Criterion one

Criterion one requires that the building as designed is not predicted to generate CO<sub>2</sub> emissions more than that set by the Target Emission Rate (TER) calculated in accordance with the National Calculation Methodology (NCM).

#### Criterion two

Criterion two places upper limits on the efficiency of controlled fittings and services for example, an upper limit to an external wall U-value of 0.35W/m<sup>2</sup>.K (non-domestic buildings).

Each fixed building service should at the minimum be as efficient or more than the rate for that particular service set out in the *Non -Domestic Building Services Compliance Guide*.

#### Criterion three

Criterion three requires that zones in non-residential buildings are not subject to excessive solar gains. This is demonstrated using the Simplified Building Energy Model (SBEM) or Dynamic Simulation Method (DSM) for non-residential buildings.

Criterion one to three will be addressed within the energy strategy.

#### Requirements

The requirements of Part L are as follows:

1. Reasonable provision shall be made for the conservation of fuel and power in buildings by:

- a. Limiting heat gains and losses

Through thermal elements and other parts of the building fabric; and

From pipes, ducts and vessels used for space heating, space cooling and hot water services;

- b. Providing fixed building services which

Are energy efficient;

Have effective controls;

Are commissioned by testing and adjusting as necessary to ensure they use no more fuel and power than is reasonable in the circumstances.

### Building Regulations Part L1A 2013

The residential units will be assessed against the Building Regulations Part L1A 2013. Part L1A has five key criteria which must be satisfied as follows:

**Criterion 1** – Achieving the Target Emission Rate (TER) and Target Fabric Energy Efficiency (TFEE).

**Criterion 2** – Limits on design flexibility.

**Criterion 3** – Limiting the effect of heat gains in the summer.

**Criterion 4** – Building performance consistent with the Building Emission Rate (BER).

**Criterion 5** – Provision for energy efficient operation of the building.

Criterion 1 of the Building Regulations Part L 2013 requires that the dwelling as designed is not anticipated to generate CO<sub>2</sub> emissions in excess of that set by a Target Emission Rate (TER) calculated in accordance with SAP 2012 methodology. Additionally, the dwelling must demonstrate that the proposed fabric energy efficiency does not exceed that of the notional dwelling.

Criterion 2 places upper limits on the efficiency of controlled fittings and services.

Criterion 3 requires that occupied rooms in the dwelling are not subject to excessive internal heat gains in the summer months. This is demonstrated using the SAP 2012 methodology.

This note focuses specifically on Criterion 1 and Criterion 3 compliance.

### Limitations

Occupants may operate their systems differently, and/or the weather may be different from the assumptions under Part L approved calculation methods, leading to differing energy requirements.

### Buildings containing multiple dwellings.

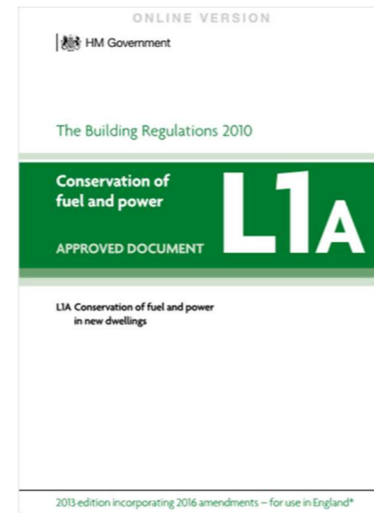
As the Proposed Development consists of residential apartments, i.e. buildings containing multiple dwellings, compliance with Criterion 1 of Part L1A 2013 if the average Dwelling Emission Rate (DER) and Dwelling Fabric Energy Efficiency (DFEE) is no greater than the average TER or TFEE. The average is calculated by a floor area weighting of the representative sample.

For the purpose of reporting for Building Control, an average cannot be calculated across separate buildings on a site (or site-wide basis) as would be seen for a planning application and targeted CO<sub>2</sub> emissions for a development. As such, the results should be reported on a block-by-block basis for in response to Part L1A 2013 compliance and separately as site wide in response to the planning policy targets set by the Local Authority to support the planning application.

### Unregulated Energy and Carbon.

The Part L compliance assessment only takes into account regulated energy uses (i.e. lighting, heating, cooling and ventilation) and does not consider unregulated energy uses. Unregulated sources include 'plug-in' consumption from items such as televisions, computers and fridge-freezers, etc.

Due to these energy requirements being excluded from the Part L appraisal an assessment of the unregulated CO<sub>2</sub> emissions of the Proposed Development has not been undertaken. It is therefore suggested to carry out a



specific study for the in-use energy demands to explore further opportunity to decrease the operative costs and carbon emissions.

### 2.2 Proposed changes to Part L.

On 1<sup>st</sup> October 2019, the BRE released an update to SAP (calculation methodology for domestic buildings) for consultation, called SAP10.1. The important proposed change to the SAP methodology is the carbon factors to be used to calculate CO<sub>2</sub> emissions which are likely to also be translated into the NCM methodology and Building Regulations Part L2A 2013.

The key changes to carbon factors are those for natural gas and grid supplied electricity. Furthermore, annual carbon emissions from electrical sources will be calculated using a monthly variation. Table 1 below demonstrates the comparison between the current and proposed Part L carbon emission factors. For the proposed electricity factor, the annual average has been provided for comparison purposes.

Table 1: Current and proposed carbon factors for natural gas and grid supplied electricity.

Fuel	Part L 2013 Carbon Factor (kgCO <sub>2</sub> /kWh)	Proposed SAP10.1 Carbon Factor (kgCO <sub>2</sub> /kWh)
Mains Gas	0.216	0.210
Electricity (average)	0.519	0.136

Nevertheless, if the proposed amendments to Part L are implemented, this will impact on the future Energy Performance Certificates (EPCs).

### Part L 2021 regulation changes

Updated Part L Building Regulations published in October 2021 are set to come into force June 2022. The Proposed development may need to be assessed under these new regulations where meaningful progress has not commenced on site by implementation date.

The full formal calculation methodology and associated software for this version of building regulations is not being released until June 2021, thus implications for the project's performance against building regulations compliance cannot be fully appraised as of yet.

Further improvements to the fabric and system efficiencies of the Proposed Development may need to be made to the design retrospectively in order to achieve compliance during construction at a cost to the client if re-assessment is required as the new regulations are enforced. Clarification from legal and Building Control teams should be sought to confirm.

Confirmed regulation updates include:

- Homes and non-domestic buildings built to Part L 2021 standards will emit 31% and 27% less CO<sub>2</sub> on average respectively than one built to current standards (Part L 2013).
- A Primary energy target was introduced with the fabric Energy Efficiency target retained.
- varying carbon factor associated with grid electricity is included (73% lower on average than Part L 2013).

### Building Regulations Part S (2021)

Updated Part S Building Regulations published in October 2021 are set to come into force June 2022.

Confirmed regulation updates include:

- Every new home, including those created from a change of use, with associated parking must have an EV ChargePoint

- All new non-residential buildings with more than 10 parking spaces must have a minimum of one ChargePoint and cable routes for 20% of the total number of spaces

### Building Regulations Part O

Updated Part O Building Regulations published in October 2021 are set to come into force June 2022. Part O covers the overheating mitigation for new residential buildings. New dwellings fall under the SAP assessment overheating methodology which uses a static heat balance for the months of June, July and August, for which the average temperature is calculated. This more in-depth analysis of overheating and mitigation will need to be assessed if the development occurs after policy implementation in June.

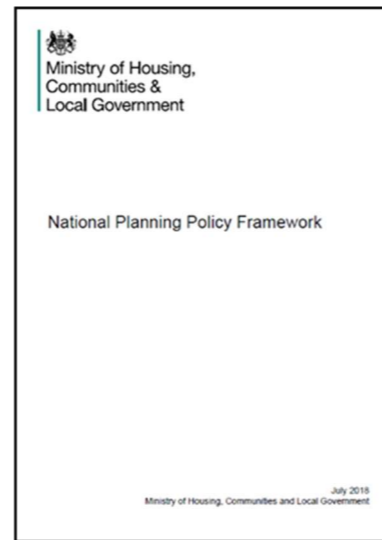
### 2.3 National Planning Policy Framework (July 2021).

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced.

The purpose of the framework is to aid in the achievement of a sustainable development by providing guidance towards policy building that would meet the economic, social and environmental objectives.

Relevant key information to note:

- Local planning policies and decisions should exploit any opportunity to make the location sustainable, Potential actions are:
  - Improving quality of building designs to enable sustainable use of resources such as energy and water
  - Design of development should also reflect the local aspirations
  - Improving quality of building designs to enable sustainable use of resources such as energy and water
  - Design of development should also reflect the local aspirations
  - Create an environment that promotes health and well-being e.g. improve access for walking or cycling
- Policies should plan for future challenges such as climate change, flooding and coastal change:
  - Reduce vulnerability by incorporating resistant and resilient designs
  - Implementing designs that would reduce overall greenhouse gas emissions throughout lifecycle of building
  - Increase use of renewable energy and low carbon energy sources.
- Policies and decisions should prioritise the conservation and enhancement of natural environment:
  - Protect and enhance valued landscape, biodiversity sites and geological value and soils
  - Protect the intrinsic character and beauty of the countryside and their accompanying ecosystem
  - Maintain character of undeveloped coast
  - Minimise impacts on and provide net gains for biodiversity
  - Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.
- Promote the use of sustainable materials all stages of development.



### Environment Act (2021)

The Environment Act 2021 aims to protect and enhance the United Kingdom's environment for future generations. The main focus includes improving air quality, restoring natural habitats, increasing biodiversity, reducing waste and making better use of resources. The goal is to act as a stepping stone through the transition into a circular economy, incentivising people to recycle more, encouraging businesses to create sustainable

packaging, making household recycling easier and stopping the export of polluting plastic waste to developing countries.

The act is driven by legally binding environmental targets and enforced by an independent Office for Environmental Protection (OEP) which will hold government and public bodies to account on their environmental obligations.

The environment act will deliver:

- Long-term targets to improve air quality, biodiversity, water, and waste reduction and resource efficiency
- A target on ambient PM2.5 concentrations, the most harmful pollutant to human health
- A target to halt the decline of nature by 2030
- Environmental Improvement Plans, including interim targets
- A cycle of environmental monitoring and reporting
- Environmental Principles embedded in domestic policy making
- Office for Environmental Protection to uphold environmental law

### Public Services (Social Value) Act 2012

The Social Value Act sets out planning public service implementation in a way the secures wider social, environmental and economic benefits for the area. Focus is put on commissioners as to whether the services they are going to buy, or the way they are going to buy them, could secure these benefits for their area or stakeholders. The Act is a tool to help commissioners get more value for money out of procurement. It also encourages commissioners to talk to their local provider market or community to design better services, often finding new and innovative solutions to difficult problems.

Relevant key information to note:

- Re-assessment of the act in 2018 – a Social Value Model was produced with the aim of streamlining and standardising the procurement process.
- As of January 1<sup>st</sup>, 2021, all new procurement activity must have the social value model applied.
- Social value is evaluated on qualitative responses from bidders, and not on volumes. This means that larger suppliers are not able to win on scale alone; all bidders must set out what they will deliver and how they will deliver it and it is this information that will be scored in bid evaluations. The minimum weighting that should be applied to social value is 10%.

### 3. Local policy

#### 3.1 North East Cambridge Area Action Plan (NECAAP).


NECAAP is currently a draft planning document. It consists of 30 proposed policies ranging in scope including topics such as the climate emergency, water supply and quality, energy infrastructure, new build developments and affordable housing, sustainable transport, landscaping, biodiversity, waste management, digital infrastructure and other broad sustainability aspects.


NECAAP includes other supporting proposed plans sounding topics of; community safety, education, economic enrichment, equality, skills, training and local employment, environmental health and ecology, housing, recreational space, smart infrastructure, environmental monitoring, mobility, waste management and collection, water management and drainage, net zero carbon, heritage and archaeology, odour and noise management and cultural placemaking. It is noted that as the development progresses, relevant elements of NECAAP will be addressed as appropriate, however as previously stated, this policy is all currently in draft stage.

#### 3.2 South Cambridgeshire Local plan



Table 2 outlines the key policy elements that are included within the South Cambridgeshire local plan. Many elements of this plan have been used to inform the sustainability strategy for Cambridge North.



Table 2: South Cambridgeshire policy summary

Theme	South Cambridgeshire Local Plan
<b>Sustainable design &amp; energy efficiency</b> 	<b>Policy CC/1: Mitigation and Adaptation to Climate Change</b> Planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation adaptation into the development. Applicants must submit a Sustainability Statement to demonstrate how these principles have been embedded into the development proposal.
	<b>Policy CC/3: Renewable and Low Carbon Energy in New Developments</b> Proposals for new dwellings and new non-residential buildings of 1000m <sup>2</sup> or more will be required to reduce carbon emissions by a minimum of 10% through the use of on-site renewable energy and low carbon technologies.
	<b>Policy HQ/1: Design Principles</b> All new development must be of high quality design, with a clear vision as to the positive contribution the development will make to its local and wider context.
	<b>Policy HQ/2: Public Art and New Development</b> The council will encourage the provision or commissioning of public art that is integrated into the design of development as a means of enhancing the quality of development proposals in particular from: <ul style="list-style-type: none"> <li>- Other developments where the floor area to be built is 1000m<sup>2</sup> gross or more, including office, manufacturing, warehousing and retail developments.</li> </ul>

Theme	South Cambridgeshire Local Plan
<b>Flood risk and water resources</b> 	<b>Policy CC/4: Water Efficiency</b> Development must be accompanied by a water conservation strategy, which demonstrates a minimum water efficiency standard equivalent to the BREEAM standard for 2 credits for water use levels unless demonstrated not practicable.
	<b>Policy CC/7: Water Quality</b> In order to protect and enhance water quality, all development proposals must demonstrate that: <ul style="list-style-type: none"> <li>- There are adequate water supply, sewerage and land drainage systems (including water sources, water and waste water infrastructure) to serve the whole development, or an agreement with the relevant service provider to ensure the provision of the necessary infrastructure prior to the occupation development. Where development is being phased, each phase must demonstrate sufficient water supply and waste water conveyance, treatment and discharge capacity.</li> <li>- The quality of ground, surface or water bodies will not be harmed, and opportunities have been explored and taken for improvements to water quality, including re naturalisation of river morphology, and ecology.</li> <li>- Appropriate consideration is given to sources of pollution, and appropriate Sustainable Drainage System (SuDS) measures incorporated to protect water quality from polluted surface water runoff.</li> </ul> Foul drainage to a public sewer should be provided wherever possible, but where it is demonstrated that it is not feasible, alternative suited must not pose unacceptable risks to water quality or quantity.
	<b>Policy CC/8: Sustainable Drainage Systems</b> Development proposals must incorporate appropriate Sustainable Drainage System (SuDS) appropriate to the nature of the site.
	<b>Policy CC/9: Managing Flood Risk</b> In order to minimise flood risk, development will only be permitted where: <ul style="list-style-type: none"> <li>- The sequential test and exception tests established by the National Planning Policy Framework demonstrate the development is acceptable (where required).</li> <li>- Floor levels are 300mm above the 1 in 100 year flood level plus an allowance for climate change where appropriate and where appropriate and practical also 300mm above adjacent highway levels.</li> <li>- suitable flood protection mitigation measures are incorporated as appropriate to the level and nature of flood risk, which can be satisfactorily implemented to ensure safe occupation, access and egress</li> <li>- There would be no increase to flood risk elsewhere, and opportunities to reduce flood risk elsewhere have been explored and taken.</li> <li>- The destination of the discharge obeys the following priority order:                             <ul style="list-style-type: none"> <li>- Firstly, to the ground via infiltration</li> <li>- Then, to a water body</li> <li>- Then, to a surface water sewer</li> <li>- Discharge to a foul water or combined sewer is unacceptable</li> </ul> </li> </ul>



Theme	South Cambridgeshire Local Plan
	<ul style="list-style-type: none"> <li>- Site specific Flood Risk Assessments (FRAs) appropriate to the scale and nature of the development and the risks involved and which takes account of the future climate change will be required.</li> <li>- FRAs will need to meet national standards and local guidance (including recommendations of the South Cambridgeshire and Cambridge City Strategic Flood Risk Assessment (2010) and the Phase 1 and 2 Water Cycle Strategy or successor documents).</li> </ul>
<b>Biodiversity</b> 	<p><b>Policy NH/2: Protecting and Enhancing Landscape Character</b> Development will only be permitted where respects and retains or enhances local character and distinctiveness of the local landscape and of the individual National Character Area in which it is located.</p> <p><b>Policy NH/4: Biodiversity</b> New development must aim to maintain, enhance, restore or add to biodiversity. opportunities should be taken to achieve positive gain through the form and design of development. measures may include creating, enhancing and managing wildlife habitats on networks, and natural landscape. The built environment should be viewed as an opportunity to fully integrate by diversity within new development through innovation. priority for habitat creation should be given to sites which assist in the achievement of targets in the Biodiversity Action Plans (BAPs) and a delivery of the Cambridgeshire Green Infrastructure Strategy.</p> <p><b>Policy NH/6: Green Infrastructure</b> The Council will encourage proposals which:</p> <ul style="list-style-type: none"> <li>- Reinforce, link, buffer and create new green infrastructure.</li> <li>- Promote, manage and interpret green infrastructure and enhance public enjoyment of it.</li> </ul> <p>All new developments will be required to contribute towards the enhancement of the green infrastructure network within the district. these contributions will include the establishment, enhancement and the ongoing management of costs.</p>
<b>Pollution</b> 	<p><b>Policy CC/6: Construction Methods</b> Development which by its nature or extent is likely to have some adverse impact on local environment and immunity during construction and slash or generate construction waste must:</p> <ul style="list-style-type: none"> <li>- Carefully manage materials already on site (including soils), or brought to the site, to reduce the amount of waste produced and maximise the reuse or recycling of materials either on site or locally. Any construction spoil reused within the development should take account of the landscape character and avoid the creation of features alien to the topography.</li> <li>- Ensure the constructors are considerate to neighbouring occupiers by restricting the hours of noisy operations and by locating storage compounds and using plant or machinery to avoid noise, smells, dust, visual or other adverse impacts.</li> </ul> <p><b>Policy SC/10: Light Pollution.</b> All development proposals including external lighting or changes to existing lighting should reduce the potential impact of that lighting.</p>

Theme	South Cambridgeshire Local Plan
	<p><b>Policy SC/11: Noise Pollution</b> Planning permission will not be granted for a development which:</p> <ul style="list-style-type: none"> <li>- Has an unacceptable adverse impact on the indoor and outdoor acoustic environment of existing or planned development</li> <li>- Has an unacceptable adverse impact on countryside areas of tranquillity which are important for wildlife and countryside recreation.</li> <li>- Would be subject to unacceptable noise levels from existing noise sources, both ambient levels and having regard to noise characteristics such as impulses whether irregular or tonal.</li> </ul> <p><b>Policy SC/12: Air Quality</b> Where development proposals would be subject to unacceptable air quality standards or would have an unacceptable impact on air quality standards they will be refused.</p>
<b>Health and wellbeing &amp; community</b> 	<p><b>Policy SC/2: Health Impact Assessment</b> New development will have a positive impact on the health and wellbeing of new and existing residents. Planning applications for developments of 1000m<sup>2</sup> or more floorspace will be accompanied by a Health Impact Assessment.</p> <p><b>Policy TI/10: Broadband</b> New development (residential, employment and commercial) will be expected to contribute towards the provision of infrastructure suitable to enable the delivery of high speed broadband services across the district.</p>
<b>Transport</b> 	<p><b>Policy TI/2: Planning for Sustainable Travel</b> Development must be located and designed to reduce the need to travel, particularly by car, and promote sustainable travel appropriate to its location.</p> <p>Planning permission will only be granted for development likely to give rise to increased travel demands where the site has (or will attain) sufficient integration and accessibility by walking, cycling or public and community transport.</p> <p>Developers of large developments (of over 1000m<sup>2</sup>) will be required to demonstrate they have maximised opportunities for sustainable travel and will make adequate provision to mitigate the likely impacts through provision of a Transport Assessment and Travel Plan.</p> <p><b>Policy TI/3: Parking Provision</b> Car parking provision should be provided through a design led approach (1 space per 25m<sup>2</sup> (under 2500m<sup>2</sup>), 1 space per 30m<sup>2</sup> (over 2500m<sup>2</sup>)). Cycle parking should be provided to at least the minimum standards (1 space per 30m<sup>2</sup>).</p>

Theme	South Cambridgeshire Local Plan
	Car parking provision will take into consideration the site location, type and mix of uses, car ownership levels, availability of local services, facilities and public transport, and high weight and user safety issues, as well as ensuring appropriate parking for people with impaired mobility.

### 3.3 Greater Cambridge Sustainable Design and Construction (SPD) (January 2020).

The Sustainability Statement should take the form of a report with accompanying plans and drawings to illustrate and expand upon the information contained in the Sustainability Checklist.

The Sustainability Checklist provides the questions that applicants need to respond to in their Sustainability Statement and other relevant documents. For developments in South Cambridgeshire, the Sustainability Statement should form a stand-alone document.

Part 1b withing the SPD applies to South Cambridgeshire. Relevant checklist policies have been listed below.

#### Energy & Carbon Reduction

As specified in the Sustainability Checklist Policies En.1 - En.3:

- 10% onsite renewable or low carbon energy for all new residential development and major non-residential development
- For large residential developments, BREEAM Communities assessment could be considered

#### Biodiversity

As specified in the Sustainability Checklist Policies Bio.1 – Bio.9:

- All development proposals should seek to conserve and enhance biodiversity
- A Preliminary Ecological Assessment and Protected Species Scoping Survey<sup>61</sup> must be conducted
- Mitigation hierarchy must be followed, demonstrating how existing habitats and species have been protected in the proposed ecological and landscape strategy
- It must be demonstrated that the proposals will deliver biodiversity net gain, with use of the DEFRA Biodiversity Offsetting metric.
- For major developments, the Natural Cambridgeshire Local Nature Partnership (LNP) Developing with Nature Toolkit must be adopted.

As specified in the Sustainability Checklist Policies Osc.2 – Osc.5:

- Consideration must be given to the provision of food growing opportunities.
- Measures must be integrated into the design to create healthy indoor environments.

#### Transport

The council has offered the following guidance on sustainable transport measures:

- Incentivise behavioural change towards greater car sharing, increased bus and rail use, and improved cycling/pedestrian infrastructure.
- Support sustainable and low emission public transport
- Improve parking allocation and facilities through non-idling policies, priority parking for low emission vehicles (with charging points) and for car share schemes, bicycle parking, electric bike charging points.

Electric and Low Emission Vehicle requirements:

- Residential developments
  1. One Rapid Charging Point/station Per 1000m<sup>2</sup> of floorspace or per 20 parking spaces or

2. Allocated fast Charging Point for 50% of proposed parking spaces
- Commercial developments
    1. One Rapid Charging Point/station Per 1000m<sup>2</sup> of floorspace or per 20 parking spaces or
    2. Allocated fast Charging Point for 50% of proposed parking spaces
  - Supporting infrastructure
    1. Provision of infrastructure to facilitate additional charging points
    2. Support for other Low Emission technologies is welcome and considered on site-by-site basis

As specified in the Sustainability Checklist Policies T.1 – T.6:

- You must demonstrate how the development proposals give priority for walking and cycling over cars, linking the development with the surrounding walking and cycling network including planned projects
- Electric vehicle charging should be provided where there is car parking

#### Materials

As specified in the Sustainability Checklist Policy Osc.1:

- A target must be set for improving the environmental impact of materials used in constructing the development, with consideration given to the embodied carbon of materials. Non-residential schemes should refer to the BREEAM assessment. Residential schemes should give consideration to use of the Green Guide to Specification, certification schemes for specific materials with further information available at: <http://www.greenbooklive.com/>

#### Recycling and Waste

As specified in the Sustainability Checklist Policies Wr.1 – Wr.3:

- The size and location of recycling and waste facilities, both for storage and collection, should be factored into the design of the proposals using the requirements set out in the RECAP Waste Management Design Guide SPD and associated Toolkit.
- Complete Cambridge City Council's Waste and recycling checklist for developers.
- Measures should be put in place to reduce the amount of construction waste generated by the proposals, including the use of single-use plastics where alternative options exist; and re-use and recycle remaining construction waste (Non-residential schemes should refer to the BREEAM assessment)

#### Climate Change Adaptation

All development should integrate measures into the design of developments to enable adaptation to climate risks including overheating and flood risk.

As specified in the Sustainability Checklist Policies Ca.1 – Ca.7:

- Overheating analysis must be undertaken following the CIBSE methodology and utilising future climate scenarios
- Where the proposal has flat roofs, these should be designed as green or brown roofs in line with the requirements of policy 31
- Where there are existing trees on site, including ancient and veteran trees, the retention of these trees should inform the development layout. This is alongside the integration of new tree planting.

#### Pollution

- All development proposals including external lighting or changes to existing lighting should reduce the potential impacts of that lighting
- All major development and any development proposals on land subject to contamination or land that is suspected to be contaminated.
- Developers are responsible for ensuring that a proposed development will be safe and 'suitable for use' for the purposes for which it is intended.

- Development must ensure that it does not adversely impact on air quality or expose sensitive users to poor air quality and does not lead to significant adverse effects on health, amenity and the environment from polluting or malodorous emissions, or dust or smoke emissions to air.

Development will be permitted where it is demonstrated that:

- a) It will not lead to significant adverse effects and impacts, including cumulative effects and construction phase impacts wherever applicable, on health and quality of life/amenity from noise and vibration; and
- b) Adverse noise effects/impacts can be minimised by appropriate reduction and/or mitigation measures secured through the use of conditions or planning obligations, as appropriate (prevention through high quality acoustic design is preferable to mitigation).

### Health and Wellbeing

Further guidance will be contained in an update to the South Cambridgeshire Health Impact Assessment SPD and updates to both Councils Affordable Housing SPDs.

- Submission of a Health Impact Assessment required for proposals of 20 or more dwellings, or 1,000m<sup>2</sup> or more of new floorspace.

### Water Efficiency

As specified in the Sustainability Checklist Policies Wat.1 – Wat.3:

- All Residential development – requirement for potable water use of no more than 110 litres/person/day
- All Non-residential development – maximum BREEAM credits for Wat01

Sustainable Drainage Systems:

- All scales of new development need to utilise SuDS in order to reduce the rate of discharge into watercourses and mitigate the risk of surface water flooding.
- Consideration must be given to water re-use as part of the site sustainable drainage strategy

A site-specific Flood Risk Assessment is required:

- For proposals of 1 ha or greater in Flood Zone 1
- For all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3; or
- In an area within Flood Zone 1 which has critical drainage problems; or
- Where a proposed development, or a change of use to a more vulnerable class, may be subject to other forms of flooding

### Heritage Assets

Where works to improve the environmental performance of a heritage asset are proposed, evidence is required to demonstrate that the works will not harm the building's integrity or significance.

CIBSE guidance on building services in historic buildings sets out four principal aims when seeking to enhance the sustainability of heritage assets:

- Aim 1 – preserve historic fabric;
- Aim 2 – extend the beneficial use of older buildings;
- Aim 3 – reduce carbon emissions, using the hierarchical approach; and
- Aim 4 – specify environmentally conscious materials.

Applications for works to heritage assets will need to demonstrate a thorough understanding of the building in question via the submission of the following information:

- surveys of existing construction, to include walls, floors, ceilings and roofs;
- submission of baseline energy consumption data before and after improvements have taken place (submission of data post improvement would be secured via a planning condition);
- measured data of existing environmental performance of the building's fabric;
- an indication of any national performance standards being targeted as a result of works; and

- recommendations on the environmental performance measures to be implemented in order to achieve the standard.

This information can be submitted as part of a Design and Access Statement for the proposal or as part of a Heritage Statement

## 4. Conclusion

This document has been developed to summarise the planning and regulatory policy requirements that will need to be responded to for the proposed Cambridge North development in Cambridge.

Like national policy, the local policy relevant to the development site and proposal will form the minimum performance of the energy and sustainability strategy. The development will be required to respond to the following local policy and guidance documents:

- National Planning Policy Framework (NPPF) (2021)
- National Building Regulations (2013)
- North East Cambridge Area Action Plan (NECAAP) (2021)
- Supplementary Planning Documents and Guidance (SPD) (2020)
- South Cambridgeshire District Local Plan (2018)
  - o Cambridgeshire flood and water SPD
  - o Sustainable design and construction SPD

The SPD summarises the requirements set out in the South Cambridgeshire Local Plans (2018) which in itself sets out visions and objectives for the new development of the Greater Cambridge area in order to support the transition to a more environmentally sustainable and successful low carbon economy by 2031.

The Plans outline pathways to ensuring carbon emissions, flood risk, pollution and pressure on resources such as water are all minimised across new developments in the region.

The key sustainability targets required by for planning permission under the various adopted Cambridge Plans are as follows:

- All new non-residential development to achieve BREEAM 'excellent'
- All non-residential development – mandatory requirements for Ene01 associated with BREEAM 'excellent'
- All residential development – 44% reduction on Part L 2006 (19% reduction on Part L 2013)
- 10% onsite renewable or low carbon energy for all new residential development and major non-residential development
- At least one rapid EV charge point for large-scale Major developments
- All non-residential development – between 2 and maximum BREEAM credits for Wat01
- All residential development – requirement for potable water use of no more than 110 litres/person/day.

In conclusion, the checklist has been developed to respond to all relevant policies related to sustainable construction. However, as reiterated throughout the Checklist SPD, the Checklist should not be used as the sole document to respond to policies. Additional reports and analysis will need to be carried out and will be referred and referenced to in the Checklist responses. The following documents should be considered where applicable before the Checklist is completed:

- Part L Calculation and Energy Strategy.
- Part G Calculation.
- Thermal Comfort Analysis (TM52 or TM59).
- Environmental Assessment Pre-assessment (e.g. BREEAM).



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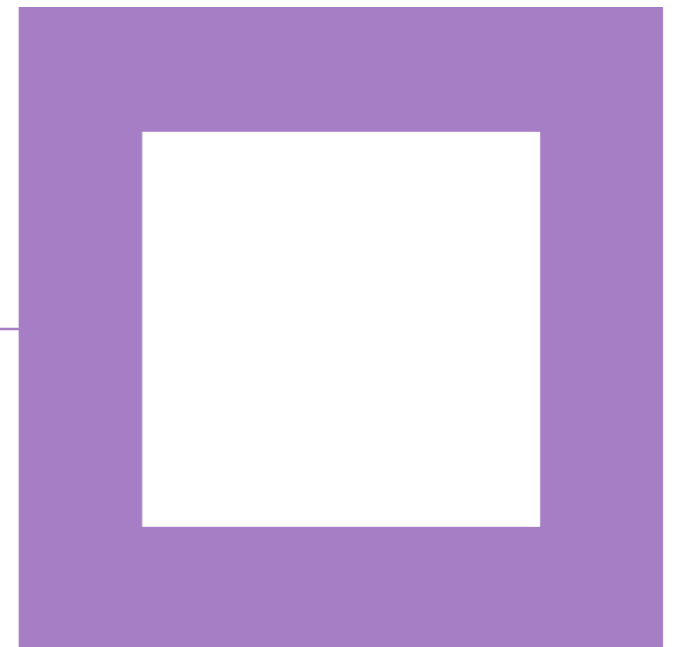
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