HOARE LEA

The Beehive Redevelopment. Cambridge.
Railway Pension Nominees Limited.

SUSTAINABILITY
SUSTAINABILITY STRATEGY
REP-2323716A-5A-MB-20240816-SUSTAINABILITY STRATEGY-REV01
REVISION 01 – 16 AUGUST 2024

Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
01	16/08/2024	Planning issue	M. Brookman	W. D. M. Naismith	J. Nuttall

Project number: 23/23716
Document reference: REP-2323716A-5A-MB-20240816-Sustainability Strategy-Rev01.docx

Contents.

Executive summary.

This document presents the Sustainability Strategy, prepared on behalf of Railway Pension Nominees Limited ('the Applicant') for the redevelopment of the Beehive Centre (the 'Proposed Development'). This Strategy has been informed by both national and local policy requirements, as well as the Applicant's vision and sustainable design development guidance and frameworks including, but not limited to:

- United Nations Sustainable Development Goals (UN SDGs);
- Cambridge Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
  - Cambridgeshire flood and water SPD.
  - Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (Adopted January 2020).
- Emerging Joint Local Plan for the Greater Cambridge Area
- BREEAM New Construction Version 6.1.
- RIBA 2030 Climate Challenge guidelines
- Client vision.

The SPDs (Supplementary Planning Document) detail specific requirements for submitted applications and, combined with the Cambridge Local Plan (2018), set out the vision and objectives for new developments in the Greater Cambridge area, in order to support the transition to a more environmentally sustainable and successful low carbon economy. The documents 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 value that the Proposed Development can bring to the site, local community, and future building users, five defined factors or 'capitals' inform our proposed sustainability framework. These are summarised below:

Physical capital – "Addressing climate change"

The Proposed Development will achieve energy efficiency through a fabric first approach and maximisation of the use of renewable energy, particularly PV panels and air source heat pumps, as well as energy metering and energy-efficient lighting.. As designs progress calculations will be undertaken to establish the embodied and operational carbon associated with individual plots of the Proposed Development. In addition, sustainable means of transport to the site will be promoted through the provision of enhances walking and routes and electric vehicles charging points. A pre-demolition audit will be undertaken to establish and evaluate how materials can be reused on site and the embodied carbon of materials will be evaluated through the design to minimise the embodied carbon associated with the development.

Social capital – "Creating local connections"

The Proposed Development will create opportunities within the design and construction stages and site operation for apprenticeships and local students, encouraging STEM career paths to help close the skills gap. Recruitment and employment associated with the main contractor will be implemented in a fair and just manner to ensure diversity and equal opportunities are provided on site. An inclusive and adaptable space will be provided which provides social value to the local area and meets the specific and general needs of the occupiers. One example of this is the Hive Park, which will feature landscaping, accessible routes and space for community artwork to enhance the local community.

Economic capital – "Economic enrichment"

The Proposed Development is expected to enable the creation of new jobs and opportunities 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 puts user health and wellbeing are at the centre of design and specification to ensure a comfortable indoor environment is created. This will make the Proposed Development a place where people want 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 – "Positive impact"

All aspects of the design, construction and operation of the Proposed Development will be developed to have the environment at the forefront of decisions. Key considerations relate to pollution, local air quality, resource demand, waste and biodiversity. Special attention will be paid to meaningfully reduce the water consumption of the building and rainwater recycling is deemed to be considered, by at least meeting the Wat01 requirement of five credits and incorporating water metering and flow-control devices.

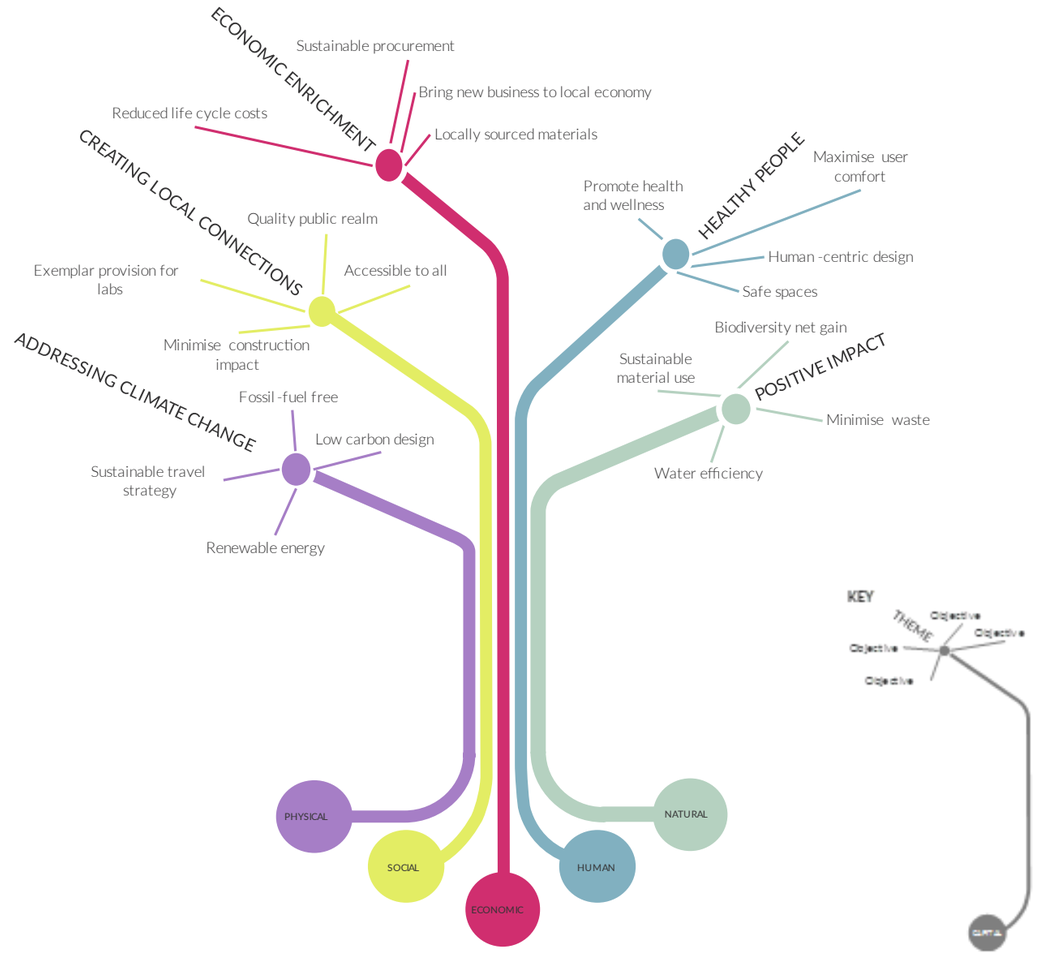


Figure 1: Approach to sustainability for the Beehive Redevelopment.

Key performance indicators

This section summarises the key performance indicators to be targeted and assessed within the development. The source of these KPIs vary between national planning policy, local requirements and the aspirations of the project team and client.

Table 1: Key performance indicators for the Beehive Redevelopment.

Measure	Unit	Planning regulation/requirement	Project target	Project Aspiration	Current performance
BREEAM Certification Holistic sustainability certification	Rating	Excellent	Outstanding (*Offices*) Excellent (for *Labs*)	Outstanding	Outline preassessment targets Outstanding (for *Offices*) and Excellent (for *Labs*); exceeding and meeting the requirements, respectively. A route to Outstanding for labs will be sought if feasible.
WELL Certification *Sustainability certification, with added focus on health & wellbeing*	Rating	None	WELL pre-assessments to be evaluated at plot level		Certification is enabled, details to be developed. Health and wellbeing is central to many of the decisions being taken on the design of buildings and spaces between them on the site, creating opportunities to enhance the wellbeing of tenants.
Biodiversity Net Gain (%) (Change in biodiversity unit from existing site to proposed site)	%	10% minimum (20% target)	≥100%		≥100% The proposed extensive green space within the overall site enables the minimum BNG figure to be significantly exceeded, demonstrating a commitment to enhance ecology and biodiversity.
Urban Green Factor Metric to assess the quantity and quality of green space provision in urban development	factor	None	No set targets		0.32 The GLA has targets for developments in London, where a scheme like this would be expected to achieve 0.3, so this is an improvement on the typical benchmark for a commercial development.
Water consumption – BREEAM Wat01 Reduction in modelled water consumption, compared to a baseline figure	Wat01 credits (% improvement on baseline)	5 credits (55%)	5 credits + exemplary (≥65%)		All plots will target the exemplary level of regulated water consumption, via low-flow fittings and water harvesting systems. This target would exceed the minimum planning requirement of the 5-credit level, seeking to minimise the Proposed Development's impact on water resources.
SuDS – site surface water run-off rate As a result of site drainage strategy	Run-off rate	Restricting to the greenfield Qbar rate (Qbar: the peak flow rate from a catchment for the mean annual flood (in a 1-2 year return period)	Restricting to the greenfield Qbar rate		3.0 L/s for Northern Catchment; 4.1 L/s for Southern Catchment The proposed total Qbar rate of 7.1 L/s is a betterment of 98% on the total existing discharge rate for the QBAR event (1–2-year event) of 365.4 L/s into the existing Anglian Water sewers from the Site. This will significantly reduce the likelihood of downstream flooding and improve the capacity of the local drainage network
SuDS – climate change allowance Allowance in drainage strategy for more extreme weather events	%	30%	35% for 1:30-year event ; 40% for 1:100-year storm event		The proposed site drainage strategy enables a betterment on the planning requirement for allowance of climate change, ensuring the buildings are future-proofed
Construction waste arising (/GIA) Amount of construction waste generated, rationalised by gross internal floor area	Tonnes / 100m^2	None	6.5 (Two Wst01 credits)	3.2 (Three Wst01 credits)	6.5 Resource efficiency targeted is in-line with two Wst01 credits, confirmed in the indicative BREEAM assessment. Site waste management plans will consider how to minimise these figures.
Energy performance – BREEAM Ene01 Measured Energy Performance Ratio	Ene01 credits (EPR_{NC})	4 credits (BREEAM Excellent) 0.4	6 credits (Offices, for Outstanding) 4 credits (Labs, for Excellent)	6 credits (all plots, for Outstanding)	These targets will be achieved (as a minimum) Design will incorporate high-quality fabric, PV, heat pumps and a balanced glazing approach considering both daylighting and overheating to meet these standards.
EPC Energy performance certificate	Rating	None	'A'		
Upfront embodied carbon Embodied carbon of construction products specified, e.g. carbon from extraction or processing of the material	$kgCO_2/m^2$	Reporting only	≤600 (Offices) ≤750 (Labs)	≤500 (Offices – stretch) ≤750 (Labs)	Sustainable procurement plan and carbon budgeting will guide specification, and will ensure betterment of the LETI 2020 Design Target of 600 $kgCO_2e/m^2$ for all office plots

1. Introduction.

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

- Appendix A: Sustainability Checklist showing how the scheme responds to key Cambridge Local Plan sustainability requirements
- Appendix B: Summary indicative BREEAM pre-assessment

1.1 Description of development.

The Proposed Development is the demolition and redevelopment of the Beehive Centre, including in Outline Application form for the demolition and redevelopment for a new local centre (E (a-f), F1(b-f), F2(b,d)), open space and employment (office and laboratory) floorspace (E(g)(i)(ii) to the ground floor and employment floorspace (office and laboratory) (E(g)(i)(ii) to the upper floors; along with supporting infrastructure, including pedestrian and cycle routes, vehicular access, car and cycle parking, servicing areas, landscaping and utilities.'

1.2 The Applicant's vision.

The design team have been focused on developing a highly sustainable development in line with The Applicant's vision for the site. 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 building design.
- 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 and development of the buildings.
- Integrating sustainability considerations early in the process, helps to optimise the design process.

1.3 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 the 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 – Approved Document L (2021)
- Cambridge Local Plan (October 2018)
- Supplementary Planning Documents and Guidance (SPD)
  - Cambridgeshire flood and water SPD
  - Greater Cambridge Sustainable Design and Construction Supplementary Planning Document (SPD) (Adopted January 2020)
- Emerging Joint Local Plan for the Greater Cambridge Area (2021)

The SPDs (Supplementary Planning Document) provide specific requirements for submitted applications and, combined with the Cambridges Local Plan (2018), set out the vision and objectives for new developments in the Greater Cambridge area, in order to support the transition to a more environmentally sustainable and successful low carbon economy. The documents 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:

- All Non-residential – mandatory requirements for Ene01 associated with BREEAM 'excellent'
- At least one slow EV Charge Point for every two parking spaces in non-residential developments
- All new non-residential development to achieve BREEAM 'excellent'

Figure 2: Reviewed policy documents.

2. 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 5 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.

This promotes a holistic, interdisciplinary approach to sustainability and sustainable development which is both planet-conscious and people-centric. This Sustainability 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 they are a part of.

The Delivery Framework

Working with 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 3 and Figure 4 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 V6.1 has been produced. Please refer to Appendix B for summary pre-assessment report with a schedule of the targeted credits and anticipated performance score.

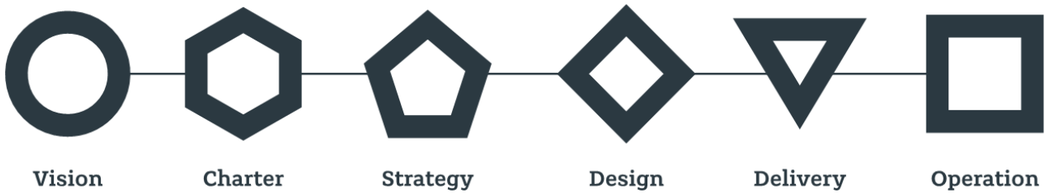


Figure 3: Sustainability strategy – Delivery phase (inception to completion).

Physical capital	"Addressing climate change" Creating high quality buildings ensures PHYSICAL VALUE is increased where buildings and infrastructure project an image of design for longevity and allow people to navigate easily on foot/by bicycle.
Social capital	"Creating local connections" By enabling community identity, SOCIAL VALUE is increased where a great place brings people together and creates a community.
Economic capital	"Economic enrichment" By ensuring equity for all, ECONOMIC VALUE is increased where all users of a place feel they have a level of ownership of the asset and buy-in to the outcomes it is seeking to achieve.
Human capital	"Healthy people" With a focus on people, HUMAN VALUE is increased where quality and longevity of life is improved, and happiness is increased.
Natural capital	"Positive impact" By seeking to achieve positive gain, NATURAL VALUE is increased where existing quality is protected, and new complementary resources are introduced.

Figure 4: Proposed framework for sustainability – Creating value.

3. Sustainability strategy.

The Proposed Development is based on high sustainability aspirations and is compliant with industry best practice The strategy for the Proposed Development addresses key sustainability challenges and opportunities, responds to the requirements of the applicable policies (seeking to push beyond them where feasible), 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

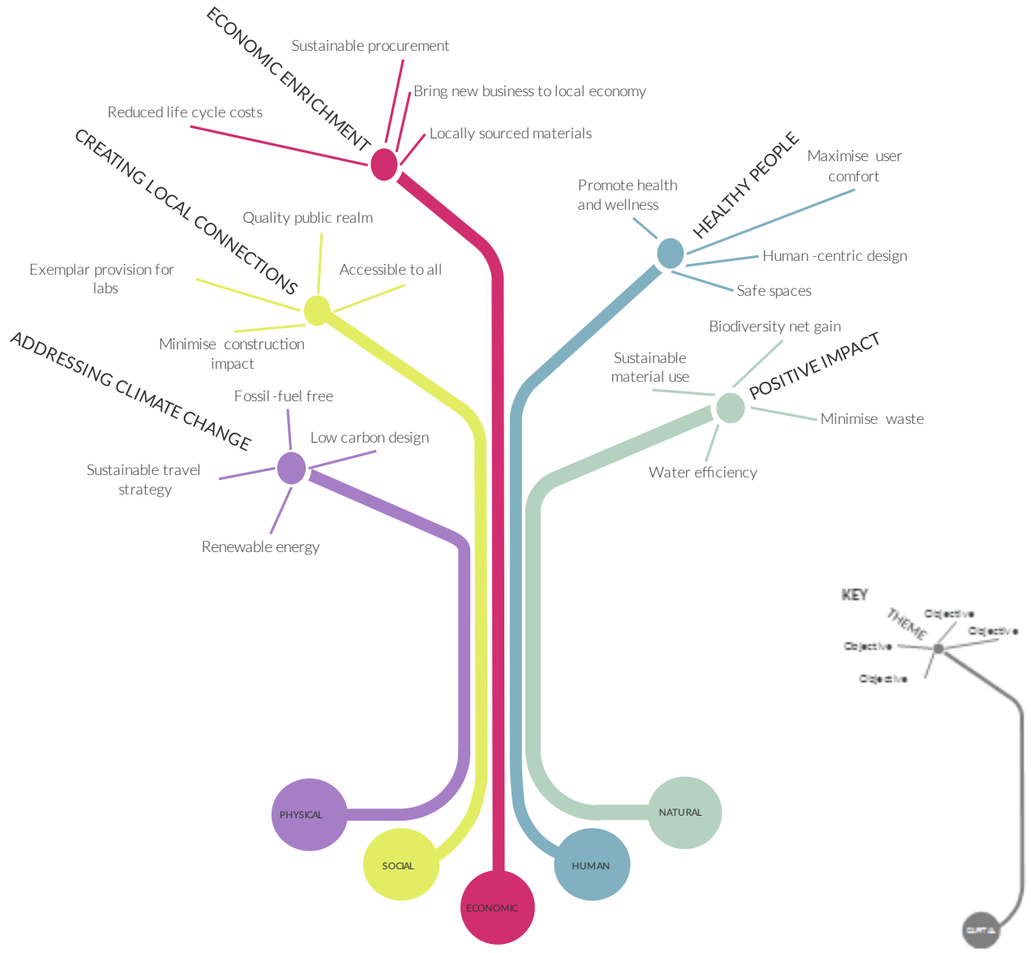
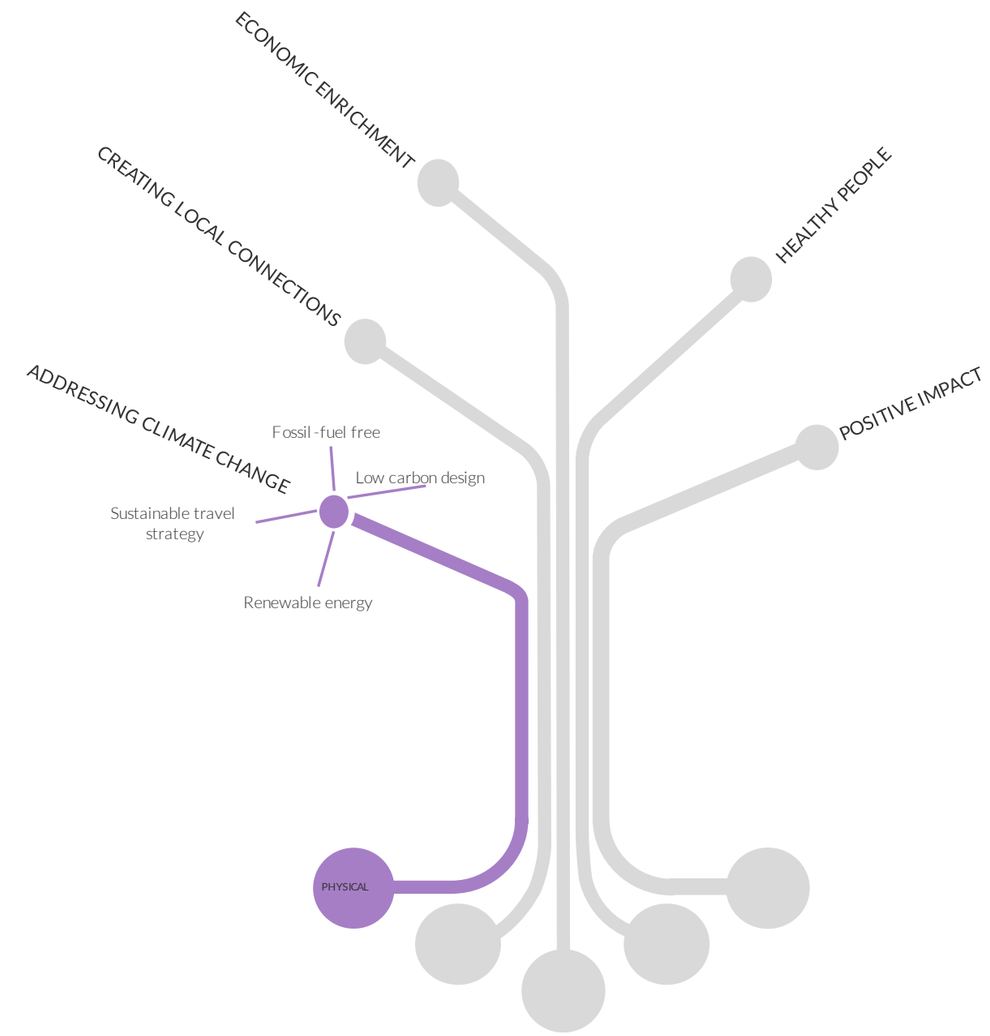


Figure 5: The sustainability strategy illustrated - key themes and areas.

3.1 Physical capital – "Addressing climate change".



Energy use and performance
The buildings will be designed to reduce the energy demand 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 both minimise heat loss and consider the cooling demand within the space. The façade of the buildings will be refined to maximise passive design measures including shading and thermally efficient insulation.

Office buildings will seek to be designed to achieve an Energy Performance Ratio (EPR) of at least 0.6, in order to achieve the minimum requirements for of BREEAM 'Outstanding'. Lab buildings will be designed to achieve an EPR of at least 0.4 to meet the minimum standards for 'Excellent', as the higher EPR is considered more feasible to achieve in the office-only spaces. This demonstrates an ambitious sustainability vision for the site, seeking to push beyond the minimum standards where this is possible within the design.

The development is also targeting high-performance in operational energy. It aim towards an operational energy consumption of less than 55 kWh/m^2/yr for the base build, in line with the RIBA 2030 Climate Challenge for offices. The development will also seek to achieve 150 kWh m^2/yr for research facilities as part of the base build design. The design team are progressing with workshops for the Proposed Development to review different construction options and design considerations and how these inform the designs moving forward. One example is considering any potential Urban Heat Island effect. Opportunities to mitigate its impact, such as cool roofs, conscientious material palette choice and green spaces/features, will be considered and incorporated into the scheme where appropriate. The development will be designed to incorporate energy metering and smart monitoring technology, to make it easier for the occupants to monitor energy usage. An efficient lighting strategy will

This is in line with the Cambridge Local Plan Policy 28 and the Emerging CC/NZ: Net zero carbon new buildings

Renewables & 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. Photovoltaics will be maximised on flat roof areas where appropriate and feasible alongside other demands for green roofs and plant space. Air Source Heat Pumps will be incorporated to provide heating, cooling and domestic hot water.

To assess compliance against these targets, monitoring and reporting technologies and practices will be implemented across the development. 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 Cambridge Local Plan Policy 29

Embodied carbon
The embodied carbon of the development will be assessed throughout the design and construction.

The development will undergo Whole Life Carbon analysis at plot level, to provide a more in-depth study into sources of high embodied carbon within the design of the buildings and specification of building elements over the whole life cycle of each building, to inform sustainable choices as the design progresses. Material selections will also seek to maximise the recycled content of specified materials, including identifying via pre-demolition audits any opportunities to recycle materials within the existing buildings

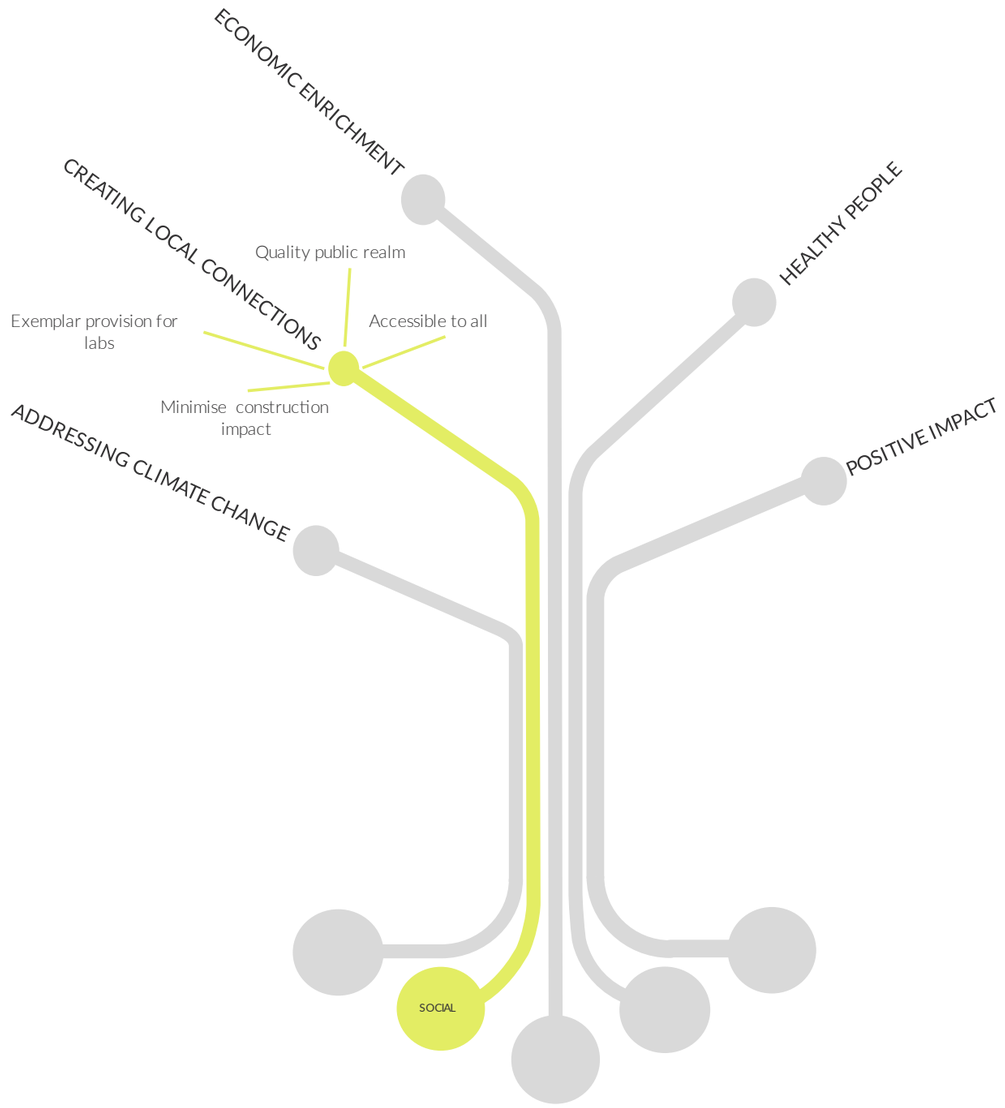
The scheme will be targeting an upfront embodied carbon target of less than 600kgCO_2/m^2 for base build office buildings as a baseline target, but with a stretch target of 500kgCO_2/m^2. To account for the increase demand on building services in laboratory spaces, these will be designed to an upfront carbon target of 750kgCO_2/m^2, in line with the RIBA Climate Challenge 2030. Based upon the above a strategy for each building will be developed at the appropriate stage of the design.

This is in line with the Cambridge Local Plan Policy 28/29 and Emerging CC/NZ: Net zero carbon new buildings

Sustainable transport
The site benefits from excellent access to pedestrian and cycle facilities. A Transport Assessment and Travel Plan will be prepared to identify ways to encourage sustainable transport use on-site. EV charging infrastructure will be included and cycle storage spaces and cyclist facilities will be provided at sufficient levels for the site's occupancy. At least 20% of the car parking spaces provided will at least have the capability for future connection as EV charging spaces, in line with the requirements of Building Regulations Approved Document S. The landscaping strategy will be developed to encourage sustainable modes of travel.

This is in line with the Greater Cambridge Sustainable Design and Construction SPD (January 2020) and the Cambridge Local Plan Policy 5.

3.2 Social capital – "Creating local connections".



Quality Public realm
The Proposed Development includes design which incorporates external spaces in a way that contributes to the development of a successful and attractive space that reinforces the local community. 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.

The Site is located in a strategic position in Cambridge; the network of pedestrian and cyclist pathways provides a connection with existing facilities and the wider local area.

One example of an element of the public realm offering provided will be the Hive Park, which will form part of the redeveloped site. The Park will include extensive landscaping, with a south-facing open lawn, new trees and planting beds and retention of existing trees and vegetation where possible. The Park will consider sustainable transport by featuring pedestrian and cycle routes, cycle stores and well-lit routes, to ensure the space is safe and accessible for all potential users. Another feature will be access to an existing wall, which can be used for community murals and artwork to create an attractive environment that the surrounding community will value and want to use.

This is in line with the Applicant's vision, the United Nations Sustainable Development Goal 11 and the emerging policy GP/QD: Achieving high quality development

Construction impact and responsibility
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, 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.

The Considerate Constructor Scheme (CCS), or a similar programme, will be used during the construction phases, as a demonstration of the Proposed Development's commitment to minimising construction impact. This will be put in place to help strengthen the current and future relationships between the Proposed Development, its stakeholders and the local community. Contractors will demonstrate achievement of all of the Man03 Responsible construction practices BREEAM criteria (supported by a high score achieved in the CCS scheme or equivalent).

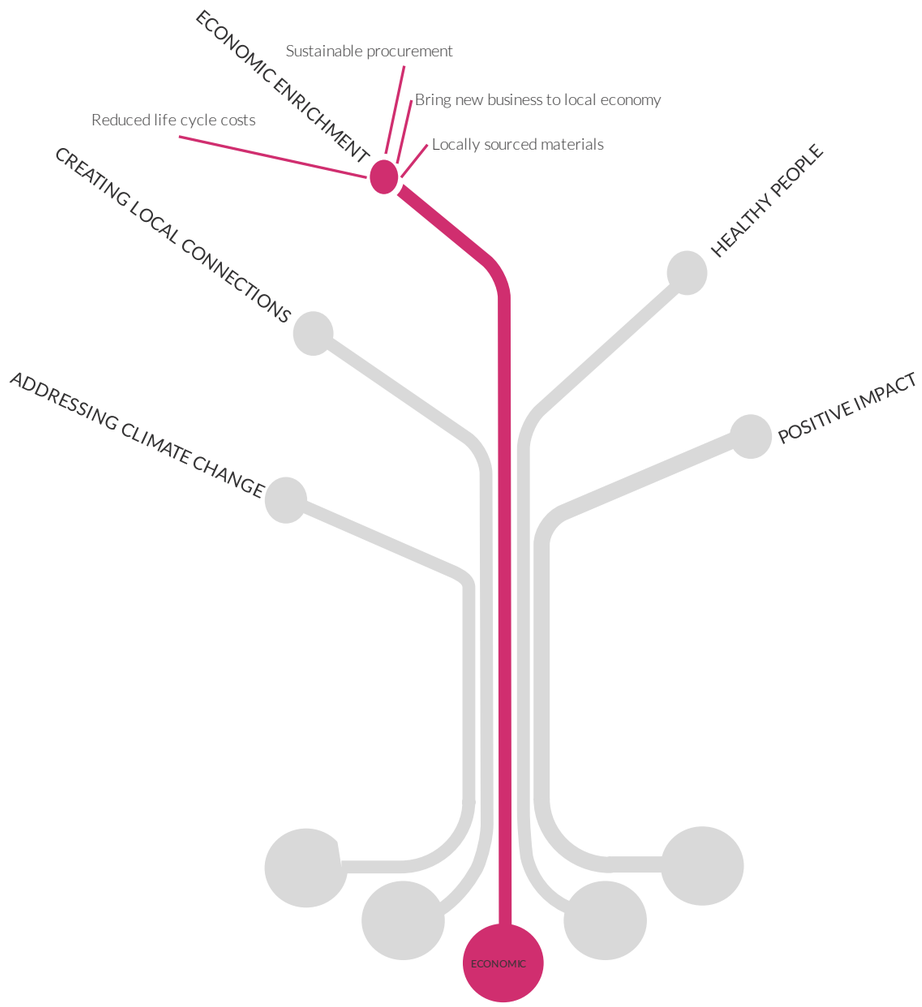
This is in line with the Applicant's *vision and the United Nations Sustainable Development Goal 11 and Goal 1.*

Positive social and business value
As part of the development, work opportunities will be created for local people. Work experience placements will be provided for local students during both construction and operation. Apprenticeships for construction and professional skills to provide decent work and economic growth to the local area. Staff employed during the construction and operation of this development will be from a range of diverse backgrounds, ethnicities and ages, to reduce inequality and also benefitting from a variety of perspectives and experience.

There will be engagement with local science and research businesses, to ensure that the lab plots within the Proposed Development will be designed to meet the business needs for this industry.

This is in line with the Applicant's vision, the United Nations Sustainable Development Goals 8, 10 and 11, Cambridge Local Plan Policy 2 and the emerging policy WS/IO: Creating inclusive employment and business opportunities through new developments

3.3 Economic capital – "Economic enrichment".



Reduced running costs
The Proposed Development has been designed with efficiency in mind, thus also including attention to reduction in running costs.

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.

Sustainable procurement
As part of the Development, a robust sustainable procurement policy will be prepared and enforced, to ensure materials for the development are sourced responsibly and sustainably.

The Development will maximise specification of materials which possess a responsible sourcing certification, such as ISO 14001 or BES6001. The level of sustainable procurement will be tracked by assessment using the BREEAM Mat03 Responsible sourcing of construction products, and at least 2 credits will be achieved for each plot against this criteria. The Development will also prioritise selection of materials with an Environmental Product Declaration where feasible. 100% of newly specified timber will be FSC or PEFC certified and sourced, meeting the government's definition of 'legally harvested and traded' timber.

Where possible, the Development will prioritise the procurement of locally-sourced construction products. This will provide local businesses with financial and employment opportunities, enhancing the local economy even prior to the units being finished and tenants moving in.

The contractor tender pack will include for sustainable clauses and benchmarks to ensure that the strategy proposed for the development is continued and delivered upon. Contractors will be required to also demonstrate that they will achieve the exemplary Man 03 Responsible construction practices BREEAM criteria.

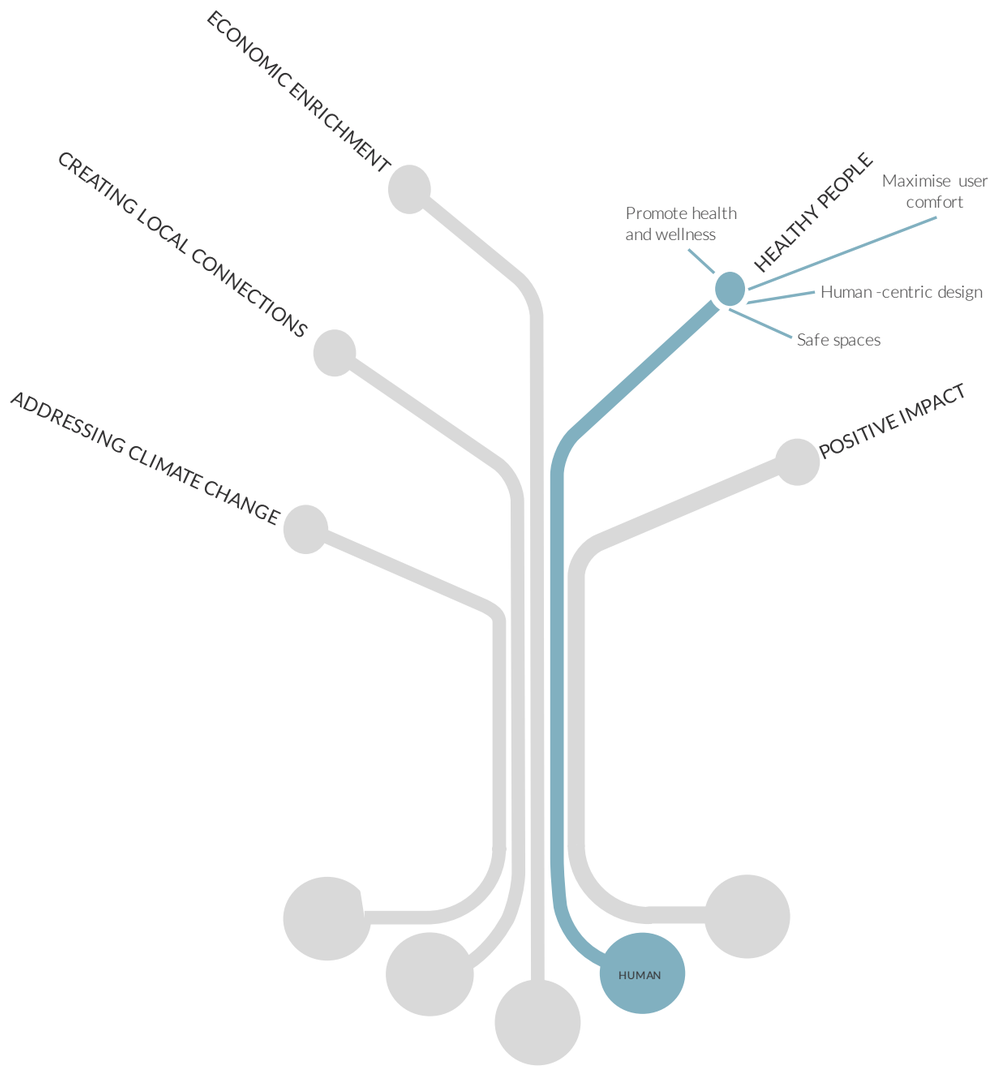
This is in line with the Applicant's vision *and United Nations Sustainable Development Goal 13*

Community invigoration
Investment in local sustainability community and infrastructure schemes will be developed with the hope of placing community wellness though sustainable means at the heart of the development.

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 of materials and labour. In-line with Cambridge City Council's commitment to paying a Real Living Wage to all of their staff, all main contractor staff for each development will be paid on or above a Real Living Wage to ensure support for a local workforce.

This is in line with the Applicant's vision, United Nations Sustainable Development Goal 13 and the Cambridge Local Plan Policy 2

3.4 Human capital – "Healthy people".



Health and 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 users.

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. The electric led building services will be used to minimise negative impacts of environmental factors such as local air quality and air will be filtered to meet best practice standards for particulate matter.

The Proposed Development will incorporate biophilia, providing access and visibility to greenery for building users which will help to boost wellbeing and mental health of the building users.

The air quality within the development will be monitored to demonstrate low internal CO_2 levels, in line with RIBA 2030 Climate Challenge targets. Post-construction, measurements will be taken to ascertain the levels of VOCs and formaldehye levels present, with decisions on construction materials seeking to minimise these figures as far as possible. The development will aim towards the internal VOC and formaldehyde levels being within defined limits – < 0.3 mg/m^3 and <0.1 mg/m^3 respectively, again in line with RIBA 2030 Climate Challenge targets. Support and monitoring will be provided to the development for the first 12 months post-occupancy.

This is in line with the United Nations Sustainable Development Goal 3, RIBA 2030 Climate Challenge and emerging policy GP/PP: People and place responsive design

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

The cycle and pedestrian paths to be installed will be designed to enable cohesive and safe travel around the site using more sustainable means and ensuring that the site is designed to be accessible to all intended users.

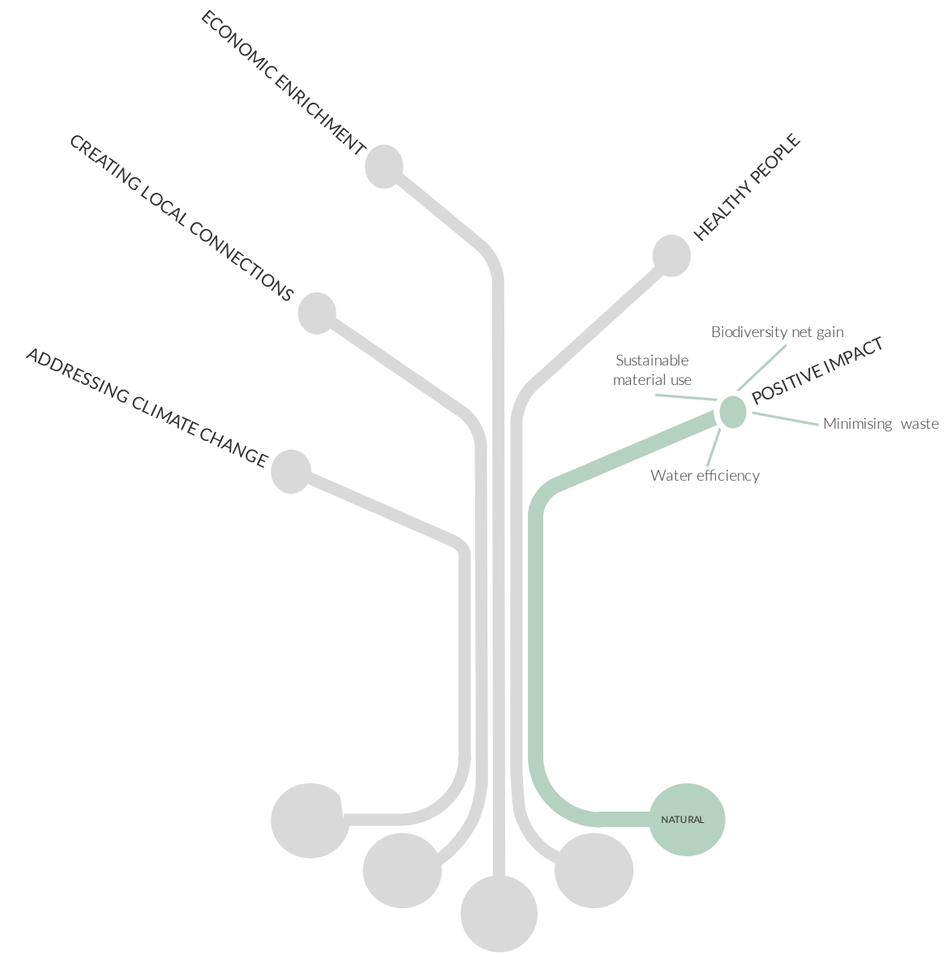
Cycling to the site will be promoted as part of this development. The site is strategically placed on the Chisholm Trail, which is currently undergoing extension and expansion, so will be in a prime location to enable building users to utilise more sustainable modes of transport.

This is in line with the Applicant's vision and United Nations Sustainable Development Goal 3

User comfort
The Proposed Development has followed the cooling hierarchy to reduce the risk of overheating within the space. This has been balanced with the improved U-values within the space to reduce heating demand. Occupied spaces will be designed to maintain a comfortable temperature for users, in both current and future climate scenarios. This will be undertaken in accordance with the BREEAM Hea04 Thermal comfort requirements for each space..

This is in line with the Applicant's vision and emerging policy CC/DC: Designing for a changing climate

3.5 Natural capital – "Positive impact".



BREEAM ratings & alternative sustainability certifications
Each plot within the Proposed Development will be committed to achieving at least a BREEAM 'Excellent' rating, demonstrating a holistic sustainability strategy in all aspects of design, construction and operation. This will include an emphasis on pollution, air quality, resource demand, waste and biodiversity. Currently a score of over 85% of available credits is demonstrated to be achievable.

The minimum energy standards for an 'Outstanding' rating are considered feasible for the office areas, so office assessments will seek to target 'Outstanding' ratings, which would push beyond the planning requirement. Lab assessments will achieve at least an 'Excellent', with potential to push to 'Outstanding' depending on the energy performance of individual lab buildings. Furthermore, the Proposed Development will consider how the features of other sustainability certifications such as WELL, ActiveScore and WiredScore could be incorporated into each plot, to ensure the developments would continue to meet any future sustainability requirements.

This is in line with the Cambridge Local Plan Policy 28

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 a significant uplift in biodiversity units, to move towards a more resilient ecosystem that nurtures the vital relationship between people and nature. A Biodiversity Net Gain of over 100% is currently achieved by the proposals compared to the existing site, far exceeding the 20% planning requirement An ecology report is being undertaken which provides full details of the measures which are being designed for the site.

This is in line with the Greater Cambridge Sustainable Design and Construction SPD (January 2020)

Water efficiency
During the design reductions in water consumption will be encouraged through careful specification of sanitaryware, with a review being undertaken as to how 10 litres/ per person per day of potable water could be achieved. Flow rates for sanitary fittings will be reduced as far as possible while not causing any maintenance issues (i.e. for the WC).

The exemplary level of water consumption under BREEAM Wat01 will be targeted by the Proposed Development, via a reduction of modelled water consumption below a baseline model which exceeds the level for the minimum 5 credits required by Cambridge City Council requirements. This will be sought via low-flow fittings and incorporation of rainwater harvesting. The BREEAM credits for Wat02 water monitoring and Wat03 leak detection are also being targeted, as well as measures to minimise consumption from unregulated water uses such as irrigation to meet Wat04. The user handbook for all tenants will contain guidance on how to reduce their water consumption, which will include minimising consumption from these unregulated sources.

Additionally, a sustainable drainage system (SuDS) strategy will be designed and implemented, in order to facilitate the restriction of the surface water run-off rate to no more than the greenfield Qbar rate. There is also required to be a climate change allowance within these calculations of at least 30%. Based on the current proposals, the surface water run-off rate is indeed restricted to the greenfield rate, 3.0 L/s and 4.1 L/s for the Northern and Southern catchments respectively, and a 35% allowance is feasible for the 1-in-30-year flood event and 40% for the 1-in-100-year flood event.

This is in line with the Greater Cambridge Sustainable Design and Construction SPD (January 2020), Cambridge Local Plan Policy 28 and emerging policy CC/WE: Water efficiency in new developments

Sustainable material use & minimising waste
Key Circular Economy principles will be implemented to ensure efficient use of natural resources. Critical measures include:

- Pre-demolition audits will be undertaken during demolition of the existing buildings to identify opportunities for material reuse. This will be furthered through requiring that Contractors undertake Construction Environment Management Plans in order to address the waste hierarchy.
- The amount of non-hazardous construction waste generated will be monitored and controlled On site environmental data during the construction phase will be collated, reviewed and verified to promote transparency and accountability. This will be undertaken in accordance with the BREEAM criteria for Waste 01 Construction Waste Management. 90% of demolition waste and 80% of non-demolition waste (by tonnage) will be diverted from landfill for each plot's construction. The developments will target a maximum of 6.5 tonnes of non-hazardous construction waste per 100m^2 GIA will be generated.
- 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.
- A material efficiency strategy will be developed based on meetings and collaboration between the design team at all project stages, and recommendations will be adopted where practical and feasible. This strategy will be adopted in order to reduce resource demand, in line with the BREEAM requirements of Mat06.

This is in line with the United Nations Sustainable Development Goal 12 and Emerging Policy CC/CE: Reducing waste and supporting the circular economy

4. Conclusion.

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.

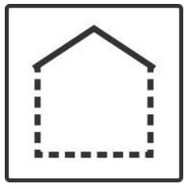
- United Nations Sustainable Development Goals (UN SDGs);
- Cambridge Local Plan (October 2018) and Supplementary Planning Documents and Guidance (SPD)
- BREEAM New Construction Version 6.1.
- RIBA 2030 Climate Challenge
- The five capitals approach to sustainability.
- Client vision.

Below is a summary of some of the key targets sought for this development and at the plot level.

Water consumption
Low-flow fittings and water harvesting technology to be utilised, with each plot targeting the exemplary level of consumption against the BREEAM Wat01 criteria, exceeding the minimum planning requirement of five credits.

Biodiversity and ecology
Ecology will be central to the site, which will include extensive local planting and generation of potential habitats. The current site proposals indicate a Biodiversity Net Gain in excess of 100% will be achieved.

BREEAM Ratings
'Excellent' to be targeted as a minimum for all buildings with the offices seeking an 'Outstanding' rating.



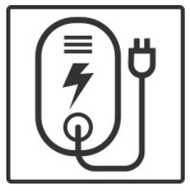
Upfront embodied carbon target
600kgCO_2/m^2 for base-build office buildings
(Office stretch target): 500kgCO_2/m^2)
750kgCO_2/m^2 for base-build laboratory buildings

Sustainable procurement
A robust sustainable procurement plan will be enforced. All new timber will be PEFC/FSC-certified. Locally-sourced construction products to be specified where possible. Products with responsible sourcing certificates to be prioritised.

Encouraging low water use
Additional measures to encourage users to minimise their water consumption will be used. These include water metering connected to a BMS, lowering unregulated water consumption and preparing a handbook with guidance for building users.

A future-proofed development
The current proposals will review how to protect against potential future sustainability requirements. At the plot level, consideration will be given to alternative certifications, such as WELL, ActiveScore and Wired Score and their respective requirements

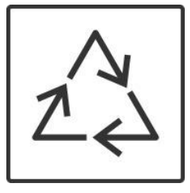
Low and zero carbon energy sources
The scheme will be all-electric, with no combustion sources during normal operation. PV area to be maximised where feasible on roof space, ASHPs to be used for heating, cooling and DHW, maximising on-site renewable energy generation.



Sustainable transport
The site will be designed to promote sustainable modes of transport. This includes protecting and enhancing walking/cycle routes, EV charging provision in car parks, as well as including sufficient cycle storage and cyclist facilities.

Community
External spaces, including the Hive Park, will be incorporated into the site redevelopment, to provide an attractive and inclusive place which reinforces the local community.

User comfort
The spaces will be designed to protect the safety and comfort of building users. Studies and modelling to be conducted to ensure thermal comfort, safe air quality and adequate lighting. The mental and physical health of occupants will be considered.



Minimising waste
Waste generation will be minimised. Each plot to target no more than 6.5 tonnes non-hazardous construction waste per 100m^2 GIA. Pre-demolition audits will identify elements of existing buildings that can be reused.

Figure 6: Summary of key targets for the Beehive Redevelopment.

Appendix A: Sustainability checklist.

This document has been produced to collate the project team's responses to the Sustainability Checklist for applications in Cambridgeshire. This is required to support the planning application of the Beehive Redevelopment.

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

Code	Checklist	Summary of approach	Response owner
TRANSPORT – SPD SECTION 2			
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 Site location is within easy access of key transport interchanges, in addition to being well served by the existing walking and cycling network. The Site is located within acceptable and recommended distances for walking and cycling. The Site is current served by public transport, including directly by bus.	Waterman
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?	The development significantly reduces reliance on private cars by reducing parking provision, and making significant enhancements for sustainable modes (additional bus services, on and off-site provision to remove barriers to walking and cycling). This also includes supporting Council aspirations for City-wide initiatives focused on enhancing non-car modes.	Waterman
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?	All measures within the Site boundary will be in place by occupation, subject to the relevant build-out phase. Off-site measures will be delivered in conjunction with the highway authority (or public transport authority) in accordance with their requirements, whether directly or through financial contributions.	Waterman
T.4	Where car parking is provided, has provision been made for electric vehicle charging?	Yes, on-site car parking caters for electric vehicles.	Waterman
T.5	Have any 'softer' measures been included, to encourage uptake of more sustainable modes of transport?	There is a very robust Travel Plan developed for the Site which all occupying tenants will adhere to. This will be under frequent review, including assessing movement patterns to and from the Site – it also includes checking off-site parking levels in the vicinity of the Site to monitor and manage the sustainable transport strategy. This is also supported by a site-wide Delivery & Servicing Management Plan to re-time deliveries away from peak movement periods, and a Parking Management Plan that controls how on-site parking is accessed, allocated, monitored and charged for (in conjunction with Council). All documents provided for planning.	
T.6	Does the development inhibit the expansion of high-quality public transport/cycling and walking routes?	No, the development secures space for the subsidiary sections of the City's Chisholm Trail between Coldham's Lane, York Street and Sleaford Street. It integrates with the City and Greater Cambridge Partnership's proposals for Phase 2 of the trail and also supports the proposals for the Eastern Corridor (Newmarket Road). Further measures have been identified to enhance the provision for walking and cycling elsewhere on the network, connecting to the Site.	Waterman
ENERGY AND CARBON REDUCTION – SPD SECTION 3.2			
En.2	For non-residential development, have you carried out a BREEAM pre-assessment and met the mandatory energy requirements for BREEAM 'excellent' within Ene 01?	BREEAM pre-assessment has been prepared by Hoare Lea sustainability, demonstrating that at least four credits for Ene 01 are targeted as a minimum for each plot.	Hoare Lea
En.3	How will you ensure that where renewable/low carbon technologies have been included in the approach to meeting the above carbon reduction requirements, these will be successfully integrated into the design of the development?	Photovoltaic panels are to be located at roof level of each building with heating and cooling provided by air source heat pumps. Please refer to the accompanying energy strategy report.	Hoare Lea
WATER EFFICIENCY – SPD SECTION 3.3			
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 5 credits from Wat01 of the BREEAM assessment?	The scheme will be incorporating low-flow fittings and water harvesting as appropriate to achieve a water consumption to achieve five Wat01 credits as a minimum. Initial studies indicated that a 56% improvement over baseline consumption was achieved with low-flow fittings only. This target is confirmed within the BREEAM pre-assessment summary located in Appendix B.	Hoare Lea / Leonard Design

Code	Checklist	Summary of approach	Response owner
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 proposal considers water re-use as part of the sustainable drainage strategy for the site as part of an integrated approach to water management. Below ground attenuation storage is proposed beneath external hardstanding areas and service yards towards the northern portion of the Proposed Development to control and utilise runoff from the lower (northern) drainage catchment, working in tandem with green and blue roof attenuation and upper catchment SuDS features. Provision has been made for the integration of extensive areas of blue roof attenuation storage on selected buildings, alongside green roof coverage where practical considerations allow. Rainwater will be captured for filtration and re-used to reduce water consumption in buildings and in the landscape to irrigate planting and top up the wetland.	Hoare Lea / Leonard Design
CLIMATE CHANGE ADAPTATION – SPD SECTION 3.4			
Ca.1	Have you integrated measures to design out the risk of overheating, giving priority to architectural approaches in line with the cooling hierarchy?	Measures to design out the risk of overheating were integrated within the architectural approaches in line with the cooling hierarchy. The proposal implements a fabric first approach where heat entering the building is reduced through improved insulation and orientation-responding fenestration. Facades have been developed with suitable glazing-to-solid ratios, with particular focus on south facing orientations. Suitable g-values will be specified to further control solar heat gains as required and buildings will have the capability for internal blinds to be installed to improve occupant comfort. A HEA 04 thermal comfort study will be undertaken for each building type in accordance with the BREEAM criteria to develop current and future climate change scenarios and how the building is able to respond.	Hoare Lea / Leonard Design
Ca.2	Have you undertaken overheating analysis following the CIBSE methodology and utilising future climate scenarios?	Cooling hierarchy demonstrated within the accompanying energy strategy report. Each building will undertake the Hea04 Thermal comfort study in accordance with the BREEAM criteria.	Hoare Lea / Leonard Design
Ca.3	Have you considered the role of green infrastructure and cool materials in enhancing the adaptive capacity of your proposal?	The role of green infrastructure and cool materials in enhancing the adaptive capacity of the proposal has been and will continue to be considered throughout the design development. For example, at the highest visionary level an Urban Greening Framework has been written in to the Design Code, which covers six core design principles of landscape, trees, ecology and biodiversity, and water (as well as Play and leisure, plus lighting and wayfinding). The design proposals will include substantial tree planting, enhancement of existing boundaries to create green corridors, and large areas of new herbaceous planting, rain gardens, and wildflower meadow. Alongside soft materials, any future hard materials palettes will include consideration for cool material selection.	LDA-D
Ca.4	Where your proposal has flat roofs, have these been designed as green or brown roofs in line with the requirements of policy 31?	Vegetation will be installed on roofs (and walls) to provide insulation and cooling, as well as a source of biodiversity and ecology on-site. A significant portion of roof space will be utilised for the purpose of brown / green roof installation. All areas will be created with the appropriate engineered foundations / layers to ensure that the 'host' buildings can support the material load, remain waterproof and not be susceptible to root ingress.	Leonard Design / Ecology Solutions
Ca.5	Where there are existing trees on your site, including ancient and veteran trees, how has the retention of these trees informed the layout of your development?	There are no ancient or veteran trees on site. There are 10no. trees to the north of the site with a TPO. The retention of existing trees where reasonably possible has been considered and reviewed throughout the design development. All individual trees and groups of trees to the site boundaries are to be retained and enhanced to ensure these continue to provide a buffer to	LDA-D

Code	Checklist	Summary of approach	Response owner
		neighbours, contribute to amenity value, and establish important green corridors. To the centre of the site, trees have been retained where possible, and contribute to the design of various character areas e.g. the existing Silver Maples form the proposed heart of the Maple Square central event space.	
Ca.6	How have you integrated the planting of new trees into your proposals, giving consideration to the right tree in the right place principle?	The new scheme and masterplan proposed the planting of approximately 297 new trees. Across the site, consideration for structural diversity and desired landscape impact over time i.e. day 1 planting of shrubs/ fast growing species that will reach maturity more quickly, versus impact in 5 years, 10 years, etc. will be given as detailed planting plans are developed. The 'right tree in the right place' is and will be a guiding principle, as detailed planting plans emerge. The need to plant resilient trees and include a variety of species has been discussed with Officers as more important than only favouring native species, which are typically preferable for biodiversity.	LDA-D
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?	Concrete is being used as the primary structural material for wet lab buildings and in the floor slab and stair and lift cores. Building strategies currently assume raised floors and suspended ceilings which limit direct access to thermal mass but this strategy will continue to be reviewed	Leonard Design
BIODIVERSITY AND GEODIVERSITY – SPD SECTION 3.5			
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? https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea/	Yes - The site has been subject to thorough ecological survey work in January 2021 and October 2022, which has been further supported by detailed desk work across 2022 and 2023 to identify the main habitats present and to understand any potential protected species considerations	Ecology Solutions
Bio.2	If a protected or priority species and/or habitats have been identified, has a specialist been engaged to conduct a detailed survey? https://events.cieem.net/ProfessionalDirectory/Professional-Directory.aspx	Owing to the well-developed nature of the site, the lack of seminatural habitat and the results of detailed survey work, the site is considered to be of little ecological value and of negligible significance to any protected or notable species.	Ecology Solutions
Bio.3	Has/will all the relevant information from these surveys been provided?	Yes - All relevant information and findings of the ecological survey works and evaluation have been presented in the Ecological Assessment.	Ecology Solutions
Bio.4	Has the mitigation hierarchy been followed, demonstrating how existing habitats and species have been protected in the proposed ecological and landscape strategy? http://www.csbi.org.uk/our-work/mitigation-hierarchy-guide/	Yes - the mitigation hierarchy has been followed to mitigate potentially adverse effects. The project aimed to avoid impacts through careful planning and design. When avoidance was not possible, measures were implemented to minimize the severity and extent of the impacts. Additionally, efforts were made to improve onsite habitats, and any remaining residual impacts were offset through compensatory measures. By following this hierarchy, the project effectively addressed and mitigated potential adverse effects, ensuring a more environmentally sustainable approach.	Ecology Solutions
Bio.5	Has the mitigation hierarchy been followed, demonstrating how any potentially adverse effects have been mitigated?	Yes - Mitigation measures for any adverse effects have been outlined in the Ecological Assessment including plans to include SuDS features, bat and bird boxes and a lighting strategy, to offset any negative effects of the Proposed Development.	Ecology Solutions
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?	Yes - Plans to create new habitat and enhance existing habitat aim to go beyond offsetting any damage to existing habitat and will increase the ecological value of the site, as well as providing new ecological niches / opportunities.	Ecology Solutions
Bio.7	Has it been demonstrated that the proposals will deliver biodiversity net gain, with use of the DEFRA Biodiversity Offsetting metric?	Yes - The landscaping proposals have been assessed using the DEFRA Biodiversity Metric V4.0 Calculator Tool and has shown that the proposals are set to record a significant net gain.	Ecology Solutions
Bio.8	For major development, has the Natural Cambridgeshire Local Nature Partnership (LNP) Developing with Nature Toolkit	Yes - Guidance and information from the Local Nature Recovery Tool Kit has been utilised to detail recommendations on how to deliver newly	Ecology Solutions

Code	Checklist	Summary of approach	Response owner
	been adopted?	created habitats within the site such as wetland areas, Orchard planting areas and grasslands.	
Bio.9	Has a suitable biodiversity management and monitoring strategy for the site been proposed?	Yes – Recommendations for monitoring / management have been outlined in the Ecological Assessment. Furthermore, as a result of the use of the DEFRA Biodiversity Metric V4.0 Calculator Tool, the site will require ecological management for a minimum 30-year period, a requirement set out in the Environment Act 2021. The final and exact details of which are expected to be set out in response to a suitably worded planning condition	Ecology Solutions
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 Regulations 2017 (as amended) to record its decision with regard to likely significant effect, including undertaking Appropriate Assessment where necessary?	Given the significant distances between the site and any nearby statutory sites, with these separated by significant areas of open space, roads and built form, any significant adverse effects during construction (direct or indirect) are considered highly unlikely to arise (either alone or in combination with other plans or projects) and would be more than mitigated for through adoption of appropriate construction and engineering practices, in line with best practice and legislative requirements.	Ecology Solutions
POLLUTION – SPD SECTION 3.6			
LIGHT POLLUTION			
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?	An external lighting strategy has been developed which meets the local plan/SPD requirements.	Hoare Lea
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?	An external lighting strategy has been developed which meets the local plan/SPD requirements. It identifies appropriate industry guidance and principles that has been adhered to.	Hoare Lea
Pol.3	Has the development taken measures to reduce light pollution impacts on	The external lighting strategy highlights how light pollution has been considered, including	Hoare Lea
	character, residential amenity and biodiversity?	appropriate industry guidance, and how the development will be designed to mitigate this.	
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?	The lighting strategy confirms that a detailed lighting impact assessment shall be undertaken.	Hoare Lea
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'?	The lighting strategy confirms that a lighting impact assessment shall be undertaken in regard to and accordance with the Institute of Lighting Professionals 'PLG04 – Guidance on Undertaking Environmental Lighting Impact Assessments.	Hoare Lea
Pol.6	For any proposal for the display of illuminated advertisements has the relevant information been provided?	No illuminated advertisements are currently specified.	Hoare Lea
CONTAMINATED LAND			
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 undertaken and included with the application?	A contaminated land Preliminary Risk Assessment (PRA) has been completed detailing an assessment of the Site's current and historical uses to understand what the potential impacts to human health receptors or the environment may be present. The PRA has identified the Site's historical uses which include depot, dairy, works, and petrol station as posing a potentially significant contaminative risk. Based on the PRA a preliminary ground investigation has been completed to understand the ground conditions and the potential pollutant linkages. The preliminary ground investigation has identified potentially significant contamination as being present for which additional ground investigation is required to	Waterman

Code	Checklist	Summary of approach	Response owner
		establish the extent and magnitude of the impact and whether remedial measures would be required to ensure post development completion a significant impact to human health receptors or the environment is absent.	
NOISE			
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?	Elements of the Proposed Development are considered to be noise sensitive (NSD), as defined by Cambridge's SPD, and consideration has been given to the control of internal sound levels owing to external noise. An assessment of external noise ingress, inclusive of recommendations for the sound insulation performance of façades, has been provided within Hoare Lea's Noise ES Chapter and is based upon external sound level data measured on site. Guidance on appropriate internal conditions for the proposed uses has been drawn from industry good practice guidance.	Hoare Lea
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?	Noise generating plant associated with the development has been assessed in accordance with Cambridge's SPD. Further details can be found within Hoare Lea's Noise ES Chapter which has been prepared in support of the planning application.	Hoare Lea
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?	The Noise ES Chapter is considered representative of an "Acoustic Design Statement". The document sets out the design principles adopted for NSD and NGD and is considered to be in line with the submission requirements of the SPD.	Hoare Lea
Pol.11	Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site?	The design seeks to control noise emissions from the site's operations in line with Cambridge's current planning requirements.	Hoare Lea

Code	Checklist	Summary of approach	Response owner
		The massing of the new development can be expected to screen areas to the south of the site from traffic noise on Coldhams Lane, but this is not considered critical to the design given the context of the area and the surrounding commercial uses.	
Pol.12	For all development, has the impact of demolition construction noise/vibration been assessed and mitigation proposed?	Pol 12: An initial assessment of construction noise and vibration has been provided within the Noise ES Chapter. Further details of the final construction methodology and proposed scheme of noise control measures would normally be provided by the Principal Contractor as part of their DCEMP.	Hoare Lea
Pol.13	For substantial development or infrastructure projects has a Noise and Vibration Demolition and Construction Environmental Management Plan been provided?	As above	Hoare Lea
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?	The development at full build out reduces two-way vehicle movement by between 8,500 and 11,500 two-way movements a day (weekday and weekend respectively). Based upon the predicted trip generation then a noise impact assessment would not typically be required as there are no traffic movements which would experience a >5% AADT increase in traffic. A significant net decrease in traffic is expected across the network. This would be managed through a significant decrease in parking provision along with the comprehensive active/sustainable travel strategy. Please also refer to accompanying acoustic survey.	Waterman
AIR POLLUTION			
Pol.15	Will the development require an Environmental Impact Assessment?	Please refer to accompanying documents, Environmental Statement as collated by Bidwells	Bidwells

Code	Checklist	Summary of approach	Response owner
Pol.16	Will the proposals interfere with the Air Quality actions stated in the Local Transport Plan or Local Air Quality Action Plan?	Please refer to accompanying EIA documentation, this is currently being reviewed and refined. Potential air quality issues include lab fume extract, generator flues, and kitchen extract.	Waterman
Pol.17	Is the development part of a large scale major redevelopment that might result in long-term construction generating HGV flows more than 100 movements per day and/or demolition and construction dust?	Refer to accompanying EIA documentation, this is currently being reviewed and refined.	Waterman
Pol.18	Will the development significantly alter the road or rail network? For example, – realign roads, i.e. changing the proximity of receptors to traffic lanes – Introduce a new road – Introduce a new junction – Remove an existing junction near to relevant receptors. – Change/introduce a junction that causes traffic to significantly accelerate or decelerate, e.g. traffic lights, or roundabouts. – Introduce or change a bus station	Points of access will remain the same with local enhancements provided. For internal reconfiguration and enhancements provided pleases refer to accompanying transport assessment / masterplan documentation.	Waterman
Pol.19	Will the development significantly alter flows or speeds on busy roads greater than 10,000 vehicles per day or any road within an AQMA? Where 'significantly' is defined as including any of the following: – Change in average vehicle speed of 5kph or a significant increase in congestion – A change in the modal split to a greater percentage of Heavy Duty Vehicles (HDVs) – A change of PSV and/or HDV flows of more than 25 AADT – within or adjacent to an AQMA, more than 100 AADT elsewhere. – Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight). A change of LDV flows of more than 100 AADT within or adjacent to an AQMA, more than 500 AADT elsewhere.	Please refer to the transport assessment for full details.	Waterman
Pol.20	Does the development provide more than 50 new parking spaces or more than 25 if it is within an existing AQMA?	The provision for parking spaces is being reduced against existing, please refer to transport assessment and supporting documents for full details.	Waterman
Pol.21	Does the development have an underground car park with extraction system where the ventilation extract for the car park will be within 20 m of a relevant receptor and coupled with the car park having more than 100 movements per day.	No underground car parking is being provided.	Waterman
Pol.22	Is the development within an AQMA and a sensitive development (Residential, school, healthcare, childcare etc.)?	The site is within a AQMA but is not a sensitive development	Waterman
Pol.23	For commercial development, does the development include a prescribed industrial process under the PPC regulations, including MCPD65?	Please refer to accompanying reports.	Waterman/ Design team
Pol.24	Is the development a sensitive development close to an existing prescribed process or other source of air pollution, such as a busy road?	Please refer to accompanying reports.	Waterman/ Design team
Pol.25	May the development create a street canyon or reduce dispersion of pollutants?	Please refer to accompanying reports.	Waterman/ Design Team
Pol.26	Does the energy strategy for your proposal introduce Combined Heat and Power (CHP) plant, other centralised boilers, or generators? Do these conform with the emissions standards set out in Appendix 3 of this SPD?	Strategy does not specify for CHP or other centralised generators or boilers, please refer to accompanying Energy Strategy	Hoare Lea
ODOUR AND OTHER FUGITIVE EMISSIONS			
Pol.27	For all industrial, commercial, or business uses that generate odours or if substantial	Please refer to accompanying reports	Hoare Lea

Code	Checklist	Summary of approach	Response owner
	ventilation or extraction equipment is proposed has an overarching outline ventilation statement/strategy been provided?		
Pol.28	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?	When the occupants of the Development are confirmed, an appropriate odour risk assessment detailed odour assessment would be undertaken with reference to the SPD.	Hoare Lea
Pol.29	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 assessment of odour for planning (IAQM, Version 1.1 - July 2018)'?	The Development would not introduce high risk odour generating uses, therefore a detailed odour assessment has not been undertaken. Although unlikely, if this changes when the occupants of the Development are confirmed, a detailed odour assessment would be undertaken in accordance with the Institute of Air Quality Management document 'Guidance on the assessment of odour for planning (IAQM, Version 1.1 - July 2018).	Waterman
SUSTAINABLE DRAINAGE SYSTEMS – REFER TO THE CAMBRIDGESHIRE FLOOD AND WATER SPD			
SuDS.1	Have you completed the pre-application Checklist (Appendix E) and Surface Water Drainage Pro-forma (Appendix F) of the Cambridgeshire Flood and Water SPD https://www.cambridge.gov.uk/media/7107/cambridgeshire-flood-and-water-spd.pdf	The pre-application checklist and surface water drainage pro-forma will be completed and appended to the Flood Risk Assessment & Surface Water Drainage Strategy report that will accompany and support the planning application.	Waterman
CONSTRUCTION STANDARDS (BREEAM) – SPD SECTION 3.8			
Cs.1	If your proposal involves the re-use/re-development of existing buildings, have you developed a bespoke approach to sustainable construction standards and what form does this bespoke approach take?	N/A – new-build proposed.	All
Cs.2	Where BREEAM has been used, has a BREEAM pre-assessment been prepared for submission with your planning application?	BREEAM pre-assessment has been prepared by Hoare Lea sustainability, to be provided with planning submission	Hoare Lea
HERITAGE ASSETS AND CLIMATE CHANGE – SPD SECTION 3.10			
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	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	N/A
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	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	N/A
RECYCLING AND WASTE FACILITIES CONSTRUCTION WASTE – SPD SECTION 3.11			
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?	We have based our spatial allocation on the RECAP Waste Management Design Guide SPD and will use the toolkit to confirm the design at the next stage once the shape and layout of storage areas are to be finalised. We are aware of some locations where the 25m distance from collection point is exceeded and we will either design this out at the next stage or will look to develop a management strategy to deal with the extended distance.	Leonard Design
Wr.2	Has it been shown that the average and maximum distances for building users to move their waste to the	The average and maximum distances for building users to move their waste to the storage or	Leonard Design

Code	Checklist	Summary of approach	Response owner
	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?	collection points is not all within the guidelines set out in the relevant guidance. In some of the larger buildings, users have to move their waste beyond 30m to the storage point following a centralized bin storage design. Where these targets are also exceeded for the collection point of maximum 10m, a management plan is in place. On bin days, the bins will be pulled out to the curb or service bay where the maximum distance for collection point is met.	
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)	Refer to accompanying reports, including this Sustainability Strategy which sets out targets for construction waste management in accordance with the BREEAM requirements	All / Hoare Lea
OTHER SUSTAINABILITY CONSIDERATIONS – SPD SECTION 4			
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: http://www.greenbooklive.com/	The Sustainability Strategy sets out targets for materials in accordance with the BREEAM requirements.	All / Hoare Lea
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?	Elements of food growing are expected in the Community gardens and also with some fruit planting within site edges. Long term management and custodianship of this space will be determined at later stages.	All
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?	For optimum daylight, the clear height within the office and laboratory spaces are set to minimum 2.8m, according to BCO 2023 specification. The window to window and window to core maximum distances were also followed.	Leonard Design / Hoare Lea

Appendix B: BREEAM pre-assessment summary.

This appendix provides an indicative BREEAM V6.1 New Construction pre-assessment for the proposed offices and labs at The Beehive Centre redevelopment. Due to stage of the project , and the nature of the site having multiple intended use types and fit out requirements, this pre-assessment summary forms the basis of the strategy for other certification types, and identifies a feasible route to the sought BREEAM ratings. As the designs develop and the programme of the different units progresses, there may be some fluctuation in the specific credits targeted for individual plots.

The buildings are currently considered to be most suitable to be assessed using a Shell and Core assessment type.

The Applicant is committed to exceeding the score required for 'Excellent' for all plots, and is seeking to achieve an 'Outstanding' rating for the Office only spaces. The applicant will investigate how requirements for 'Outstanding' could be achieved as each building progresses.

Laboratories strategy

The current proposed baseline score is 88.26%, equivalent to a BREEAM 'Excellent' rating, with a difference between the minimum required score for a BREEAM 'Excellent' rating of 70% of 18.26%. The required four credits for Ene01 to achieve a BREEAM 'Excellent' rating are included within this strategy, and so the minimum planning policy standards are demonstrated to be achievable as part of this strategy.

Offices strategy

The current proposed baseline score is 89.59%, equivalent to a BREEAM 'Outstanding' rating, with exceeding the minimum required score for a BREEAM 'Outstanding' rating of 85% of 4.59%. This strategy introduces two additional credits for Ene01, increasing this to six credits which are a pre-requisite to achieving an 'Outstanding' rating and exceeding the minimum standards of the planning policy.

Potential strategy

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 96.99%, equivalent to a BREEAM 'Outstanding' rating with a difference of 11.99% above the minimum required score. The development will review the credits marked as potential during the design, to identify whether these are indeed feasible, or will not be possible and can be removed from the BREEAM strategy.

Credit information

All mandatory and minimum standards for the BREEAM 'Excellent' rating have been included within the assessment strategy for the target baseline score. The mandatory and minimum standards for an 'Outstanding' rating are included within the office (only) and potential strategies.

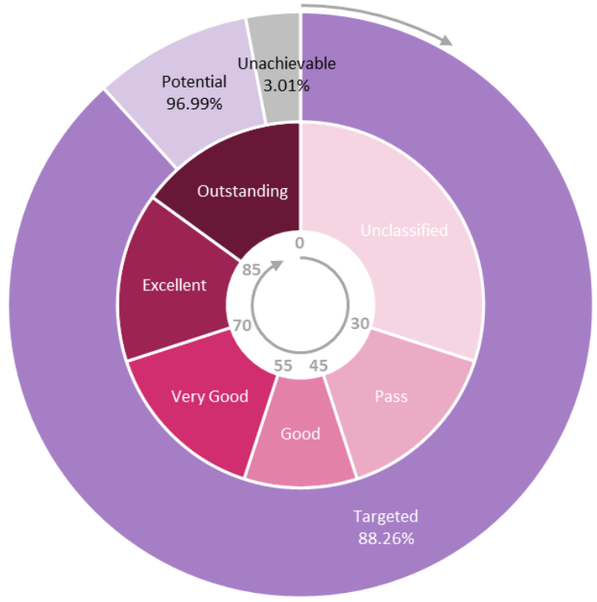


Figure 7: BREEAM score summaries for 'labs' strategy.

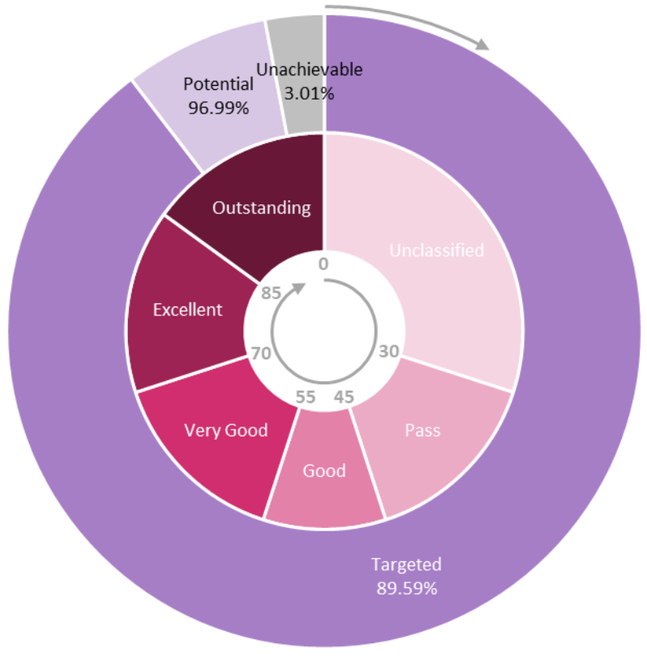


Figure 8: BREEAM score summaries for 'office' strategy.

Summary score sheet.

The summary table below highlights the list of targeted credits for the current BREEAM V6.1 pre-assessment. Mandatory credits to achieve a 'Excellent' rating and above are highlighted by **(M_V).** Additional mandatory credits for an 'Excellent' or 'Outstanding' rating are highlighted by **(M_e) and (M_o)** 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 **(M_e), (M_o)**	6	6	-
	Man 04: Commissioning and handover **(M_e), (M_o)**	4	4	-
	Man 05: Aftercare **(M_e), (M_o)**	-	-	-
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 **(M_e) (M_o)**	13	8 (Lab) 10 (Off)	+2 0
	Ene 02: Energy monitoring **(M_V) (M_e) (M_o)**	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 **(M_V) (M_e) (M_o)**	5	5	+1
	Wat 02: Water monitoring **(M_V) (M_e) (M_o)**	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	-
	Mat 02: Environmental impacts from construction products	1	0	+1
	Mat 03: Responsible sourcing of construction products **(M_V) (M_e) (M_o)**	4	4	+1
	Mat 05: Designing for durability and resilience	1	1	-
	Mat 06: Material efficiency	1	1	-
Waste	Wst 01: Construction waste management **(M_o)**	5	4	-
	Wst 02: Use of recycled and sustainably sourced aggregates	1	0	+1
	Wst 03: Operational waste **(M_e), (M_o)**	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	4	+1
	Targeted weighted score rating (labs):	88.26%, 'Excellent'		
	Targeted weighted score rating (office):	89.59%, 'Outstanding'		
	Potential weighted score rating:	96.99%, 'Outstanding'		

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