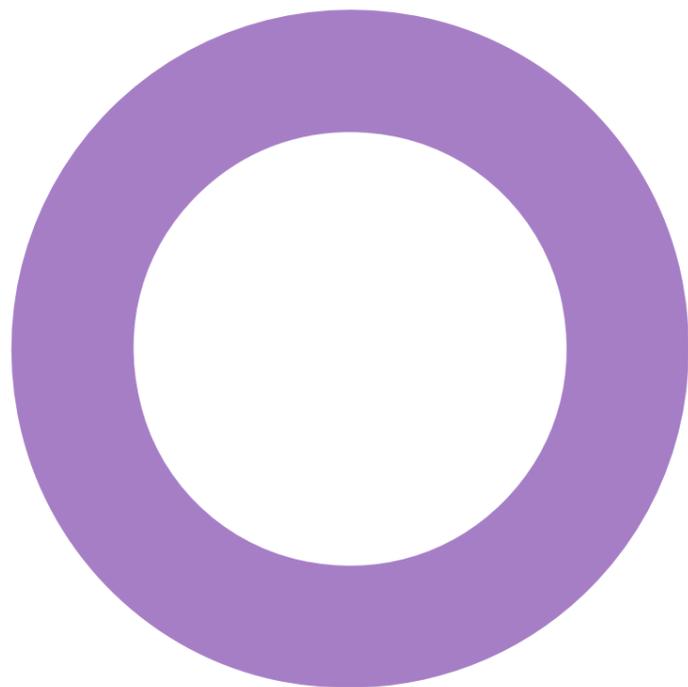


**Life and Mind Building.  
Oxford.**  
University of Oxford.

**SUSTAINABILITY**  
SUSTAINABILITY STRATEGY

REVISION P03 - 20 JULY 2020



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
P01	08/06/2020	Stage 3 Report	JQ	JF	JF
P02	03/07/2020	Draft Planning Issue	JQ	KC	KC
P03	20/07/2020	Planning Issue	JQ	KC	KC

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## 1. Executive summary

This document sets out the sustainability strategy for the Life and Mind building of Oxford University, based on the five capitals of sustainability as illustrated in Figure 1.

### The Vision

The development is characterised by **high sustainability ambitions** as defined within the Oxford University's Estates Services Sustainability Design Guide (The Design Guide). The building in its design, construction, and operation, responds to the challenge of sustainability and acts as a demonstration of the University's commitment to this agenda.

### The Approach

A **holistic, interdisciplinary approach** has been adopted to define and communicate the sustainability strategy for the development. The proposed framework spans the **whole project lifecycle** with the project legacy in mind from day one. The sustainability framework incorporates key elements from other sustainability guidance and frameworks as further detailed in Section 3 of this report.

The Design Guide, which is covered further in section 3.1 of this report, is of principal importance to the sustainability strategy; it primarily focuses on the natural and physical aspects of sustainability, and therefore additional frameworks are used to show how the development also influences the social, economic and human aspects of sustainability. This is through utilising the following:

1. Local Planning Policies – e.g. Oxford City Council Planning requirements.
2. Sustainable Design Benchmarks – e.g. WELL Building Standard.
3. A selection of Best Practice Industry Standards – e.g. BREEAM New Construction 2018, CIBSE Guidelines etc.

Section 4 covers the Approach to Sustainability for the project, covering the Five Capitals of Sustainability.

### Creating Value

As illustrated in Figure 1, the goal of the framework is to realise a shift from “sustainability on paper” to “sustainability in practice”; hence, the focus is on creating value from sustainable development with tangible benefits across **five key defined themes**, namely:

1. Physical capital – key theme: “Designed for performance”.
2. Human capital – key theme: “People centred design”.
3. Natural capital – key theme: “Enhancing the Environment”.
4. Economic capital – key theme: “Equity and economy”.
5. Social capital – key theme: “Partnership collaboration”.

The Life and Mind Building responds to each of these aspects of sustainability to create a broad and meaningful contribution to a sustainable built environment in Oxford while enhancing the building users' experience of the building, its environment, and the surrounding community.

### Sustainability Framework

The Sustainability Framework is driven by outcomes for the project which have been agreed with both the client and the design team and which are captured in a range of project specific commitments. The output from these discussions are presented in Section 5.

This framework is developed as a live document and therefore periodic progress reports will be issued and discussed at both client and design team meetings. This is to ensure that the principles of the sustainability framework remain embedded in the design and throughout the project lifecycle.

A selection of the core sustainability outcomes and drivers for the project, as defined within the Design Guide are shown in Figure 2 below.

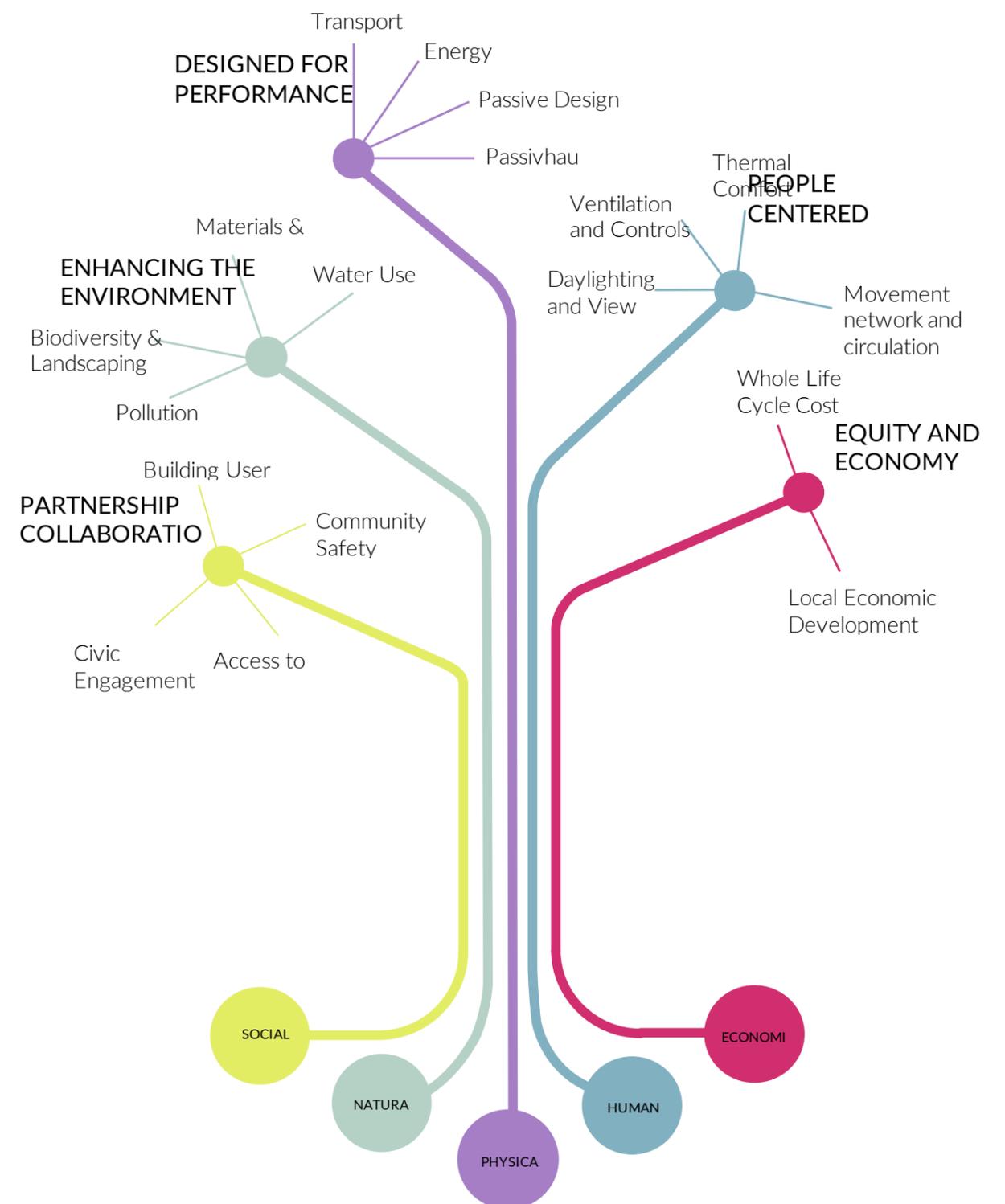


Figure 1: Sustainability strategy illustrated – key themes and objectives for the Life & Mind building.

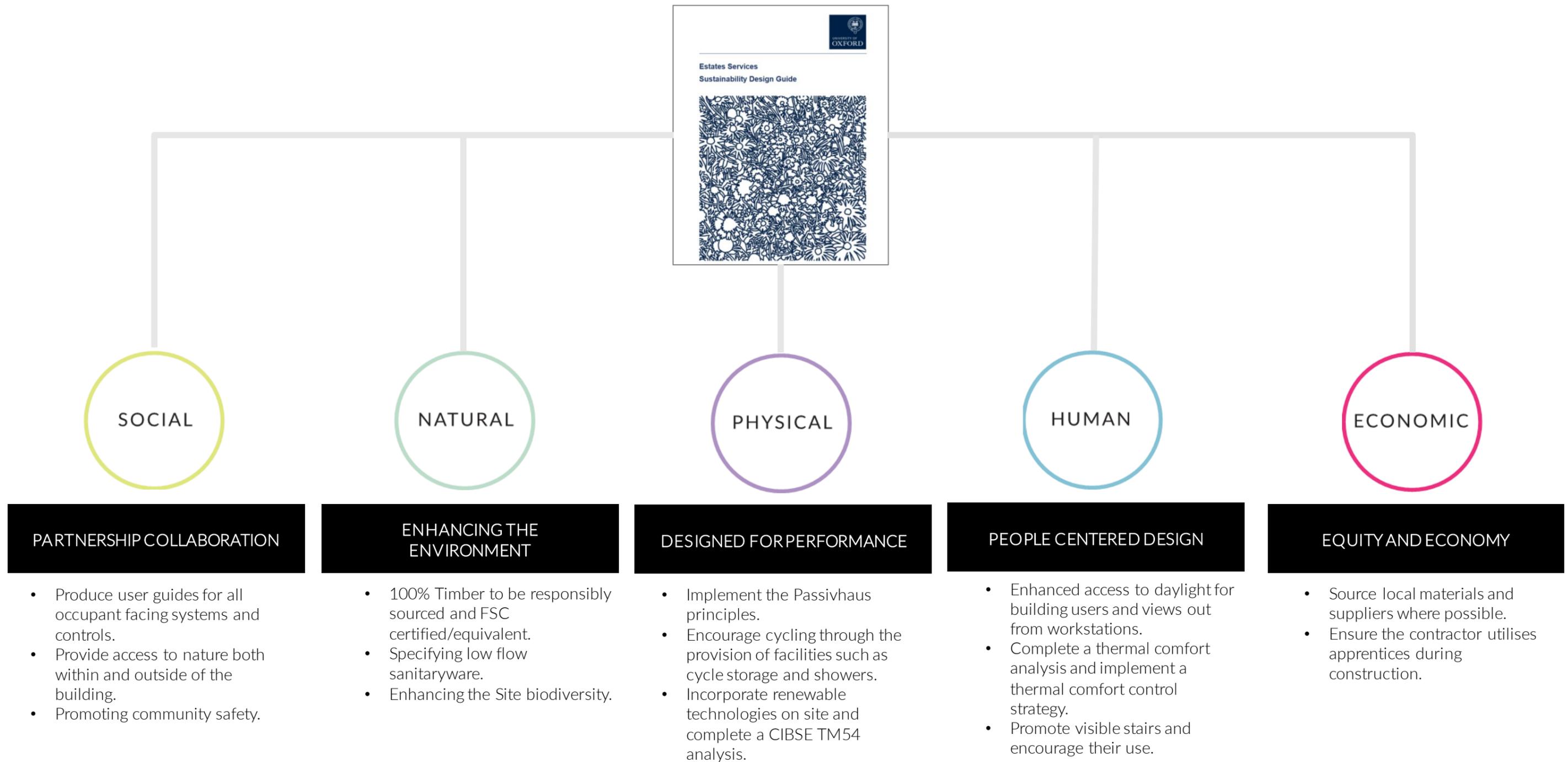


Figure 2: Core Sustainability Outcomes

## 2. Introduction

### 2.1 Purpose of the Report

This document has been prepared on behalf of the University of Oxford, in support of the planning application for the Life and Mind Building.

The Life and Mind Building will form part of the University of Oxford and is being designed as a collaborative office and research building for the following departments;

- Experimental Psychology
- Department of Plant Sciences
- Department of Zoology

The Sustainability Strategy summarises the core objectives for the project as set out within the Estates Services Sustainability Design Guide (the Design Guide), planning requirements and additional measures from selected sustainability frameworks. This aims to create a broad and meaningful contribution to a sustainable built environment in Oxford while enhancing the building users' experience of the building, its environment, and the surrounding community.

To guide the sustainable design of the building, a sustainability framework has been utilised. The framework is articulated around the Five Capitals of Sustainability to provide a holistic interdisciplinary approach. Merging requirements from the Design Guide, planning requirements and further drivers and requirements taken from the WELL Building standard and BREEAM New Construction 2018. Section 3 shows how these drivers relating to sustainability are articulated to provide a coherent framework of guidelines and requirements for the Life and Mind Building

Section 5 of this report highlights the main characteristics of the design and demonstrate how these align with the drivers chosen to guide the project, ensuring that the Life and Mind Building meets all the main requirements of a broad approach to sustainability.

Kindly refer to Appendix 1 for a summary of how the Life and Mind Building responds to each of the sustainability measures included in this Strategy.



Figure 3: NBBJ Rendered Images

### 3. Drivers

This section provides a summary of the drivers relating to sustainability for the development. Section 3.1 covers the Design Guide, which forms the core objectives for the project. Supplementary sustainability drivers are provided in Section 3.2 and Section 3.3. The Design Guide primarily focuses on the natural and physical aspects of sustainability, and therefore additional frameworks are being utilised to show how the development also influences the social, economic and human aspects of sustainability.

#### 3.1 Client Requirements

The Design Guide sets out guidance and a range of requirements for sustainable development. It provides a framework which aims to minimise the operational energy consumption of buildings and to deliver wider sustainability benefits on all projects for the university. This forms the focus of the Sustainability Strategy for the development.

A BREEAM assessment is not undertaken as such for the Life and Mind Building. However, the Design Guide has been referred to in lieu of BREEAM, which has been translated into the Sustainability Framework described below, and integrated into the design of the Life and Mind Building,

In addition, drivers and requirements taken from adopted planning policy and the WELL Building Standard will complement the aims and ambitions of the Design Guide.

#### 3.2 Planning Policy

The current local plan consists of the statutory Development Plan for Oxford, which contains a number of policy documents that sets out agreed planning policies for the city and against which planning decisions are made. The Oxford Development Plan is composed of the following documents:

- The Oxford Local Plan 2036
- Site specific Area Action Plans
- Neighbourhood Development Plans

The Oxford Local Plan 2036 was submitted to the Secretary of State for Housing, Communities and Local Government in March 2019 and adopted on the 8th of June 2020. It is a vital document that sets out the aspiration for the city of Oxford. Since its adoption, this document guides new developments to ensure that the historical, cultural and architectural character of Oxford is respected while improving the city's future by supporting its people and their environment.

The Local Plan 2036 now forms part of the statutory development plan, which means that it now has full weight in determining planning applications.

#### 3.3 WELL Building Standard

The WELL Building Standard (WELL) is the leading tool for advancing health and well-being in buildings. It emerged from the observation that we spend more than 90% of our time indoors and is based on medical research exploring the connection between buildings and the health and wellness impacts on us as occupants.

The WELL is revolutionizing the way people think about buildings. It explores how design, operations and behaviours within the places where we live, work, learn and play can be optimized to advance human health and well-being.

A significant number of features of WELL, taken across its seven key concepts, have been incorporated into this Sustainability Strategy to enhance the way the Life and Mind Building responds to the Design Guide and planning requirements.

The key drivers behind the Sustainability Strategy Matrix are therefore shown in Figure 4.

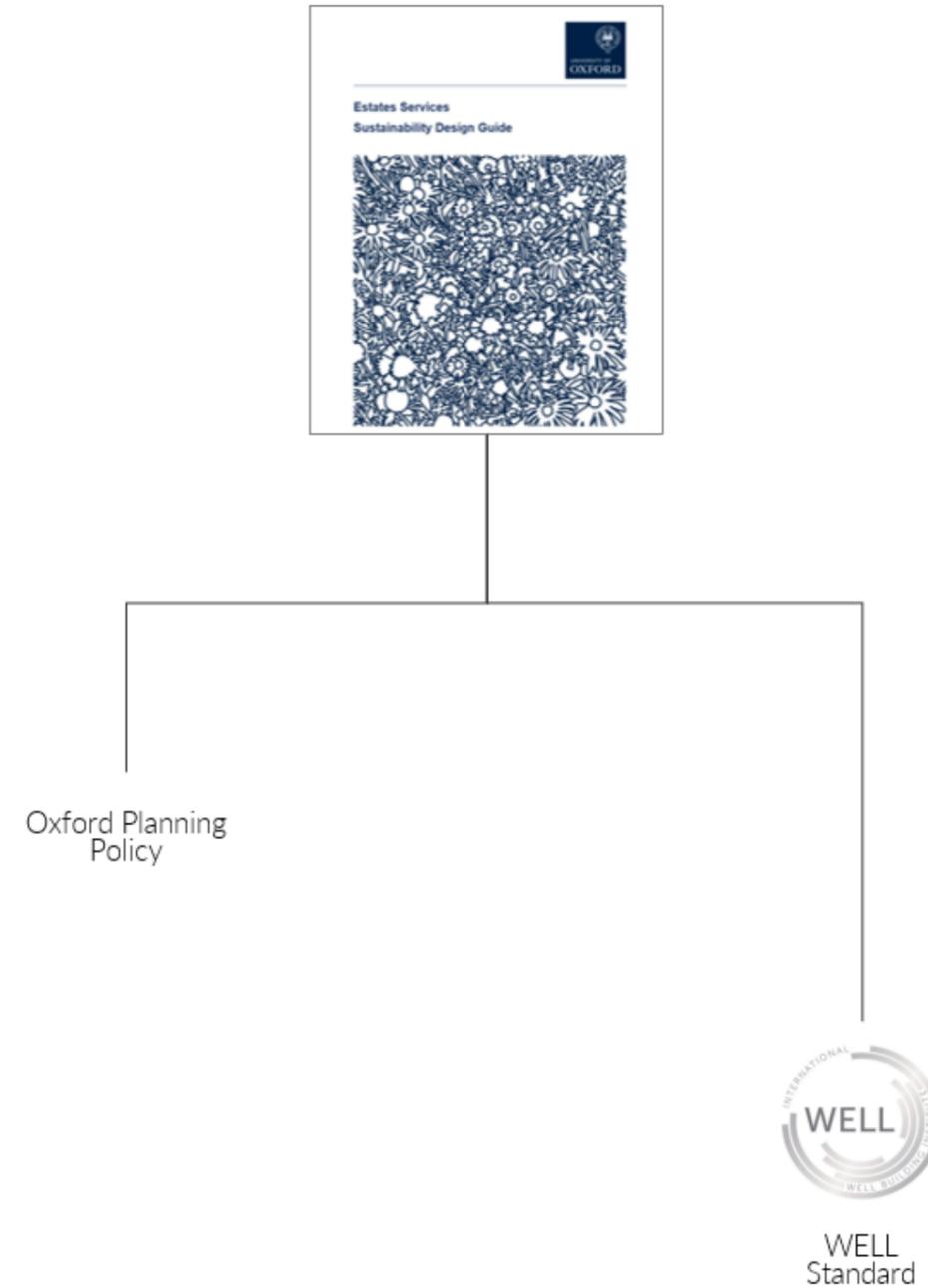


Figure 4: Sustainability Drivers

## 4. Approach to Sustainability

Historically, the consideration of sustainability in the built environment focused primarily on issues of energy consumption and carbon emissions. In recent years, there has been a recognition that built environment projects both have the ability to, and should, influence a much broader range of aspects of sustainability in their design, construction, and operation.

The Design Guide already addresses many of these issues, however, given the importance of the Life and Mind Building to the University and in its local context, an even broader approach has been adopted utilising the Five Capitals model of sustainability.

This model fully recognises the potential that a project like the Life and Mind Building has to create value through its sustainable development by considering and responding to the Five Capitals, namely:

- Social
- Natural
- Physical
- Human
- Economic

All with the aim of realising tangible benefits for building users, the local and wider community, and the environment.

### 4.1 Sustainability Framework

The Sustainability Framework has been used to guide the process set out in Figure 5, which focuses on:

- Defining a sustainability vision for the project;
- Establishing a Charter which derives a series of sustainability objectives from the vision (see Appendix 1) and is based on the Design Guide supplemented with a number of best practice environmental assessment methods, where these benefit the building;
- Setting a Strategy which includes a suite of metrics aligned to outcomes and against which the project can be scrutinised;
- Designing the project in a way that responds to the various sustainability aspirations of the strategy;
- Ensuring that the design responses are delivered through the construction of the project; and
- Realising tangible benefits to all stakeholders as the development moves into operation.

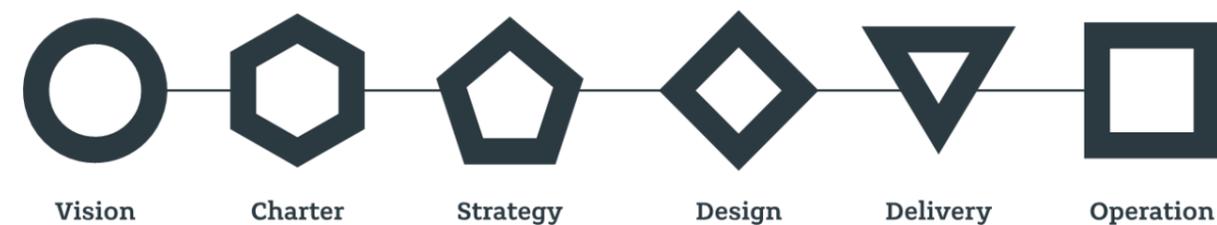
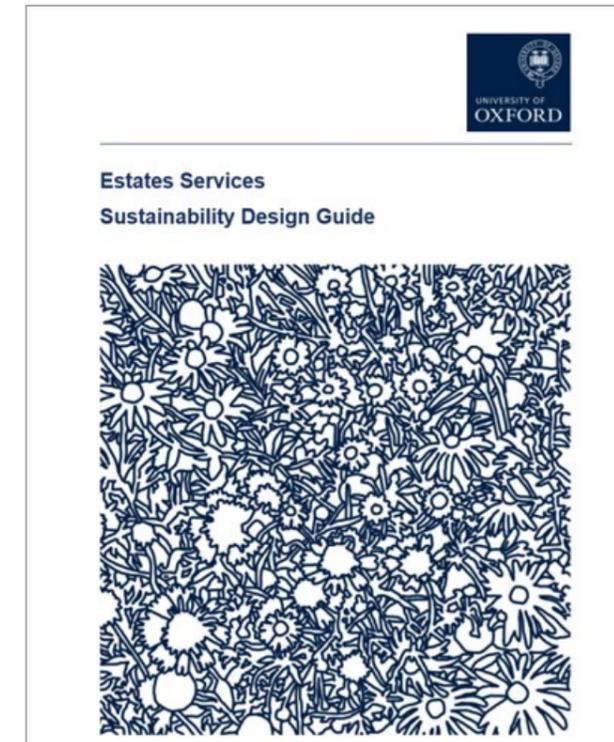


Figure 5: Sustainability Strategy - Delivery Phase (Inception to Completion).



#### Physical Capital **Designed for Performance**

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.

#### Natural Capital **Enhancing the Environment**

By seeking to achieve positive gain, **NATURAL VALUE** is increased where existing quality is protected, and new complimentary resources are introduced.

#### Human Capital **People Centred Design**

With a focus on people, **HUMAN VALUE** is increased where quality and longevity of life is improved, and happiness is increased.

#### Social Capital **Partnership and Collaboration**

By enabling community identity, **SOCIAL VALUE** is increased where a great place brings people together and creates a community.

#### Economic Capital **Equity and Economy**

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.

## 5. Sustainability Strategy

Figure 6 illustrates the key themes and focus areas which have been considered in the design and the development of the Sustainability Strategy.

Sections 5.1- 5.5 below explores how each of the Five Capitals have been addressed, and highlight a selection of the core objectives, set up in line with the Design Guide, planning requirements and additional measures within additional sustainability frameworks ensuring that the Life and Mind Building meets all the main requirement of a broad approach to sustainability.

Kindly refer to Appendix 1 for a summary of all the sustainability measures included in this Strategy.

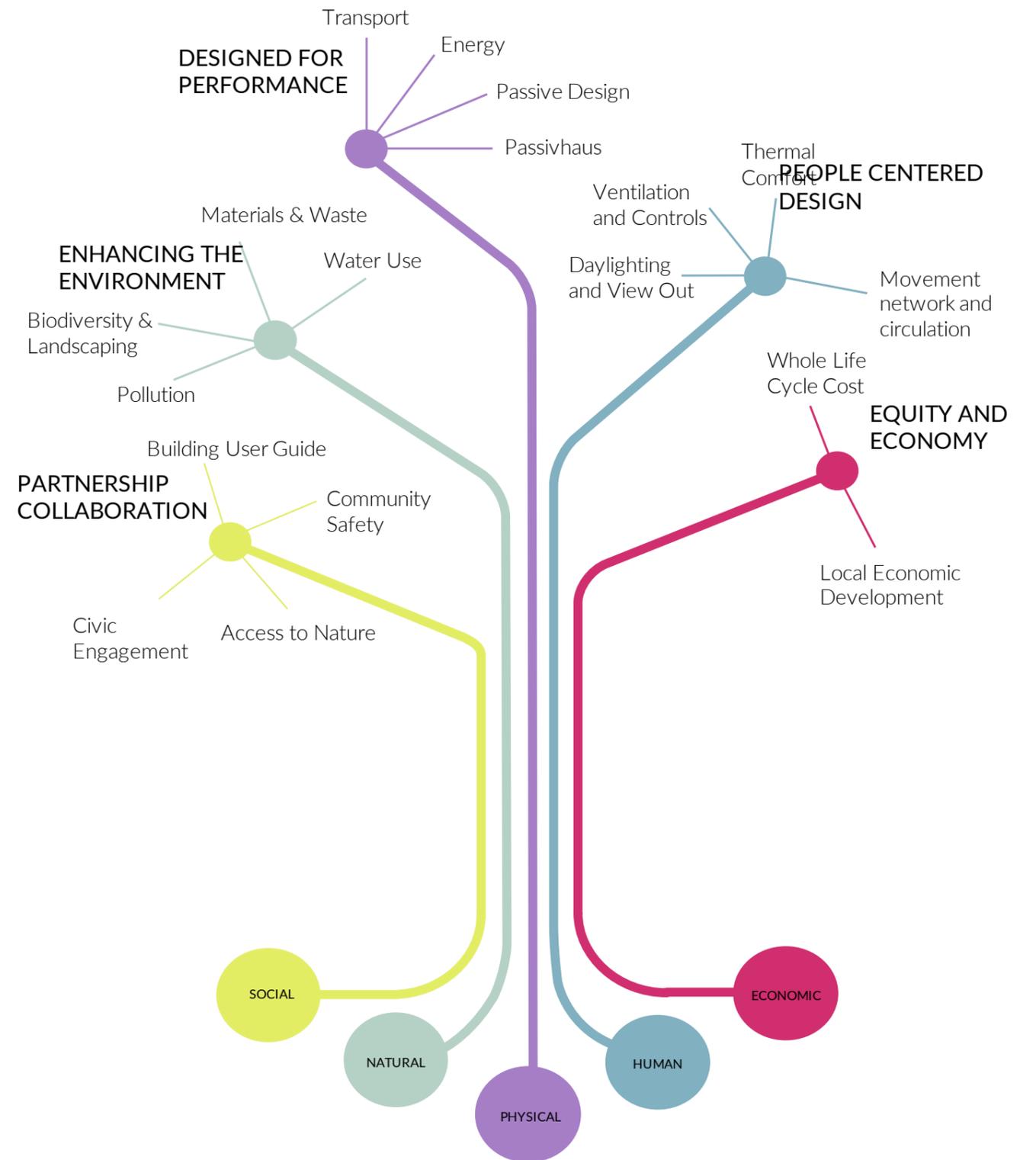
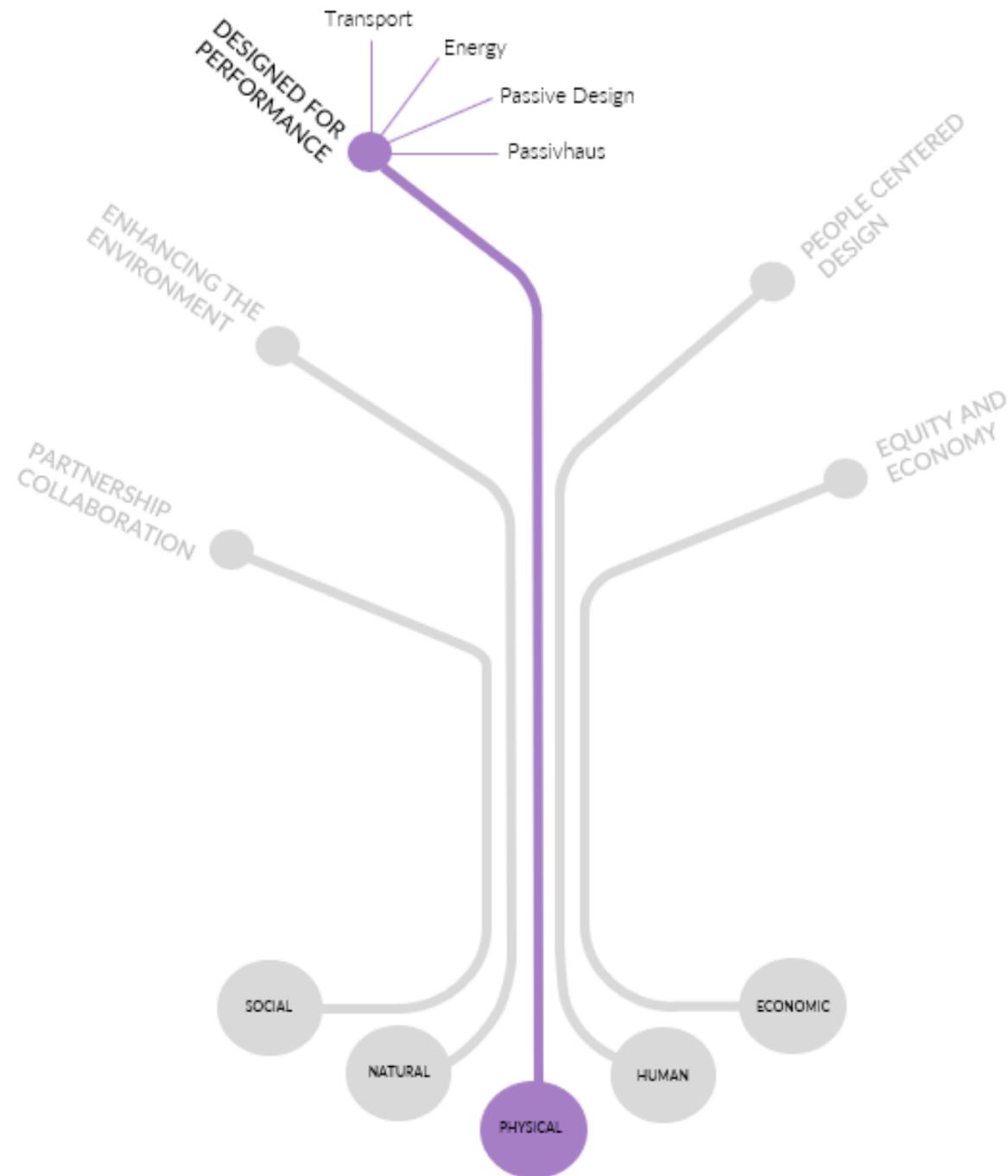


Figure 6: Sustainability Strategy Key Drivers

## 5.1 Designed for Performance



The **Design for Performance** theme focuses on ensuring that the energy consumption and CO<sub>2</sub> emissions generated by the building and its occupants are kept to a minimum. This is achieved through implementing passive design strategies and promoting a 'fabric first' approach. In addition, the specification and design of energy efficient systems is supported as well as the use of renewable sources of energy. The implementation of the Passivhaus methodology is also encouraged to ensure that energy efficiency targets are embedded in the design. This section also focusses on minimising operational energy consumption through defining users' needs and implementing energy efficient solutions, especially in areas with specific requirements, such as the laboratory and IT spaces. Finally, the commissioning of the systems and energy metering are required in order to identify and control the energy consumption of the building.

In order to reduce the Life and Mind Building occupant's emissions of CO<sub>2</sub>, sustainable modes of transport are promoted. This aims at reducing car journeys and, therefore, to minimise congestion and CO<sub>2</sub> emissions over the lifecycle of the building. This is achieved through a Travel Assessment and the implementation of a Travel Plan, identifying the needs of the site and highlighting adapted measures to enhance the access to the site and promote sustainable modes of transports. In addition, the provision of cycle storage and cyclists' facilities is incentivised while the provision of additional car parking spaces is discouraged.

### Transport

The University is responsible for 20% of employment in Oxford, 10,000 daily commuter trips from outside of the ring road and 12,000 interwork journeys across the city each day. Adequate support for connectivity, and in particular measures that support sustainable transport and removing car trips from the road network, is therefore a key priority for all projects. Cycling is the key sustainable transport mode for staff and students accounting for 31% of all staff commutes across the city and for over 40% of commutes to the Science Area.

A Transport Assessment has been produced to determine existing travel patterns of the University staff and students and the current local environment and facilities available to the commuters. On this basis the Travel Plan highlights adapted measures to enhance the access to the site and promote sustainable modes of transports that are relevant to the site. These measures have been incorporated in the design.

As a result, the development will be designed to offer better access to sustainable means of transport for building users. To do so the design incorporate cyclist facilities, such as sufficient cycle storage and showers to promote the use of sustainable modes of transport and encourage safe and healthy cycling. The number of cycle spaces that will be provided has been calculated based on the occupancy of the building to ensure that everyone who would like to cycle to the building is given the opportunity. Cycle spaces will be secured, lite and covered to allow a comfortable use. Consideration will also be given to dock less bikes and lockers as the design progresses. The Transport Assessment and Travel Plan produced by Ramboll provide further details.

On the other hand, the design does not include any new parking spaces for the building users. This is aiming at discouraging people from relying on cars and therefore prioritise cycling, walking and the use of public transport.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.17 as well as with the Oxford Local Plan 2036, Policy RE7, M1, M2, M3, M5 and SP60*

### Energy

One key driver for the proposed development is to minimise operational energy consumption and determine accurate predictions of this energy consumption. The first step to achieve this has been to define users' needs and implement energy efficient solutions to respond to these needs. Special attention has been given to areas with specific requirements, such as the laboratory and IT spaces, which are also known to have high energy demand.

In addition, a CIBSE TM54 Analysis has been undertaken to inform the design. This will feed into the seasonal commissioning process for the building. Well managed seasonal commissioning is essential to ensure that this

process is repeated for the various modes in which the building will operate and therefore identify optimum settings for the systems. This ensures that the needs of the occupants are met while energy consumption is optimised.

The implementation of an appropriate metering strategy to effectively monitor utilities and heat consumption and performance is also a way of controlling the operational energy consumption. The meters will be linked to the University I.On metering system to facilitate the reading of the energy consumption and identify the building's energy consuming loads.

The proposed development is also required to achieve a 40% regulated carbon emission reduction through energy efficiency and on-site renewables. A Low Zero Carbon Technology Feasibility Study has therefore been completed to determine the most appropriate solution for the building. As a result of this study, heating and cooling will be provided to the entire building via a central air source heat pump (ASHP) system incorporating heat recovery. This will also serve the hot water systems via indirect cylinders. It is also proposed to install a 62.8kWp PV array on the roof of the office block (approx. 280m<sup>2</sup>), with an estimated annual electricity output of 56,500kWh. The Energy Strategy produced by Hoare Lea provides further details.

*This is in line with University of Oxford, Estates Services, Sustainability Design Guide, 2.19, 2.2, 2.11, 2.12 and 2.21, 2.24 as well as with the Oxford Local Plan 2036, Policy RE1.*

### Passive Design

Passive design measures are those which reduce the demand for energy within buildings, without consuming energy in the process. These are the most robust and effective measures for reducing CO<sub>2</sub> emissions as the performance of the solutions is unlikely to deteriorate significantly with time, or be subject to change. In this sense, it is possible to have confidence that the benefits these measures provide will continue at a similar level for the duration of their installation.

Factors such as the building massing, layout, orientation, fabric design, daylighting provision, ventilation strategies and thermal mass will significantly affect the heat gains and losses of the building. Simplifying architectural forms and early consideration of passive opportunities to design out risks can have a significant impact on the deliverability of stable and comfortable internal environments. To achieve this, the massing of the building achieves a good form factor, which is defined as the ratio between the building's external envelop area and the total floor area and is an indication of how efficient a building's form is. This translates in reduced energy loss through the fabric of the building.

Air tightness also plays a key role in promoting passive design. Air infiltration could significantly affect the heat losses of the building and could lead to occupant's discomfort due to cold drafts. Pursuing an airtight building would have benefits in terms of reducing space heating requirements and improving occupant's thermal comfort. An air tightness value of 2m<sup>3</sup>/h/m<sup>2</sup> @50Pa is being targeted for the project.

Therefore, passive design has been considered and the recommendations within the Design Guide have been incorporated in the design. This includes reducing East and West facing facades and optimising glazing for daylighting and view out opportunities, while limiting unwanted solar gains. In addition, a passive design analysis has been completed and the Passivhaus methodology is being followed, confirming a 5% CO<sub>2</sub> emissions reduction from passive design measures.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.5 and 2.5.*

### Passivhaus

Passivhaus modelling has been undertaken using the Passivhaus Planning Package (PHPP) software. The Passivhaus methodology can produce minimal (and predictable) operational energy consumption combined with greater occupant comfort. The building has therefore been designed in accordance with the following Passivhaus principles;

#### Offices

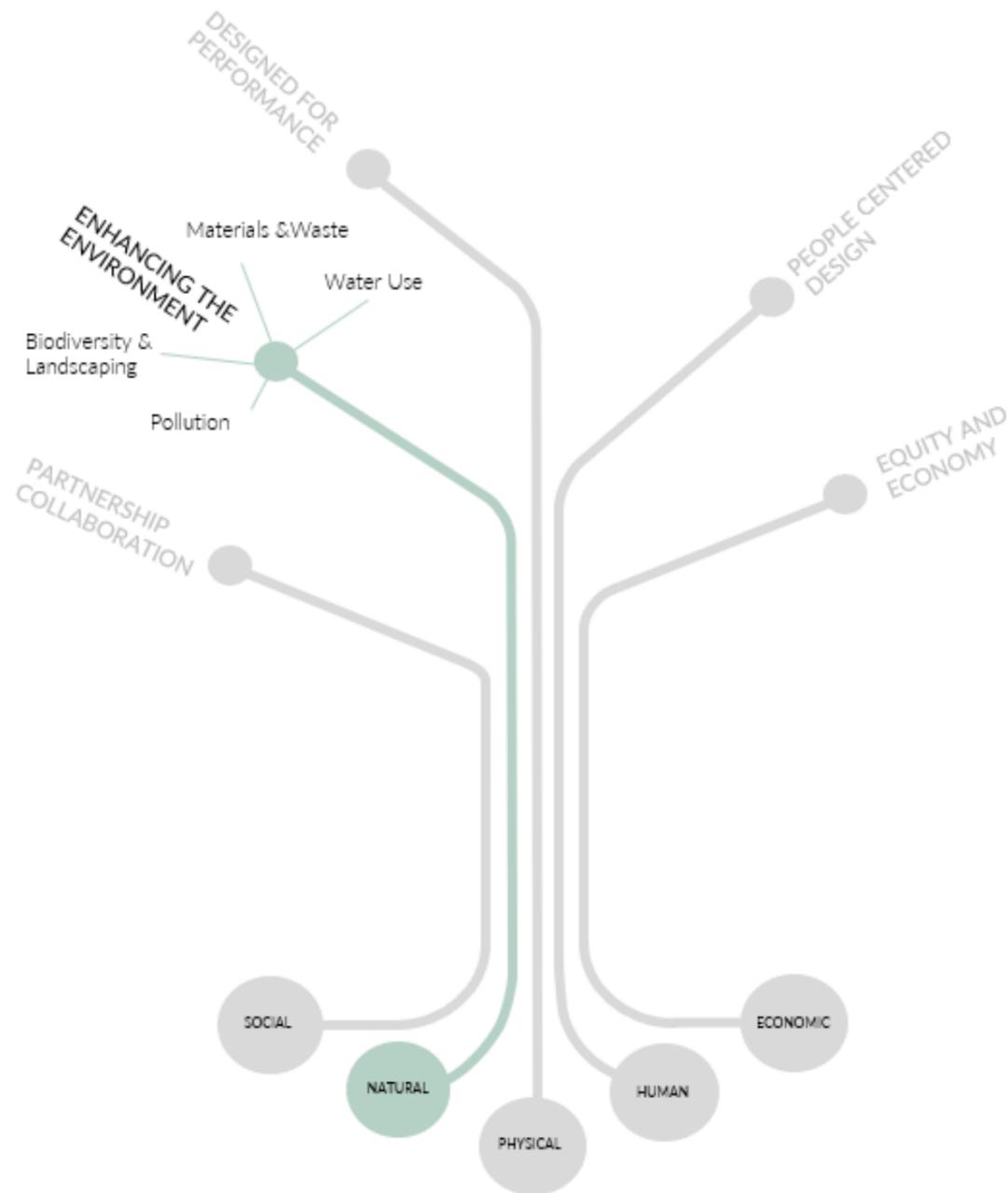
1. ≤14.5kWh/(m<sup>2</sup>a) heating demand
2. ≤5.6kWh/(m<sup>2</sup>a) cooling demand
3. ≤65kWh/(m<sup>2</sup>a) renewable primary energy (PER) demand

#### Laboratories

1. ≤14.4 kWh/(m<sup>2</sup>a) heating demand (to be agreed with the institute).
2. ≤59.4 kWh/(m<sup>2</sup>a) cooling demand.
3. ≤556 kWh/(m<sup>2</sup>a) renewable primary energy (PER) demand

*This is in line with University of Oxford, Estates Services, Sustainability Design Guide, 2.1.*

## 5.2 Enhancing the Environment



The **Enhancing the Environment** section aims at reducing the impact of the building on the environment. This is achieved by considering carefully the following aspects.

The potable water consumption of the Life and Mind Building will be kept to a minimum through the specification of water efficient fittings and through allowing water monitoring in order to identify and control the water consumption of the building.

During the construction phase, the procurement of sustainably sourced and recycled materials is promoted as well as the reduction of waste generated. Additionally, the specification of product and systems with low impact on pollution is encouraged. This will have a direct effect of the health of the building's occupants who will be given the opportunity to work and study in healthy internal environments with good indoor air quality.

Negative impact on surface water or groundwater quality is also controlled through the implementation of best practice pollution prevention policies and procedures

Finally, this section also focuses on the impact of the building on biodiversity and promotes the protection of ecology during the construction phase as well as the enhancement of the habitat and ecological value of the site.

### Materials and Waste

The Design Guide requires lifecycle impacts of the materials used in the building to be considered in all purchasing decisions. Construction projects require significant volume of materials which can cause potential impacts including deforestation, mineral extraction, manufacturing, transport and end-of-life disposal.

Therefore, measures will be incorporated into the construction process to ensure that materials are sourced from responsible sources. For example, the timber specification will call for FSC (Forest Stewardship Council) certified and/ or PEFC (Programme for the Endorsement of Forest Certification) certified timber products. Other materials will be procured from supplier holding and ISO certification or other ecolabels.

In addition, the use of recycled materials is promoted and elements of the existing building structure and surrounding external infrastructure will be retained and reused for the new development. The following targets have been identified in line with the Design Guide:

- The use of recycled aggregates from off-site sources will be promoted with an aspiration to use these for 60% of all aggregates consumed on site.
- The use of recycled or reclaimed timber will be promoted with an aspiration to use this for 90% of all timber used on site.
- The use of recycled insulation products will also be encouraged.

Waste disposal is also a substantial cost to the University, a key external reporting metric, and one of its greatest environmental impacts. Construction projects present a significant opportunity for waste minimisation, reuse and recycling if managed correctly. To achieve this, the selected contractor will be required to meet the Design Guide requirements for waste, which includes producing a Resource Management Plan, and diverting a minimum of 85% of non-hazardous waste from landfill. In addition, all items which could be reused will be listed in the Warp-it system and reviewed with the Uni Green Scheme.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.14 and 2.15 as well as with the Oxford Local Plan 2036, Policy RE1.*

### Water Use

The Design Guide and University Water Management Strategy both set out targets for reducing the University's water consumption. Water is a significant cost to departments and projects. Furthermore, with expected high population growth, unless adaptation interventions are made, there are expected to be water deficits across the UK by 2050. The building has therefore been designed to limit the use of potable water as far as possible, through the specification of sanitaryware and by specifying low flow rate products.

All indoor and outdoor planting will also be chosen to be suitable for the UK climate and therefore rely mainly on precipitation. This will allow the Life and Mind Building to go as far as possible towards minimising water use by designing out any need of irrigation.

In addition, to reduce the consumption of potable water in the new buildings through minimising wastage due to water leaks, a water meter will be incorporated on the main water supply of each building as well as to each water consuming plant or areas representing over 10% of the building's total water demand. These meters will be linked to the University's I.On monitoring system to allow accessible and easy water consumption reading. This will allow the building occupants to keep track of their consumption and therefore promote water saving behaviours.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.13 as well as with the Oxford Local Plan 2036, Policy RE1.*

### **Pollution**

The Design Guide requires that appropriate controls are put in place to prevent air and water pollution. Measures are therefore to be included in the design to limit the global warming potential (GWP) and greenhouse gas emissions from all insulation and refrigerants being used in the building. Measures include specifying insulation and systems which have a GWP lower than 5 and low greenhouse gas emissions. In addition, a refrigerant leak detection system is to be provided.

In order to maintain a good air quality and healthy internal environment for the building users, low VOC finishing products will be specified. In addition, the ventilation system will respond to carbon dioxide and volatile organic compound sensors to provide the required level of ventilation. The levels of ventilation will be adjusted as a response to the measured level to ensure a healthy environment is provided at any time.

Finally, to ensure no negative impact on surface water or groundwater quality, the contractor will be required to implement best practice pollution prevention policies and procedures on site in accordance with working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.16 as well as with the Oxford Local Plan 2036, Policy RE3, RE4.*

### **Biodiversity and Landscaping**

Enhancing habitats on University land is a key deliverable of the Environmental Sustainability policy and Biodiversity Strategy. As well as supporting increases in biodiversity, effective planting can reduce heat gain through shading and evapotranspiration, supporting both energy and comfort objectives. It can also assist with surface water management, improve occupant experience of a building, promote sustainable behaviours and reduce CO<sub>2</sub> and pollutants. Access to nature also has a demonstrated impact on the building occupants' physical and mental health as it relieves stress and mental fatigue, support focus and encourage overall mental well-being as well as reducing blood pressure.

Therefore, the proposed development will aim to enhance biodiversity and a planting/habitat strategy and a management plan will be developed with the Parks Department. This will contribute towards maintaining the landscaping and biodiversity throughout the lifecycle of the building. An ecologist will be appointed to ensure that a net biodiversity increase is delivered. To achieve this the design will incorporate a number of ecological features to the site such as ornamental shrub planting and seven different trees. Green roofs have been included in the scheme as well as vertical greening of the cycle shelter. The possibility to include bird/bat boxes as well as bee hotels will be reviewed further.

All planting will be suitable for the UK climate with a view on specification of planting that can cope with climate change and limit disease risk to assist with changes in future climate.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.18 as well as with the Oxford Local Plan 2036, Policy SP60*



Thermal comfort can affect mood, performance and productivity, however, a comfortable thermal environment that satisfies all occupants is challenging to achieve due to individual preferences and possible spatial and temporal variations in the thermal environment. Therefore, in order to promote occupant productivity and ensure a sufficient level of thermal comfort, there is a need for a holistic approach to thermal comfort that can satisfy the individual preferences of all building users. A temperature control strategy has been produced to ensure the occupants consider thermal comfort in the building. This has been assessed using PHPP and PMV/PPD comfort criteria. In addition, to enhance thermal comfort;

- A series of thermal zones will be provided across the building, some cooler than others
- The incorporation of a thermal gradient so that there is a 3-degree temperature difference across the building. This enables 'free address' so employees can select an environment that meets their preferences.

The ventilation will also be controlled through temperature and CO<sub>2</sub> sensors positioned in the occupied space in order to ensure a healthy and comfortable environment is provided at any time.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide 2.7, 2.8 and WELL v2 Pilot, Thermal Comfort Concept, T03 and T04*

#### Acoustic Performance

Noisy working environment can be a source of stress. Studies show that individuals exposed to external noise such as traffic noise have a higher risk for diabetes, stroke and heart attack. In addition, exposure to noise can lead to reduced reaction time and increased levels of annoyance.

Office noise can also lead to decreased productivity, especially in open-plan offices where aural distractions and interruptions from other employees are frequent. Additionally, studies show that exposure to noise generated within the building can lead to reduced concentration and mental arithmetic performance, and increased distraction due to reduced speech privacy. Incorporating strategic planning and mitigation required to prevent general issues of acoustical disturbance from both externally and internally generated noise can help improve occupant comfort and well-being.

To achieve this, zones have been defined and classified by level of sensitivity to noise. The design incorporates a combination of ambient noise, sound insulation and sound absorbing surface treatments to control the transmission of speech sounds. Open plan office spaces are shielded from the atrium to control noise ingress. Additionally, the acoustic design includes controlling the transmission of noise from equipment to other parts of the building.

The acoustic impact of the Life and Mind Building on its surrounding has also been considered to reduce the likelihood of nuisance noise and vibrations to neighbours and local wildlife.

*This is in line with the WELL v1 Standard, 74 Exterior noise intrusion and 75 Internally generated noise, as well as with the Oxford Local Plan 2036, Policy RE8*

#### Movement network and circulation

Physical inactivity and sedentariness have emerged as a primary focus of public health in recent years due to the host of negative health implications associated with both behaviours. Strategies that promote stair use and general movement throughout buildings have emerged as promising interventions that aim to encourage short-bouts of health-enhancing physical activity throughout the day.

The integration of interior pathways and stairs within the built environment can provide a convenient way to incorporate short periods of physical activity into the workday, thus reducing sedentary tendencies. The location of stairs in a building has an impact on their use. Evidence-based guidelines such as the Active Design Guidelines suggest that stairs should be proximate to main entry points and located physically and visibly before elevator banks. The building therefore promotes the use of stairs by having a feature staircase.

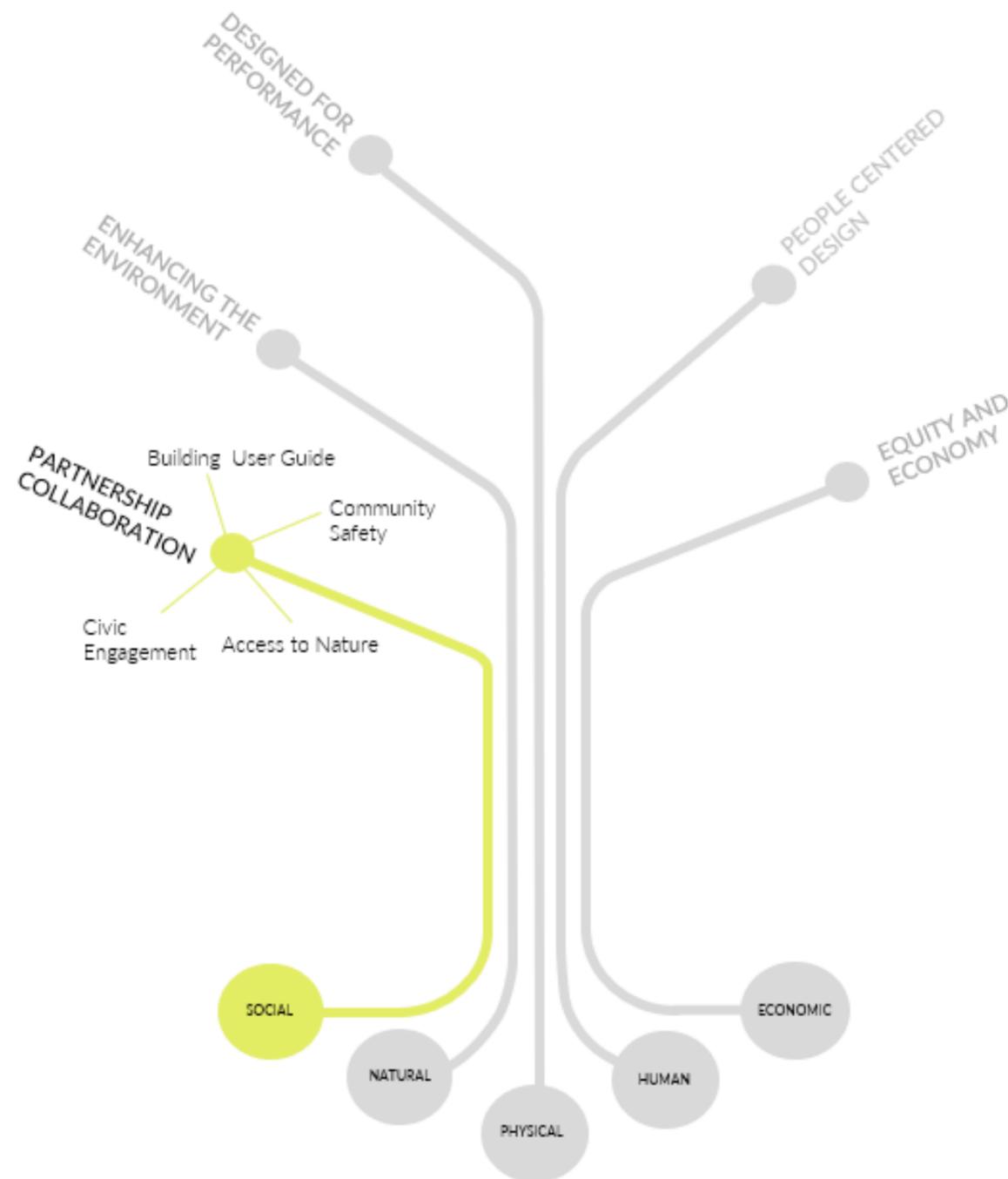
The building will also implement the following in all stairs/hallways to encourage their use;

1. Appropriate lighting
2. Views out
3. Natural design elements
4. Integrate point-of-use signage to encourage the use of stairs.

This aims at making the stairs more accessible and attractive as they will also constitute a place to unwind and enjoy contact with natural elements while moving across the building. This will encourage building users to use the stairs as opposed to lifts, especially for travelling a small number of floors therefore promoting intermittent bouts of physical activity throughout the day and reduce sedentary behaviour

*This is in line with WELL v2 Pilot, Movement Concept, V03, as well as with the Oxford Local Plan 2036, Policy RE5.*

## 5.4 Partnership Collaboration



The **Partnership and Collaboration** section aims at ensuring that the building integrates fully in its environment and adds value to the community in which it sits. To achieve this, the scale, the form and appearance of the surroundings has been considered in the design.

Additionally, the production and distribution of a Building User Guide will be required to assist the building users in familiarising with the building, its systems, and its surrounding. This will also allow the building's systems to perform at optimum levels and improve building occupants' comfort and satisfaction.

The implementation of effective measures that provide an appropriate level of security to the building users is encouraged as well as features of inclusive and accessible design that facilitate social cohesion. The design of the building's surrounding should also promote interaction and socialisation through provision of adequate facilities and outdoor furniture that meet functional needs. This will also be facilitated by the creation of opportunities for individuals to become actively involved in and connected to the surrounding community through engagement and volunteerism.

Finally, it has been demonstrated through several studies that biophilia has a great impact on people's physical and mental wellbeing, therefore, the inclusion of biophilic elements, indoors and outdoors, is highly supported.

### Building User Guide

Ensuring that the building users understand their building and its surroundings, and how to operate its systems is critical to improve their wellbeing and experience. This directly responds to the control strategy implemented for the heating, cooling and ventilation systems. On the other hand, this ensures the building's long-term energy performance.

To allow facilities managers and building users to better understand the functionality of the building and how to ensure it continues to perform at optimum levels, two Building User Guides will be produced by the Principal Contractor:

- one technical User Guide for the premises facilities managers
- one non-technical User Guide for distribution to the building occupiers.

*This is in line with The University Estates Sustainable Design Guide, Section 2.22*

### Community Safety and Inclusive design

Community safety is an important aspect of the quality of life of every community and its cohesion. It relates to crime and the fear of crime, and to the creation of safer and friendlier environments within communities, through good design and integration with the surroundings. To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site, the Life and Mind Building is designed to propose a safe and friendly environment to its users and the surrounding community, and all public realm will be compliant with the principles of 'Secured by design' including:

- providing for well-designed public spaces and access routes, which are integrated with their surroundings and respond to the needs of the community;
- maximising natural surveillance; and
- providing for appropriate lighting of public spaces and access routes.

In addition, a site-specific Security Risk Assessment has been undertaken and a number of measures to ensure a good level of security is achieved have been highlighted in the report. These measures have been included in the design.

The implementation of these security measures will contribute to providing a safe environment for the building users and surrounding community, therefore promoting social cohesion. With this in mind, and in order to create successful living and working environment as well as achieving high quality public spaces, the design allows for a mobile coffee unit on the plaza area, and the scheme will also be provided with benches and litter bins. These elements will be carefully chosen to provide durable street furniture that are appropriate to the local streetscape and character of the area and encourage social interaction.

Inclusive and flexible space design is also promoted to facilitate social cohesion. To do so, appropriate inclusive access plan policies at all levels of the development plan supported by a specific strategic policy targeting to meet the main principles of inclusive design and also include as a minimum the following measures:

- wheelchair and pushchair access,
- highly visible doors,
- non-slip mats and automatic doors

This will ensure that the Life and Mind Building is accessible to all

*This is in line with the Oxford Local Plan 2036, Policy RE7*

### Access to Nature

Access to nature plays a key role in helping relieve stress and mental fatigue, support focus and encourage overall mental well-being. Increasing nature contact at work may offer a simple, population-based approach to enhance workplace health promotion efforts. The building is therefore designed to provide:

- 1) direct connection to plants.
- 2) direct connection to light.
- 3) direct connection to nature scenes.
- 4) natural elements along common circulation routes, shared seating areas and rooms.

In addition, research has demonstrated that biophilia, or the idea that humans have an affinity towards the natural world, and access to natural elements, especially indoor planting, reduces blood pressure and the risk of depression. In line with this, indoor and outdoor biophilic measures have been considered thoroughly and planting will be incorporated in the Life and Mind Building.

To encourage the University staff and students to regularly connect with nature, outdoor area will be provided, that are an appropriate size and provide amenity for the building users during coffee or lunch breaks to gather, socialise and relax.

*This is in line with WELL v1 Standard, 88 Biophilia II – Quantitative and WELL v2 Pilot, Enhanced Access to Nature, M09*

### Civic Engagement

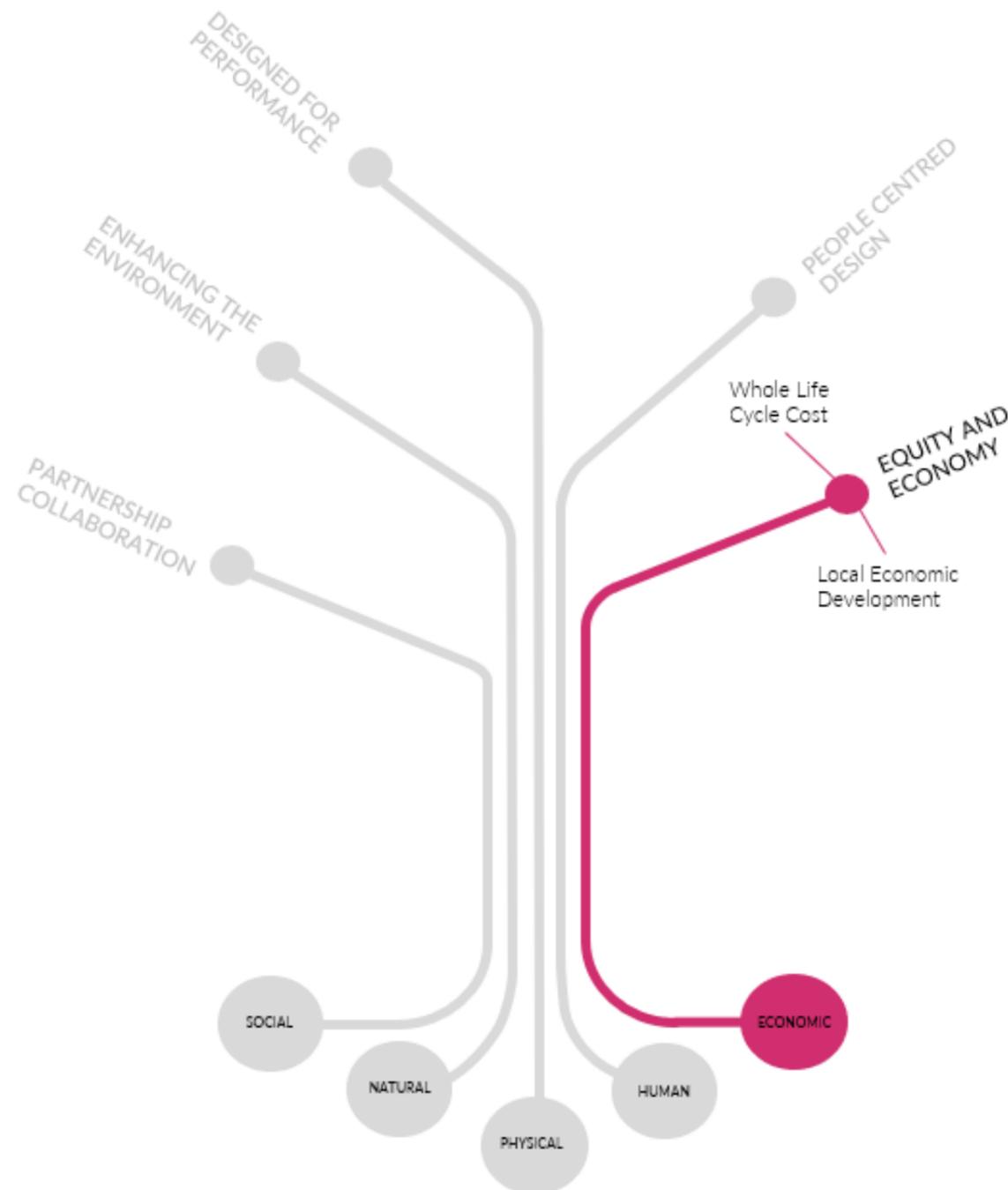
Providing opportunities for civic engagement can help create a positive, socially responsible work culture, enhance employee retention and organizational reputation and make a positive contribution to the local community. Opportunities will be created for the Life and Mind Building users to become actively involved in and connected to the surrounding community through engagement and volunteerism.

Therefore, at least two of the following requirements will be met;

- a. All eligible employees are given the option to take paid time off to participate in volunteer activities for at least 16 hours of paid time annually (separate from vacation, sick or other paid time off), with at least eight hours organized by the employer for a registered charity or non-profit.
- b. Projects provide a list of volunteer opportunities in the project area and community, with at least one opportunity per month that would be suitable for employees.
- c. Projects contribute annually to a registered charity of employee's choice to match employee donations, up to a maximum amount defined by the employer.

*This is in line with WELL v2 Pilot, Community Concept, C11*

## 5.5 Equity and Economy



This **Equity and Economy** theme focusses on managing the financial impact of the building on the University as well as the community in which it sits. Therefore, maintenance and replacements costs for the development are controlled and predicted through the implementation of a whole life cycle costing of the design options. This should inform the design to ensure that the long-term costs to the University in terms of maintenance, energy and potential rectification is understood and have low financial impact on the University.

In addition, the creation of jobs at all levels, including apprentices, is encouraged during the construction phase as well as fair treatment, provision of benefits and pay for all workers. Local procurement of services and materials is promoted. This will ensure that the building has a positive financial impact on the surrounding community, creating jobs and ensuring local firms regular incomes.

### Whole Life Cycle Cost

To deliver whole life value from the proposed development and promote economic sustainability, the development will undertake, where appropriate, whole life cycle costing of the design options which will then continue to be reviewed further throughout design stages. This will improve the design, specification, maintenance and operation of the Life and Mind Building

The whole life cost; that is a combination of the capital, maintenance and operational costs, informs the design decision and helps achieve the following:

- Lowest possible building energy consumption over the operational life span of the building (compared to other options/alternatives analysed).
- Significant reduction in maintenance requirement/frequency.
- Prolonged replacement intervals of services infrastructure/systems or building fabric.
- Dismantling and recycling or reuse of building components.

*This is in line with the University of Oxford, Estates Services, Sustainability Design Guide, 2.20.*

### Local Economic Development

Where possible, local suppliers and labourers will be considered during the construction process and local materials will be used for the works where appropriate. A proportion of at least 25% of the procurement budget for the building should be dedicated to local suppliers. This will ensure that the development has a positive impact on the local economy, ensuring regular work and incomes to local services and materials providers.

The proposed development seeks to generate fair and sustained economic growth for the local area. To achieve this, the main contractor will be required to implement the following measures:

- Ensure that a minimum of 5% of the overall construction workforce is at apprentice or trainee level.
- Ensure that a minimum of 5 full time jobs are created during the construction.
- Pay all staff at or above the national Living Wage.

All University employees will be required to undertake anti-bribery and anti-corruption training. In addition, the University will provide standard benefits for its employees, such as the cycle to work scheme or childcare vouchers, and a provisional target of 50% set for all employees. These measures will support the financial health of the Life and Mind Building users which is expected to have a wider impact of the local economy.

*This is in line with GRI CRESS, 2011 (LA3), GRI Standards 204-1 Proportion of spending on local suppliers and ISO 26000 Guidance on social responsibility: Fair operating practices core subject; GRI 205-1, 206-1.*

## 6. Conclusion

This report presents the Sustainability Strategy for the proposed development of the Life and Mind Building which has been informed by the University of Oxford Sustainability Design Guide, Local Planning Policy and additional sustainability frameworks, such as WELL and BREEAM, as well as meetings with the design team throughout RIBA Stages 2 and 3.

It summarises the core objectives to create a broad and meaningful contribution to a sustainable built environment in Oxford while enhancing the building users' experience of the building, its environment and the surrounding community.

To guide the sustainable design of the building, a sustainability framework has been utilised. The framework is articulated around the Five Capitals of Sustainability to provide a holistic interdisciplinary approach. Some key performance indices are summarised below. For a summary of all the sustainability measures included in this Strategy, please refer to Appendix 1:

### Social Capital - Partnership Collaboration:

- Produce user guides for all occupant facing systems and controls.
- Provide access to nature both within and outside of the building.
- Promoting community safety.

### Natural Capital - Enhancing the Environment:

- 100% Timber to be responsibly sourced and FSC certified/equivalent.
- Specifying low flow sanitaryware.
- Enhancing the Site biodiversity.

### Physical Capital - Designed for Performance:

- Implement the Passivhaus Principles.
- Encourage the use of cyclist facilities through the inclusion of cycle storage and showers.
- Incorporate renewable technologies on Site and complete a CIBSE TM54 analysis.

### Human Capital - People centred design:

- Enhanced access to daylight for building users and views out from workstations.
- Complete a thermal comfort analysis and implement a thermal comfort control strategy.
- Promote visible stairs and encourage the use of the stairs.

### Economic Capital - Equity and Economy:

- Source local materials and suppliers where possible.
- Ensure the contractor utilises apprentices during construction.
- Consider whole life cycle cost analyses.

Kindly refer to Appendix 1 for a summary of all the sustainability measures included in this Strategy

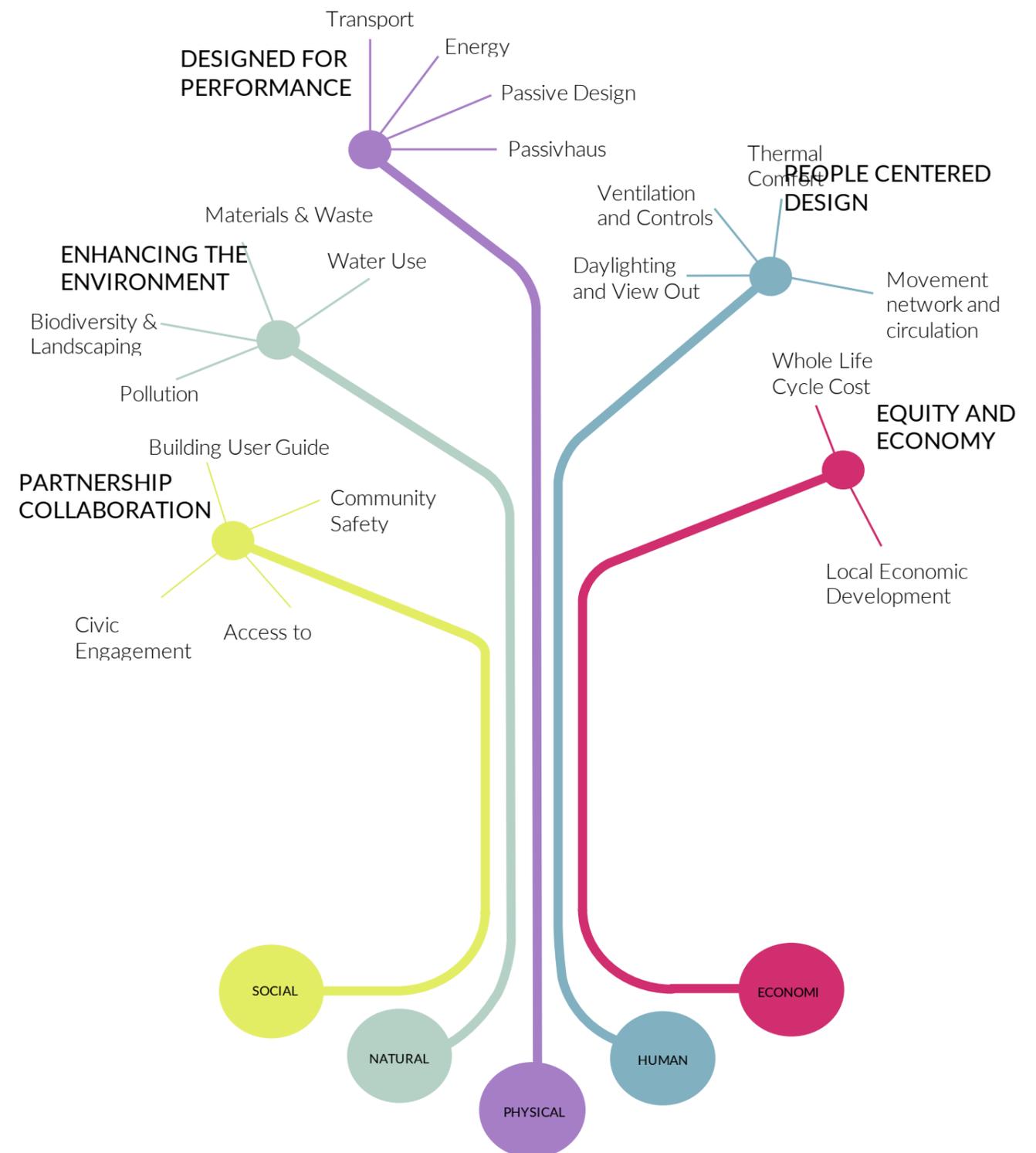


Figure 7: Overall five capitals concept, themes and objectives.

## Appendix 1: Sustainability Charter

# University of Oxford

## Life and Mind Building, Sustainability Charter

A **holistic, interdisciplinary approach** has been adopted to define and communicate the sustainability strategy for the development. The proposed framework spans the whole project lifecycle with the project legacy in mind from day one. the goal of the framework is to realise a shift from “sustainability on paper” to “sustainability in practice”; hence, the focus is on creating value from sustainable development in real terms and tangible benefits across **five key defined factors/aspects** as shown below. The Life and Mind Building responds to each of these aspects of sustainability to create a broad and meaningful contribution to a sustainable built environment in Oxford.

This charter should be read in conjunction with the other elements of the planning submission to gain a full picture of the project's integrated response to sustainability

<b>Enhancing the Environment</b>	
<b>Ref No.</b>	<b>Benefit</b>
NA01	<b>Water Consumption</b> Reduce the consumption of potable water in new buildings through specification of the sanitaryware
NA02	<b>Water Monitoring and Leak Detection</b> Reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.
NA03	<b>Materials</b> Recognise and encourage measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.
NA04	<b>Waste</b> Reduce construction waste by encouraging the reuse, recovery and best practice management practices to minimise waste going to landfill.
NA05	<b>Pollution</b> Prevent pollution through the specification of insulants and refrigerants.
NA06	<b>Biodiversity and Landscaping</b> Protect and enhance habitat on Site.
NA07	<b>Trees</b> Protect and enhance trees on Site.
NA08	<b>Efficient Use of Land &amp; Density</b> Ensure an efficient and appropriate use of land and utilise brownfield land over greenfield land.
NA10	<b>Water Quality</b> Ensure no negative impact on surface water or groundwater quality.
NA11	<b>Flooding</b> Minimise the risk and impact of localised flooding on-site and off-site.

<b>People Centred Design</b>	
<b>Ref No.</b>	<b>Benefit</b>
HU01	<b>Thermal Comfort</b> Provide a comfortable thermal environment for staff and students.
HU02	<b>Ventilation and Cooling</b> Provide adequate and controllable ventilation to provide comfortable and productive University work spaces.
HU03	<b>Controls</b> Enhance thermal comfort of people in building through provision of thermal zoning in each space.

<b>HU04</b>	<b>Daylighting</b> Ensure that occupants are provided with appropriate daylighting.
<b>HU05</b>	<b>View-Out</b> Ensure that occupants are provided with access to daylight and views.
<b>HU06</b>	<b>Entrance Design</b> Enhance the experience and comfort of all building users.
<b>HU07</b>	<b>Atmospheric Noise Emissions</b> Reduce the likelihood of nuisance noise and vibrations to neighbours and local wildlife.
<b>HU08</b>	<b>Internal Acoustics Strategy</b> Incorporate strategic planning and mitigation required to prevent general issues of acoustical disturbance from both externally and internally generated noise.
<b>HU09</b>	<b>Sound masking</b> Increase the acoustical privacy of the building.
<b>HU10</b>	<b>Air Quality</b> Encourage healthy internal environments with good indoor air quality.
<b>HU11</b>	<b>Air quality monitoring and awareness</b> Monitor indoor air quality issues
<b>HU12</b>	<b>Portion sizes</b> Promote healthy portion sizes and reduce unintended overconsumption.
<b>HU13</b>	<b>Visual and physical ergonomics</b> Reduce physical strain and injury risk.
<b>HU14</b>	<b>Drinking Water Promotion</b> Provide optimal opportunities for drinking water.
<b>HU15</b>	<b>Health, wellbeing and Health Impact Assessments</b> Promote health and wellbeing of the building users
<b>HU16</b>	<b>Movement network and circulation</b> Promote daily physical activity and movement through the design of the circulation network.

## Partnership and Collaboration

Ref No.	Benefit
<b>SO01</b>	<b>Building User Guide</b> Ensure the building occupants have a full understanding of the buildings design intent.
<b>SO02</b>	<b>Inclusive Design</b> Create an inclusive and flexible space that facilitates social cohesion.
<b>SO03</b>	<b>Creating Successful New Places</b> Ensure the design creates a successful living and working environment and achieve high quality public spaces.
<b>SO04</b>	<b>Designing Development to Relate to Its Context</b> New development should relate to the siting, scale, form and appearance of the surrounding development.
<b>SO05</b>	<b>Siting of Development to meet functional needs</b> Ensure the development is designed appropriately.
<b>SO06</b>	<b>Civic engagement</b> Encourage the creation of opportunities for individuals to become actively involved in and connected to the surrounding community through engagement and volunteerism.
<b>SO07</b>	<b>Community Safety</b> Encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.
<b>SO08</b>	<b>Biophilic Design</b> Promote connection with nature and continuum between public realm and individual blocks.
<b>SO09</b>	<b>Provide Enhanced Access to Nature</b> Support access to nature by incorporating access elements.
<b>SO10</b>	<b>Stress support</b> Identify and manage areas of workplace stress and provide programs that support stress management.

## Designed for Performance

Ref No.	Benefit
PH01	<b>Passivhaus</b> Deliver minimal (and predictable) operational energy consumption combined with greater occupant comfort.
PH02	<b>Passive Design</b> Create a stable and comfortable internal environment.
PH03	<b>Energy Benchmarking</b> Minimise operational energy consumption.
PH04	<b>Metering</b> Effectively monitor utilities and heat consumption and performance.
PH05	<b>Renewables</b> Implement LZC technologies where appropriate.
PH06	<b>Air Tightness (non certified projects)</b> Provide a productive, cost effective and robust University workplace.
PH07	<b>Cyclist Facilities</b> Encourage building users to cycle.
PH08	<b>IT Spaces</b> Minimise the energy consumption of IT spaces.
PH09	<b>Commissioning and Seasonal Commissioning</b> Encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.
PH10	<b>Laboratories</b> Consider and implement measures for the energy efficient design and operation of laboratories.
PH11	<b>Energy Efficiency</b> Improve the energy efficiency of a scheme will reduce the energy requirements and thus the fuel costs of operation.
PH12	<b>Light Spillage</b> Provide appropriate lighting to the Site.
PH13	<b>Transport Assessment</b> Locate, design and implement measures to promote access to sustainable modes of transport. <b>Travel Plan</b> Put in place appropriate measures to enhance the accessibility of the development.
PH14	<b>Prioritising walking, cycling and public transport</b> Minimise the need to travel and prioritise access by walking, cycling and public transport.
PH15	<b>Motor vehicle parking</b> Encourage the use of alternative transport modes, other than car travel.
PH16	<b>Provision of electric charging points</b> Encourage the use of electric car changing points.
PH17	<b>Supporting access to new development</b> Promote accessibility and encourage sustainable transport options.

## Equity and Economy

Ref No.	Benefit
EC01	<b>Lifecycle Cost and Value</b> Ensure that the long term costs to the University in terms of maintenance, energy and potential rectification is understood at the point of decision making.
EC02	<b>Apprentices</b> Promote a variety of workers.
EC03	<b>Job Creation</b> Promote the economy.
EC04	<b>Wage</b> Promote the economic success of the workers.

<b>EC05</b>	<b>Benefits</b> Promote employee benefits.
<b>EC06</b>	<b>Local Suppliers</b> Promote locally sourced materials.
<b>EC07</b>	<b>Local material sourcing</b> Sourcing local materials and produce.
<b>EC08</b>	<b>Procurement Budget</b> Promote a proportion of the procurement budget on local suppliers.
<b>EC09</b>	<b>Anti-corruption &amp; anti-bribery</b> Implement an anti-bribery policy if there is a risk that someone who works for you or on your behalf might be exposed to bribery.



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