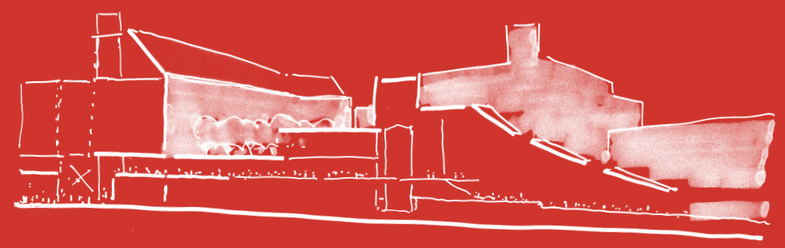
The British Library Extension
January 2022

Sustainability Statement



The British Library and SMBL Developments Ltd

British Library Extension

Sustainability Statement

ARP-REP-227

0.5 | November 2021

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 249622

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Contents

1 Introduction

Ove Arup and Partners Limited ('Arup') has been commissioned by the British Library and SMBL Developments Ltd (the 'Applicant') to produce the Sustainability Statement for the British Library Extension, a proposed mixed-use development on a site bound by Midland Road, Ossulston Street and Dangoor Walk, north of the existing British library in Somers Town, Camden.

This Sustainability Statement has been produced to support the planning application for the Proposed Development.

The report outlines how the British Library Extension will respond to national, regional and local planning policy related to sustainable design and construction, including the London Plan (2021), National Planning Policy Framework (2021), Camden Local Plan (2017) and associated Camden Planning Guidance (CPG)s.

The sustainability performance of the British Library Extension will be benchmarked using the Building Research Establishment Environmental Assessment Method (BREEAM) New Construction 2018. The bespoke BREEAM pre-assessment for the Proposed Development is included in Appendix A as part of this Sustainability Statement.

The Sustainability Statement should be read in conjunction with all other planning documents.

1.1 The Site

The Proposed Development is located within the Central Activities Zone and the emerging Knowledge Quarter Innovation District. It is bound by the existing British Library to the south, Midland Road and Ossulston Street in the east and west respectively, and Dangoor Walk to the north. This area is hereafter referred to as the 'Site'.

The Proposed Development would involve extending the northern aspect of the existing British Library to provide library accommodation; commercial space designed to cater for knowledge quarter uses (including life sciences, cultural, scientific and heritage collections and data sciences); retail space; and the Crossrail 2 works at basement level.

The Proposed Development would provide a gross internal area (GIA) of up to approximately 97,000m2. The new library accommodation and the Alan Turing Institute and public circulation, including a public foyer, would be provided at approximately 10,000m2 in addition to a replaced BLCC and BL tank farm and other library infrastructure. Approximately 76,000m2 (GIA) would be provided for commercial space together with retail.

Infrastructure related to Crossrail 2 would be provided at approximately 4,300m2 (GIA), plus a shaft descending between basement levels 2-7. With respect to Crossrail 2, the Proposed Development would provide the main civils and structural elements of the Euston St Pancras Station eastern shaft and passenger subway tunnel. There will be adaptions to existing library operational areas, including the loading bay.

The Proposed Development would be 'car lite' with five wheelchair-accessible car parking spaces, four operational spaces for maintenance vehicles and a single minibus bay. The BLCC and the Story Garden are located within the Site. In order to facilitate the construction of the Proposed Development, the existing BLCC would need to be demolished, and the functions of the BLCC will be relocated within the new development. Additionally, a new community garden would be created within the Site to replace the existing Story Garden. Further information on the demolition of the BLCC and Story Garden can be found within the Whole Life Cycle Assessment submitted as part of this application.

1.2 Sustainability Strategy

The sustainability strategy for the Proposed Development has shaped the proposal throughout the design process to help it achieve the highest levels of performance. In addition to meeting the requirements of the London Plan, the Camden Local Plan and targeting BREEAM Excellent with an aspiration for Outstanding, the project has set further ambitious targets.

The United Nations Sustainable Development Goals (UNSDGs) have been used as a framework to identify the areas where the project could contribute towards sustainable outcomes, both in terms of impact of the intervention, and in terms of the level of influence that the project team could potentially have on the outcome.

Targets were developed during a workshop attended by representatives from the client teams, the architects, engineers, and the quantity surveyors. As shown in Figure 1 the UNSDGs were plotted according to their relevance to the project, both in terms of their influence and the positive impact of achieving the goals.

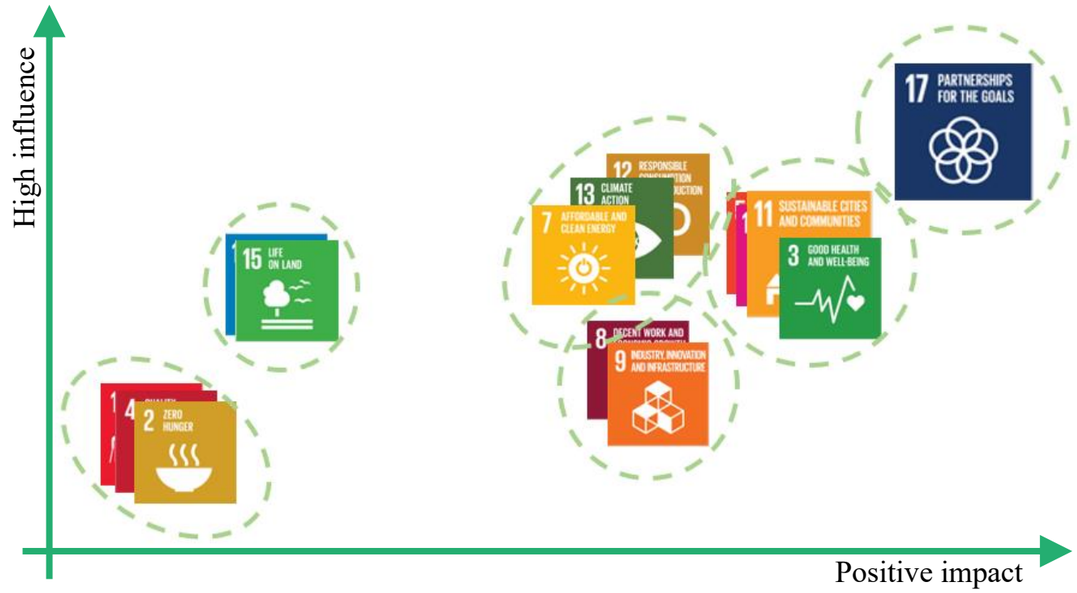


Figure 1 Graph showing the UNSDG influence

From the workshop, a number of key UNSDG goals that will inform the development approach were identified. These were as follows:

Goal 17: Revitalize the global partnership for sustainable development

Building projects comprise many organisations, the closer partnership of which can often provide more innovative and efficient sustainable solutions.

Goal 3: Ensure healthy lives and promote well-being for all at all ages

People spend around 90% of their time indoors. Buildings have a significant role to play in providing an environment that reduces harmful chemicals and encourages physical activity and mental health.

Goal 11: Make cities inclusive, safe, resilient and sustainable

Buildings can contribute to sustainable cities by reducing their impact on infrastructure and encouraging sustainable behaviour. They also play a role in shaping communities. Both cities and communities need to be encouraged - they are not synonymous even in built-up areas.

Goal 10: Reduce inequality within and among countries

Inequalities exist in response to many variables such as gender, race, ability and social class. Buildings can unintentionally contribute to these inequalities (or at least their perceptions). By focussing on a very diverse range of stakeholders, buildings can be made more inclusive. Diversity could also be positively embraced within the project team. Finally, the construction industry provides valuable opportunities for employment.

Goal 5: Achieve gender equality and empower all women and girls

The design of buildings helps shape the culture of our society. Designers should be aware of the different needs of genders at each stage of life. Gender equality should consider those who do not identify with binary gender categories. The construction industry also provides an opportunity to encourage diversity in the sector.

Goal 12: Ensure sustainable consumption and production patterns

The construction industry is one of the greatest consumers of materials. The old model of 'take-make-discard' is no longer viable. Materials need to be considered in a 'cradle-to-cradle' way and the recovery of materials in a way that retains their value should be prioritised.

From the workshop, six key clusters emerged, defining the main areas of intervention and target setting. These are as follows:

The above six clusters are incorporated into the sustainability strategy, the circular economy statement, and are referenced in this document where relevant. They are also tracked and managed through the project's BREEAM assessment.

These six project-specific clusters guide the design and take this Sustainability Statement above and beyond the typical scope, representative of the project itself which holds sustainability strategies at the forefront of design decisions. This is not only related to sustainability in environmental terms, but also to economic and social aspects of sustainability. Key sustainable strategies include:

- Whole-Life Carbon: With ambitious circular economy and embodied carbon and waste reduction aspirations, as well as an energy strategy that aims to minimise operational carbon emissions by addressing critical areas such as building orientation, site layout, microclimate impacts, limits to solar gains, amongst others.

- Focus on Community, including cultural and learning programs, security and employment, as well as the Health and wellbeing of users, addressing areas such as public realm, lighting and air quality.
- The strategy to Climate change adaptation includes the management of flood risk through Sustainable Drainage Systems, a landscape strategy that promotes current and future biodiversity, amongst others, as part of the project's Adaptation and Resilience review.

2 Planning Context

This Statement has been prepared in response to the planning requirements and guidelines outlined in the following documents:

- Camden Local Plan (Camden Council, 2017, 'current CLP')
- Camden Planning Guidance (CPGs): Air Quality (January 2021), Biodiversity (March 2018), Energy efficiency and adaptation (January 2021), Planning for health and wellbeing (January 2021), Transport (January 2021), Trees (March 2021), and Water and Flooding (March 2019).
- The London Plan (Greater London Authority (GLA), March 2021)
- Sustainable Design and Construction Supplementary Planning Guidance (GLA, April 2014)
- National Planning Policy Framework (2021) and National Planning practice guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. It provides guidance for local planning authorities drawing up local plans and is a material consideration for those determining applications.

The NPPF sets out a presumption in favour of sustainable development, and the need to support sustainable economic growth through the planning system. It identifies three overarching objectives as follows:

- **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
- **a social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- **an environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Planning plays a key role in shaping places to secure meaningful reductions in greenhouse gas emissions, providing resilience to the impacts of climate change and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.

2.2 The London Plan (2021)

Greater London Authority (GLA) new London Plan, published on March 2021, sets out a new way of delivering 'Good Growth' which focuses on sustainable development and is defined as follows:

'Good Growth is about working to re-balance development in London towards more genuinely affordable homes for working Londoners to buy and rent. And it's about delivering a more socially integrated and sustainable city, where people have more of a say and growth brings the best out of existing places while providing new opportunities to communities.'

The new London Plan Chapter 9: Sustainable Infrastructure, sets out the new targets for sustainable design. It includes the following strategic policies that are relevant for this development's sustainable building design:

- Policy SI1 Improving air quality
- Policy SI2 Minimising greenhouse gas emissions
- Policy SI3 Energy Infrastructure
- Policy SI4 Managing heat risk
- Policy SI5 Water infrastructure
- Policy SI6 Digital connectivity infrastructure
- Policy SI7 Reducing waste and supporting the circular economy
- Policy SI8 Waste capacity and net waste self sufficiency
- Policy SI9 Safeguarded waste sites
- Policy SI10 Aggregates
- Policy SI12 Flood risk management
- Policy SI13 Sustainable drainage

Other policies from the London Plan contained in Chapter 3 Design, Chapter 5 Social Infrastructure, Chapter 6 Economy, Chapter 8 Green Infrastructure and Natural Environment or Chapter 10 Transport are also relevant to this project.

2.3 Draft Camden Site Allocations Local Plan

The Site Allocations Local Plan identifies a range of suitable locations for housing, employment and other uses and sets out the Council's preferred approach to their redevelopment. The Site Allocations Local Plan builds on the policies in the adopted Local Plan by allocating key areas of change and individual sites and setting out specific policies for how they should be redeveloped.

- Policy KQ1 – Supporting growth in the Knowledge Quarter Innovation District
- Policy IDS19 – Land to the rear of the British Library

2.4 Camden Local Plan (2017)

The Camden Local Plan is a key document within Camden's development plan, which is the name given to the group of documents that set out the Council's planning policies. For the purposes of this document, the core document is the *Local Plan* updated in January 2017.

The Local Plan includes a number of policies relevant to sustainability, as follows:

- Policy C1 Health and wellbeing
- Policy A2 Open space. New and enhanced open space
- Policy A3 Biodiversity
- Policy D1 Design
- Policy D2 Heritage
- Policy CC1 Climate change mitigation
- Policy CC2 Adapting to climate change
- Policy CC3 Water and flooding
- Policy CC4 Air quality
- Policy CC5 Waste
- Policy T1 Prioritising walking, cycling and public transport
- Policy T2 Parking and car-free development
- Policy T3 Transport infrastructure

2.5 Pre-Application Meetings

2.5.1 Social Value

A meeting with Camden Planning Department on the social value approach to the proposed British Library Extension was held on 9th September 2020. The session was an overview of the current range of thinking for delivering wider social value from the proposal. The presentation predominantly focussed on Social and Economic aspects of the paper, to respond to the officers who were present at the session.

The following aspects were discussed:

- Environmental
- Social
- Health and Wellbeing
- Economic
- Education

Feedback was provided by Camden Planning Department in a letter dated 12th October 2020.

Key comments from Camden planning team that have been taken into consideration are as follows:

- *We would like to understand which targets in the UNSDG will be informing the development approach, and how those will be measured going forward.*
- *We are very supportive of taking a whole-of-life carbon approach to the scheme and would like to see the early results of those considerations soon.*
- *We don't believe BREEAM 'Excellent' is a sufficiently ambitious target for a scheme such as this, which should be aiming for exemplary environmental performance.*
- *We encourage the team to respond to Camden Climate Action Plan which was approved in the summer of 2020 and to engage with Camden's Climate Change Alliance.*
- *We will expect to see the site support 'healthy active lives' by design through promotion of walking and cycling, but we would also like to understand how the development could contribute to other aspects of health-related concerns.*
- *Global Generation's support for local growing initiatives clearly responds to a local need and can provide local health benefits. We would like to understand how the development can contribute to maintaining the legacy of this work in perpetuity.*
- *We would like to see how the whole of the public realm will respond to the Healthy Streets indicators and in particular consideration of how the site could play a role as a link in a chain of other sites of amenity and health value such as Camley Street Nature Park, Regents Canal, Regents Park etc).*
- *We would like to understand more about the strategy for supporting start-ups and microbusinesses and the concept of the tech incubator.*
- *We would like to see more ambition in the commitments to STEAM and how these can start to be delivered from an early stage.*
- *It is strongly recommended to articulate ideas and commitments to wider social, economic and environmental outcomes in a Social Value Framework.*

2.5.2 Sustainability

A meeting with Camden Planning Department on the sustainability approach to the proposed British Library Extension was held in December 2020.

The following aspects were discussed:

- Sustainability Aspirations
- Air Quality
- Sustainable Urban Drainage Systems

Comments on each of the above topics were received on 13th January 2021 and have been taken into account in the ongoing design.

3 Design Response

The following section sets out the approach taken for the British Library Extension to address relevant planning policies.

3.1 Growth and spatial strategy

3.1.1 Delivery and location of growth

Camden Local Plan
Policy G1 Delivery and location of growth

London Plan
Policy GG2 Making the best use of land
Policy GG6 Increasing efficiency and resilience
Policy SD10 Strategic and local regeneration
Policy D1 London's form, character and capacity for growth
Policy D2 Infrastructure requirements for sustainable densities
Policy D3 Optimising site capacity through the design-led approach

Delivering growth

The British Library is located in the London Borough of Camden. The development site is bounded by Midland Road to the east, Euston Road to the south, Ossulston Street to the west, and Dangoor Walk to the north.

This central London site is currently under-used and the project represents a densification of brownfield site usage, creating new public facilities and incorporating major future transport infrastructure which is coordinated into the development instead of being provided in a separate building.

The British Library Extension will form an addition to the Knowledge Quarter, a cluster of academic, cultural, research, scientific and media organisations large and small, all within a one-mile radius of King's Cross, in Central London. The proposal will deliver a significant amount of space suitable for Knowledge Quarter uses.

The project generates significant new areas of public space, including community-led landscape urban greening which will contribute significantly to the biodiversity of the area. The new development will secure high-quality, successful, attractive, vibrant and safe places with a mix of uses which:

- Support and increase the borough's contribution to London's role as a world business, commercial and cultural centre
- Integrate with surrounding areas and communities, economically, socially and physically
- Create significant job and training opportunities for local people and contribute significantly to the regeneration of neighbouring communities
- Maximise opportunities for walking, cycling and the use of public transport, to and through the area
- Improve community safety and reduce opportunities for crime and antisocial behaviour
- Protect and enhance features and assets of historic and conservation importance

There are a number of site constraints for the new British Library Extension which require consideration. These are as follows:

- North: Francis Crick Institute, with high sensitivity to noise and vibration.
- East: Grade 1 Listed St Pancras Station
- South: Grade 1 Listed British Library
- West: Grad II Listed Levita House residential, with sensitivity to construction activities and daylight/sunlight considerations
- Below: Crossrail 2 safeguarding exclusion zone & infrastructure to be incorporated into the scheme+ Existing live LUL tunnels
- Above: Protected views (e.g. over Barlow Shed) restricting planning envelope

Therefore, this site integrates multiple uses within a very constrained site, facilitating the delivery of a library, Crossrail 2 and public realm generation, each bringing health, wellbeing and biodiversity benefits. Overall this use intensity generates a much lower environmental and carbon impact than providing each function individually.

3.2 Community, health and wellbeing

3.2.1 Health and wellbeing

Camden Local Plan
Policy C1 Health and wellbeing

Camden Planning Guidance
Planning for health and wellbeing CPG January 2021

London Plan
Policy GG3 Creating a healthy city
Policy S2 Health and social care facilities

Health and wellbeing

The development will achieve thermal comfort, visual comfort and acoustic performance criteria as set out in BREEAM to achieve a minimum certification of Excellent. The project team will also complete an assessment of all mixed mode areas in accordance with CIBSE TM52 as part of the BREEAM assessment and demonstrate that the risk of overheating has

been mitigated. A pre-planning assessment of overheating risk has been undertaken and conclusions have been provided in the Energy Strategy submitted as part of this application.

A Health Impact Assessment of the British Library extension has been undertaken by Arup. The findings of the assessment aim to identify the health and wellbeing effects of the Proposed Development on the population around the Site.

The assessment determines impact according to the following:

- Positive, negative, or negligible impact
- Temporary or permanent impact
- Mild, moderate or major impact

Table 1 shows a summary of the assessed impact of the Proposed Development, both during construction and operation.

Table 1 Health Impact Assessment

Health determinant	**Impact on determinant at population level**
Construction	
Access to open space and nature	Negative, Temporary, Moderate
Air quality (AQ), noise and neighbourhood amenity (NA)	**AQ:** Negligible **Noise**: Negative, Temporary, Moderate **NA**: Negative, Temporary, Minor
Access to work and training	Positive, Temporary, Minor
Social Cohesion and Lifetime Neighbourhoods	Negative, Temporary, Moderate
Operation	
Access to open space and nature	Positive, Permanent, Minor/Moderate
Accessibility and active travel	Positive, Permanent, Minor/Moderate
Crime reduction and community safety	Negligible
Access to work and training	Positive, Permanent, Minor
Social Cohesion and Lifetime Neighbourhoods	Positive, Permanent, Minor

From the health impact assessment, the following recommendations are made:

Construction

- Before the permanent relocation of the Story Garden for construction of the Proposed Development occurs, it is recommended that alternative options for the temporary provision of open space and community garden are identified, preferably in communication with the local community. Alternative options should be well communicated with the wider community including where they can be found and how they can be accessed. This will improve the access to open space and nature and social cohesion.
- It is recommended that the Neighbours Advisory Panel (NAP) will be established, as planned, to represent community interests during construction. Additionally, the Community Engagement Team should continue developing relationships with local communities to help co-curate the Proposed Development that represented the views of the community.
- It is recommended that mitigation measures currently under discussion to minimise impact from noise and vibration should be confirmed as soon as possible to ensure that appropriate measures are in place once construction begins and impacts are mitigated as far as practicable.

Operation

- Other sustainable design aspirations include targeting BREEAM “Excellent” with aspirations to meet “Outstanding” and targeting WELL Building Institute Standard “Gold” rating throughout the development. It is recommended that these initiatives are further explored and implemented, if practicable.
- The inclusion of a community garden and an open learning room will offer many physical and mental health benefits to local residents as they will have access to areas for social interaction and physical activity. To ensure that the space is used, it is recommended that the Council explores ways to promote and incentivise the use of these areas.
- It is recommended that public realm and building design aspirations currently under discussion are developed by engaging with key stakeholders including staff and groups with protected characteristics (age, disability, gender reassignment, marriage, civil partnership, maternity and pregnancy, race, religion or belief, sex and sexual orientation). This will contribute to the maximisation of positive impacts for vulnerable groups.
- It is recommended that the current aspiration for most of the ground floor for the site extension to be accessible both externally and internally to the public is implemented. This will improve accessibility and attract passers-by.

The Health Impact Assessment submitted as part of this application details how these recommendations have been addressed in the proposed design.

3.2.2 Community, cultural and leisure facilities

Camden Local Plan
Policy C2 Community facilities
Policy C3 Cultural and leisure facilities

London Plan
Policy GG1 Building strong and inclusive communities
Policy HC5 Supporting London's culture and creative industries
Policy S1 Developing London's social infrastructure

Project commitments

PARTNERSHIP AND COLLABORATION	BREEAM	Reference Policy
Beyond. Community Engagement: Ensure that the wider community participates in a wide and deep consultation process that extends throughout all RIBA Stages of the project.	Man01	
Beyond. Sustainability focused Leases and fit-out guide: Define the terms of Sustainability focused Leases, for both office space and research labs, to ensure collective decision making and sharing information for common benefit. Ensure tenant support with the fitout process, aiming to reduce waste, energy and water consumption.	Man04	
Beyond. Define engagement program. Including Developer/Landlord, Delivery Team, Facility manager, prospective and future tenants, visitors and occupiers (inc. British Library). The program will ensure that the building will perform as expected after completion and achieve the expected carbon outcome.		

Managing the concentration of community uses and addressing the needs of all sections of the community

The development team aims to ensure that the wider community participates in a wide and deep consultation process that extends throughout all RIBA Stages of the project.

As detailed in the Social Value Framework, the development encourages the strengthening of local communities via the following:

- Local community involvement in the design of The Story Garden in collaboration with Global Generation
- Start a Neighbours Advisory Panel
- Establish Community Advisory Groups (run by the British Library) whereby the community can be involved in the creation of collaborative projects and the long-term delivery of community-based services
- Provide a programme of workshops that inform tenants of their rights to quality housing and connects them to relevant resources
- Start an Adult Learning Programme for the community free of charge around topics of local interest
- The Library's new People Strategy will enhance its staff volunteering programme to support its community
- Tender for BL catering contract from 2022 will include consideration for provision of healthy food, use of local suppliers and local training programme.

Cultural, leisure and community facilities

As detailed in the Social Value Framework, the development encourages the strengthening of local communities via the provision of the following facilities:

- Learning Open Reading Room to provide informal space for community and family activities such as story-telling, display and events space for community projects.
- Provide site facilities (out of hours) for use by local organisations

3.2.3 Safety and security

Camden Local Plan
Policy C5 Safety and security

London Plan
Policy D11 Safety, security and resilience to emergency
Policy D12 Fire safety

Design and security

The security design of the development will be guided by Counter-Terrorism Security Advisors (CTSAs), Secured by Design Principles and other security best practice to create a secure environment for visitors and staff. This will include physical and electronic measures such as CCTV, as well as landscape design features that reduce the risk posed by hostile vehicles, including planters, benches and bollards.

A Threat and Risk Assessment by Arup has found that the site is potentially impacted by various threats and risks such as theft or damage of British Library collections, petty crime or nuisance activities directed at users of the Extension, and a direct or indirect terrorist attack against the Extension, most likely with the intent to cause mass casualties.

The security design therefore responds to this in the following ways:

- Recognising the relationship between the design and the UN Sustainable Development Goals, for example, UNSDG 3 - Good health and well-being, UNSD 9 - Industry, innovation and infrastructure, UNSDG 13 – Climate action, UNSDG 16 – Peace, justice and strong institutions
    - Allaying the fear of crime (SDG 3)
    - Responsible procurement and use of materials and resources (SDG 9, 13)
    - Supporting the use of green space, whilst also maintaining security provision (SDG 3, 13)
    - Creating a sense of community by promoting open, safe, and welcoming space where people can meet (SDG 3, 16)

Fire Safety

The fire safety strategy for the British Library Extension has been developed considering its location, proposed use and operation, as well as fire safety requirements by the British Library as well as commercial use, holistically.

The fire safety measures proposed will also meet the functional requirements of Part B of the Building Regulations 2010 (as amended) by following the British Library fire safety brief and framework for fire engineering (Published Document 7974 under BS 7974), which leans on guidance within the risk-based fire safety standard BS 9999:2017.

The building will be provided with the following:

- Sprinkler protection throughout.
- A series of evacuation zones that are aligned with the functional uses of the building. Evacuation will be phased to evacuate the zone at risk; with subsequent escalation manually controlled. The British Library areas within the Proposed Development will form a new evacuation zone to the existing British Library St Pancras Building, with interlinked systems to allow the British Library zone within the Proposed Development to evacuate when there is a fire is in the St Pancras Building should this be desired.
- An automatic fire detection and alarm in line with the British Library specification for their areas, and suitable for the risk identified in the remainder of the new development.
- Eight firefighting cores to provide access to all floors, with above ground firefighting core comprising a firefighting stair, a firefighting lift and a ventilated firefighting lobby with dry fire main, and the firefighting cores serving the basement comprising a firefighting stair, ventilated firefighting lobby with dry fire main and an evacuation lift as the basement is less than 10m deep; in addition to these provisions the stair in the new BLCC building will be provided with a dry riser.
- The fire brigade will have vehicle access to the East and West elevations of the extension.
- A mixture of natural and mechanical smoke ventilation will be implemented in the basement level.
- The central ‘Foyer’ atrium will be enclosed in fire resisting glazing on the upper levels and provided with a mechanical smoke control system to maintain tenable conditions on floors and bridges that are open to the foyer.
- Active and passive fire protection measures are provided to the entrance areas serving the different uses of the building to limit disruption to business operation of areas not directly affected by fire or smoke.
- The building is generally provided with floor-to-floor fire resisting compartmentation, with the exception of the atrium foyer which has a performance-based fire and smoke control design approach.
- The loadbearing structure and external wall comprises predominantly non-combustible materials, with limited exceptions of timber being considered where its application presents an acceptably low fire risk.
- All loadbearing elements of structure to achieve a minimum R 120 minutes structural fire resistance.
- Inclusive design features will be provided in addition to management procedures to ensure the safe evacuation of disabled occupants such that no reliance on carry down procedures is required. Evacuation lifts will be provided that may be used by the building management to aid those requiring assistance during their evacuation.
- Further details of the means of escape strategy from the extension can be found in the Stage 1 Fire Strategy Report developed by the fire consultant (Arup Fire).

3.2.4 Access for all

Camden Local Plan
Policy C6 Access for all

London Plan
Policy D5 Inclusive Design

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Safe and accessible spaces: Ensure that all spaces in the development are fully accessible and safe for use by the most vulnerable members of the community.	Hea06 Hea07	London Plan Policy D5

Accessibility

The accessibility of the design is being assessed using a combination of exemplary standards, consultation with stakeholder groups, and the previous experience of the Arup Access and Inclusive Environments team.

Throughout design development, the following principles have been carefully considered:

- Access routes and approaches to/from the site for pedestrians, cyclists and motorists
- Equitable access for staff, visitors / service users, and all members of the general public to employment, academic and leisure opportunities
- Providing inclusive facilities and spaces for different cultures, faiths, and disabilities to provide a welcoming space for all
- Connections with the surroundings – including transport links (existing, and Crossrail 2) and to the existing British Library building

Arup's Access and Inclusive Environments team have been working with the architect (RSHP) and the landscape architects (DSDHA) to ensure these principles are implemented, considering both current and future needs of visitors and occupants.

Open Green Space

There are a number of small-medium sized publicly accessible green spaces within 15 mins walk of the British Library. There is the potential for enhanced greening to the British Library public realm to contribute to this network of green spaces.

Transport Access

The British Library is very well connected with the majority of the local area receiving the highest public transport accessibility rating of '6b'. The library is within close walking distance of the national mainline railway termini of Euston, St. Pancras and King's Cross Stations, in addition to the main Eurostar hub of St. Pancras International, with links to Paris and the continent. All stations have links to the London Underground system with direct access to the Northern, Victoria, Piccadilly, Circle, Metropolitan lines.

- The Proposed Development benefits from a Public Transport Accessibility level (PTAL) rating of 6b, which indicates an 'excellent' connectivity to the surrounding network.
- The Proposed Development would provide four wheelchair-accessible car parking spaces for users of the British Library and one wheelchair-accessible space for the new commercial scheme. Additionally there will be four operational car parking spaces and one minibus parking space provided.
- All pedestrian crossings are provided with tactile paving on the approaches to the crossings. The tactile paving is also colour contrasted to assist those with visual impairments. Dropped kerbs are provided at all crossing locations.
- 1,112 long-stay cycle parking spaces are proposed to be provided (including 110 existing cycle parking spaces). This includes 56 Sheffield stands, 111 lockers for folding bikes and 945 two tier cycle stand spaces.
- In accordance with the London Plan (2021), the area schedule indicates that 172 short-stay cycle parking spaces should be provided. The proposals indicate a provision of 122 short-stay cycle parking spaces for short term visitors/public on-site. The remaining 50 additional off-site cycle parking spaces are proposed to be provided in the local area, such as along the island on Midland Road, with a financial contribution agreed as part of the S106 agreement.
- There are several spaces on the local public highway, including 11 Sheffield stands (22 short-stay cycle parking spaces) on the footway on Midland Road, which will need to be relocated on the public highway. These spaces are not part of the on-site policy requirement.

For further details, see the Accessibility and Inclusive Design chapter of the Design and Access Statement submitted as part of this application.

3.3 Economy and jobs

3.3.1 Economic opportunities and premises

Camden Local Plan
Policy E1 Economic development
Policy E2 Employment premises and sites

Camden Planning Guidance
Design

London Plan
Policy E8 Sector growth opportunities and clusters
Policy E11 Skills and opportunities for all

Project commitments

This section provides information on wider social sustainability issues. Specific targets have been defined in the Social Value Framework submitted as part of this application.

PARTNERSHIP AND COLLABORATION	BREEAM	Reference Policy
Beyond. Ethical supply chain and equal opportunities: Ensure any supplies from unstable areas are from reputable companies - Encourage questions about contractor blacklisting in tender documents. - Transparency review of supply chain against Modern Slavery Act Project partners to demonstrate commitment to equal opportunities and to ensure minimum labour pay conditions		

Knowledge Quarter and science growth sector

The British Library already plays a very important role nationally, regionally and locally, but there is potential for the organisation to build on its successes through the Proposed Development. The site is currently at a tipping point, as physical spaces are reaching capacity.

The British Library extension will build momentum on the economic strengths of the Knowledge Quarter to deliver significant economic and social benefits to the local area. By aligning the BLE's programmes and initiatives with existing successful programmes, the development is set to generate growth in jobs and the economy with more opportunities for local schools, residents and workers to share in the benefits.

The BLE will be one of the largest investments in the Knowledge Quarter since the King's Cross regeneration scheme. It will create approximately 53,000-55,000 sqm (NIA) of conventional and affordable office, incubator and lab-enabled spaces (depending on scenarios) to businesses to start up, build networks and grow. A new home for the Alan Turing Institute will create synergies with the Library as well.

Additional library spaces and a new foyer will be open to all, connecting regular visitors and traditionally under-served local communities in shared space.

The mix of commercial space with library and open and versatile curated spaces will add the following benefits in the central scenario:

- Create 3,060 new jobs in total including many knowledge-intensive roles
- Increase local GVA by £5.6b (2020 £) over a 10-year period after completion of the extension
- Increase local spending in Camden by £52m (2020 £) over a 10-year period after completion of the extension

By creating high-quality and dynamic spaces linked to the British Library, the extension will attract a mix of science, research and commercial businesses that can learn from one another. 'Learning around the edges' of their specialism by working together kick-starts innovation and creates opportunities to commercialise ideas. In essence, the Proposed Development has the potential to become the epicentre of the Knowledge Quarter, a place of invention and economic growth of city-wide and national significance.

The British Library extension will help the Knowledge Quarter be more inclusive through its enhanced programmes to support SMEs. A Somers Town Compact (ST Compact) will be secured in the S106 agreement which will encourage occupiers to support work placements and apprenticeships and to develop programmes of engagement with local schools.

For further details, see the Social and Economic Impacts Report submitted as part of this application.

Providing a range of employment premises

As detailed in the Social Value Framework, the Proposed Development supports local employment via the following:

- A mentoring / work experience scheme facilitated between the Business and IP Centre (BIPC) alumni and local young people
- A new Youth Programme for 16-25 year olds led by the British Library Learning team, including a Young Entrepreneurship Scheme with the BIPC
- BIPC workshop rooms available in evenings and weekends to established community partners at no cost
- Affordable, subsidised incubator space within the library for socially responsible and creative micro, small and medium enterprises (MSMEs)
- Support to local people to re-skill within the Maker Space in the BIPC

It is anticipated that the requirement to provide a range of employment premises within the Proposed Development would fall under the S106 agreement.

Supporting local employment training schemes and enterprise development

As detailed in the Social Value Framework, the Proposed Development supports local employment via the following:

- Job descriptions reviewed by Jobs Hub and Good Work Camden for accessibility – particularly for entry level roles
- Opportunities advertised through Jobs Hub, Good Work Camden and/or King's Cross Construction Skills Centre (KXCSC), and ahead of wider promotion for entry level roles.
- Workshops and training sessions run to support local people with interview skills, CV writing and job applications, and understanding the work in the British Library or science and technology
- Annual business start-up day in the BIPC, free of charge to local residents
- 150 2-week construction work experience placements, focusing on under 24s or disadvantaged residents
- One construction apprenticeship start per £3m spend on the BLE development

For further details, see the Social Value Framework submitted as part of this application.

3.4 Protecting amenity

3.4.1 Managing the impact of development

Camden Local Plan
Policy A1 Managing the impact of development
Policy A5 Basements

Camden Planning Guidance
Design

London Plan
Policy D10 Basement development

Sunlight, daylight, overshadowing and solar glare

During the design process expert advice was sought on alternative massing options, which were technically assessed to understand how the daylight, sunlight, obtrusive light and overshadowing effects could be reduced and mitigated. After a number of technical iterations, the analysis of the optimisation studies has informed the final massing of the Proposed Development.

The potential for solar glare has been considered throughout the façade design process and as such solar glare mitigation is embedded within the design. This includes considerations such as orientation of the reflective elements on the façade and reducing large areas of glazing or reflective cladding. Therefore, no significant solar glare effects are expected as a result of the Proposed Development.

Figure 2 shows the daylight and sunlight study for the external public spaces on site.

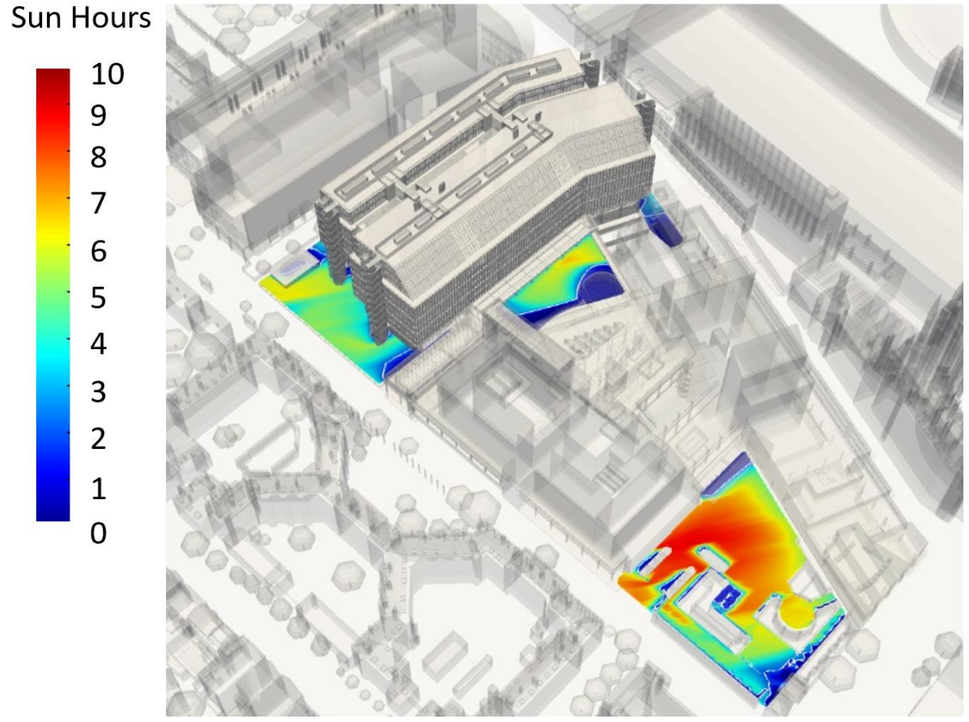


Figure 2 Sun hours study

The Proposed Development makes use of a seasonal design strategy as follows:

- On typical levels, solar gains are reduced by projecting vertical fins that provide solar shading for low-angled sun and the incorporation of captive solar-responsive blind systems which also controls glare (economy of systems and materials); these are operated by the building's Building Management System (BMS).
- North-facing facades, which are self-shaded and have minimal incident sunlight, comprise a double-glazed system with natural ventilation via opening vertical panels, reducing energy demand overall and providing users with a degree of control which promotes wellbeing.

Artificial lighting levels

A Lighting Masterplan has been developed for the Proposed Development, which puts people and the needs of the local community at the heart of the design. The approach to external lighting design focuses on the quality of the overall experience for all users of the spaces; with careful integration of light within the building, as well as hard and soft landscaping.

Lighting will be used to reinforce key routes, create a relaxing space and calming atmosphere in paths for wandering and meandering. Dwell areas will feature focused lighting to

encourage visitors to rest and enjoy spaces. Community activity areas will feature lighting infrastructure to enable provision of lighting for defined activities.

Designing for sustainability is inherent in the lighting approach.

The unique approach to the lighting masterplan factors the wider site context and ‘designs in’ the incidental lighting surrounding the site.

The internal courtyard is enclosed on four sides by fully glazed façades, the internal lighting adjacent to the corridor will provide sufficient light to enable circulation around and through the courtyard in the hours of darkness.

This approach enables a reduction in external lighting equipment across the site, equating to a reduction in associated costs, embodied carbon of lighting equipment and associated power supply, ducting and cabling. This approach also ensures that operational use of electricity is minimised.

To maintain the value and demand of built assets, the design will integrate flexibility, adaptability, and high performance. The lighting strategy will have a truly holistic approach to design that considers the lighting aesthetic and quality, material impact of lighting systems, energy efficiency, financing, optimal maintenance, and the reuse and/or recycling mechanism of equipment.

Applying circular economy principles to the lighting design is closely aligned to the British Library Extension’s commitment to the UN Sustainable Development Goals. Through sustainable use of materials and resources, avoiding waste and restoration of natural systems, circular lighting principles contribute to the project’s wider sustainability goals. In the built environment, these considerations will deliver assets that are better able to withstand known and unknown future conditions.

These are the principles of circular economy to be integrated in lighting design:

Circle of lighting materials

- Lighting products should be capable of being dismantled to base components to be up or down cycled or, as a last resort, re-cycled and returned to the materials reservoir.

An adaptable system

- Lighting systems must be able to adapt to new layouts, functions and programmes over a building’s lifetime, while being able to integrate with technologies that may not exist at the time of design.

Higher flexibility, higher resilience

- Lighting outputs, layers, and distributions of light within a space must be flexible to accommodate variable functions and uses throughout the day.

High quality design

- A successful circular lighting design must go beyond box checking of energy efficiency and longevity. The quality of the lighting design will have a significant impact on the longevity of its use, affecting its circularity.

In addition to the above, light pollution, or ‘obtrusive lighting’, is to be minimised. The design will be in accordance with best practice guidance such as ILP GN01:2020 *Guidance Notes for the Reduction of Obtrusive Light*. The design will provide a good balance of upward flux, luminous intensity, and building facade luminance, within the guidance threshold.

All external lighting (except those for safety and security) will be automatically switched off between 23:00 and 07:00. Those lights that will stay switched on for safety and security reasons will follow the lower levels of lighting recommended during the hours stated in the ILP Guidance Notes.

Whilst the design of the internal light fittings are not yet finalised for the commercial elements, the internal lighting levels for the purpose of the assessment assumes typical recessed office luminaries arranged in a regular array on the proposed office ceilings so that an average illuminance of 500 lux is achieved across the working plane. This represents a typical Category A office fit-out as per ILP GN01:2020 *Guidance Notes for the Reduction of Obtrusive Light*. The assessment is undertaken on a worst-case scenario, whereby the Proposed Development would be fully lit at night and blinds or any other shading devices were considered to be either not installed or not deployed. The results of the assessments have shown that no significant effects would occur to any nearby sensitive residential property.

Considerate Constructors Scheme

Impacts on neighbours from construction will be mitigated by requiring the Contractor to comply with best practice on the Considerate Constructors Scheme (CCS). The Considerate Constructors Scheme (CCS) is a national initiative set up by the UK construction industry. Sites and companies that register with the scheme sign up and are monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements. Additionally, a Construction Management Plan will be developed for the project which can be referred to as part of this submission.

Microclimate

The Site will be impacted by the London heat island effect; where built up areas are hotter in temperature than nearby rural areas due to heat absorbed and re-emitted by buildings and other hard surfaces.

The landscaping strategy, involving planting a series of trees throughout the Site will support the comfort of people in the space. It will do this by offering microclimate value such as providing shading and reducing heat absorption, which can support with mitigating urban heat island effects. Trees will also contribute to the wind mitigation strategy.

Dense canopies and shrubs are proposed that will have good ground coverage and will provide solar shading to protect visitors from UV radiation. The shrubs will additionally convert solar radiation to latent heat which will support evapotranspiration and cool the local environment. Light-coloured paving with a high solar reflectivity index is additionally proposed which will help to reflect heat. Recommendations are shown in Figure 3.

Figure 3 Microclimate recommendations

Basement Construction Plan

The archaeology assessment, as presented in the Environmental Statement, describes the likely significant effects of the Proposed Development on archaeology. The archaeology assessment is concerned with effects on any designated or non-designated archaeological assets within the Site or study area, including both currently known archaeology and the potential to encounter previously unknown archaeology at the Site.

The effects from the construction and existence of the Proposed Development are summarised as follows:

As a result of the proposed additional mitigation, including the programme of archaeological recording in line with the NPPF requirements, the large magnitude of change experienced by any surviving heritage assets within the site due to the construction and existence of the Proposed Development would be offset by recording and advancing understanding of their significance, and publicly disseminating the results. The residual effects would be neutral and not significant.

Archaeology would not experience any significant effects arising from the operation of the Proposed Development. Therefore, operational effects are scoped out of the assessment.

3.4.2 Provision and enhancement of open space

Camden Local Plan
Policy A2 Open space

Camden Planning Guidance
Public open space CPG January 2021

London Plan
Policy D8 Public realm
Policy G4 Open space

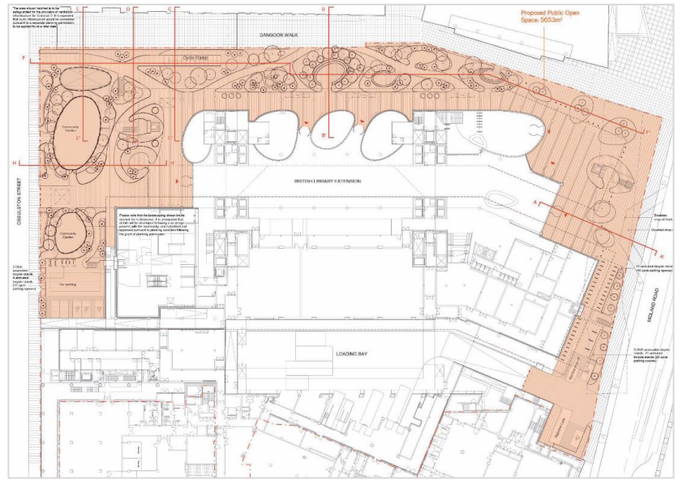
Securing high quality new open space

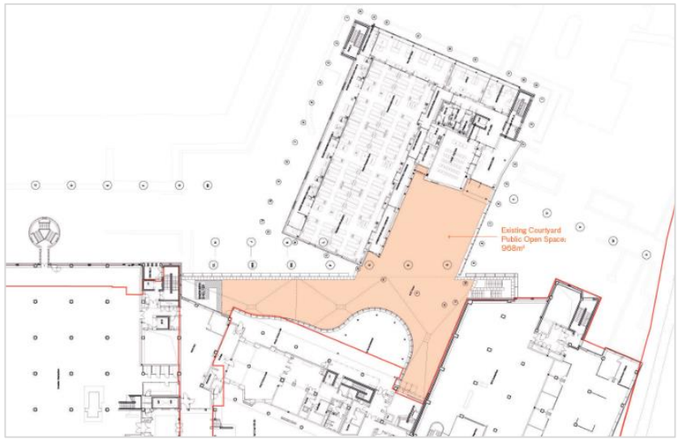
The design of the public realm has been developed to consider a wide range of users and support a number of activities, including play space, informal events and gathering spaces, art spaces, quiet reading spaces and other seated spaces. This is supported by a varied greening approach which enhances the biodiversity and nature of the spaces and adds to the character and quality of the different spaces on offer, including an extensive tree planting strategy and the inclusion of a community garden.

High quality materials are proposed which will be long lasting and robust. Consideration has been given to accessibility to ensure the public realm is an inclusive landscape which caters to users of all abilities, as well as to improve connections to local landmarks, civic spaces and a wider green network of open spaces and community gardens in Camden.

A Lighting Masterplan has been developed for the Proposed Development which provides a strategy to create an environment after dark that puts people and the local community at the heart of what drives the lighting design. The approach to external lighting design focuses on the quality of the overall experience for all users of the spaces, with careful integration of light within the building, as well as hard and soft landscaping to create high-quality and usable new open space.

Based on Camden's Policy A2 which requires open space provision of 0.74m^2 per occupant for commercial and higher education developments, a total of 2301.4m^2 open space would be required for an occupancy of 3110. The total area of proposed external space as measured in orange on the plans shown in Figure 4 is 7051m^2 and so on this basis, the proposed British Library extension meets the requirements of this Camden policy.





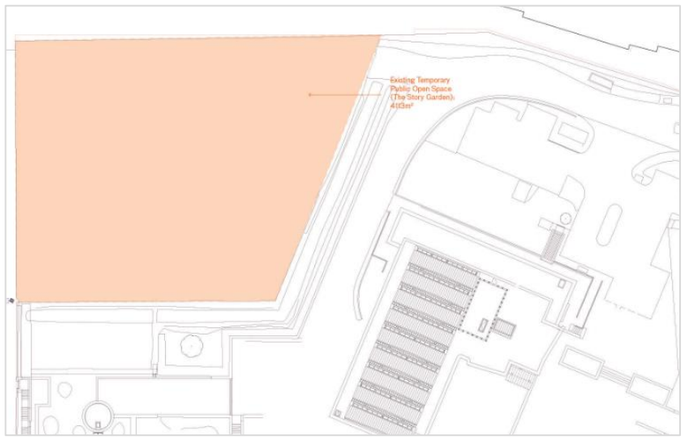


Figure 4 Open space measurements (DSDHA, 23-08-2021)

Enhancing our green infrastructure

The term ‘green infrastructure’ refers to the network of green and open spaces, green features such as trees and green roofs and water bodies, such as the Regent’s Canal, which taken together provide multiple quality of life benefits. There is a particular opportunity to continue improving links between open spaces to improve access for recreation and corridors which allow species to move between habitats.

Current landscaping and public realm design for the Proposed Development aspire to improve the availability of high quality, accessible green space. Green infrastructure has been incorporated throughout the site to increase opportunities for greening, play, healthy living and community cohesion.

A key part of this strategy is the proposed blue and green roofs. The northern building incorporates a wetland roof, providing valuable habitat to the surrounding area while helping control the run-off rate for the development. The southern roof proposes swathes of species-rich grassland interspersed with woodland edge planting, adding further habitat types to the scheme. Bat boxes and bird houses are proposed on the northern building; hibernaculum and insect hotels are proposed on both roofs, creating valuable space for these species.

3.4.3 Biodiversity

Camden Local Plan
Policy A3 Biodiversity

Camden Planning Guidance
Biodiversity CPG March 2018
Trees CPG March 2019

London Plan
Policy G5 Urban greening
Policy G6 Biodiversity and access to nature

Project commitments

BIODIVERSE HABITATS	BREEAM	Reference Policy
Site assessment. Carry out an assessment to determine the existing ecological value associated with the site and surrounding areas, and identify risks and opportunities for ecological protection and enhancement.	LE01 LE02 LE03	Camden Plan Policy A3 CPG Biodiversity
Biodiversity. Minimum Net Gain. Enhance the ecological value of the area associated with the site in support of local, regional and national priorities. Assess the possibility of implementing Bio-diverse roofs /	Aspirational 10% net gain LE04	London Plan Policy G1 Camden Plan Policy CC2 A3 CPG Design

walls, considering the wider benefits and burden that they may entail (eg, reduced renewable capacity, etc.)		
Urban Greening Factor. Focus on greening, biodiversity and inclusive access. Agree strategy for ongoing monitoring, management and maintenance of the site and its habitats and ecological features, to ensure intended outcomes are realised for the long term.	UGF 0.3	London Plan Policy G5 Camden Plan Policy A3 CPG
Complete a survey of **existing trees** and promote retention if appropriate. All timber to be sustainably managed: **FSC** or Sustainable Green Ecosystem Council	Man03	London Plan Policy G7 CPG Trees

Ecological surveys

The Site is located in the London Borough of Camden, within a heavily urbanised environment, surrounded by buildings, pavements and associated urban infrastructure. The Preliminary Ecological Appraisal (PEA) of the British Library Extension, submitted with the application, summarises the findings of a desktop study and species records search. Additionally, a Phase 1 Habitat Survey and preliminary bat roost assessment were conducted on 25 August 2020, which are also detailed in the PEA.

Results of the desktop study show there is one statutory designated site within 1km of the site. Camley Street Nature Park, a Local Nature Reserve (LNR); this is considered sufficiently isolated from the Proposed Development that any impacts are unlikely. Ten non-statutory designated sites exist within 1km of the site, all Sites of Importance for Nature Conservation (SINCs), which are designated for their mosaic of habitats, the fauna they support and their amenity value. Again, due to their isolation from the site and the type of development specified, it is considered that any impacts are unlikely.

The site currently predominantly comprises buildings and hard standing with introduced shrub, amenity grassland and other typical landscaped habitats. Part of the site is currently in use as an urban allotment. The ‘Story Garden’ is a temporary instalment with allotment-style planting in containers and small temporary buildings, which include metal containers, sheds and a main ‘office’ constructed mainly from wood.

No evidence of bats was recorded during the preliminary bat roost assessment of the library building within the site. No trees within the site supported features suitable for roosting bats.

Five black redstart *Phoenicurus ochruros* surveys were undertaken in 2018 and 2019 to establish the status of this species at the site. Black redstart was not recorded during any of these surveys and are therefore considered not to utilise the site for breeding or foraging at this time.

Common species of birds are likely to breed in vegetated areas of the site and consideration of their presence is required to ensure legislation is complied with during the project. Provided the recommendations for protection of breeding birds are adhered to, it is considered that there will be no negative impacts as a result of the development proposals.

Opportunities exist for ecological enhancement of the site. Ecological mitigation and enhancement proposals will ensure the ecological resilience of the Proposed Development and to ensure the design’s compliance with the revised National Planning Policy Framework policies and relevant local planning objectives.

A Habitat Survey has been undertaken by Arup Ecology. The following habitats were recorded within the Proposed Development boundary:

- Scattered broad-leaved trees
- Amenity grassland
- Introduced shrub
- Buildings and hard standing
- Other - urban allotment

The habitats on site are generally considered to be of low ecological value. The majority of the site consists of hardstanding and buildings. The vegetated areas provide some ecological value, but this is limited as species consist largely of ornamental and/or non-native species with low value for biodiversity. No protected or notable habitats are present within the site.

Trees and vegetation

As per guidance from Camden Council, the landscaping strategy focuses on greening, biodiversity and inclusive access. There will be ongoing monitoring and maintenance of the site and its habitats to ensure it retains its high quality and usefulness in the long term. The proposed landscaping scheme maximises the amount of greening on the site, and the planting scheme has been designed in line with the Ecologist’s recommendations.

The project achieves an Urban Greening Factor of 0.24 which is below the challenging target of 0.30. This is the value the project has achieved with maximised opportunities for ecological enhancement (detailed below). In the context of this dense urban site in central London, there is presently no meaningful option for greening expansion beyond that which the Proposed Development already incorporates. The project team will however continue to actively seek and implement future opportunities to improve the score as the design progresses.

A long-term strategy for tree planting is proposed which seeks to introduce ecological succession into the landscape. An initial layer of quick growing, short life space pioneer species are proposed which will provide planting height and tree canopy cover early on. This is supplemented by long lifespan species which will grow much more slowly, eventually outgrowing and replacing pioneer species. This will result in a number of different stages of tree growth.

Growing trees in the community gardens is also proposed which eventually will be transplanted to other areas of the public realm when more mature. The Ossulston Street Entrance and Community Gardens area is located to the West of the Site close to the location where the existing Story Garden is located. This is shown in Figure 5.

The landscape and planting design responds to the microclimate, site conditions and the brief for these spaces. On the Ossulston Street boundary, a planted ‘buffer’ is proposed, within which the new Community Gardens are located. This planted zone includes a Raingarden, which acts as a SUDS drainage measure, and contributes to the overall play strategy for the site. Extensive tree planting in this area provides some shading to the Community Garden in summer.

The Community Garden is proposed as a co-design project between the local community, the British Library and SMBL, to develop a space that is designed, curated and used collaboratively with Somers Town residents. The design shown in the Design and Access Statement is illustrative and will be superseded by the co-design post planning. Please refer to the Landscape Statement, Landscape Drawings and Planting Schedule for full details of proposals in this area.

Figure 5 Ossulton Street Entrance and Community Gardens

3.4.4 Noise and vibration

Camden Local Plan
Policy A4 Noise and vibration

London Plan
Policy D14 Noise

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Internal comfort. Achieve thermal comfort, visual comfort and acoustic performance criteria as set out in BREEAM. Complete an assessment in accordance with CIBSE TM52, and demonstrate that the risk of overheating has been mitigated. **Beyond**: Microclimate study	Hea05 Pol05 Hea01	London Plan Policy SI 4 Camden Plan Policy CC2 CPG Energy efficiency and adaptation

Assessing the impact of noise and vibration

An environmental noise survey around the site was conducted by Arup in December 2020.

The following information has been extracted from the Camden Local Plan 2017 Appendix 3: Noise Thresholds, Industrial and Commercial Noise Sources regarding noise emissions from the Proposed Development:

"A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15dB if tonal components are present) should be considered as the design criterion."

It is assumed that these requirements apply to incident noise levels on the nearest residential buildings.

Section 6.1 of the Camden Local Plan 2017 states:

"Emergency equipment such as generators which are only to be used for short periods of time will be required to meet the noise criteria of no more than 10dB above the background level (L90 15 minutes). During standby periods, emergency equipment will be required to meet the usual criteria for plant and machinery. Conditions to this effect may be imposed in instances where emergency equipment forms part of the application."

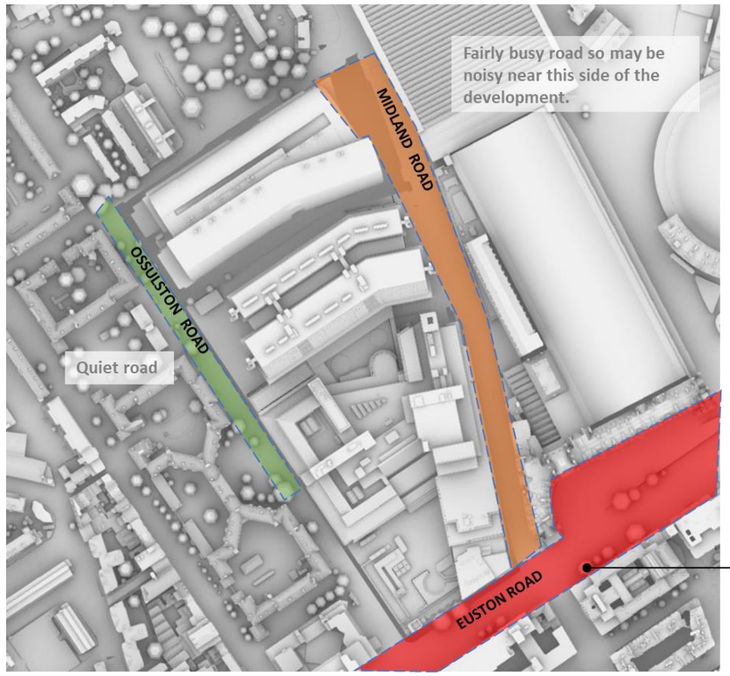
Compliance with these requirements will ensure alignment with the requirements of BREEAM Credit Pol 05 which requires that there is a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level.

Whilst the Camden Local Plan refers to BS4141:2014, where appropriate, reference will be made to BS41412:2014+A1:2019 which provides further information of the application of the standard.

Acoustic reports

Report number BL-ARUP-ZZ-XX-RP-YA-0001 *Baseline Noise Survey and Noise Emission Criteria* dated 22 February 21 sets out the measured noise levels in the environmental noise survey and sets out noise emission criteria from new mechanical equipment associated with the development in line with the requirements of Camden Council. For further details please refer to the Acoustic section of the Environmental Impact Assessment for the Proposed Development.

Figure 6 provides an overview of the noise levels on the main roads around the British Library site.



Euston Road is a very busy road with high noise levels. This may impact existing outdoor areas, but it is too far from the Proposed Development to have a significant impact on new outdoor areas.

Figure 6 Acoustic study

Plant and other noise generating equipment

Based on the current design strategy at RIBA Stage 2, the following building services equipment is proposed:

- Air source heat pumps and air-cooled chillers on the roof
- All air handling units expected to be internal with intake and discharge louvres in the façade and via raised openings integrated into the surrounding landscape
- Life safety and business continuity generators in the basement with intake and discharge to raised openings outside the building at pavement level

3.5 Design and heritage

3.5.1 Design and local heritage

Camden Local Plan
Policy D1 Design
Policy D2 Heritage

Camden Planning Guidance
Design CPG Jan 2021

London Plan
Policy D3 Optimising site capacity through the design-led approach
Policy D4 Delivering good design
Policy HC1 Heritage conservation and growth
Policy HC3 Strategic and Local Views
Policy HC4 London View Management Framework

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Heritage: Protect the heritage resources around the site. Demonstrate through the sustainability statement measures taken to acknowledge, value and preserve the existing heritage strategy.		London Plan Policies HC1 HC3 HC4

Local context and character

The listed buildings of King's Cross and St Pancras Stations, their hotels, the German Gymnasium and the Stanley buildings form a relatively coherent contemporary Victorian railway-dominated townscape within the King's Cross Conservation Area. The redevelopment of former railway sites both within the conservation area and to the west of Midland Road continues the generally large scale and grain of the Victorian townscape in modern form with a variety of public and commercial uses and architectural styles. The Site itself is a notable gap site to the west of Midland Road, which impacts negatively on the quality of the townscape on Midland Road, Ossulston Street and Dangor Walk through its poorly defined street edges and backlands service yard character. The north-west part of the Site is occupied by a temporary community garden behind hoarding on Ossulston Street.

The Proposed Development would reinstate built form on a largely empty site, creating well defined new public realm at the western end on Ossulston Street and new well defined street frontages along Dangor Walk and Midland Road. The Proposed Development would be of an appropriate scale that would be equivalent in height to the Francis Crick Institute and would not intrude on significant views of the Grade I listed St Pancras or the existing British Library. The Proposed Development would sit comfortably alongside its modern neighbours

to the north and south complimenting the large scale modern civic or public character to the east of Ossulston Street. As the existing British Library and Francis Crick Institute do, it would remain subservient to the Grade I listed St Pancras to its east.

The scale and form of the Proposed Development would contrast with the predominantly low-rise residential character of the townscape to the west of the Site but where visible it would be appreciated as part of the contrasting larger scale townscape to the east and the legibility of the Proposed Development as an extension to a public and civic building of national importance and part of a nationally important focal point within central London is appropriate.

The Proposed Development has been designed to follow the geometry and colour palate of the existing British Library and would sit comfortably alongside the Grade I listed building. The richly articulated gable ends of the Proposed Development with vertical stair towers at the east and west ends of the Proposed Development would create distinctive markers for the new northern entrances to the British Library which would enhance the legibility of the extended British Library from within its local context.

Sustainable design and durability

- The envelope design at the British Library Extension follows fabric first principles with a smart façade consistent with the requirements of a contemporary office building. The façade systems are tuned to their orientation to ensure the most efficient performance which minimises energy usage and operational energy demand.

- The organisation of the building programme has been optimised for the site conditions with a larger southern building which has floorplates which can be adapted for laboratory use and a smaller north building with shallower floorplates which utilises passive ventilation and green materials in its structural design. A naturally ventilated atrium space sits between the north and south building providing a buffer between internal and external environments. The general public circulation areas of the lower levels which are largely Library spaces are also naturally ventilated.

- Typical commercial/ lab adaptable levels utilise a high-performance closed cavity façade system on south, east and west facades which minimises solar gains and therefore overheating. A sensible proportion of glazing in relation to solid panels ensures the right balance between thermal performance and maximising daylighting to the deep occupied floors which helps to reduce lighting loads.

- The lower levels of the building area set beneath a structural transfer deck which has a large overhang and helps to reduce solar gains to these levels. There is also a greater proportion of solid panels on the levels which increases the thermal performance of the envelope and helps reduce energy demand. Opening vents and external shading are features of the south facing cladding to the level 1 courtyard to ensure comfortable conditions for occupants.

- The building is designed with inbuilt potential to make minimal upgrades to suit the technical needs of life science occupiers and laboratory use, by means of an on-floor air handling proposal that avoids large air risers passing through lower library levels and allows customisation on a floor by floor basis making the building adaptable over its lifetime.

- Disassembly of the building has been factored into the design

- Large areas of external landscaping, terraces and green roofs will significantly increase biodiversity and ecology on site creating a comfortable public realm and green outlook for building occupants.

Details and materials

Consideration has been made throughout the design process to place sustainability considerations at the forefront of decision-making. Strategies embedded in the design include the following:

- The Proposed Development will maximise use of off-site manufacture by employing standardised elements and repetitive modules. This standardisation of components will reduce waste and transportation and assist disassembly. Where possible materials have been selected which allow for re-use and recycling.

- The design allows for economy of internal finishes, eg. exposed services and removal of ceilings where possible.

- Internally low carbon healthy materials have been selected, materials which are also suitably robust for a national institution with larger visitor numbers.

- All materials will be responsibly sourced and where possible Environmental Product Declarations will be sought.

- A sustainable procurement plan will be produced to guide the material selection.

- Sustainably sourced materials with high recycled content and re-use potential will be specified wherever practicable. All timber is to be sustainably managed: PEFC, FSC or Sustainable Green Ecosystem Council.

In addition to the above, materials will been chosen for their durability and longevity as well as for their appropriateness for an extension to a Grade I listed national library located in a sensitive and prominent townscape location. Key material sections are as follows:

Aluminium:

- Aluminium is used for the main facades of the building and will where possible be specified with high recycled content and finishes, which prolong the durability and life of the system (anodising) to reduce embodied carbon. Aluminium is durable and low weight and it is suitably robust, and has inherent flexibility and potential to recycle after use.

- Aluminium extrusions are typically made into unitised systems which reduces material wastage and transport. The ability to extrude aluminium means the proposed shading fins are integral to the unit rather than an addition which requires more material for supports and fixings.

GRC:

- GRC is a flexible green alternative to concrete that is durable and lightweight, weather resistant and fire retardant. Components of GRC comprise reclaimed or recycled fibreglass, used for its strength, and reuse of waste fly ash products which are

incorporated into concrete. GRC can reproduce the surface appearance of many materials, including stone and concrete and can readily be coloured to match brickwork.

- In the British Library Extension, GRC is formed into lightweight façade panels incorporated into elements of the façade – e.g. stair cores, façade infill elements of façade system which incorporates perforations for natural ventilation. Red colouration matches the existing brickwork of the library.

Timber:

- User of timber is established internally in the existing library and has been incorporated in proposals where possible due to its low embodied carbon and proven wellbeing benefits. Externally the use of timber for facades is limited by emerging fire legislation, however it has been incorporated where possible for some cladding elements and is used for secondary restraint elements of the level 2 transfer structure.
- Internally, use of timber is widespread at lower levels of the proposal where it provides continuity with the existing interior and provides a sustainable non-corporate finish that is appropriate in publicly accessible areas of this cultural extension. Toxic treatments will not be permitted.
- On upper levels, the possibility of Cross-laminated timber (CLT) floor structures provide a lightweight low carbon alternative to concrete and steel.

Crime prevention through environmental design

Crime Prevention Through Environmental Design (CPTED) principles have been considered as part of the security design strategy. This multi-disciplinary approach prevents crime and reduces fear of crime in the built environment, ensuring a practical and proportional level of security, which will not have adverse effects on customer experience and the overall efficiency of the development.

Measures incorporated include a mixture of elements related to technology, such as alarm systems and access control systems, as well as natural surveillance and landscaping features. Security design recommendations are in line with extending a listed building and nothing has been designed in, from a security standpoint, which will be detrimental to the heritage status.

Views

The Townscape and Visual Impact Assessment undertaken has demonstrated that the Proposed Development would not be widely visible within its context. There would be localised significant effects in the streets adjacent to the Site along Ossulston Street and Midland Road, and also where streets and open spaces align with the Proposed Development, for example from parts of Chalton Street and along Doric Way. The Proposed Development would not intrude on significant views of the Grade I listed St Pancras from King's Cross Square and the eastern end of Euston Road. It was concluded that all visual effects assessed would be beneficial or neutral.

Listed buildings

The British Library is a Grade I listed building constructed in 1982-1999 to designs by architect Colin St John Wilson with MJ Long. The special interest of the listed building is protected by law, through sections 16 and 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990. The list entry specifies which areas of the building are covered under the designation (in summary, the exterior and public areas) and which are excluded (in summary, the back-of-house spaces and the British Library Centre for Conservation). The National Planning Policy Framework asks that 'great weight' is given to the conservation of heritage assets; that harm requires clear and convincing justification; and that any harm has to be outweighed by public benefits. Further detail can be found in the Heritage Statement produced by Cordula Zeidler Heritage Consultancy.

Built heritage (off-site)

The Proposed Development would have no effect on the most iconic and best recognised close views of the Grade I listed St Pancras and Kings Cross from King's Cross Square and the eastern end of Euston Road. There would be the minor visibility of the Proposed Development in secondary views of St Pancras and Kings Cross from Pentonville Road and Gray's Inn Road, which would not result in any harm in NPPF terms to the appreciation of the heritage significance of either listed buildings.

The visibility of the Proposed Development would not alter the ability to appreciate the historic and functional relationships between the three Grade II listed buildings of the Ossulston Estate close to the west of the Proposed Development or have any impact on their group value. Consolidation of the contrasting modern townscape of substantial public buildings to the east of the listed group would not alter the character of their easterly setting. There would be no material effects on the ability to appreciate the heritage significance of any of the designated heritage assets within the agreed study area.

Archaeology

Results of a desk-based assessment of the archaeological potential of the site have shown that the Site was undeveloped pastureland until the planned housing development of Somers Town in the late 18th and early 19th century. The Somers Town development was originally planned as upscale housing but after the start of extensive railway construction into Euston, St Pancras and King's Cross in the 1830s, was subsequently sold off in smaller lots for cheaper housing and the area became known for slum housing. By 1878, the Somers Town houses west of St Pancras were mostly demolished so that the Somers Town Goods Yard could be constructed, an extensive site on two levels consisting of rail sidings, goods sheds and hydraulic lifting equipment. The Somers Town Goods Yard was disused by the late 1950s and was largely demolished in the 1960s.a

Locally significant archaeological remains of the late 18th and early 19th century Somers Town housing development and the late 19th century Somers Town Goods Yard may survive within the site.

Current proposed mitigation would support recording and advancing the understanding of the significance of archaeological assets at the Site and public dissemination of the results in accordance with the requirements of the NPPF and local planning objectives.

3.6 Sustainability and climate change

3.6.1 Climate change mitigation and adaptation

Camden Local Plan
Policy CC1 Climate change mitigation
Policy CC2 Adapting to climate change

Camden Planning Guidance
Energy efficiency and adaptation CPG Jan 2021

London Plan
Policy SI 2 Minimising greenhouse gas emissions
Policy SI 4 Managing heat risk

Project commitments

PARTNERSHIP AND COLLABORATION	BREEAM	Reference Policy
Exemplary sustainability aspirations. Develop during Stage 1-2 a detailed sustainability strategy and brief that collects to summarises the requirements from the ESG policies of the three main investors. Involved stakeholders (inc. project team, contractors, energy providers, manufacturers, etc.) are expected to adopt, meet and preferably exceed the minimum levels of performance defined in the Sustainability Strategy. The strategy will be endorsed by the three main investors.	Man01	

PATHWAY TO NET ZERO	BREEAM	Reference Policy
Be lean. Be clean. Be green. Be seen. Develop Energy Strategy / Detailed Energy Assessment compliant with London Plan Policy 5.2, 5.3 and Published New London Plan Policy SI2		London Plan Policy SI2
Be lean: Use less energy	Ene01	London Plan Policy SI2
Beyond: Energy Use Intensity: Design for Performance rating for base building: Minimum 4.5*		Camden Plan Policy CC1 CC2 CPG Energy efficiency and adaptation
Be clean: Supply energy efficiently. Deliver an all-electric building. Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems. Install electric charge points for at least 20% of car parking spaces. Energy efficient external lighting and transport systems	Pol01 Pol04 Ene01 Ene03 Ene06	London Plan SI2 Camden Policy CC1
Be green: Renewable energy. Target a 20% reduction in carbon dioxide emissions on-site from renewable technologies, including heat pumps.	Ene04	London Plan Policy SI2 Camden Plan Policy CC1 CC2 CPG Energy efficiency and adaptation
Be seen: Monitor, verify and report on energy performance.	Ene02 Man05	London Plan Policy SI2
Beyond: Minimum **EPC Rating**: Office: B - Retail: C		
Embodied and Whole Life Carbon. Undertake a Life Cycle Assessment at each RIBA stage to quantify Embodied and Whole-Life Carbon. **Methodology**: Compliant with: •BS EN 15978, •RICS Professional Statement 'Whole life carbon assessment for the built environment' •GLA Published New London Plan 'Whole-Life Carbon Guidance' •Camden CPG Energy efficiency and adaptation **Scope**: All building components under direct control of the project team, as defined in Table 3 of the RICS PS **Results**: For Stages A1-A5 and A-C, in $kgCO_2e$ and $kgCO_2e/m^2$. Table 13 of the RICS PS. **Beyond:** Derive benchmarks and adopt targets for each building typology.	Mat01 Mat06	London Plan Policy SI2 Camden Policy CC1 CPG Energy efficiency and adaptation
Beyond: Undertake a **Life Cycle Costing** Assessment	Man02	

Resilience and flexibility: Carry out a climate change adaptation and resilience review, and identify opportunities to maintain long term value in the building. Design for demountability is supported by BREEAM and WLC assessment, and subject to market/industry maturity.	Wst05 Wst06 Mat05
Beyond: Offsets. Strategy. Develop a proposal for an offsetting strategy to meet Net Zero aspirations, taking into account emerging taxation and taxonomy issues. Sourcing of 100% of electricity from green certified suppliers in the base building.	

The energy hierarchy

A passive design review was completed during the design process, addressing issues such as building orientation, site layout and microclimate impacts.

The energy strategy for the Site has been designed in line with the energy hierarchy outlined in Policy SI2 ‘Minimising greenhouse gas emissions’ of the new London Plan:

- Be Lean: use less energy and manage demand during operation.
- Be Clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly.
- Be Green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site.
- Be Seen: monitor, verify and report on energy performance.

These measures are detailed within the Energy Statement produced by Arup and should be read alongside this statement.

The principles of the energy strategy as outlined in the Energy Statement are:

- An engagement program will be defined including Developer/Landlord, Delivery Team, Facility manager, prospective and future tenants, visitors and occupiers (inc. British Library). The program will contribute to delivering the project’s modelled energy performance in operation.
- Deliver an all-electric building.
- Reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.
- Incorporated energy efficient external lighting and transport systems.
- Target a 20% reduction in carbon dioxide emissions on-site from renewable technologies, including heat pumps. Note, the project is not presently achieving 20% reduction as part of the 'Be Green' stage, which is partly due to how heat pumps are assessed in the hierarchy (looking at heating improvement only). However, the development has prioritised efforts in the Be Lean stage to achieve an overall % reduction which represents an ambitious target for this stage. For further information, please refer to the Energy Statement.
- Minimum EPC Rating: Office: B - Retail: C
- Energy Use Intensity: Design for Performance rating for base building:

  Minimum 4.5* NABERS (UKGBC Rating)
- Develop a proposal for an offsetting strategy or payment to meet Net Zero aspirations, taking into account emerging taxation and taxonomy issues. For further details on the carbon offset strategy please refer to the Energy Statement submitted as part of this application.
- Sourcing of 100% of electricity is planned to be from green certified suppliers in the base building.

For further details, see the Energy Statement submitted as part of this application.

Resource efficiency and demolition

Camden Planning Guidance ‘Energy Efficiency and adaptation’, newly updated in January 2020, requires that when refit, refurbish or substantial refurbishment and extension are not feasible options *“the development proposal should include a pre-demolition audit identifying all materials within the building and documenting how they will be managed. The preference should be for re-use on site, then re-use off site, remanufacture or recycling.”*

The pre-demolition audit will also obtain 1 credit for BREEAM Wst01 and therefore, following BREEAM requirements, the audit must be carried out by an individual with an appropriate knowledge of buildings, waste, and options for the reuse and recycling of different waste streams.

As part of this application a study has been undertaken to assess the whole life carbon based justification of the existing British Library Centre for Conservation to make space for the proposed development. Details of this can be found in the WLCA Report submitted as part of this application.

Embodied carbon

Whole Life-Cycle Cycle Assessment (WLCA) has been undertaken during early RIBA Stage 2 of the Proposed Development in line with the RICS Professional Statement: Whole Life Cycle Assessment for the Built Environment (2017). The calculation has been conducted using a method defined by recognised standards; ensuring consistency of approach, transparency of method, use of common data, and allowing for broad comparisons and benchmarking.

Through a focus on embodied carbon and careful material selection from the earliest design stages, the proposal encourages decisions which reduce the environmental and social impact of construction products used on a project. Importantly, it takes a ‘whole life cycle’ approach to construction product impacts, encouraging consideration of impacts during manufacture, design, procurement, installation, in-use and end-of-life. Further actions have been as follows:

- The Project aspiration is to reduce embodied carbon by 40% from current practice, aiming to meet the GLA’s aspirational embodied carbon performance.

  - Whole Life-Cycle Cycle Assessment (WLCA) has been undertaken during early RIBA Stage 2 of the proposed development. This WLCA captures the embodied carbon savings already achieved by the decisions of the Design Team, which include amongst others, an efficient design of the basement to ensure the integration of Cross Rail 2 and to avoid embodied carbon inefficiencies; using the right materials in the right places (e.g. timber transfer decks, considering CLT infills, etc.), avoiding unnecessary overspecification; and carefully selecting low embodied carbon options – high levels of cement replacement in concrete, increased recycled content of steel, etc.
- Further optioneering have taken place to measure the embodied carbon impact of different design options and select the most sustainable alternative.
- In order to specify and source materials responsibly and sustainably a sustainable procurement plan will be produced to guide the material selection. Sustainably sourced materials with high recycled content and re-use potential will be specified wherever practicable, and Environmental Product Declarations will be sought as often as possible.
- All timber will be sustainably managed: FSC or Sustainable Green Ecosystem Council
- A circular economy approach has been taken to the design which incorporates strategies to minimize waste production on site, enhance durability of selected materials, design for adaptability and ease of disassembly.

At Stage 2, not all the building components are designed to a sufficient level of detail to estimate accurate carbon emissions and suggest improvements – e.g. MEP, partitions, finishes. The objective of the Design Team is to demonstrate at Stage 2 our commitment, by achieving the project's embodied carbon reduction ambition in the elements that can be controlled and quantified at Stage 2 – substructure, structure, façade and external works. The same level of ambition can be therefore expected at later stages for the rest of the building components.

The outcomes are detailed within the Whole Life Cycle Assessment report and should be read alongside this statement.

Monitoring

As per the new London Plan requirement for "Be Seen", energy performance will be monitored post-construction and the building's systems subject to seasonal commissioning until optimal performance is maintained under automatic control and the building operator is confident to manage ongoing operation.

Data will be passed to the Mayor's post construction monitoring platform and live feedback to be provided to occupants and visitors to communicate how the building is performing.

In addition, the proposed building will utilise sensors and controls to more effectively modulate building services outputs to match user demand, thereby improving user experience while avoiding wasteful energy usage. During the next design stage, a number of potential opportunities will be explored, subject to feasibility and viability:

- CO_2 / air quality monitoring coupled with motorised dampers for demand-controlled ventilation will be explored.
- Automated control of internal blinds to meet the façade performance.
- Adaptive lighting control and monitoring through ESM.
- Lift Controls and monitoring through BMS/EMS.
- Cooling and heating system controls through packaged controller, its interface with the BMS and usage through energy meters on the EMS.

Climate change adaptation measures

A climate change adaptation and resilience review has been carried out to identify opportunities to maintain long term value in the building. Adaption to climate change is the process of reducing vulnerability to the physical impacts of climate change, such as more severe weather events, long-term changes in temperature and rainfall, and sea level rise. The role of climate change adaptation in sustainability is to ensure robustness and longevity of the building under changing climatic conditions. There are also crossovers between climate change adaptation and measures to reduce carbon emissions, particularly through energy efficiency, and other aspects of sustainability, such as water resource efficiency and social amenity.

The project is targeting the BREEAM credit Wst 05 Adaptation to climate change credit, which requires a climate change adaptation strategy appraisal to be completed for structural and fabric resilience before the end of RIBA Stage 2 (Concept Design stage). This appraisal identifies extreme weather conditions arising from climate change, and recommendations have been made to mitigate these impacts.

The Proposed Development will be resilient against future climate and needs of the community, with infrastructure and management designed to be adaptable so to protect from flooding, respond to heat waves and water shortages. The project will select standardised components wherever possible to reduce wastage. A long life loose fit approach is taken throughout the design process, with consideration of future alternative uses accounted for through provision of open space and column free interiors.

Further details can be found in the Circular Economy Statement submitted as part of this application.

Green spaces

A variety of green spaces are proposed to create a multi-zoned public realm with a range of landscape types and zones. This is supported by investment in nearby community gardens which will enable off-site greening improvements and an improved green network of spaces to the local neighbourhood. Extensive tree planting is proposed whereby a variety of short, mid and long-term species will be specified to create a resilient and adaptable cover of planting. This will also support environmental and social benefits including improved air quality and microclimate, nesting, sheltering and foraging opportunities resulting in biodiversity gain and a sense of wellness through connectivity to nature.

Urban heat island

The Site will be impacted by London's urban heat island (UHI) effect; where built up areas are hotter in temperature than their rural surroundings. This is caused by a number of factors which include, heat absorbed by buildings and hard surfaces, reduction in green surfaces and heat emissions through people, buildings and transport.

The landscaping strategy, involving planting a framework of trees throughout the Site will support the comfort of people in the space and help to ensure the development does not contribute to London's UHI. It will do this by strategies that offer both microclimate value as well as help to reduce heat absorption.

For instance, trees and shading structures provide shade for visitors and also shield surfaces from direct solar radiation. This is especially important in the more exposed areas in the west and the south. In addition, trees and planting in these areas also has a benefit in improving wind conditions ensuring spaces are suitable for human occupancy.

In central courtyard, the massing provides a good level of self- shading, additional shade or trees here will help to enhance the space further.

The external area to the North of the site is also in shade for much of the year making it a comfortable transit zone for people wanting to avoid noise and pollution from Euston Road.

Use of high albedo materials and green surfaces will also help to reduce adverse UHI effect.

Cooling

The development has addressed the ‘cooling hierarchy’ set out in the London Plan as follows:

1. **Reduce the amount of heat entering the building**

   Passive design measures have been implemented into the design to reduce solar gain, conduction and infiltration. These include:

   - Optimised façade design-based on orientation, location and internal use to achieve performance and design requirements.
   - Application of a suitable glazing ratio and shading systems depending on orientation.
   - Use high thermal and solar control performance façade elements where required (closed cavity faced (CCF) on south east, south west, east and west facades).
   - Integrate the use of blinds for dynamic enhancement to performance (CCF facade)

2. **Minimise internal heat generation through energy efficient design**

   Base building systems will be designed to minimise heat losses such as those from pipework, fans and pumps.

   Tenants will be encouraged to review their IT equipment installation such that lower energy configurations are achieved and heat gains from comms rooms are captured efficiently at source.

3. **Manage the heat within the building through exposed internal thermal mass and higher ceilings (purge ventilation)**

   The development is investigating the opportunity to utilise thermal mass. Tenants can maximise this benefit by choosing to install a fit-out solution without suspended ceilings. The current design assumes an exposed service solution with desirable floor to ceiling heights that allow the building to fit within the planning height limit.

4. **Passive ventilation**

   Passive ventilation is not proposed in areas where there is a limited benefit achievable given the proximity to polluted and noisy areas. However, on the northern building the façade is proposed to include window opening to enable mixed mode ventilation. This is an ongoing consideration.

5. **Mechanical ventilation with free cooling and heat recovery bypass and smart control of air volumes**

   During hot weather cooling recovery will be achieved by air handling units using high-efficiency heat recovery devices appropriate for application. During milder weather, the thermal wheel will be stopped such that beneficial ‘free cooling’ can be achieved.

6. **Active cooling, reuse of heat**

   The mechanical cooling system will be highly efficient and comprise simultaneous heating and cooling heat-pumps which recover waste heat from the office for use within the building or potentially by neighbouring buildings. The system will also benefit from a packaged controller which adapts to the demand in the building with the aim of achieving the high system efficiency.

3.6.2 Water and flooding

Camden Local Plan
Policy CC3 Water and flooding

Camden Planning Guidance
Water and flooding CPG March 2019

London Plan
Policy SI 5 Water infrastructure
Policy SI 12 Flood risk management
Policy SI 13 Sustainable drainage

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Risk of flooding. Flood risk assessment and Sustainable Drainage Systems (SuDS) according to planning policy. Constrain runoff volumes for a 1 in 100 year, 6 hour rainfall.	Pol03	London Plan Policies SI12 SI13 Camden Plan Policy CC2 CC3

Water resources. Complete a feasibility assessment on rain and grey water capture on-site, and integrate if feasible. Incorporate water efficient fittings and appliances to achieve reduction from baseline to comply with BREEAM requirements. Provide occupant access to water consumption data.	Wat01 Wat02 Wat03 Wat04	CPG Water and flooding Planning feedback

Water infrastructure

To deliver a more water efficient design, various strategies have been proposed. The below strategies have been considered to monitor and control water consumption, reduce water use, and recycle and reuse water aligned with sustainability aspirations and to achieve BREEAM outstanding certification:

- Low flow sanitary fittings and dual flush toilets
- Grey water harvesting system collected from the showers and wash handbasins of the cyclist facilities
- Rainwater harvesting system
- Leak detection systems
- Metering and submetering for water consumption monitoring and leak detection

The grey water and rainwater systems have been proposed to facilitate the use of non-potable cold-water supply to displace potable cold water where appropriate (e.g. serving toilets, urinals, irrigation and etc).

Discussions took place on water efficiency during the pre-application period with Camden officers. As a result of these discussions, water garden features have been incorporated into the design.

The water strategy outlined above will result in a substantial reduction in potable water consumption and aim to keep the mains water consumption below the 105 litres/per person, per day requirement as outlined in the London Plan Policy SI 5 Water infrastructure. This will be achieved through the incorporation of water efficient fittings and appliances.

Mitigating flood risk

In order to satisfy the London Plan and Camden's requirements to manage flood risk for new developments, the proposed drainage strategy is aiming to reduce the surface water discharge to the greenfield runoff rate. Measures to achieve this have been considered as Camden's preferred drainage hierarchy, and taking into account the site constraints. The proposed drainage strategy will incorporate the following SUDS systems:

- Rainwater collection and reuse system;
- Blue and green roofs;
- Basement attenuation;
- Below ground attenuation;
- Grey water recycling.

The discharge off-site will be into the Thames Water combined sewer adjacent to the site. With the implementation of the SUDS presented, the proposed drainage strategy will achieve a surface water discharge reduction of more than 90% compared to the existing conditions.

3.6.3 Air quality

Camden Local Plan
Policy CC4 Air quality

Camden Planning Guidance
Air Quality CPG Jan 2021

London Plan
Policy SI 1 Improving air quality

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Air Quality Assessment. Develop comprehensive AQA that includes emissions from combustion of fuels, construction and demolition and transport, and demonstrates no negative impact on air quality. The AQA will be informed by the Pre-demolition audit and will define mitigation measures to be integrated in a Construction Management Plan. **Beyond**: Detailed gas dispersion modelling	Pol02 Tra01 Tra02 Man03 Wst01 Hea02	London Plan Policy SI1 Camden Plan Policy C1 & CC4 Camden CPG Camden feedback

Air Quality Assessments

An air quality assessment has been undertaken for the Proposed Development. In summary, the impacts of construction and operational traffic have been assessed in accordance to the Institute of Air Quality Management (IAQM) and Environmental Protect UK (EPUK) Land-Use Planning & Development Control: Planning for Air Quality guidance. The pollutants of concerns for the assessment are nitrogen oxide (NO2) and particulate matters (PM10 and PM2.5). Based on the assessment, the effects of the Proposed Development during construction and operation are considered to be not significant.

The assessment of the impacts of proposed combustion plant were considered. No combustion plant for space or water heating is proposed. There would be three units of backup generators which would operate for less than 18 hours per year. This is below the number of hourly exceedances of the short term NO2 limit value allowed per year. Therefore, effects from combustion plant emissions would not be significant and this was scoped out of the assessment.

For construction dust, it is anticipated the work associated with the Proposed Development would be high-risk based on the IAQM's Guidance on the Assessment from Demolition and Construction and Greater London Authority (GLA) guidance. As such, mitigation measures for high risk sites have been recommended and applied through a construction management plan (CMP). Significant effects would therefore not occur and an assessment of construction dust has been scoped out.

An Air Quality Neutral (AQN) assessment has been undertaken in accordance to the GLA's Sustainable Design and Construction Supplementary Planning Guidance (SPG). The Proposed Development has been assessment to be air quality neutral and comply with the AQN policy.

Construction and demolition

It has been assumed that the Proposed Development would be a high-risk site in terms of construction dust risk to human health and dust soiling. In light of this assumption, the best practice mitigation measures described in the IAQM construction dust guidance and GLA guidance for high-risk sites are essential to avoid significant effects occurring and are set out in the draft Construction Management Plan, submitted with the planning application. The good practice measures will contribute to 'air quality positive' requirement detailed in the London Plan 2021 and London Environment Strategy[1].

The air quality assessment has shown the project would have a negligible effect on construction traffic, therefore no specific or bespoke mitigation is proposed for the project.

A pre-demolition audit has been undertaken during RIBA Stage 2 (Concept Design stage), to identify potential materials and equipment that can be reused, which has guided the design to consider using the materials identified and to help waste contractors set targets to maximise reuse and recycling opportunities.

Fuel for energy

London Plan Policy SI 1 'Improving Air Quality' recognises the importance to the Mayor of tackling air pollution in order to improve air quality, health and well-being. Among the requirements was the criterion in relation to planning decisions, that a major development be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality. 'Air quality neutral' was defined in the Mayor's Sustainable Design and Construction, Supplementary Planning Guidance.

The London Environment Strategy[2] (LES) was published in May 2018 and sets out the Mayor's vision for London's environment in 2050. It is a strategy that brings together approaches from multiple aspects of London's environment in an integrated document. In relation to planning, the LES proposes new large-scale developments in London to be 'Air Quality Positive'. It aims for larger development to go further than being 'air quality neutral' and implement effective design and integration to surrounding area to boost local air quality. The key aim is to ensure that emissions and exposure to pollution are reduced and air quality positive emphasises the importance of considering air quality very early in the design process.

An appropriate Air Quality Assessment was prepared for the Proposed Development and should be read alongside this statement. Please refer to the Environmental Statement - Volume 1, Chapter 5 for further details.

3.6.4 Waste

Camden Local Plan
Policy CC5 Waste

Camden Planning Guidance
Design

London Plan
Policy SI 2 Minimising greenhouse gas emissions
Policy SI 7 Reducing waste and supporting the circular economy
Policy SI 8 Waste capacity and net waste self-sufficiency
Policy SI 9 Safeguarded waste sites
Policy SI 10 Aggregates

Project commitments

PATHWAY TO NET ZERO	BREEAM	Reference Policy
Circular Economy. Comprehensively adopt circular economy principles to retain material's highest value. Develop a **Circular Economy Statement** according to GLA's Published New London Plan SI7 to demonstrate the re-use and recycle of demolished materials (BLCC), reduce material demand of the new design and design for re-use and recyclability. **Condition and Feasibility Study BLCC Resource efficiency Plan**	Wst06 Mat03	London Plan Policy SI 7 CPG Energy efficiency and adaptation
Waste. Complete a **pre-demolition audit**. Recycle 95% of non-hazardous construction, demolition and excavation waste Construction waste generation: Max 6.5 t/100m^{2}GIA Operational waste: Establishing recycling loop systems and provision of collection facilities, including paper, food, lights and batteries	Wst01 Wst03	London Plan Policy SI 7 Camden Plan Policy CC5 CPG Energy efficiency and adaptation

[1] GLA (2018). The London Environment Strategy, Available at: https://www.london.gov.uk/what-we-do/environment/london-environment-strategy

[2] Greater London Authority (2018) The London Environment Strategy, May 2018

Waste production and recycling

Waste and Resources Action Programme (WRAP) UK defines the circular economy as follows:

"A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life."

Within the Site Waste Management Plan (SWMP), a number of potential applications of the five key principles will be considered in relation to WRAP's Designing out Waste guidance, which outlines to reduce and optimise material use through design and specification. These will be considered and developed further at the detailed design stages. Any changes will be reflected in future iterations of the SWMP.

A pre-demolition audit has been undertaken during RIBA Stage 2 (Concept Design stage), to identify potential materials and equipment that can be reused, which has guided the design to consider using the materials identified and to help waste contractors set targets to maximise reuse and recycling opportunities.

Arup Sustainability have produced a circular economy statement. A Circular Economy is defined in London Plan Policy SI7 'Reducing waste and supporting the Circular Economy' as one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.

The key waste-related circular economy strategies to be implemented are as follows:

- In order to design out construction, demolition, excavation, industrial and municipal waste arisings the project is targeting 80% construction, demolition and excavation waste to be recycled as aggregates and construction waste generation to be max 6.5 t/100m2GIA. A Resource Management Plan will be prepared to guide the process.
- In order to manage waste from demolition, a pre-demolition audit has been specified. Opportunities will be identified wherever possible to adopt standardised and/or repeated elements to enable greater recyclability.
- In order to manage waste from excavation this project targets 95% of non-hazardous construction, demolition and excavation waste to be recycled.
- In order to reduce the quantities of waste arising from construction, the façade is designed around the use of standardised elements, repetitive modules and off-site manufacture. This significantly reduces material wastage during construction. The principal contractor will be required to commit to monitoring construction site impacts and setting appropriate targets e.g. the project is targeting 95% diversion of waste from landfill.
- The design will support operational waste management through provision of dedicated space for the segregation and storage of operational recyclable waste. The waste strategy and management are being built into the project logistics from concept design stage.

Facilities for storage and collection

To promote waste hierarchy and circular economy principles in the operational stage of the Site, refuse storage will be located in the Proposed Development in a convenient location with clear signage to encourage separation of waste for recycling intro recyclables, food waste and residual waste. This storage will also have convenient access for refuse collection coordinated with the public realm design. This provision of segregated recycling waste storage areas will contribute towards local targets for reductions in waste volumes sent to landfill.

Waste from the existing and new areas within the development will be stored in communal waste stores with one store for the library spaces and one store for the new commercial spaces. Waste will be segregated at source into multiple waste streams including residual, glass, metal, paper, cardboard and food waste. Waste will be collected in colour coded bags and bins to reduce the risk of contamination. The waste containers will be collected every day and storage space will be provided for two days' waste to ensure resilience.

Space is provided for the storage of bulky waste and this waste will be reused and recycled where possible. Space is provided for the proper storage and handling of any special or hazardous wastes. A full waste management plan will be developed as part of the project to ensure waste is being stored and handled responsibly.

All deliveries and collections will be managed from an internal service yard accessed from Midland Road. Vehicles will access and egress in forward gear. The service yard is located in the centre of the development in order to minimise travel distances for deliveries. Deliveries and waste collections will be managed using a booking system to ensure that delivery peaks can be spread over the operational day to keep the service yard working efficiently. Waste is collected in communal waste stores adjacent to the service yard to reduce the number of waste collection trips and the distances that full waste bins will need to be moved. Compactors, skips and balers will be used to minimise the storage space required for the waste.

Waste Management Plan

A Site Waste Management Plan (SWMP) will be developed for the Site, which outlines the key objectives to achieve efficient use of material resources and to reduce the amount of waste produced due to the construction activities of the Site. It will be based on the guiding principles of sustainable resource and waste management: the waste hierarchy and the circular economy. The waste hierarchy and the circular economy aim to reduce the quantity of waste generated while trying to maximise the efficient use of material resources.

In accordance with these principles, and in response to the relevant regulatory, policy and guidance context, the SWMP will set out a number of materials and waste management targets, as shown in Table 2 below.

Table 2 Waste management targets

Management type	**Target**
Waste generation	Less than 4.5m^3/100m^2 or 1.2 tonnes/100m^2 (gross internal area (GIA))
Landfill diversion	90% tonnage of waste diverted

3.7 Transport

3.7.1 Prioritising walking, cycling and public transport

Camden Local Plan
Policy T1 Prioritising walking, cycling and public transport
Policy T2 Parking and car-free development
Policy T3 Transport infrastructure

Camden Planning Guidance
Transport CPG January 2021

London Plan
Policy T3 Transport capacity, connectivity and safeguarding
Policy T4 Assessing and mitigating transport impacts
Policy T5 Cycling
Policy T6 Car parking

Project commitments

INCLUSIVE PLACE	BREEAM	Reference Policy
Sustainable Transport: Incorporate measures to encourage and facilitate sustainable transport modes: access to public transport, cycling, walking	Tra01 Tra02	London Plan Policy T5 Camden Plan Policy T1 T2

This section summarises the approach for providing more sustainable access to transport and amenities at the Site. This is detailed further within the Transport Assessment and Framework Travel Plan (FTP), which should be read alongside this statement.

Walking

The Site is easily accessible to facilities and amenities within walking distance. There is good provision of footways for pedestrians, with a number of pedestrian crossing facilities.

In the vicinity of the Site, there is a good provision for pedestrians with footways of an adequate width leading to key destinations, including public transport stops and stations. The primary walking route to the Site is on A501 Euston Road which provides appropriate footway widths and dropped kerbs at appropriate locations to assist those travelling with buggies or wheelchairs.

Signalised pedestrian crossings are provided at the junctions of A501 Euston Road/Ossulston Street, and A501 Euston Road/Mabledon Place to the west of the Site, and the junction of A501 Euston Road/Midland Road/Judd Street to the east, which allows people walking safely across the street.

There is also a good provision for disabled pedestrians in the vicinity of the Site. All pedestrian crossings are provided with tactile paving on the approaches to the crossings. The tactile paving is also colour contrasted to assist those with visual impairments. Dropped kerbs are provided at all crossing locations.

Cycling

The Site benefits from good access to cycle networks, such as Cycleway 3, Cycleway 6, Local Cycle Network Route 6, and Local Cycle Network Route 16, which are available in the vicinity of the Site.

1,112 long-stay cycle parking spaces are proposed to be provided (including 110 existing cycle parking spaces). This includes 56 Sheffield stands, 111 lockers for folding bikes and 945 two tier cycle stand spaces.

In accordance with the London Plan (2021), the area schedule indicates that 172 short-stay cycle parking spaces should be provided. The proposals indicate a provision of 122 short-stay cycle parking spaces for short term visitors/public on-site. The remaining 50 additional off-site cycle parking spaces are proposed to be provided in the local area, such as along the island on Midland Road, with a financial contribution agreed as part of the S106 agreement.

There are several spaces on the local public highway, including 11 Sheffield stands (22 short-stay cycle parking spaces) on the footway on Midland Road, which will need to be relocated on the public highway. These spaces are not part of the on-site policy requirement.

Public transport

The Proposed Development benefits from a Public Transport Accessibility Level (PTAL) rating of 6b, which indicates an ‘excellent’ connectivity to the surrounding network.

Parking

The Proposed Development would provide four wheelchair-accessible car parking spaces for users of the British Library and one wheelchair-accessible space for the new commercial scheme. Additionally, there will be four operational car parking spaces and one minibus parking space provided.

The Proposed Development reduces existing car parking spaces. As per guidance within Camden’s Transport CPG (January 2021), 20% of retained spaces will be fitted with active electric vehicle charging facilities, and the remaining 80% of retained spaces will be fitted with passive electric vehicle charging facilities. Therefore, all car parking spaces in the proposed development will be fitted with infrastructure for electric vehicle charging.

Public transport improvements and proposals

The following infrastructural improvements are proposed, which are in proximity to the Proposed Development:

- London Underground line improvements: as part of TfL’s ongoing commitment to improve London Underground services, the following upgrades to stations and London Underground lines in the vicinity of the Site are planned:
    - The Four Lines Modernisation programme (Circle, District, Hammersmith & City and Metropolitan lines) to increase capacity (2023).
    - Capacity improvements on the Jubilee and Northern lines (2022).

- Elizabeth line (Crossrail): this route will provide a rail connection through central London linking Maidenhead and Heathrow Airport in the west to Shenfield and Abbey Wood in the east. The closest station to the Site is Farringdon station, which is approximately 1km walking distance from the Site. The Elizabeth line will open in phases, with services through central London (from Paddington to Abbey Wood) expected to begin in spring 2022.

- Crossrail 2 is a new proposed railway linking the national rail networks in Surrey and Hertfordshire to London. The new railway would stop at key locations throughout the city centre, including Euston St. Pancras (the nearest station to the Site). This would improve access to and from London across the wider South East, and significantly reduce congestion on existing London Underground and National Rail services.

- Crossrail 2 is planned to run beneath the Library site. One of the most important advances anticipated in the Crossrail 2 strategy is the creation of a new station beneath Somers Town, connecting Euston and St Pancras Stations. The proposals for the British Library Extension include a complex of structural enclosures above and below ground, to house the future requirements of Transport for London in the event of Crossrail 2's implementation. This includes a deep shaft at the western end of the site, descending from street level through 6 underground levels, a basement to accommodate a series of plant rooms, including a large ventilation fan chamber, a pedestrian passageway connecting east-west across the site at basement level, and ventilation, escape, servicing, and access facilities at street level and above. The scale, functions and arrangements of these elements have been the subject of three years' collaboration between TfL and the Applicant.

4 BREEAM UK New Construction 2018

INCLUSIVE PLACE	BREEAM	Reference Policy
BREEAM: Minimum Excellent **Beyond**: Aspirational Outstanding		Camden Plan Policy CC2 CPG Energy Efficiency and adaptation

BREEAM

A BREEAM UK New Construction 2018 (v3.0) assessment is being undertaken for the shell & core mixed-use British Library Extension. The assessment is for the office, culture, laboratory and retail areas.

This section outlines the results of the pre-assessment exercise, a summary of the strategy currently adopted and the next steps in the assessment process. Pre-assessment is not a formal BREEAM certification stage, but it is intended to give an indication as to the likely level of performance based on the information available at this stage of the design.

The pre-assessment forms the basis of a strategy for the proposed shell and core mixed-use development to achieve a minimum 'Excellent' BREEAM rating with aspirations for an 'Outstanding' rating. The targeted ratings have been set by the Applicant in line with the expected Camden planning requirements.

Following various sustainability workshops with the design team the targeted score for the assessment is **76.93%** which equates to an 'Excellent' BREEAM rating with all mandatory rating criteria targeted.

Table 3 Summary of targeted credits by category

Category	Available score	Target score
Management	11.0%	11.0%
Health & Wellbeing	8.0%	6.55%
Energy	14.0%	11.45%
Transport	11.5%	7.70%
Water	7.0%	6.22%
Materials	17.5%	10.29%
Waste	7.0%	4.45%
Land Use & Ecology	15.0%	11.54%
Pollution	9.0%	6.75%
Total	**100%**	**76.93%**
Expected BREEAM Rating		**Excellent**

Figure 7 Number of targeted credits by category

It is intended that this project will be assessed under the BREEAM Bespoke methodology, which will allow the list of applicable credits to be modified to reflect the unique nature of this development. As part of this process, an application will be submitted to the BRE along with specific details of the project to allow the bespoke list of criteria to be produced. This may result in alterations to the weightings of categories within the BREEAM New Construction 2018 manual, therefore the exact target and potential percentage scores stated may vary slightly, however this will not impact the overall ratings.

Arup recommends that the targeted scores always allow a margin of 10% above the minimum threshold required for the targeted rating during the design stage. The minimum score required for a BREEAM ‘Excellent’ rating is 70% and for an ‘Outstanding’ rating is 85% with all mandatory criteria also achieved. There is a further possible 14.5% which could be achieved pending further investigation of technical and commercial implications during the detailed design stage, potentially allowing the building to target a rating of ‘Outstanding’. Further details of the opportunity to uplift to ‘Outstanding’ are shown in Figure 8 and Table 4 BREEAM uplift opportunities

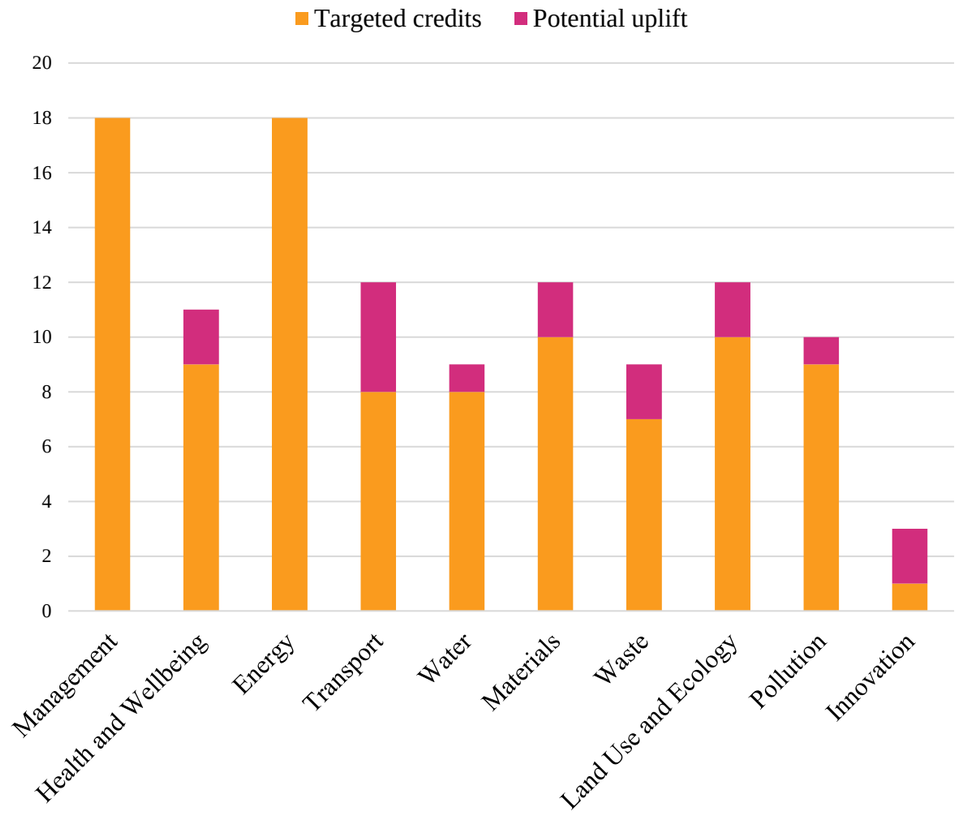


Figure 8 Targeted and potential uplift credits by category

Table 4 BREEAM uplift opportunities

Potential credits	Uplift score	Requirements
Hea02 - View out	1 credit	Size of windows, as % of internal wall area, must comply with requirements set out in BS8206-2 Table 1, depending on relevant distance between workstation location and window.
Hea02 - Ventilation	1 credit	"Location of air intakes and exhausts must be compliant with one of the following: - PD CEN/TR 16798-4:2017 - BRE FB 30 - BRE IP 9/14 - CIBSE TM21
Wat01 - Water consumption	1 credit	For applicable components, reduce water consumption to meet Performance Level 5
Mat01 - Environmental impacts from construction products	1 credit	Carry out building LCA options appraisal of at least 3 significantly different core building services design options using an LCA tool which is recognised by BRE.
Mat03 - Responsible sourcing of materials	2 credits	All products under, as a minimum, the superstructure, internal finishes and substructure/hard landscaping categories must be sourced using products which are compliant with a BREEAM recognised responsible sourcing scheme. Generally, miscellaneous fixings, adhesives and seals will fall outside the scope
Wst02 - Use of recycled and sustainably sourced aggregates	1 credit	Use of recycled / sustainably sourced aggregates
Wst04 - Speculative floor and ceiling finishes	1 credit	Requires floor and ceiling finished to be installed only in a show area (speculative development).
LE04 - Enhancement of ecological value	2 credits	Ecological value of site to be reviewed using the type, distinctiveness, condition and area or length throughout the project lifecycle. The percentage change determines the number of credits awarded.
Pol03 - Flood risk management and reducing surface water run-off	1 credit	Ensure that surface water run-off rate is reduced by 30% compared to the pre-developed. Ensure that surface water run-off volume is no greater than the greenfield run-off rate.
Wst05 - Exemplary performance	1 credit	Additional credit available if credits under Pol03 can be achieved.
LE02 - Exemplary performance	1 credit	Additional credit available if credits under Pol03 can be achieved.

5 Conclusion

This report has provided a summary of the British Library Extension's alignment with local planning requirements including the new London Plan, Mayor of London's Supplementary Planning Guidance (SPG) and the Camden Local Plan.

The project has high sustainability aspirations, as demonstrated by the measures described and the target rating of BREEAM 'Excellent' (which puts the building in the top 10% of new buildings in terms of sustainability performance, as described by the BRE).

The key sustainability measures include:

- Improved building design, which seeks to expand the employment area of the building.
- A BREEAM UK New Construction 2018 'Excellent' rating for the shell & core mixed-use assessment.
- 50% improvement over baseline building water consumption, anticipated by water efficient fixtures and fittings.
- The proposed development will be all-electric and incorporate air source heat pumps into the scheme, which are considered a renewable resource under Camden planning guidance.
- A whole life cycle assessment has been undertaken in line with the London Plan Policy SI2 'Minimising greenhouse gas emissions' to help the project team to understand the environmental impact of the building design and operation. The scheme's impact has been compared with the benchmarks defined by the GLA with the ambition to meet the aspirational whole life cycle carbon benchmarks
- Ecological enhancements have been incorporated into the design to improve ecological resilience and to seek to achieve a biodiversity net gain for the Site. Additionally, the project achieves an Urban Greening Factor of 0.24.
- The design takes into account resilience against future climate change with adaptable infrastructure and management designed to protect from flooding and respond to heat waves and water shortages.
- Compliance with the waste hierarchy throughout operations as set out in the Operational Waste Management Plan.

The six key clusters have been addressed, and their impact measured, as follows:

1 **PARTNERSHIPS** to magnify the positive outcomes of the British Library project across wider communities.

- Stakeholder engagement
- Collaboration within the Project Team

2 Creating an **INCLUSIVE PLACE** that adds social value to the local Camden area and community.

- Inclusive and diverse places
- Health and Wellbeing
- Transport
- Heritage
- Certification ratings
- Water and drainage

3 **PATHWAY TOWARDS NET ZERO CARBON** and future **RESILIENCE** through integrated design.

- Operational energy and carbon
- Renewable energy sourcing
- Embodied Carbon, Circular Economy and Waste
- Resilient buildings

4 Creating a hub that supports **INNOVATION** and delivers sustainable **EMPLOYMENT**.

- Prioritise occupant satisfaction
- Innovation
- Work conditions

5 Using the available space to focus on high quality **BIODIVERSE HABITATS**, which engage users.

- Protect biodiversity
- Protect trees

6 Using the Library project to support the needs of the **LOCAL COMMUNITY**.

- Protect the local community
- Provide local opportunities

Appendix A BREEAM Pre-Assessment Scorecard

Bespoke assessment

BREEAM NC 2018 Tracker

Stage 2 Action
Potential Uplift
Potential Issue

Targeted Score76.93%
Potential Score:91.38%

Min. for Excellent70.00%
Min. for Outstanding85.00%

Credits		Available	Basecase	Potential Uplift	Stage 2 Action	Commentary and actions	Responsibility
Management							
Man 01	Project brief and design	4	4		Define roles	**Credit 1: Project delivery planning** Requires client, building occupier, design team and contractor involved in contributing to the decision-making process for the project and defining their roles and responsibilities.	**Project Manager**
					Stakeholder consultation	**Credit 2: Stakeholder Consultation (interested parties)** Requires third party consultation and feedback incorporation into design proposal.	**Architect**
					Agree targets	**Credits 3 & 4 - Prerequisites** The project team, including the client, formally agree strategic performance targets early in the design process with the support of the BREEAM AP where appointed.	**Sustainability**
					Appoint BREEAM AP	**Credit 3: BREEAM AP (Concept Design)** Involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout **Concept Design**	**Sustainability**
						Credits 4:BREEAM AP (Developed Design) Involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the project's overall performance against BREEAM, from their appointment and throughout **Developed Design**	**Sustainability**
Man 02	Life cycle cost and service life planning	4	4		Elemental LCC	**Credit 1: Elemental level life cycle cost (LCC)** Requires specialist Life Cycle Cost analysis to facilitate optioneering.	**Cost Consultant**
						Credit 2: Component level life cycle cost (LCC) Requires specialist Life Cycle Cost analysis to facilitate optioneering.	**Cost Consultant**
						Credit 3: Capital Cost reporting Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/m²) as part of the submission to BRE	**Client**
Man 03	Responsible construction practices	6	6			**Credit 0: Pre-requisite** Requires use of Legally harvested and traded timber only	**Contractor**
						Credit 1: Environmental management Requires appointment of contractor operating EMS and implementing best practice pollution prevention policies.	**Contractor**
						Credit 2 - Prerequisite The client and the contractor formally agree performance targets.	**Contractor**

						Credit 2: BREEAM AP (site) Involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible going beyond the design intent, to maximise the project's performance against the agreed performance targets throughout the **Construction, Handover and Close Out stages.**	**Contractor**
						Credit 3: Responsible construction management Take actions as applicable from BREEAM Man 03 action list.	**Contractor**
						Credit 4: *Monitoring of construction site impacts - Utility consumption and Transport of construction materials & waste* Requires the contractor to monitor site impacts.	**Contractor**
Man 04	Commissioning and handover	4	4			**Credit 1: Commissioning - testing schedule and responsibilities** Requires scheduling commissioning activities and reference standards to be used	**Contractor**
						Credit 2: Commissioning - design and preparation Requires commissioning of building services and appointment of specialist commissioning manager during the design stage by either the client or the principal contractor	**Contractor**
						Credit 3: Testing and inspecting building fabric Requires thermographic survey and/or airtightness test and inspection carried out by specialist	**Contractor**
						Credit 4: Handover Requires development of Building User Guide (BUG) and training schedule for facility managers	**Contractor**
		18 11%	18 11%	0 0%			

	Health & Wellbeing						
Hea 01	Visual Comfort	3	2	1		**Credit 2: Daylighting** Requires building areas to meet good practice daylight factors	**Architect**
						Credit 3: View out Requires 95% of relevant areas to be within 7m of a wall with 20% window.	**Architect**
						Credit 4: Internal and external lighting levels, zoning and control Requires lighting design to comply with CIBSE standards and allow for occupant control.	**MEP Engineer**
Hea 02	Indoor Air Quality	1		1		**Credit 0: Pre-requisite - Indoor air quality plan** Site-specific indoor air quality plan	**Contractor**
						Credit 1: Ventilation Requires minimum distances between intake and exhaust and suitable filtration measures.	**Contractor**
Hea 04	Thermal comfort	3	3			**Credit 1: Thermal modelling** Requires thermal modelling to demonstrate compliance with CIBSE thermal comfort criteria	**MEP Engineer**
						Credit 2: Adaptability - for a projected climate change scenario As above, but in relation to future climate change. Design to allow for flexibility.	**MEP Engineer**
Hea 05	Acoustic Performance	1	1			**Credit 1: Acoustic performance (based on Shell & Core scope)** Requires compliance with acoustic performance standards and testing requirements in relation to indoor ambient noise level, or defined bespoke set of performance requirements for all function areas of the building.	**Acoustician**
Hea 06	Security	1	1		Security consultant review	**Credit 1: Security of site and building** Requires Specialist Security consultant to produce a Security Needs Assessment and develop recommendations to be incorporated into design proposals.	**Security Consultant, Architect**
Hea 07	Safe and Healthy Surroundings	2	2			**Credit 1: Safe Access** Access routes for site.	**Architect**

						Credit 2: Outside Space Outside space providing building users with an external amenity area	**Architect**
		11 8.0%	9 6.55%	2 1%			
	Energy						
Ene 01	Reduction of energy use and carbon emissions	13	10			**Credit 1: Energy performance (Up to 9 credits)**	**MEP Engineer**
						Credit 2: Prediction of operation energy consumption (Up to 4 credits)	**MEP Engineer**
Ene 02	Energy Monitoring	2	2			**One credit - Sub-metering of major energy consuming systems** Requires sub metering strategy to cover at least 90% of energy end-use consumption	**MEP Engineer**
						One credit - Sub-metering of high energy load and tenancy areas Requires sub metering strategy to cover at least 90% of energy end-use consumption, sub metering of high energy load and tenancy areas and BMS system or similar.	**MEP Engineer**
Ene 03	External Lighting	1	1			**Credit 1: External lighting** Requires no external lighting OR efficient light fittings coupled with daylight switch controls and presence detection in areas of intermittent pedestrian traffic.	**MEP Engineer**
Ene 04	Low carbon design	3	2		Passive design and LZC technology review	**Credit 1: Passive design** Requires analysis and implementation of passive solutions to reduce energy demand (>5%)	**MEP Engineer**
						Credit 2 Low and zero carbon technologies Requires LZC specialist study and implementation of LZC technologies to reduce energy demand.	**MEP Engineer**
Ene 06	Energy Efficient Transportation Systems	3	3			**Credits 1 (one credit) and Credit 2 (two credits) : Energy consumption and Energy efficient features** Requires development of transportation analysis and incorporation of energy efficient feature into lifts and other transportation systems. Contractor to develop energy consumption comparison and select most efficient solution.	**Vertical Transportation Engineer**
Ene 07	Energy Efficient Laboratory Systems						
		22 14.0%	18 11.45%	0 0%			
	Transport						
Tra 01	Transport Assessment and Travel Plan	2	2		Site specific transport assessment	**Credit 1: Transport assessment and travel plan** No later than Concept Design stage, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form	**Transport Consultant**
Tra 02	Sustainable Transport Measures	10	6	4		**Credit 0: Prerequisite** Achieve Tra 01	**Transport Consultant**
						Credit 1: Transport options implementation Requires site location in close proximity of amenities such as food outlet, cash machine etc.	**Transport Consultant, Architect**
		12 11.5%	8 7.7%	4 3.8%			
	Water						
Wat 01	Water Consumption	5	4	1		**Credit 1: Water consumption** Requires use of water efficient fittings and implementation of rainwater harvesting and grey water recycling	**Architect**
Wat 02	Water Monitoring	1	1			**Credit 1: Water monitoring** Requires water meter on the mains water supply and sub metering of plant/areas accounting for more than 10% of water demand and pulsed output to be connected to BMS	**MEP Engineer**

Wat 03	Leak Detection	2	2			**Credit 1: Leak detection system** Requires leak detection system with compliant set of features.	**MEP Engineer**
						Credit 2: Flow control devices Requires flow control devises in each sanitary facility/area.	**MEP Engineer**
Wat 04	Water Efficient Equipment	1	1			**Credit 1: Water efficient equipment** Requires unregulated water demands to be mitigated or reduced.	**Architect**
		9 7.0%	8 6.22%	1 0.8%			
	Materials						
Mat 01	Environmental impacts from construction products	10	5	1	LCA Options Analysis	**Credits: LCA Analysis** Confirm optimal design choices for various building elements using LCA tools.	**Sustainability**
Mat 02	Environmental Product Declarations	1	1	0		**Credit** Specify construction products with EPD that achieve a total EPD points score according to the methodology.	**Contractor**
Mat 03	Responsible Sourcing of Materials	4	2	1		**Credit 0: Pre-requisite - Legally harvested timber** All timber and timber-based products used on the project are legally harvested and traded timber as per the UK government's Timber Procurement Policy	**Contractor**
					Sustainable Procurement Plan	**Credit 1: Enabling sustainable procurement** Requires to implement a sustainable procurement plan and demonstrate that a significant amount of construction products holds recognized Responsible sourcing credentials/certificates.	**Contractor, Architect**
						Credit 2: Measuring responsible sourcing	**Sustainability**
Mat 05	Designing for durability and resilience	1	1			**Credit 1: Protecting vulnerable parts of the building from damage & protecting exposed parts of the building from material degradation** Requires design to incorporate durability & resilience measures.	**Architect**
Mat 06	Material efficiency	1	1		Optimise material use	**Credit 1: Material efficiency** Requires implementation of a material efficiency strategy into design and construction	**Structural Engineer**
		17 17.5%	10 10.29%	2 2.1%			
	Waste						
Wst 01	Construction Waste Management	5	3	1	Pre-demolition audit	**Credit 0: Pre-requisite - Pre-demolition audit** Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition	**Client**
						Credit 1: Resource efficiency (up to three credits) Requires a pre-demolition audit and Contractor's Resource Management Plan (RMP) resulting into significant reduction of construction waste.	**Contractor**
						Credit 2: Diversion of resources from landfill Requires significant diversion of construction, demolition and excavation waste from landfill.	**Contractor**
Wst 02	Use of recycled and sustainably sourced aggregates	1	0	1		**Credit 1: Recycled aggregates** Requires use of high grade aggregate to contribute to the total amount of recycled and/or secondary aggregate.	**Contractor**
Wst 03	Operational Waste	1	1			**Credit 1: Operational waste** Mandatory for Excellent. Requires provision of dedicated waste storage for recyclable waste and supporting facilities.	**Architect**
Wst 04	Speculative Floor and Ceiling Finishes	1	0	1		**Credit 1: Speculative floor and ceiling finishes** Requires floor and ceiling finishes to be installed only in a limited show area (speculative development).	**Client**

Wst 05	Adaptation to climate change	1	1		Climate risk assessment	**Credit 1: Adaptation to climate change – structural and fabric resilience** Requires a systematic (structural and fabric resilience specific) risk assessment addressing climate change risks	**Structural Engineer**
Wst 06	Design for disassembly and adaptability	2	2		Disassembly and functional adaptation potential	**Credit 1: Design for disassembly and functional adaptability - recommendations** Requires implementation of functional adaptability strategy.	**Structural Engineer, MEP Engineer, Architect**
						Credit 2: Design for disassembly and functional adaptability - implementation Requires implementation of functional adaptability strategy.	**Structural Engineer, MEP Engineer, Architect**
		11	7	2			
		7.0%	4.45%	1.3%			
	Land Use & Ecology						
LE 01	Site selection	2	1			**Credit 1: Previously occupied land** Requires at least 75% of the Proposed Development's footprint is on an area of land which has previously been occupied.	**Client**
LE 02	Identifying and understanding the risks and opportunities for the site	2	2			**Credit 0: Pre-requisite - Statutory obligations** The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site	**Contractor**
					Ecologist review of site	**Credit 1: Survey and evaluation** Requires suitably qualified ecologist to assess site and provide recommendations	**Ecologist**
					Stakeholder consultation to determine measures	**Credit 2: Determining the ecological outcomes** Determine measures with relevant stakeholders in line with the mitigation hierarchy	**Ecologist**
LE 03	Managing negative impacts on ecology	3	3		Plan to avoid negative impacts	**Credit 1: Planning and measures on site** Implement measures in practice	**Contractor**
						Credit 2: Managing negative impacts Manage negative impacts from site preparation and construction in line with ecologist recommendations and show that no overall loss of ecological value has occurred.	**Ecologist**
LE 04	Enhancement of Ecological value	4	2	2		**Credit 0: Pre-requisite - Managing negative impacts** Achieve LE03 credit 2, and client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site	**Ecologist**
						Credit 1: Ecological enhancement Measures implemented which enhance ecological value, based on input from project team and ecologist.	**Ecologist**
						Credit 2 - Change and enhancement of ecology Up to three credits based on resulting uplift in ecological value of the site.	**Ecologist**
LE 05	Long Term Impact on Biodiversity	2	2			**Credit 0: Pre-requisite - Statutory obligations** Achieve LE 03 and LE 04 and the client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.	**Ecologist**
						Credit 1: Management and maintenance throughout project Measures have been implemented to manage and maintain ecology throughout the project and a section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied.	**Ecologist**
						Credit 1: Long term impact on biodiversity A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion.	**Ecologist**
		13	10	2			
		15.0%	11.54%	2.3%			

	Pollution						
Pol 01	Impact of Refrigerants	3	2			**Credit 0: Pre-requisite** All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3)	**MEP Engineer**
						Credit 1: Impact of refrigerants Requires no refrigerants or refrigerants with low Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_{2e}) or GWP.	**MEP Engineer**
						Credit 2: Refrigerant Leak Detection Requires inclusion of refrigerant leak detection system.	**MEP Engineer**
Pol 02	Local air quality	2	2			**Credit 1: NOx emission levels for heating and hot water** All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. Alternative requirements possible if this is not the case - district heat network planned?	**MEP Engineer**
Pol 03	Flood risk management and reducing surface water run-off	5	3	1		**Credit 0: Pre-requisite** An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria.	**Civil Engineer**
						Credit 1: Flood resilience Requires building located in low flooding risk zone or avoidance of flooding risk	**Civil Engineer**
						Credit 2: Surface water run-off Surface water run-off rate and volume.	**Civil Engineer**
						Credit 3: Minimising watercourse pollution Requires no discharge from site for rainfall up to 5mm, SuDS, pollutions prevention systems. Appointment of Appropriate Consultant (drainage specialist) required.	**Civil Engineer**
Pol 04	Reduction of Night-Time Light Pollution	1	1			**Credit 1: Reduction of night time light pollution** Requires no external lighting or reduction of obtrusive light as per ILP Guidance notes coupled with automatic switch off between 23:00 and 7:00 and low lighting levels for safety/security lighting and advertisements.	**MEP Engineer**
Pol 05	Noise Attenuation	1	1			**Credit 1: Reduction of noise pollution** Requires specialist noise impact assessment and a difference no greater than +5dB during the day (07:00 to 23:00) and +3dB at night (23:00 to 07:00) compared to the background noise level.	**Acoustician**
		12	9	1			
		9.0%	6.75%	0.8%			
	Innovation						
Man 03	Responsible Construction Practices	1	1			Exemplary performance for responsible construction management ***Credit considered achievable***	**Contractor**
Wst 05	Adaptation to climate change	1	0	1		Requires meeting multiple credits, including the two Pol03 Surface water run-off credits . ***Credit considered achievable. Design team to review requirements***	**Civil Engineer**
LE 02	Ecological risks and opportunities	1	0	1		Requires meeting multiple credits ***Credit considered achievable. Design team to review requirements***	**Ecologist**
AI	TBC	0	0			Innovation to be proposed and approved by BRE ***All disciplines to identify possible Innovation features.***	**TBC**
		2	1	2			
			1%	2%			
		100%	76.93%	14.5%			

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