SUSTAINABILITY STATEMENT

WATKINS PAYNE PARTNERSHIP

247 TOTTENHAM COURT ROAD

JULY 2020

watkins payne
designed engineered focused

247 Tottenham Court Road
London

Sustainability Statement

Planning Issue 2

Client Name:	Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 2 Limited
Client Address:	10 Fenchurch Avenue London EC3H 5AG
Property:	247 Tottenham Court Road, London, W1T 7HH; 3 Bayley Street, London, WC1B 3HA; 1 Morwell Street, London, WC1B 3AR; 2-3 Morwell Street, London, WC1B 3AR; and 4 Morwell Street, London, W1T 7QT
Project Reference:	4650
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Checked by:	JD
Validated by:	MDC

C O N T E N T S

EXECUTIVE SUMMARY

Watkins Payne Partnership have been commissioned by Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 2 Limited (the Applicant) to produce a statement of sustainability in support of an application for planning permission for the proposed development.

Key Measures

This sustainability statement describes how the proposed development will provide appropriate levels of sustainability within the design and construction for the development. It covers the key themes of Energy and CO_2 Reduction, Transport, Sustainable Urban Drainage, Water, Waste, Air Quality, Ecology, Noise Pollution, Circular Economy, Whole Life Carbon and BREEAM.

Energy and CO_2 Reduction

- For the full details please refer to the Energy Strategy produced by Watkins Payne that should be read in conjunction with this report.
- The focus of the energy strategy is on CO_2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology.
- The building envelope is to be designed to be capable of providing a future mixed mode cooling & ventilation strategy which is future proofing against the pedestrianisation of Tottenham Court Road.
- As a result, the development as a whole for all uses achieves a 50.2% reduction in regulated CO_2 emissions.

Transport

- For the full details please refer to the Transport Assessment produced by Momentum Transport Consultancy.
- The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan (2019). Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels.
- The development is proposed to be car-free, with no car parking spaces provided and existing car parking removed.

Sustainable Urban Drainage Systems (SUDS)

- For full details please refer to the Drainage Report produced by AKT II.
- There are no watercourses in the immediate vicinity of the site and it will not be possible to discharge to one. It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls.
- The proposed Sustainable Drainage System (SuDS) is to incorporate an 120m3 attenuation storage volume to achieve greenfield limiting discharge rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan.
- The proposed SuDS features will also comprise of a green roof to assist with infiltration and limiting the development's discharge rate

Water

- For full details on the water strategy please refer to the BREEAM Reports produced by Watkins Payne and contained in Appendix 1.

- The water strategy states that all water consuming plant specified should allow for a 50% improvement in efficiency over the national baseline.

Waste

- For full details please refer to the Design and Access Statement produced by Stiff + Trevillion.
- On-street loading is proposed for the scheme. This is proposed to happen on Morwell Street through the use of a new dedicated on-street loading bay bordering the western footway of Morwell Street. A loading bay has been designed to accommodate delivery, servicing and waste vehicles whilst ensuring that northbound access for large vehicles on Morwell Street, including coaches associated with nearby hotel uses, is maintained.

Air Quality

- For full details please refer to Air Quality Assessment produced by AECOM.
- The demolition and construction works have the potential to generate fugitive emissions of dust and PM10.
- Suitable mitigation measures will be adopted to reduce the nuisance and human-health impacts of the dust and PM10 which, if effectively implemented, can reduce impacts to an insignificant level.
- The operational impact of the proposed development on local air quality has been assessed at 12 off-site receptor locations representing existing sensitive receptors and air quality impacts are predicted to be negligible, according to the EPUK/IAQM significance criteria.
- It should be noted that the commercial office areas are to be future proofed with natural ventilation apertures located behind screened louvres adjacent to the windows within each bay of the office areas from 1st floor level and above. These apertures will allow the commercial office space to operate a mixed mode ventilation and cooling strategy if improvements to the Tottenham Court Road air quality and noise allow in the future.

Ecology

- For full details please refer to the Preliminary Ecological Appraisal produced by Tyler Grange.
- The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required.
- The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively.

Noise Pollution

- For full detail please refer to the Noise Assessment produced by AECOM.
- The operational noise limits have been determined at the nearby sensitive receptors.
- Noise emissions from proposed building plant will be considered during detailed design in order to ensure that operational noise does not adversely affect nearby residents (both existing residents as well as future occupants of the proposed development).
- Outline façade sound insulation performance requirements have been determined with example configurations for glazing in order to mitigate against external ambient noise and achieve LBC's ambient noise criteria.

- Based on the assessment and the recommended mitigation measures, the site is considered suitable for the intended use. The required mitigation strategy covering glazing and ventilation performance will be finalised during detailed design.

Circular Economy

- For full detail please refer to the Detailed Circular Economy Statement produced by Watkins Payne.
- The statement gives an overview of the circular economy strategies to be implemented in line with emerging London Plan (2019) Policy S17 and the related Draft Pre-Consultation Guidance document.
- The following circular economy strategic approaches will be considered in relation to the new development: use of reclaimed materials/products, opportunities for returnable packaging solutions, offsite fabrication, reduce weight of structures, and avoiding over-specifying materials.

Whole Life Carbon

- For full details please refer to the Whole Life Carbon Assessment produced by Hoare Lea.
- The assessment shows the proposed new low carbon design strategy will have a lower whole life carbon footprint than the refurbishment scenarios assessed (over 60 years).
- Methods of low carbon construction are being considered for the project, including a review of CLT (timber) as a potential material for the upper floor slabs and other elements specified with a high content of recycled material.

BREEAM

- For full details please refer to the BREEAM Reports produced by Watkins Payne and contained in Appendix 1.
- The development will be assessed against the BREEAM 2018 New Construction scheme.
- The achievable score for the Retail spaces is 71.32% which equates to a BREEAM rating of Excellent. This includes targeting the maximum credits available under Man01 (project brief and design), Man04 (commissioning and handover), Hea07 (safe and healthy surroundings), Ene03 (external lighting), Tra01 (transport assessment and travel plan), Wat03 (water leak detection), Mat05 (designing for durability and resilience), Wst03 (operational waste), LE02 (identifying and understanding the risks and opportunities for the site), Pol02 (local air quality), Pol04 (reduction of night time light pollution), and Pol05 (noise attenuation).
- The achievable score for the Offices is 72.79% which equates to a BREEAM rating of Excellent. This includes targeting the maximum credits available under Man03 (responsible construction practices), Hea04 (thermal comfort), Hea05 (acoustic performance), Ene02 (energy monitoring), Ene06 (energy efficient lifts), Wat02 (water monitoring), Wst04 (speculative floor and ceiling finishes), Wst06 (design for disassembly and adaptability), LE03 (managing negative impacts on habitats and biodiversity on the site), and LE05 (long term biodiversity management and maintenance).

1.00 INTRODUCTION

1.01 Application

This Sustainability Statement has been prepared on behalf of Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 2 Limited in support of an application at 247 Tottenham Court Road for full planning permission for:-

Demolition of 247 Tottenham Court Road, 3 Bayley Street, 1 Morwell Street, 2-3 Morwell Street and 4 Morwell Street and the erection of a mixed use office led development comprising ground plus five storey building for office (Class B1) use, flexible uses at ground and basement (Class A1/A2/A3/B1/D1/D2), residential (Class C3) use, basement excavation, provision of roof terraces, roof level plant equipment and enclosures, cycle parking, public realm and other associated works.

1.02 Existing Building

247 Tottenham Court Road

The existing building is comprised of basement, ground plus seven stories with shop and café (Class A1) uses at ground floor and the upper floors within an office (Class B1) use. Office carparking is provided within the basement with access from Morwell Street.

3 Bayley Street

The existing building joins the northern boundary with 247 Tottenham Court Road and is comprised of ground plus five storeys. The upper floors contain four residential dwellings and the first floor forms part of the office at 247 Tottenham Court Road.

1 Morwell Street

At ground floor, the existing building is linked to the shop (Class A1) at 242 Tottenham Court Road, and is currently occupied by Tiger on the ground and lower ground floors. We understand that this change of use was granted planning permission on 13 April 1981 (ref. 31936). The first and second floors (and part of the basement) are in use as an office (Class B1) and are accessible from office floorplates on Tottenham Court Road.

4 Morwell Street

The existing building is occupied by the Architectural Association at basement, ground, first and second floor and comprises a mix of storage, studios and offices and is a mix of Class B1/D1 uses.

1.03 Purpose

The aim of this sustainability statement is to demonstrate how the relevant planning policies that address sustainability have been addressed.

This statement is structured as follows:

- **Section 1** - an introduction to the site and the buildings.
- **Section 2** - a description of the main policies and drivers for sustainability relevant to the application.

- **Section 3** - a review against the National Planning Policy Framework, the current London Plan (2016), the emerging London Plan (2019) and Camden's planning policy.

1.04 Reservation

This report has been prepared solely for the use of the applicant and Watkins Payne Partnership accept no responsibility for its use by any third parties.

2.00 POLICY REVIEW

This section of the report is a review of all the planning policy documents that are applicable to the development as follows:

- National Planning Policy Framework (2019);
- Current London Plan (2016)
- Emerging London Plan (2019); and
- Camden Local Plan (2017)

2.01 National Planning Policy Framework (2019)

The National Planning Policy Framework (NPPF) provides the planning policies for England and how these policies should be applied. Whilst sustainable development is not the sole aim of the NPPF, it remains a main theme throughout and the NPPF provides the context for sustainable development.

2.02 Current London Plan (2016)

The London Plan sets out the Mayor's vision for London. In accordance with the NPPF, it promotes economic development, and endorses the principles of sustainable development. It is a key driver for strategic decision-making on London's development, including development decisions. The current London Plan was adopted in March 2016 and includes a number of policies associated with sustainable design:

- Policy 5.1 Climate change mitigation;
- Policy 5.2 Minimising carbon dioxide emissions;
- Policy 5.3 Sustainable design and construction;
- Policy 5.6 Decentralised energy in development proposals;
- Policy 5.7 Renewable energy;
- Policy 5.9 Overheating and cooling;
- Policy 5.10 Urban greening;
- Policy 5.11 Green roofs and development site environs;
- Policy 5.12 Flood risk management; and
- Policy 5.15 Water use and supplies.

2.03 Emerging London Plan (2019)

The new London Plan (intent to publish) version, dated December 2019 sets out the Mayor's vision and overall strategic plan for London. It sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. Given the late stage of the emerging London Plan, it is considered that material weight can be given to the Draft Plan in line with paragraph 48 of the NPPF. The following policies are considered most pertinent to this report:

- Policy GG2 Making the best use of land;
- Policy GG6 Increasing efficiency and resilience;
- Policy D1A Infrastructure requirements for sustainable development;
- Policy D1B Optimising site capacity through the design-led approach;
- Policy D13 Noise;
- Policy G5 Urban greening;
- Policy G6 Biodiversity and access to nature;
- Policy G7 Trees and woodlands;
- Policy SI1 Improving air quality;

- Policy SI2 Minimising greenhouse gas emissions;
- Policy SI3 Energy infrastructure;
- Policy SI5 Water infrastructure;
- Policy SI12 Flood risk management;
- Policy SI13 Sustainable drainage;
- Policy T1 Strategic approach to transport;
- Policy T5 Cycling; and
- Policy T6 Car parking.

2.04 Camden Local Plan (2017)

The Camden Local Plan sets out the Council's planning policies and replaces the Core Strategy and Development Policies planning documents (adopted in 2010). It ensures that Camden continues to have robust, effective and up to-date planning policies that respond to changing circumstances and the borough's unique characteristics and contribute to delivering the Camden Plan and other local priorities. The Local Plan will cover the period from 2016-2031. The key policies are:

- Policy C6 Access for all;
- Policy A1 Managing the impact of development;
- Policy A2 Open Space;
- Policy A3 Biodiversity;
- Policy A4 Noise and vibration;
- 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; and
- Policy T3 Transport infrastructure.

3.00 SUSTAINABILITY METHODOLOGY

Statement Key

Box Colour	Colour Coding
	Current London Plan (2016)
	Emerging London Plan (2019)
	Camden Local Plan (2017)

The compliance of the development is noted using the following colour coding system in the fourth column.

Compliance Status	Colour Coding
	Achieved policy requirements
	Not achieved policy requirements due to constraints
	Not compliant with policy requirements
	Policy requirements not applicable to the development

4.00 SUSTAINABILITY MATRIX

Climate change mitigation	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor seeks to achieve an overall reduction in London's carbon dioxide emissions of 60 per cent (below 1990 levels) by 2025. It is expected that the GLA Group, London boroughs and other organisations will contribute to meeting this strategic reduction target, and the GLA will monitor progress towards its achievement annually. LDF preparation B. Within LDFs boroughs should develop detailed policies and proposals that promote and are consistent with the achievement of the Mayor's strategic carbon dioxide emissions reduction target for London.	5.1	*As outlined in the Energy Strategy produced by Watkins Payne;* The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The energy strategy has been produced using the updated SAP 10 carbon emission factors and supporting documentation from the GLA. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions.	

Minimising carbon dioxide emissions	Current London Plan (2016)	Review of proposed development	Compliance Status
Planning decisions A. Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy: 1. Be lean: use less energy 2. Be clean: supply energy efficiently 3. Be green: use renewable energy B. The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019. C. Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy. D. As a minimum, energy assessments should include the following details: a. calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations (see paragraph 5.22) at each stage of the energy hierarchy b. proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services c. proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP) d. proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies e. The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.	5.2	*As outlined in the Energy Strategy produced by Watkins Payne;* The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The energy strategy has been produced using the updated SAP 10 carbon emission factors and supporting documentation from the GLA. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions.	

Sustainable design and construction	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime. Planning decisions B. Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process. C. Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles: a. minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems) b. avoiding internal overheating and contributing to the urban heat island effect c. efficient use of natural resources (including water), including making the most of natural systems both within and around buildings d. minimising pollution (including noise, air and urban runoff) e. minimising the generation of waste and maximising reuse or recycling f. avoiding impacts from natural hazards (including flooding) g. ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions h. securing sustainable procurement of materials, using local supplies where feasible, and i. promoting and protecting biodiversity and green infrastructure. LDF preparation D. Within LDFs boroughs should consider the need to develop more detailed policies and proposals based on the sustainable design principles outlined above and those which are outlined in the Mayor's supplementary planning guidance that are specific to their local circumstances.	5.3	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The objectives of the proposal are to achieve a high quality mixed-use development which respects the diversity, character and history of the area. The development will enhance the public realm, and public activity at street level and be sustainable [environmentally, economically, socially and culturally]. The project brief specifies a sustainable clean and low energy building that is designed to the highest environmental standards. Level access is provided to all uses within the building, and lifts are to be replaced and expanded to remove any access barriers and suit the needs of modern buildings. *As outlined in the BREEAM Pre-Assessment Report produced by Watkins Payne;* The office and retail parts are to be assessed against the BREEAM 2018 New Construction scheme and are to target an overall 'Excellent' rating. As part of this, credits will be sought which minimise carbon dioxide emission (Ene01), avoid internal overheating (Hea04), ensure efficient use of water (Wat01), minimise noise pollution (Pol05), minimise water generation (Wst01 and Wst03), avoid impacts of flooding (Pol03), secures the sustainable procurement of materials (Mat03) and protects biodiversity (LE03).	

Decentralised energy in development proposals	Current London Plan (2016)	Review of proposed development	Compliance Status
Planning decisions A. Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites. B. Major development proposals should select energy systems in accordance with the following hierarchy: 1. Connection to existing heating or cooling networks; 2. Site wide CHP network; 3. Communal heating and cooling; C. Potential opportunities to meet the first priority in this hierarchy are outlined in the London Heat Map tool. Where future network opportunities are identified, proposals should be designed to connect to these networks.	5.6	*As outlined in the Energy Strategy produced by Watkins Payne;* Investigations into site-wide heat networks has established that there is no existing or proposed infrastructure arrangement within a reasonable distance from the development site. This has been confirmed in correspondence with the Camden Council. Due to decarbonisation of the national grid using electricity for heating via the proposed air source heat pumps (ASHPs) will be less carbon intensive than the burning of gas in a typical energy centre CHP plant. A further study produced by the department for Business, Energy and Industrial Strategy (BEIS) suggests that by 2025 the carbon emissions factor of electricity will be as low as 0.12kg CO_2/kWh which is nearly half of that of the current carbon emission factor of gas. Therefore, taking the mentioned points into consideration the heating demand of the development is better met with electrically powered ASHPs rather than by any existing heat network. A major consideration of the RIBA Stage 2 design process has been to minimise the massing of the building when viewed from Bedford Square. As part of this process the proposed floor to floor heights have been minimised along with the amount and the height of the plant to be located on the roof. These constraints have led to the proposed heating and comfort cooling solution to the commercial office areas of an underfloor heating and cooling systems served by on-floor zone units as this solution works well in low floor to floor heights. Each on-floor underfloor zone unit needs to be provided with a heating medium and a cooling medium. The smallest floor plant area foot print and height is to couple each on-floor zone unit with a variable refrigerant flow air source heat pump. This has the added benefit of omitting the combustion of natural gas to provide the heat source to the building. As communal heating system was not applicable to the commercial elements of the scheme a similar solution of individual air source heat pumps has been applied to the residential units. Therefore, a communal heating system is not proposed to the development.	

Renewable energy	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor seeks to increase the proportion of energy generated from renewable sources and expects that the projections for installed renewable energy capacity outlined in the Climate Change Mitigation and Energy Strategy and in supplementary planning guidance will be achieved in London. Planning decisions B. Within the framework of the energy hierarchy (see Policy 5.2), major development proposals should provide a reduction in expected carbon dioxide emissions through the use of on-site renewable energy generation, where feasible. LDF preparation C. Within LDFs boroughs should, and other agencies may wish to, develop more detailed policies and proposals to support the development of renewable energy in London – in particular, to identify broad areas where specific renewable energy technologies, including large scale systems and the large scale deployment of small scale systems, are appropriate. The identification of areas should be consistent with any guidelines and criteria outlined by the Mayor. D. All renewable energy systems should be located and designed to minimise any potential adverse impacts on biodiversity, the natural environment and historical assets, and to avoid any adverse impacts on air quality.	5.7	*As outlined in the Energy Strategy produced by Watkins Payne;* The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The energy strategy has been produced using the updated SAP 10 carbon emission factors and supporting documentation from the GLA. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. The renewable energy technologies assessment is based on using solutions that are technically proven with low maintenance implications taking into account the energy efficiency strategies being proposed in the current design. The potential renewable energy technologies have been assessed taking into account the particular development constraints. The strategy is to utilise: • Photovoltaic cells to provide a contribution to the electrical demand. • Air source heat pumps to provide the heating and cooling requirements. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions.	

Overheating and cooling	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor seeks to reduce the impact of the urban heat island effect in London and encourages the design of places and spaces to avoid overheating and excessive heat generation, and to reduce overheating due to the impacts of climate change and the urban heat island effect on an area wide basis. Planning decisions B. Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this in accordance with the following cooling hierarchy: 1. minimise internal heat generation through energy efficient design 2. reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls 3. manage the heat within the building through exposed internal thermal mass and high ceilings 4. passive ventilation 5. mechanical ventilation 6. active cooling systems (ensuring they are the lowest carbon options). C. Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible. Further details and guidance regarding overheating and cooling are outlined in the London Climate Change Adaptation Strategy. LDF preparation D. Within LDFs boroughs should develop more detailed policies and proposals to support the avoidance of overheating and to support the cooling hierarchy.	5.9	*As outlined in the Energy Strategy produced by Watkins Payne;* The proposed development has been assessed for risk of overheating in line with the requirements of the GLA and CIBSE TM52. The analysis has shown that the proposed development is at risk of overheating during each of the three TM49 design summer years under free running conditions and that as such additional measures are required by way of comfort cooling. The offices have been shown to pass the TM52 mechanically cooled criteria and the active cooling demand within the building has been shown to be lower than the notional demand. The commercial office areas of the development are being future proofed with natural ventilation apertures to allow the commercial office to be operated in a future mixed mode ventilation and cooling strategy if improvements to the Tottenham Court Road air quality and noise allow. Within the commercial office façade design, there are openings incorporated adjacent to windows within each bay of the office areas from 1st floor level and above. These doors behind screened louvres have the potential to be used as part of a mixed mode ventilation and cooling strategy. To ensure the environmental conditions are acceptable, this future passive ventilation strategy would only be operated in the scenario when the adjacent roads are free of pollution and ambient sound levels are substantially reduced. The ability to operate using a passive strategy is anticipated to reduce the demand for cooling and ventilation with an associated drop in CO_2 emissions. It is proposed that the openings would be operated by building users when external ambient conditions allow cooling without mechanical means. This is expected to be in the range of 13oC to 26oC. Internal temperatures would be acceptable at a slightly higher range than when using the installed HVAC. The mixed mode ventilation aperture doors should be closed by users if internal temperatures exceed 26oC at which time mechanical cooling is then utilised.	

Urban greening	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor will promote and support urban greening, such as new planting in the public realm (including streets, squares and plazas) and multifunctional green infrastructure, to contribute to the adaptation to, and reduction of, the effects of climate change. B. The Mayor seeks to increase the amount of surface area greened in the Central Activities Zone by at least five per cent by 2030, and a further five per cent by 20501. Planning decisions C. Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm. Elements that can contribute to this include tree planting, green roofs and walls, and soft landscaping. Major development proposals within the Central Activities Zone should demonstrate how green infrastructure has been incorporated. LDF preparation D. Boroughs should identify areas where urban greening and green infrastructure can make a particular contribution to mitigating the effects of climate change, such as the urban heat island.	5.10	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The building steps down and is set back by 2.5 metres at 4th floor level along Morwell Street to minimise the impact of views from Bedford Square, with the building set back at the 5th floor level on the corner of Bayley Street and Morwell Street. Greened terraces are proposed for this elevation along the fifth floor and a terrace and urban greening has been incorporated as part of the roof space. A chamfer has been introduced on the corner of Bayley and Morwell Street to increase the level of public realm on this corner. *As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design.	

Green roofs and development site environs	Current London Plan (2016)	Review of proposed development	Compliance Status
Planning decisions A Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible, to deliver as many of the following objectives as possible: a. adaptation to climate change (i.e. aiding cooling) b. sustainable urban drainage c. mitigation of climate change (i.e. aiding energy efficiency) d. enhancement of biodiversity e. accessible roof space f. improvements to appearance and resilience of the building g. growing food. LDF preparation B Within LDFs boroughs may wish to develop more detailed policies and proposals to support the development of green roofs and the greening of development sites. Boroughs should also promote the use of green roofs in smaller developments, renovations and extensions where feasible.	5.11	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design. *As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The current design incorporates a sedum green roof with photovoltaics.	

Flood risk management	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor will work with all relevant agencies including the Environment Agency to address current and future flood issues and minimise risks in a sustainable and cost effective way. Planning decisions B. Development proposals must comply with the flood risk assessment and management requirements set out in the NPPF and the associated technical Guidance on flood risk over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans. C. Developments which are required to pass the Exceptions Test set out in the NPPF and the Technical Guidance will need to address flood resilient design and emergency planning by demonstrating that: a. the development will remain safe and operational under flood conditions b. a strategy of either safe evacuation and/or safely remaining in the building is followed under flood conditions c. key services including electricity, water etc will continue to be provided under flood conditions d. buildings are designed for quick recovery following a flood. D. Development adjacent to flood defences will be required to protect the integrity of existing flood defences and wherever possible should aim to be set back from the banks of watercourses and those defences to allow their management, maintenance and upgrading to be undertaken in a sustainable and cost effective way. LDF preparation E. In line with the NPPF and the Technical Guidance, boroughs should, when preparing LDFs, utilise Strategic Flood Risk Assessments to identify areas where particular flood risk issues exist and develop actions and policy approaches aimed at reducing these risks, particularly through redevelopment of sites at risk of flooding and identifying specific opportunities for flood risk management measures.	5.12	*As outlined in the Drainage Assessment produced by AKT II;* The Environment Agency's Flood Zone and Indicative Floodplain Map shows that the site lies in Zone 1 and therefore is safe from flooding in high probability events, as there is no flooding located in the site nor in the surrounding streets It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls. It is recommended that at this stage a cost and space allowance is made for a storage volume of 120 m3 (greenfield reduction) as our recent experience with Thames Water suggests that they insist on limiting the discharge rates to the greenfield run-off rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan. A pre-planning enquiry was sent to Thames Water, and we are awaiting a response. The proposed SuDS features will also comprise of a green roof. It is also recommended that, if possible, the existing sewer connection(s) from the site are reused to prevent the need for constructing new sewer connections. This would minimise both the cost of the work and the disruption to the surrounding streets which are a busy thoroughfare and would consequently require significant pedestrian and traffic management to be provided during the work unless the connections were formed in headings. This is all subject to a CCTV survey which is yet to be undertaken to confirm the condition and number/level/size of existing outfall points. It is expected that the onsite survey will take place in 1-2 months' time with the results received in circa 3 months.	

Water use and supplies	Current London Plan (2016)	Review of proposed development	Compliance Status
Strategic A. The Mayor will work in partnership with appropriate agencies within London and adjoining regional and local planning authorities to protect and conserve water supplies and resources in order to secure London's needs in a sustainable manner by: a. minimising use of mains water b. reaching cost-effective minimum leakage levels c. in conjunction with demand side measures, promoting the provision of additional sustainable water resources in a timely and efficient manner, reducing the water supply deficit and achieving security of supply in London d. minimising the amount of energy consumed in water supply e. promoting the use of rainwater harvesting and using dual potable and grey water recycling systems, where they are energy and cost effective f. maintaining and upgrading water supply infrastructure g. ensuring the water supplied will not give rise to likely significant adverse effects to the environment particularly designated sites of European importance for nature conservation. Planning decisions B. Development should minimise the use of mains water by: a. incorporating water saving measures and equipment b. designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day C. New development for sustainable water supply infrastructure, which has been selected within water companies' Water Resource Management Plans, will be supported	5.15	*As outlined in the BREEAM Pre-Assessment Report produced by Watkins Payne;* The water strategy states that all water consuming plant specified should allow for a 50% improvement in efficiency over the national baseline, equating to 4 targeted credits under Wat01, which exceeds the mandatory 1 credit required for the excellent standard. This will be achieved through water saving measures, including low water consumption rates of sanitaryware. The office and retail parts are to be assessed against the BREEAM 2018 New Construction scheme and are to target an overall 'Excellent' rating. As part of this, credits will be sought which minimise water consumption (Wat01), ensure the installation of a leak detection system (Wat03), and provide sufficient water monitoring (Wat02).	

Making the best use of land	Emerging London Plan (2019)	Review of proposed development	Compliance Status
To create high-density, mixed-use places that make the best use of land, those involved in planning and development must: A. Prioritise the development of Opportunity Areas, brownfield land, surplus public sector land, sites which are well-connected by existing or planned Tube and rail stations, sites within and on the edge of town centres, and small sites. B. Proactively explore the potential to intensify the use of land, including public land, to support additional homes and workspaces, promoting higher density development, particularly on sites that are well-connected by public transport, walking and cycling, applying a design–led approach. C. Understand what is valued about existing places and use this as a catalyst for growth and place-making, strengthening London's distinct and varied character. D. Protect London's open spaces, including the Green Belt, Metropolitan Open Land, designated nature conservation sites and local spaces, and promote the creation of new green infrastructure and urban greening. E. Plan for good local walking, cycling and public transport connections to support a strategic target of 80 per cent of all journeys using sustainable travel, enabling car-free lifestyles that allow an efficient use of land, as well as using new and enhanced public transport links to unlock growth. F. Maximise opportunities to use infrastructure assets for more than one purpose, to make the best use of land and support efficient maintenance.	GG2	*As outlined in the Design and Access Statement produced by Stiff + Trevillion*; The proposals are to replace the existing building with a mixed-use office, retail and residential building that respects the scale and materiality of its neighbours. The design team has sought to respond to the contrasting scales of Tottenham Court Road, Bayley Street, Morwell Street and beyond to Bedford Square, whilst looking to create a distinction between the different uses through a subtly designed scalloped building form with a varied and distinctive facade. A key aspiration for the design is to maximise activity at ground floor level. Along Tottenham Court Road, the proposals are for ground floor flexible retail uses, plus five storeys of office accommodation above, with a pocket park proposed for near the entrance of the office on Bayley Street. The existing Santander cycle docking station would be relocated along Tottenham Court Road and expanded. The residential element has been positioned to the southern part of the site, with the entrance located on Morwell Street to reflect its predominantly domestic scale. The residential floor to ceiling heights would match those of the office to allow future flexibility in terms of land use across the site. The building steps down and is set back by 2.5 metres at 4th floor level along Morwell Street to minimise the impact of views from Bedford Square, with the building set back at the 5th floor level on the corner of Bayley Street and Morwell Street. Greened terraces are proposed for this elevation along the fifth floor and a terrace and urban greening has been incorporated as part of the roof space. A chamfer has been introduced on the corner of Bayley and Morwell Street to increase the level of public realm on this corner. The site benefits from excellent transport connection and has a Public Transport Accessibility Level (PTAL) rating of 6b, the highest accessibility rating achievable. The Crossrail Elizabeth Line is due to open December 2018 and will further improve the site's connection with the rest of London. *As outlined in the Ecological Appraisal produced by Tyler Grange*; The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design.	

Increasing efficiency and resilience	Emerging London Plan (2019)	Review of proposed development	Compliance Status
To help London become a more efficient and resilient city, those involved in planning and development must: A. Seek to improve energy efficiency and support the move towards a low carbon circular economy, contributing towards London becoming a zero-carbon city by 2050. B. Ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, and avoiding contributing to the urban heat island effect. C. Create a safe and secure environment which is resilient against the impact of emergencies including fire and terrorism. D. Take an integrated approach to the delivery of strategic and local infrastructure by ensuring that public, private, community and voluntary sectors plan and work together.	GG6	*As outlined in the Whole Life Carbon Assessment produced by Hoare Lea;* The existing building massing at the site (comprising several buildings) is poorly suited to adaptation and flexibility. The proposed development seeks to be an energy-efficient and low embodied-carbon project. The new design will be more adaptable and future proofed than the existing buildings at the site. The development will adopt a strategy to be 'long-life, loose-fit and low-energy'. The assessment shows the proposed new low-carbon design strategy will have a lower whole life carbon footprint than the refurbishment scenarios assessed (over 60 years). Methods of low carbon construction are being considered for the project, including a review of CLT (timber) as a potential material for the upper floor slabs and other elements specified with a high content of recycled material. The development can achieve net zero carbon emissions through adopting the energy hierarchy: be lean, be clean, be green (including offsets). Using the UKGBC net zero carbon framework definition a development can achieve net zero status by adopting principles of highly efficient design with on-site renewable energy generation and then investing in carbon offsets /green energy to balance the difference. Given the size and density of the development there is insufficient site capacity to install renewable energy of sufficient size to be self-sufficient in energy generation. Offsets and green electricity supplies for landlord's services will therefore be considered. *As outlined in the Energy Strategy produced by Watkins Payne;* The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. The renewable energy technologies assessment is based on using solutions that are technically proven with low maintenance implications taking into account the energy efficiency strategies being proposed in the current design. The proposed development has been assessed for risk of overheating in line with the requirements of the GLA and CIBSE TM52. The analysis has shown that the proposed development is at risk of overheating during each of the three TM49 design summer years under free running conditions and that as such additional measures are required by way of comfort cooling. The offices have been shown to pass the TM52 mechanically cooled criteria and the active cooling demand within the building has been shown to be lower than the notional demand.	

Increasing efficiency and resilience (continued)	Emerging London Plan (2019)	Review of proposed development	Compliance Status
	GG6	*As outlined in the Circular Economy Statement produced by Watkins Payne;* This statement gives an overview of the circular economy strategies to be implemented relating to the re-development of 247 Tottenham Court Road. The following circular economy strategic approaches will be considered in relation to the new development: • Use reclaimed materials and products with a high level of recycled content. • Talk to suppliers about returnable packaging solutions. • Consider opportunities for offsite fabrication, where components are installed in a factory environment the waste rate should be lower compared with onsite installation. • Use less material in the design – e.g. use new thin insulation materials to reduce the depth of wall thickness and maximise overall building net areas. • Reduce the weight of structures; this will reduce the loadings and therefore less material will be required due to thinned foundations and structural members. • Do not over-specify, e.g. consider the required purpose of a room when specifying sound insulation to avoid the unnecessary use of materials; however, this has to be weighed against flexibility in the use of the room. • Simplify and optimise materials and components (e.g. use full height doors or doors with fan lights above (i.e. to ceiling) to avoid cutting sheets of plasterboard). • Apply tighter specifications to work procedures to avoid waste and allow the use of offcuts. • Consider how work sequences affect the generation of construction waste and work with the contractor and specialist subcontractors to understand and minimise these. • Discuss options for packaging reduction with contractors and suppliers. • Use ordering procedures that avoid waste, e.g. no over-ordering and take-back schemes for material surplus and offcuts. • Ensure the products are stored correctly and handled carefully to avoid damage. This includes organising a systematic approach to storing off-cuts for further use on the site, or for local community reuse projects. • The project will target 95% diversion from landfill of construction waste.	

Infrastructure requirements for sustainable densities	Emerging London Plan (2019)	Review of proposed development	Compliance Status
Development Plans, area-based strategies and development proposals should address the following: A. The density of development proposals should: 2. be proportionate to the site's connectivity and accessibility by walking, cycling, and public transport to jobs and services (including both PTAL and access to local services)	D1A [extract]	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The site is located in central London and benefits from excellent transport connection and has a Public Transport Accessibility Level (PTAL) rating of 6b, the highest accessibility rating achievable. The Crossrail Elizabeth Line is due to open December 2018 and will further improve the site's connection with the rest of London.	

Optimising site capacity through the design-led approach	Emerging London Plan (2019)	Review of proposed development	Compliance Status
Development proposals should: 2) encourage and facilitate active travel with convenient and inclusive pedestrian and cycling routes, crossing points, cycle parking, and legible entrances to buildings, that are aligned with peoples' movement patterns and desire lines in the area 8) provide conveniently located green and open spaces for social interaction, play, relaxation and physical activity 9) help prevent or mitigate the impacts of noise and poor air quality 13) aim for high sustainability standards (with reference to the policies within London Plan Chapter's 8 and 9) and take into account the principles of the circular economy 14) provide spaces and buildings that maximise opportunities for urban greening to create attractive resilient places that can also help the management of surface water.	D1B [extract]	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. The development is proposed to be car-free, with no car parking spaces provided, however there are three blue badge disabled parking spaces on local streets; 2 on Morwell Street and one on Percy Street. *As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design. *As outlined in the Air Quality Assessment produced by AECOM;* Suitable mitigation measures will be adopted to reduce the nuisance and human-health impacts of the dust and PM10 which, if effectively implemented, can reduce impacts to an insignificant level. The operational impact of the Proposed Development on local air quality was assessed at 12 off-site receptor locations representing existing sensitive receptors. Air quality impacts due to the Proposed Development at all existing receptor locations are predicted to be negligible, according to the EPUK/IAQM significance criteria. Overall, the Proposed Development operational traffic impacts on local air quality are considered to be not significant.	

Optimising site capacity through the design-led approach (continued)	Emerging London Plan (2019)	Review of proposed development	Compliance Status
	D1B [extract]	*As outlined in the Circular Economy Statement produced by Watkins Payne;* This statement gives an overview of the circular economy strategies to be implemented relating to the re-development of 247 Tottenham Court Road. The following circular economy strategic approaches will be considered in relation to the new development: • Use reclaimed materials and products with a high level of recycled content. • Talk to suppliers about returnable packaging solutions. • Consider opportunities for offsite fabrication, where components are installed in a factory environment the waste rate should be lower compared with onsite installation. • Use less material in the design – e.g. use new thin insulation materials to reduce the depth of wall thickness and maximise overall building net areas. • Reduce the weight of structures; this will reduce the loadings and therefore less material will be required due to thinned foundations and structural members. • Do not over-specify, e.g. consider the required purpose of a room when specifying sound insulation to avoid the unnecessary use of materials; however, this has to be weighed against flexibility in the use of the room. • Simplify and optimise materials and components (e.g. use full height doors or doors with fan lights above (i.e. to ceiling) to avoid cutting sheets of plasterboard). • Apply tighter specifications to work procedures to avoid waste and allow the use of offcuts. • Consider how work sequences affect the generation of construction waste and work with the contractor and specialist subcontractors to understand and minimise these. • Discuss options for packaging reduction with contractors and suppliers. • Use ordering procedures that avoid waste, e.g. no over-ordering and take-back schemes for material surplus and offcuts. • Ensure the products are stored correctly and handled carefully to avoid damage. This includes organising a systematic approach to storing off-cuts for further use on the site, or for local community reuse projects. • The project will target 95% diversion from landfill of construction waste.	

Noise	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by: 1) avoiding significant adverse noise impacts on health and quality of life 3) mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on existing noise-generating uses 6) where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles	D13 [extract]	*As outlined in the Noise Assessment produced by AECOM;* The operational noise limits have been determined at the nearby sensitive receptors. Noise emissions from proposed building plant will be considered during detailed design in order to ensure that operational noise does not adversely affect nearby residents (both existing residents as well as future occupants of the proposed development). Outline façade sound insulation performance requirements have been determined with example configurations for glazing in order to mitigate against external ambient noise and achieve LBC's ambient noise criteria. Based on the assessment and the recommended mitigation measures, the site is considered suitable for the intended use. The required mitigation strategy covering glazing and ventilation performance will be finalised during detailed design.	

Urban greening	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage. B. Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2 but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development.	G5 [extract]	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design. *As outlined in the Drainage Assessment produced by AKT II;* It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls. It is recommended that at this stage a cost and space allowance is made for a storage volume of 120 m3 (greenfield reduction) as our recent experience with Thames Water suggests that they insist on limiting the discharge rates to the greenfield run-off rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan. A pre-planning enquiry was sent to Thames Water, and we are awaiting a response. The proposed SuDS features will also comprise of a green roof.	

Biodiversity and access to nature	Emerging London Plan (2019)	Review of proposed development	Compliance Status
D. Biodiversity enhancement should be considered from the start of the development process. E. Proposals which create new or improved habitats that result in positive gains for biodiversity should be considered positively, as should measures to reduce deficiencies in access to wildlife sites.	G6 [extract]	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design.	

Trees and woodlands	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Trees and woodlands should be protected, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees. B. In their Development Plans, boroughs should: 1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site 2) identify opportunities for tree planting in strategic locations. C. Development proposals should ensure that, wherever possible, existing trees of quality are retained 108. If it is imperative that trees have to be removed, there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVATE. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.	G7	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding (i.e. there are no trees or woodlands within the site boundary), which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design.	

Improving air quality	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality. B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed: 1. Development proposals should not: a) lead to further deterioration of existing poor air quality b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits c) create unacceptable risk of high levels of exposure to poor air quality. 2. In order to meet the requirements in Part 1, as a minimum: a) Development proposals must be at least air quality neutral b) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures c) Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1 C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating: a) How proposals have considered ways to maximise benefits to local air quality, and b) What measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this. D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance. E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve	SI1 [extract]	*As outlined in the Air Quality Assessment produced by AECOM;* Suitable mitigation measures will be adopted to reduce the nuisance and human-health impacts of the dust and PM10 which, if effectively implemented, can reduce impacts to an insignificant level. The operational impact of the Proposed Development on local air quality was assessed at 12 off-site receptor locations representing existing sensitive receptors. Air quality impacts due to the Proposed Development at all existing receptor locations are predicted to be negligible, according to the EPUK/IAQM significance criteria. Overall, the Proposed Development operational traffic impacts on local air quality are considered to be not significant. The proposed development is considered to be air quality neutral.	

Minimising greenhouse gas emissions	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Major development should be net zero-carbon. This means reducing carbon dioxide emissions from construction and operation, and minimising both annual and peak energy demand in accordance with the following energy hierarchy: 1) Be lean: use less energy and manage demand during construction and operation. 2) Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly. Development in Heat Network Priority Areas should follow the heating hierarchy in Policy SI3 Energy infrastructure. 3) Be green: generate, store and use renewable energy on-site. 4) Be seen: monitor, verify and report on energy performance. B. Major development should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy and will be expected to monitor and report on energy performance. C. In meeting the zero-carbon target a minimum on-site reduction of at least 35 per cent beyond Building Regulations is expected. Residential development should aim to achieve 10 per cent, and non-residential development should aim to achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided: 1) through a cash in lieu contribution to the relevant borough's carbon offset fund, and/or 2) off-site provided that an alternative proposal is identified and delivery is certain. D. Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver greenhouse gas reductions. The operation of offset funds should be monitored and reported on annually. DA. Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions. DB. Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.	SI2	*As outlined in the Energy Strategy produced by Watkins Payne;* The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The energy strategy has been produced using the updated SAP 10 carbon emission factors and supporting documentation from the GLA. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions. As shown in the above tables the total cumulative savings for the development exceed the minimum 35% on-site carbon reduction target but cannot fully achieve the zero carbon overall target. Therefore, a payment in lieu contribution of £177,414.74 to the Council to offset to zero carbon would be secured by S106 legal agreement. For clarity the contribution payment is based on a rate of £95/tonne CO_2.	

Minimising greenhouse gas emissions (continued)	Emerging London Plan (2019)	Review of proposed development	Compliance Status
	SI2	*As outlined in the Whole Life Carbon Assessment produced by Hoare Lea;* The existing building massing at the site (comprising several buildings) is poorly suited to adaptation and flexibility. The proposed development seeks to be an energy-efficient and low embodied-carbon project. The new design will be more adaptable and future proofed than the existing buildings at the site. The development will adopt a strategy to be 'long-life, loose-fit and low-energy'. The assessment shows the proposed new low-carbon design strategy will have a lower whole life carbon footprint than the refurbishment scenarios assessed (over 60 years). Methods of low carbon construction are being considered for the project, including a review of CLT (timber) as a potential material for the upper floor slabs and other elements specified with a high content of recycled material. The development can achieve net zero carbon emissions through adopting the energy hierarchy: be lean, be clean, be green (including offsets). Using the UKGBC net zero carbon framework definition a development can achieve net zero status by adopting principles of highly efficient design with on-site renewable energy generation and then investing in carbon offsets /green energy to balance the difference. Given the size and density of the development there is insufficient site capacity to install renewable energy of sufficient size to be self-sufficient in energy generation. Offsets and green electricity supplies for landlord's services will therefore be considered.	

Energy infrastructure	Emerging London Plan (2019)	Review of proposed development	Compliance Status
B. Energy masterplans should be developed for large-scale development locations (such as those outlined in Part A and other opportunities) which establish the most effective energy supply options. Energy masterplans should identify: 1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing) 2) heat loads from existing buildings that can be connected to future phases of a heat network 3) major heat supply plant including opportunities to utilise heat from energy from waste plants 5) secondary heat sources, including both environmental and waste heat 6) opportunities for low and ambient temperature heat networks 7) possible land for energy centres and/or energy storage 8) possible heating and cooling network routes 9) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works 10) infrastructure and land requirements for electricity and gas supplies 11) implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector 11A) opportunities to maximise renewable electricity generation and incorporate demand-side response measures.	SI3 [extract]	*As outlined in the Energy Strategy produced by Watkins Payne;* Investigations into site-wide heat networks has established that there is no existing or proposed infrastructure arrangement within a reasonable distance from the development site. This has been confirmed in correspondence with the Camden Council. Due to decarbonisation of the national grid using electricity for heating via the proposed air source heat pumps (ASHPs) will be less carbon intensive than the burning of gas in a typical energy centre CHP plant. A further study produced by the department for Business, Energy and Industrial Strategy (BEIS) suggests that by 2025 the carbon emissions factor of electricity will be as low as 0.12kg CO_2/kWh which is nearly half of that of the current carbon emission factor of gas. Therefore, taking the mentioned points into consideration the heating demand of the development is better met with electrically powered ASHPs rather than by any existing heat network. A major consideration of the RIBA Stage 2 design process has been to minimise the massing of the building when viewed from Bedford Square. As part of this process the proposed floor to floor heights have been minimised along with the amount and the height of the plant to be located on the roof. These constraints have led to the proposed heating and comfort cooling solution to the commercial office areas of an underfloor heating and cooling systems served by on-floor zone units as this solution works well in low floor to floor heights. Each on-floor underfloor zone unit needs to be provided with a heating medium and a cooling medium. The smallest floor plant area foot print and height is to couple each on-floor zone unit with a variable refrigerant flow air source heat pump. This has the added benefit of omitting the combustion of natural gas to provide the heat source to the building. As communal heating system was not applicable to the commercial elements of the scheme a similar solution of individual air source heat pumps has been applied to the residential units. Therefore, a communal heating system is not proposed to the development. The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions.	

Water infrastructure	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner. C. Development proposals should: 1) through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption) 2) achieve at least the BREEAM excellent standard for the 'Wat 01' water category124A or equivalent (commercial development) 3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.	SI5 [extract]	*As outlined in the BREEAM Pre-Assessment Report produced by Watkins Payne;* The water strategy states that all water consuming plant specified should allow for a 50% improvement in efficiency over the national baseline, equating to 4 targeted credits under Wat01, which exceeds the mandatory 1 credit required for the excellent standard. This will be achieved through water saving measures, including low water consumption rates of sanitaryware. The office and retail parts are to be assessed against the BREEAM 2018 New Construction scheme and are to target an overall 'Excellent' rating. As part of this, credits will be sought which minimise water consumption (Wat01), ensure the installation of a leak detection system (Wat03), and provide sufficient water monitoring (Wat02).	

Flood risk management	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Current and expected flood risk from all sources across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers. B. Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Surface Water Management Plan, where necessary, to identify areas where particular flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should co-operate and jointly address cross-boundary flood risk issues including with authorities outside London. C. Development proposals which require specific flood risk assessments should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.	SI12 [extract]	*As outlined in the Drainage Assessment produced by AKT II;* The Environment Agency's Flood Zone and Indicative Floodplain Map shows that the site lies in Zone 1 and therefore is safe from flooding in high probability events, as there is no flooding located in the site nor in the surrounding streets	

Sustainable drainage	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. B. Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy: 1) rainwater harvesting (including a combination of green and blue roofs) 2) infiltration techniques and green roofs 3) rainwater attenuation in open water features for gradual release 4) rainwater discharge direct to a watercourse (unless not appropriate) 5) rainwater attenuation above ground (including blue roofs) 6) rainwater attenuation below ground 7) rainwater discharge to a surface water sewer or drain 8) rainwater discharge to a combined sewer. C. Development proposals for impermeable paving should be refused where appropriate, including on small surfaces such as front gardens and driveways. D. Drainage should be designed and implemented in ways that address issues of water use efficiency, river water quality, biodiversity, amenity and recreation.	SI13	*As outlined in the Drainage Assessment produced by AKT II;* The Environment Agency's Flood Zone and Indicative Floodplain Map shows that the site lies in Zone 1 and therefore is safe from flooding in high probability events, as there is no flooding located in the site nor in the surrounding streets It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls. It is recommended that at this stage a cost and space allowance is made for a storage volume of 120 m3 (greenfield reduction) as our recent experience with Thames Water suggests that they insist on limiting the discharge rates to the greenfield run-off rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan. A pre-planning enquiry was sent to Thames Water, and we are awaiting a response. The proposed SuDS features will also comprise of a green roof. It is also recommended that, if possible, the existing sewer connection(s) from the site are reused to prevent the need for constructing new sewer connections. This would minimise both the cost of the work and the disruption to the surrounding streets which are a busy thoroughfare and would consequently require significant pedestrian and traffic management to be provided during the work unless the connections were formed in headings. This is all subject to a CCTV survey which is yet to be undertaken to confirm the condition and number/level/size of existing outfall points.	

Strategic approach to transport	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. A Development Plans should support and development proposals should facilitate: 1) the delivery of the Mayor's strategic target of 80 per cent of all trips in London to be made by foot, cycle or public transport by 2041 2) the proposed transport schemes set out in Table 10.1. B. All development should make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London's transport networks and supporting infrastructure are mitigated.	T1	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The Proposed Development is located in LB Camden. The site is situated between Tottenham Court Road Station (Northern Line and Central Line) and Goodge Street (Northern Line). Further London Underground stations are located in close proximity to the site at Oxford Circus, Leicester Square and Holborn. These stations facilitate medium length commutes into Central London for work and leisure purposes. Local buses operating within close proximity to the site complement the London Underground network by facilitating shorter journeys by public transport, as well as providing other important routes, including towards Camden Town. The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. The development is proposed to be car-free, with no car parking spaces provided.	

Cycling	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. A Development Plans and development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle. This will be achieved through: 1) supporting the delivery of a London-wide network of cycle routes, with new routes and improved infrastructure 2) securing the provision of appropriate levels of cycle parking which should be fit for purpose, secure and well-located. Developments should provide cycle parking at least in accordance with the minimum standards set out in Table 10.2 and Figure 10.2, ensuring that a minimum of two short-stay and two long-stay cycle parking spaces are provided where the application of the minimum standards would result in a lower provision.	T5 [extract]	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. Tottenham Court Road borders the site and is a signed local cycle route. The southbound lane is shared by buses and cyclists only, while the northbound lane is for all traffic. Bayley Street is a line marked cycling route. Although a parklet exists adjacent to the site that prevents vehicles accessing Tottenham Court Road from Bayley Street, a dedicated cycling lane is provided to maintain cycling access. There are 25 Santander Cycle Hire docking stations immediately north of the site on Bayley Street's southern footway. The 25 Santander spaces are proposed to be relocated to Tottenham Court Road's western footway immediately north of Percy Street as part of the development proposals. Another 41 docks are provided on Alfred Place and 16 on Rathbone Street within a 5-minute walk of the site. LB Camden entered a year-long trial with two dockless electric bike operators in August 2019, Jump and Lime. The bikes can be hired through the Jump and Lime apps. The bikes do not need to be picked up or dropped off at specific docking bays, although they must be parked in locations that do not disrupt other cyclists, pedestrians or transport users. Short-stay cycle parking in the form of Sheffield Stands is also located nearby. In the immediate vicinity of the site, there are 2 stands located directly adjacent the site on Tottenham Court Road, 12 located on the opposite side of Tottenham Court Road and 2 nearby on Bayley Street. Approximately 318 cycle parking spaces are located within a 5-minute walk of the site. The development is proposed to be car-free, with no car parking spaces provided.	

Car parking	Emerging London Plan (2019)	Review of proposed development	Compliance Status
A. Car parking should be restricted in line with levels of existing and future public transport accessibility and connectivity. B. Car-free development should be the starting point for all development proposals in places that are (or are planned to be) well-connected by public transport, with developments elsewhere designed to provide the minimum necessary parking ('car-lite').	T6 [extract]	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The development is proposed to be car-free, with no car parking spaces provided, however there are three blue badge disabled parking spaces on local streets; 2 on Morwell Street and one on Percy Street.	

Access for all	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to promote fair access and remove the barriers that prevent everyone from accessing facilities and opportunities. We will: a. expect all buildings and places to meet the highest practicable standards of accessible and inclusive design so they can be used safely, easily and with dignity by all; b. expect facilities to be located in the most accessible parts of the borough; c. expect spaces, routes and facilities between buildings to be designed to be fully accessible; d. encourage accessible public transport; and e. secure car parking for disabled people. The Council will seek to ensure that development meets the principles of lifetime neighbourhoods.	Policy C6	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. The site benefits from excellent transport connection and has a Public Transport Accessibility Level (PTAL) rating of 6b, the highest accessibility rating achievable. The Crossrail Elizabeth Line is due to open December 2018 and will further improve the site's connection with the rest of London. The development is proposed to be car-free, with no car parking spaces provided, however there are three blue badge disabled parking spaces on local streets; 2 on Morwell Street and one on Percy Street. *As outlined in the Design and Access Statement produced by Stiff + Trevillion;* Level access is provided to all uses within the building, and lifts are to be replaced and expanded to remove any access barriers and suit the needs of modern buildings.	

Managing the impact of development	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity. We will: a. seek to ensure that the amenity of communities, occupiers and neighbours is protected; b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities; c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and d. require mitigation measures where necessary. The factors we will consider include: e. visual privacy, outlook; f. sunlight, daylight and overshadowing; g. artificial lighting levels; h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans; i. impacts of the construction phase, including the use of Construction Management Plans; j. noise and vibration levels; k. odour, fumes and dust; l. microclimate; m. contaminated land; and n. impact upon water and wastewater infrastructure.	Policy A1	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The development is proposed to be car-free, with no car parking spaces provided. No open spaces will be affected by the development. *As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The objectives of the proposal are to achieve a high quality mixed-use development which respects the diversity, character and history of the area. The development will enhance the public realm, and public activity at street level and be sustainable [environmentally, economically, socially and culturally]. *As outlined in the Noise Assessment produced by AECOM;* The operational noise limits have been determined at the nearby sensitive receptors. Noise emissions from proposed building plant will be considered during detailed design in order to ensure that operational noise does not adversely affect nearby residents (both existing residents as well as future occupants of the proposed development). Outline façade sound insulation performance requirements have been determined with example configurations for glazing in order to mitigate against external ambient noise and achieve LBC's ambient noise criteria. Based on the assessment and the recommended mitigation measures, the site is considered suitable for the intended use. The required mitigation strategy covering glazing and ventilation performance will be finalised during detailed design. *As outlined in the Air Quality Assessment produced by AECOM;* Suitable mitigation measures will be adopted to reduce the nuisance and human-health impacts of the dust and PM10 which, if effectively implemented, can reduce impacts to an insignificant level.	

Open Space	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will protect, enhance and improve access to Camden's parks, open spaces and other green infrastructure. <u>Protection of open spaces</u> In order to protect the Council's open spaces, we will: a. protect all designated public and private open spaces as shown on the Policies Map and in the accompanying schedule unless equivalent or better provision of open space in terms of quality and quantity is provided within the local catchment area; c. resist development which would be detrimental to the setting of designated open spaces; e. protect non-designated spaces with nature conservation, townscape and amenity value, including gardens, where possible; f. conserve and enhance the heritage value of designated open spaces and other elements of open space which make a significant contribution to the character and appearance of conservation areas or to the setting of heritage assets; g. give strong protection to maintaining the openness and character of Metropolitan Open Land (MOL);	Policy A2 [extract]	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The Proposed Development is located in LB Camden. The site is situated between Tottenham Court Road Station (Northern Line and Central Line) and Goodge Street (Northern Line). Further London Underground stations are located in close proximity to the site at Oxford Circus, Leicester Square and Holborn. No open spaces will be affected by the development. *As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design. *As outlined in the Townscape, Visual Impact and Heritage Assessment produced by Miller Hare Limited;* The development will not have any impact on the character or heritage significance of any of the heritage assets in the vicinity of the Site, as assessed in this report. Should others disagree with this conclusion, any harm resulting from the effects of the Proposed Development on the significance of nearby heritage assets could only be considered to be at the lower end of 'less than substantial' harm. In accordance with the requirements of the NPPF para 196, such harm would be greatly outweighed by the public benefits delivered as part of the project.	

Biodiversity	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will protect and enhance sites of nature conservation and biodiversity. We will: a. designate and protect nature conservation sites and safeguard protected and priority habitats and species; b. grant permission for development unless it would directly or indirectly result in the loss or harm to a designated nature conservation site or adversely affect the status or population of priority habitats and species; c. seek the protection of other features with nature conservation value, including gardens, wherever possible; d. assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed; e. secure improvements to green corridors, particularly where a development scheme is adjacent to an existing corridor; f. seek to improve opportunities to experience nature, in particular where such opportunities are lacking; g. require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species; h. secure management plans, where appropriate, to ensure that nature conservation objectives are met; and i. work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.	Policy A3	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design.	

Noise and vibration	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to ensure that noise and vibration is controlled and managed. Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3). We will not grant planning permission for: a. development likely to generate unacceptable noise and vibration impacts; or b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses. We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development.	Policy A4	*As outlined in the Noise Assessment produced by AECOM;* The operational noise limits have been determined at the nearby sensitive receptors. Noise emissions from proposed building plant will be considered during detailed design in order to ensure that operational noise does not adversely affect nearby residents (both existing residents as well as future occupants of the proposed development). Outline façade sound insulation performance requirements have been determined with example configurations for glazing in order to mitigate against external ambient noise and achieve LBC's ambient noise criteria. Based on the assessment and the recommended mitigation measures, the site is considered suitable for the intended use. The required mitigation strategy covering glazing and ventilation performance will be finalised during detailed design.	

Design	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to secure high quality design in development. The Council will require that development: a. respects local context and character; b. preserves or enhances the historic environment and heritage assets in accordance with Policy D2 Heritage; c. is sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation; d. is of sustainable and durable construction and adaptable to different activities and land uses; e. comprises details and materials that are of high quality and complement the local character; f. integrates well with the surrounding streets and open spaces, improving movement through the site and wider area with direct, accessible and easily recognisable routes and contributes positively to the street frontage; g. is inclusive and accessible for all; h. promotes health; i. is secure and designed to minimise crime and antisocial behaviour; j. responds to natural features and preserves gardens and other open space; k. incorporates high quality landscape design (including public art, where appropriate) and maximises opportunities for greening for example through planting of trees and other soft landscaping, l. incorporates outdoor amenity space; m. preserves strategic and local views; n. for housing, provides a high standard of accommodation; and o. carefully integrates building services equipment. The Council will resist development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions.	Policy D1 [extract]	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The objectives of the proposal are to achieve a high quality mixed-use development which respects the diversity, character and history of the area. The development will enhance the public realm, and public activity at street level and be sustainable [environmentally, economically, socially and culturally]. Level access is provided to all uses within the building, and lifts are to be replaced and expanded to remove any access barriers and suit the needs of modern buildings. The project has been designed to provide a safe and secure environment for the building users and visitors in accordance with “Secured by Design” principles. The design aims include: • Safe sustainable places • Increased active frontage • Well lit, active, and landscaped amenity spaces • Clear access, movement and escape routes • Design-out opportunities for anti-social behaviour • Design-in clear lines of sight, passive surveillance, plus electronic surveillance • Provide secure enclosed cycle storage and waste management / storage • High maintenance and management standards • Residential access and dwelling security to be designed to SBD PAS24 standards *As outlined in the Townscape, Visual Impact and Heritage Assessment produced by Miller Hare Limited;* The development will not have any impact on the character or heritage significance of any of the heritage assets in the vicinity of the Site, as assessed in this report. Should others disagree with this conclusion, any harm resulting from the effects of the Proposed Development on the significance of nearby heritage assets could only be considered to be at the lower end of ‘less than substantial’ harm. In accordance with the requirements of the NPPF para 196, such harm would be greatly outweighed by the public benefits delivered as part of the project.	

Heritage	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will preserve and, where appropriate, enhance Camden's rich and diverse heritage assets and their settings, including conservation areas, listed buildings, archaeological remains, scheduled ancient monuments and historic parks and gardens and locally listed heritage assets. <u>Designated heritage assets</u> Designed heritage assets include conservation areas and listed buildings. The Council will not permit the loss of or substantial harm to a designated heritage asset, including conservation areas and Listed Buildings, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: a. the nature of the heritage asset prevents all reasonable uses of the site; b. no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; c. conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and d. the harm or loss is outweighed by the benefit of bringing the site back into use. The Council will not permit development that results in harm that is less than substantial to the significance of a designated heritage asset unless the public benefits of the proposal convincingly outweigh that harm.	Policy D2 [extract]	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The site is not within a conservation area and none of the buildings on site are listed. However, the site is located adjacent to the Bloomsbury and Charlotte Street Conservation Areas and are sensitive to any potential new development which may affect the conservation areas' characters. *As outlined in the Townscape, Visual Impact and Heritage Assessment produced by Miller Hare Limited;* The development will not have any impact on the character or heritage significance of any of the heritage assets in the vicinity of the Site, as assessed in this report. Should others disagree with this conclusion, any harm resulting from the effects of the Proposed Development on the significance of nearby heritage assets could only be considered to be at the lower end of 'less than substantial' harm. In accordance with the requirements of the NPPF para 196, such harm would be greatly outweighed by the public benefits delivered as part of the project.	

Heritage (continued)	Camden Local Plan (2017)	Review of proposed development	Compliance Status
Conservation areas Conservation areas are designated heritage assets and this section should be read in conjunction with the section above headed 'designated heritage assets'. In order to maintain the character of Camden's conservation areas, the Council will take account of conservation area statements, appraisals and management strategies when assessing applications within conservation areas. The Council will: e. require that development within conservation areas preserves or, where possible, enhances the character or appearance of the area; f. resist the total or substantial demolition of an unlisted building that makes a positive contribution to the character or appearance of a conservation area; g. resist development outside of a conservation area that causes harm to the character or appearance of that conservation area; and h. preserve trees and garden spaces which contribute to the character and appearance of a conservation area or which provide a setting for Camden's architectural heritage. Archaeology The Council will protect remains of archaeological importance by ensuring acceptable measures are taken proportionate to the significance of the heritage asset to preserve them and their setting, including physical preservation, where appropriate. Other heritage assets and non-designated heritage assets The Council will seek to protect other heritage assets including non-designated heritage assets (including those on and off the local list), Registered Parks and Gardens and London Squares. The effect of a proposal on the significance of a non-designated heritage asset will be weighed against the public benefits of the proposal, balancing the scale of any harm or loss and the significance of the heritage asset.	Policy D2 [extract]	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The southern portion of the site sits within the Greater London Archaeological Priority Areas (APAs) - areas where there is significant known archaeological interest or potential for new discoveries. APAs are used to help highlight where development might affect heritage assets. Redevelopment of a site within APAs will need to be assessed for its archaeological potential when a planning application is made. *As outlined in the Archaeological Desk-Based Assessment produced by Cotswold Archaeology;* The Site is located within the London Suburbs Archaeological Priority Area (tier 2), defined due to the potential for prehistoric remains, historic rural and agricultural activity as well as the urban expansion and development of London between the 17th century and 19th century. Evidence of these periods have been recorded in proximity to the Site and it is possible that associated remains are present within the Site, although no specific remains have been identified within the Site. The Site lies immediately to the north of London's conjectured location of fortifications and the line of defence during the English Civil War in the 17th century. Such remains, if present, would contribute to London's regional research framework and as such would retain some heritage significance. There is the possibility that historic and modern urban development within the Site has truncated any such remains, although fragmentary survival cannot be ruled out. Any archaeological remains present within the Site are unlikely to comprise remains of the highest significance (i.e. to warrant scheduling). It is therefore considered that the potential archaeological resource within the Site would not require preservation in situ, nor would it preclude development. It is considered that impacts upon the potential archaeological remains could be mitigated through a proportionate programme of archaeological fieldwork, such as a Written Scheme of Investigation (WSI) to be agreed with the Greater London Archaeological Advisory Service (GLAAS) and the London Borough of Camden.	

Climate change mitigation	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation. We will: a. promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy; b. require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met; c. ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks; d. support and encourage sensitive energy efficiency improvements to existing buildings; e. require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and f. expect all developments to optimise resource efficiency. For decentralised energy networks, we will promote decentralised energy by: g. working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them; h. protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and i. requiring all major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible establishing a new network. To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment.	Policy CC1	*As outlined in the Energy Strategy produced by Watkins Payne;* The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO_2 emissions followed by the application of low and zero carbon technologies. The target of the energy strategy is to demonstrate a minimum overall 35% reduction in carbon dioxide emissions in line with the current London Plan however consideration is also given to the emerging London Plan whereby the target will be a 100% reduction in carbon dioxide emissions with a 15% reduction for non-domestic and 10% for domestic is met by energy efficiency measures alone. The energy strategy has been produced using the updated SAP 10 carbon emission factors and supporting documentation from the GLA. The focus of the energy strategy is on CO2 reduction by using an all-electric fuel source strategy, highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps and photovoltaic (PV) cell renewable technology. As a result, the development achieves a 50.2% reduction in regulated CO_2 emissions. *As outlined in the Whole Life Carbon Assessment produced by Hoare Lea;* The existing building massing at the site (comprising several buildings) is poorly suited to adaptation and flexibility. The proposed development seeks to be an energy-efficient and low embodied-carbon project. The new design will be more adaptable and future proofed than the existing buildings at the site. The development will adopt a strategy to be 'long-life, loose-fit and low-energy'. The assessment shows the proposed new low-carbon design strategy will have a lower whole life carbon footprint than the refurbishment scenarios assessed (over 60 years). Methods of low carbon construction are being considered for the project, including a review of CLT (timber) as a potential material for the upper floor slabs and other elements specified with a high content of recycled material. The development can achieve net zero carbon emissions through adopting the energy hierarchy: be lean, be clean, be green (including offsets). Using the UKGBC net zero carbon framework definition a development can achieve net zero status by adopting principles of highly efficient design with on-site renewable energy generation and then investing in carbon offsets /green energy to balance the difference. Given the size and density of the development there is insufficient site capacity to install renewable energy of sufficient size to be self-sufficient in energy generation. Offsets and green electricity supplies for landlord's services will therefore be considered.	

Climate change mitigation (continued)	Camden Local Plan (2017)	Review of proposed development	Compliance Status
	Policy CC1	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* The site benefits from excellent transport connection and has a Public Transport Accessibility Level (PTAL) rating of 6b, the highest accessibility rating achievable. The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. The Crossrail Elizabeth Line is due to open December 2018 and will further improve the site's connection with the rest of London. *As outlined in the Circular Economy Statement produced by Watkins Payne;* The following circular economy strategic approaches will be considered in relation to the new development: • Use reclaimed materials and products with a high level of recycled content. • Talk to suppliers about returnable packaging solutions. • Consider opportunities for offsite fabrication, where components are installed in a factory environment the waste rate should be lower compared with onsite installation. • Use less material in the design – e.g. use new thin insulation materials to reduce the depth of wall thickness and maximise overall building net areas. • Reduce the weight of structures; this will reduce the loadings and therefore less material will be required due to thinned foundations and structural members. • Do not over-specify, e.g. consider the required purpose of a room when specifying sound insulation to avoid the unnecessary use of materials; however, this has to be weighed against flexibility in the use of the room. • Simplify and optimise materials and components (e.g. use full height doors or doors with fan lights above (i.e. to ceiling) to avoid cutting sheets of plasterboard). • Consider how work sequences affect the generation of construction waste and work with the contractor and specialist subcontractors to understand and minimise these. • Discuss options for packaging reduction with contractors and suppliers. • Use ordering procedures that avoid waste, e.g. no over-ordering and take-back schemes for material surplus and offcuts. • Ensure the products are stored correctly and handled carefully to avoid damage. This includes organising a systematic approach to storing off-cuts for further use on the site, or for local community reuse projects. • The project will target 95% diversion from landfill of construction waste.	

Adapting to climate change	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will require development to be resilient to climate change. All development should adopt appropriate climate change adaptation measures such as: a. the protection of existing green spaces and promoting new appropriate green infrastructure; b. not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems; c. incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and d. measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy. Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement. <u>Sustainable design and construction measures</u> The Council will promote and measure sustainable design and construction by: e. ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation; f. encourage new build residential development to use the Home Quality Mark and Passivhaus design standards; g. encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve “excellent” in BREEAM domestic refurbishment; and h. expecting non-domestic developments of 500 sqm of floorspace or above to achieve “excellent” in BREEAM assessments and encouraging zero carbon in new development from 2019.	Policy CC2	*As outlined in the Ecological Appraisal produced by Tyler Grange;* The only habitat currently found on site is building and hardstanding, which is considered to be of negligible ecological importance. The proposed loss of all of this habitat, therefore, presents no constraint and no mitigation will be required. The proposals present the opportunity to incorporate ecological enhancements and improve the biodiversity at an otherwise innocuous urban site. Creating new habitat and improving opportunities for fauna which may be at the site, such as establishing green wall and roof planting, will be in line with the current London Plan (2016), the emerging London Plan (2019) and the London Borough of Camden Local Plan (2017). New flora planted should preferably be native and of local stock where possible. In addition, enhancements for specific species groups could be provided post-construction including bird and bat boxes to increase the number of nesting and roosting sites across the site, respectively. It is considered that the site can be greatly improved for biodiversity by creating new habitats by incorporating ecologically friendly landscaping which could take the form of a green roof or green walls, and through incorporating bat and bird boxes into the scheme design. *As outlined in the Drainage Assessment produced by AKT II;* It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls. It is recommended that at this stage a cost and space allowance is made for a storage volume of 120 m3 (greenfield reduction) as our recent experience with Thames Water suggests that they insist on limiting the discharge rates to the greenfield run-off rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan. A pre-planning enquiry was sent to Thames Water, and we are awaiting a response. The proposed SuDS features will also comprise of a green roof. *As outlined in the BREEAM Pre-Assessment Report produced by Watkins Payne;* The office and retail parts are to be assessed against the BREEAM 2018 New Construction scheme and are to target an overall ‘Excellent’ rating.	

Water and flooding	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible. We will require development to: a. incorporate water efficiency measures; b. avoid harm to the water environment and improve water quality; c. consider the impact of development in areas at risk of flooding (including drainage); d. incorporate flood resilient measures in areas prone to flooding; e. utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and f. not locate vulnerable development in flood-prone areas. Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable. The Council will protect the borough's existing drinking water and foul water infrastructure, including the reservoirs at Barrow Hill, Hampstead Heath, Highgate and Kidderpore.	Policy CC3	*As outlined in the Drainage Assessment produced by AKT II;* The Environment Agency's Flood Zone and Indicative Floodplain Map shows that the site lies in Zone 1 and therefore is safe from flooding in high probability events, as there is no flooding located in the site nor in the surrounding streets It is believed that the most feasible disposal option for the site is to discharge to the existing public sewers utilising existing or new outfalls. It is recommended that at this stage a cost and space allowance is made for a storage volume of 120 m3 (greenfield reduction) as our recent experience with Thames Water suggests that they insist on limiting the discharge rates to the greenfield run-off rate in line with Policy 5.13 of the current London Plan and will be compliant with the emerging London Plan. A pre-planning enquiry was sent to Thames Water, and we are awaiting a response. The proposed SuDS features will also comprise of a green roof. It is also recommended that, if possible, the existing sewer connection(s) from the site are reused to prevent the need for constructing new sewer connections. This would minimise both the cost of the work and the disruption to the surrounding streets which are a busy thoroughfare and would consequently require significant pedestrian and traffic management to be provided during the work unless the connections were formed in headings. This is all subject to a CCTV survey which is yet to be undertaken to confirm the condition and number/level/size of existing outfall points. It is expected that the onsite survey will take place in 1-2 months' time with the results received in circa 3 months.	

Air quality	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough. The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan. Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact. Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan.	Policy CC4	*As outlined in the Air Quality Assessment produced by AECOM;* Suitable mitigation measures will be adopted to reduce the nuisance and human-health impacts of the dust and PM10 which, if effectively implemented, can reduce impacts to an insignificant level. The operational impact of the Proposed Development on local air quality was assessed at 12 off-site receptor locations representing existing sensitive receptors. Air quality impacts due to the Proposed Development at all existing receptor locations are predicted to be negligible, according to the EPUK/IAQM significance criteria. Overall, the Proposed Development operational traffic impacts on local air quality are considered to be not significant. The proposed development is considered to be air quality neutral.	

Waste	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek to make Camden a low waste borough. We will: a. aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031; b. deal with North London's waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan; c. safeguard Camden's existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and d. make sure that developments include facilities for the storage and collection of waste and recycling.	Policy CC5	*As outlined in the Design and Access Statement produced by Stiff + Trevillion;* On-street loading is proposed for the scheme. This is proposed to happen on Morwell Street through the use of a new dedicated on-street loading bay bordering the western footway of Morwell Street. A loading bay has been designed to accommodate delivery, servicing and waste vehicles whilst ensuring that northbound access for large vehicles on Morwell Street, including coaches associated with nearby hotel uses, is maintained.	

Prioritising walking, cycling and public transport	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will promote sustainable transport by prioritising walking, cycling and public transport in the borough. <u>Walking</u> In order to promote walking in the borough and improve the pedestrian environment, we will seek to ensure that developments: a. improve the pedestrian environment by supporting high quality public realm improvement works; b. make improvements to the pedestrian environment including the provision of high quality safe road crossings where needed, seating, signage and landscaping; c. are easy and safe to walk through ('permeable'); d. are adequately lit; e. provide high quality footpaths and pavements that are wide enough for the number of people expected to use them. Features should also be included to assist vulnerable road users where appropriate; and f. contribute towards bridges and water crossings where appropriate.	Policy T1	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The Proposed Development is located in LB Camden. The site is situated between Tottenham Court Road Station (Northern Line and Central Line) and Goodge Street (Northern Line). Further London Underground stations are located in close proximity to the site at Oxford Circus, Leicester Square and Holborn. These stations facilitate medium length commutes into Central London for work and leisure purposes. Local buses operating within close proximity to the site complement the London Underground network by facilitating shorter journeys by public transport, as well as providing other important routes, including towards Camden Town. The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. The development is proposed to be car-free, with no car parking spaces provided.	

Prioritising walking, cycling and public transport (continued)	Camden Local Plan (2017)	Review of proposed development	Compliance Status
Cycling In order to promote cycling in the borough and ensure a safe and accessible environment for cyclists, the Council will seek to ensure that development: g. provides for and makes contributions towards connected, high quality, convenient and safe cycle routes, in line or exceeding London Cycle Design Standards, including the implementation of the Central London Grid, Quietways Network, Cycle Super Highways and; h. provides for accessible, secure cycle parking facilities exceeding minimum standards outlined within the London Plan (Table 6.3) and design requirements outlined within our supplementary planning document Camden Planning Guidance on transport. Higher levels of provision may also be required in areas well served by cycle route infrastructure, taking into account the size and location of the development; i. makes provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers; j. is easy and safe to cycle through ('permeable'); and k. contribute towards bridges and water crossings suitable for cycle use where appropriate. Public Transport In order to safeguard and promote the provision of public transport in the borough we will seek to ensure that development contributes towards improvements to bus network infrastructure including access to bus stops, shelters, passenger seating, waiting areas, signage and timetable information. Contributions will be sought where the demand for bus services generated by the development is likely to exceed existing capacity. Contributions may also be sought towards the improvement of other forms of public transport in major developments where appropriate. Where appropriate, development will also be required to provide for interchanging between different modes of transport including facilities to make interchange easy and convenient for all users and maintain passenger comfort.	Policy T1	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. Tottenham Court Road borders the site and is a signed local cycle route. The southbound lane is shared by buses and cyclists only, while the northbound lane is for all traffic. Bayley Street is a line marked cycling route. Although a parklet exists adjacent to the site that prevents vehicles accessing Tottenham Court Road from Bayley Street, a dedicated cycling lane is provided to maintain cycling access. There are 25 Santander Cycle Hire docking stations immediately north of the site on Bayley Street's southern footway. The 25 Santander spaces are proposed to be relocated to Tottenham Court Road's western footway immediately north of Percy Street as part of the development proposals. Another 41 docks are provided on Alfred Place and 16 on Rathbone Street within a 5-minute walk of the site. LB Camden entered a year-long trial with two dockless electric bike operators in August 2019, Jump and Lime. The bikes can be hired through the Jump and Lime apps. The bikes do not need to be picked up or dropped off at specific docking bays, although they must be parked in locations that do not disrupt other cyclists, pedestrians or transport users. Short-stay cycle parking in the form of Sheffield Stands is also located nearby. In the immediate vicinity of the site, there are 2 stands located directly adjacent the site on Tottenham Court Road, 12 located on the opposite side of Tottenham Court Road and 2 nearby on Bayley Street. Approximately 318 cycle parking spaces are located within a 5-minute walk of the site The development is proposed to be car-free, with no car parking spaces provided.	

Parking and car-free development	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will limit the availability of parking and require all new developments in the borough to be car-free. We will: a. not issue on-street or on-site parking permits in connection with new developments and use legal agreements to ensure that future occupants are aware that they are not entitled to on-street parking permits; b. limit on-site parking to: i. spaces designated for disabled people where necessary, and/or ii. essential operational or servicing needs; c. support the redevelopment of existing car parks for alternative uses; and d. resist the development of boundary treatments and gardens to provide vehicle crossovers and on-site parking.	Policy T2	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The development is proposed to be car-free, with no car parking spaces provided, however there are three blue badge disabled parking spaces on local streets; 2 on Morwell Street and one on Percy Street.	

Transport infrastructure	Camden Local Plan (2017)	Review of proposed development	Compliance Status
The Council will seek improvements to transport infrastructure in the borough. We will: a. not grant planning permission for proposals which are contrary to the safeguarding of strategic infrastructure improvement projects; and b. protect existing and proposed transport infrastructure, particularly routes and facilities for walking, cycling and public transport, from removal or severance;	Policy T3	*As outlined in the Transport Assessment produced by Momentum Transport Consultancy;* The site's central location and proximity to excellent provisions for cyclists and pedestrians encourage active transport journeys. Since the site is located in a retail and commercial area, high volumes of pedestrians on nearby footways are generated throughout the day, particularly in the peak hours. A total of thirteen (13) cycle hire stations are located within 640m of the site which provide up to 366 cycles for hire, facilitating co-mobility between different modes. The proposed development would provide a total of 65 short-stay, 150 long-stay cycle parking spaces as well as 84 lockers and 14 showers. This provision is compliant with the standards set out in the emerging London Plan which is expected to be adopted in 2020. Cycle parking would be provided at lower ground level, which would be accessed via two dedicated cycle lifts and a gullied stairwell. Changing and locker facilities would be split approximately 50 / 50 between the basement levels. Tottenham Court Road borders the site and is a signed local cycle route. The southbound lane is shared by buses and cyclists only, while the northbound lane is for all traffic. Bayley Street is a line marked cycling route. Although a parklet exists adjacent to the site that prevents vehicles accessing Tottenham Court Road from Bayley Street, a dedicated cycling lane is provided to maintain cycling access. There are 25 Santander Cycle Hire docking stations immediately north of the site on Bayley Street's southern footway. The 25 Santander spaces are proposed to be relocated to Tottenham Court Road's western footway immediately north of Percy Street as part of the development proposals. Another 41 docks are provided on Alfred Place and 16 on Rathbone Street within a 5-minute walk of the site. LB Camden entered a year-long trial with two dockless electric bike operators in August 2019, Jump and Lime. The bikes can be hired through the Jump and Lime apps. The bikes do not need to be picked up or dropped off at specific docking bays, although they must be parked in locations that do not disrupt other cyclists, pedestrians or transport users. Short-stay cycle parking in the form of Sheffield Stands is also located nearby. In the immediate vicinity of the site, there are 2 stands located directly adjacent the site on Tottenham Court Road, 12 located on the opposite side of Tottenham Court Road and 2 nearby on Bayley Street. Approximately 318 cycle parking spaces are located within a 5-minute walk of the site. The development is proposed to be car-free, with no car parking spaces provided.	

Appendix 1 – BREEAM Reports

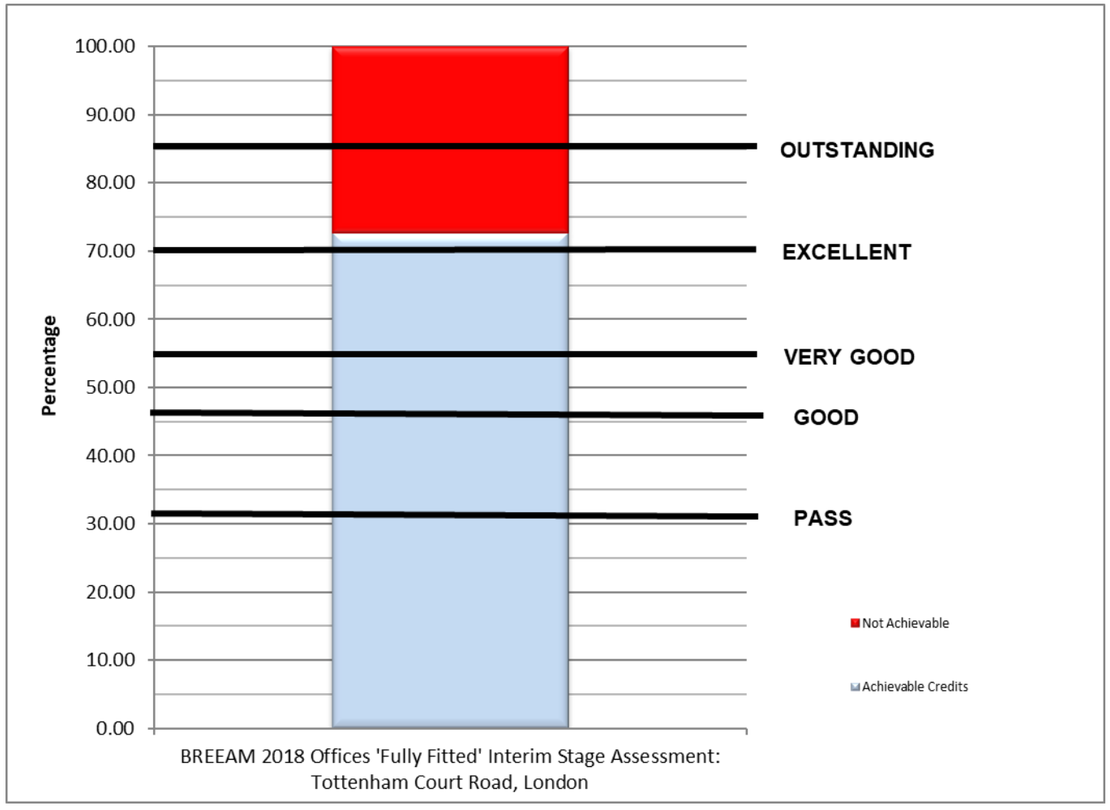
INTERIM STAGE ASSESSMENT: BREEAM (NC) 2018 Offices *'Fully Fitted'* – Target Credit Schedule

Watkins Payne Partnership has been commissioned by CO-RE to carry out a BREEAM Offices 2018 Full Assessment of the Tottenham Court Road development, London

The Target ACHIEVABLE BREEAM score is **72.79% - EXCELLENT**

This Credit Schedule details the information required and the responsible parties:

- **Credit information / requirements - detailed in RED**



Project Directory		
Client / Developer	David Hutton / Luke Wainwright / Bradley Bakes	CO-RE
Project Manager	Jason Plant	Avison Young
Cost Consultant	Philip Saunders / Stuart Le Boutillier / Thomas Butler	Gardiner & Theobald
Architect	Jason Warren / Sean Crummey / Lauren Kehoe	Stiff + Trevillion
Consulting Building Services Engineer	Mike Cousins / Jon Bottrell / Michael Treacy / Paul Wells	Watkins Payne Partnership
Structural Engineer	Kieron Taylor	AKT II
Planning Consultant	Natalie Davies / Liam Lawson Jones	Gerald Eve
Acoustician	TBC	TBC
Transport Consultant	Roy McGowan	Momentum Transport Consultancy
Communications	TBC	TBC
Ecologist	TBC	TBC
Landscape Designer	TBC	TBC
Main Contractor	Not yet appointed	Not yet appointed
Report produced by Watkins Payne Partnership		
BREEAM Assessor / Accredited Professional (AP)	Bradley Lobetta	Watkins Payne

Mandatory credits are to be achieved to reach the **PASS / GOOD / VERY GOOD / EXCELLENT / OUTSTANDING** ratings, credits with mandatory requirements are detailed in **Bold BLUE**

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**4**	Avison Young / WPP (BREEAM AP)	***First Credit:*** **Part A**: **Avison Young** to provide appropriate evidence [meeting minutes / project programme / letters of appointment(s) / responsibilities matrix / Framework agreements etc] confirming: 1. **That prior to end of RIBA Stage 2** the project delivery team have been involved in contributing to the decision-making process for the project This must include meeting(s) to identify & define design team roles, responsibilities and contributions for each key phase of the project ***The roles & responsibilities*** need to include consideration of: Note / Statement to confirm how the following items were considered when defining roles, responsibilities and contributions for each key phase of the project: • End user requirements • Aims of the design and design strategy • Particular installation and construction requirements • Occupiers budget and technical expertise in maintaining any proposed systems • Maintainability and adaptability of the proposals • Operational energy • Requirements for the production of project and end user documentation • Requirements for commissioning, training and aftercare support **Part B**: **Avison Young** to provide a statement demonstrating how the project delivery stakeholder contributions and internal design team consultation process have influenced (where relevant) • Initial Project Brief • Project Execution Plan • Communication Strategy • Concept Design **COMPLIANCE NOTES:** Definition of Project Execution Plan The RIBA Plan of Works 2013 defines a Project Execution Plan as a plan produced in collaboration between the project lead and lead designer, with contributions from other designers and members of the project team. The Project Execution Plan sets out the processes and protocols to be used to develop the design. It is sometimes referred to as a 'project quality plan'. Definition of Communication Strategy: The RIBA Plan of Works 2013 defines the Communication Strategy as a strategy that sets out when the project team will meet, how they will communicate effectively and the protocols for issuing information between the various parties, both informally and at Information Exchanges

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**Continued**	Avison Young / WPP (BREEAM AP)	***Second Credit:*** **Avison Young** to provide: 1. A Consultation plan setting out: • The process and scope of the consultation • Timescales and methods of consultation, clearly identifying at which points consultation groups/relevant parties can usefully contribute • Details on how the consultation groups/relevant parties will be kept informed about progress on the project 2. Copies of agendas and minutes of meetings with the consultation groups/relevant parties demonstrating: • The consultation plan in action • The stage in plan of works that consultation occurred 3. Copies of documentation demonstrating consultation feedback, including (where relevant): • Newsletters, posters, circulars etc. • Agenda and minutes from meetings 4. A summary of any items/issues raised from the consultation 5. A summary of how the consultation may have influenced the Initial Project Brief and Concept Design. 6. A summary of how feedback was given back to the consultation groups/relevant parties **THE ABOVE INFORMATION NEEDS TO DEMONSTRATE COMPLIANCE WITH THE FOLLOWING CREDIT REQUIRMENTS:** 1. **Prior to end of RIBA Stage 2** All **interested parties** have been consulted by the consultation team covering the **minimum consultation content** 2. How the consultation exercise and outcomes have influenced the Initial Project Brief and Concept Design 3. **Prior to end of the RIBA Stage 4** That **Consultation Feedback** has been given and received by all interested parties consulted ***Interested parties*** This includes but is not limited to the following: • Actual/intended building users (if known) including facilities management (FM) staff or those responsible for the day-to-day operation of the building and grounds. • Representative consultation group from the existing community • Existing partnerships and networks that have knowledge of and experience working on existing buildings of the same type. • Potential users of any shared facilities • Local or national historic/heritage groups (over and above any requirements relating to statutory consultees) The ***minimum consultation content*** should typically include the following: • Functionality, build quality and impact (including aesthetics) • Provision of appropriate internal and external facilities (for future building occupants and visitors or users) • Management and operational implications • Maintenance resources implications • Impacts on the local community, e.g. local traffic or transportation impact • Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders • Compliance with statutory (national or local) consultation requirements • Energy use and sustainability measures • Implementing principles and processes that deliver an inclusive and accessible design ***Consultation Feedback*** This is feedback which focuses on the stakeholder suggestions, comments, recommendations and the consultation outcomes. This includes how the suggestions and outcomes influenced, or resulted in modifications to, the proposed design and building operation/use.

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**Continued**	Avison Young / WPP (BREEAM AP)	***Third Credit:*** **Avison Young** to provide: 1. Evidence (this can be in the form of client or project brief) confirming that the BREEAM target rating has been agreed between client and design/project team 2. Letter of appointment confirming the BREEAM AP's appointment **no later than RIBA Stage 2** in line with the credit requirements **Avison Young** to provide a copy of the Project programme indicating RIBA work stages (Stage 1 – Strategic Definition Appraisal to Stage 7 – In Use) **WPP (AP)** to undertake BREEAM Pre-Assessment at **RIBA Stage 2** detailing the credit strategy to achieve the target BREEAM rating ***Fourth Credit:*** **Avison Young** to provide Continual minutes from Design Team Meetings / Workshops demonstrating: • That the BREEAM AP attends key project / design meetings [RIBA Stages 2, 3 & 4] • That BREEAM is a regular agenda item • That the BREEAM AP is included on the circulation list for all key project / design meetings [RIBA Stages 2, 3 & 4] **WPP (BREEAM AP)** to provide copies of BREEAM Progress reports for each relevant work stage [RIBA Stages 2, 3 & 4]

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 02 Life Cycle Costing and Service Life Planning	4	**1**	Gardiner & Theobald	***First – Second Credits: NOT SOUGHT*** ***Fourth Credit: CAPITAL COST REPORTING*** **Gardiner & Theobald** to provide formal confirmation of the predicted Capital Cost for the building in pounds per square metre (£k/m2) **COMPLIANCE NOTES:** **Life Cycle Cost (LCC):** The cost of an asset, or its parts throughout its life cycle, while fulfilling the performance requirements; a methodology for systematic economic evaluation of life cycle costs over a period of analysis, as defined in the agreed scope **Elemental LCC plan:** This is commonly used for developing solutions at project level during option appraisals. Costs are normally at building elemental level on the entire asset. Information may be a mix of typical benchmark costs for key elements, comparative cost modelling or approximate estimates. It is expressed as cost per square metre of gross internal floor area (GIFA) and presented for elemental analysis, aligned to the level of capital cost plans. **Component Level LCC plan:** A component level LCC plan is commonly used for cost planning specification choices of systems, elements or component levels during design development. Component level LCC appraisal for service life planning at the feasibility stage requires the environment of the building and other local conditions to be identified, and the fundamental requirements to be met in planning the service life of the building. Decisions should be made on: • The likely design life of the building (rather than the contractual design life) • Minimum functional performance criteria for each component over the building's design life • Components that must be repairable, maintainable or replaceable within the design life of the building **Predicted Capital Cost:** The capital cost for the building includes the expenses related to the initial construction of the building: • Construction, including preparatory works, materials, equipment and labour • Site management • Construction financing • Insurance and taxes during construction • Inspection and testing *Costs relating to land procurement, clearance, design, statutory approvals and post occupancy aftercare should not be included*

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 03 Responsible Construction Practices **MANDATORY PRE-REQUISITE & 3rd CREDIT FOR EXCELLENT / 4th CREDIT FOR OUTSTANDING**	6	**6**	Stiff + Trevillion / Avison Young / Stiff + Trevillion / WPP (BREEAM AP)	***MANDATORY Pre-requisite:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to source all site timber and timber-based products used on the project as 'Legally harvested and traded timber as outlined in the Central Point of Expertise on Timber (CPET) 5th Edition report on the UK Government Timber Procurement Policy ***First Credit:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to: 1. Operate an environmental management system (EMS), the EMS must be third party certified to ISO 14001 2. Implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6 ***Second Credit:*** **Avison Young** to provide a Letter of appointment confirming the BREEAM AP's appointment throughout RIBA Stages 5 – 6 in line with the credit requirements **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation that the BREEAM target rating has been agreed between client and the main contractor **Stiff + Trevillion** to provide Continual Meeting minutes from Design Team Meetings / Workshops demonstrating that the BREEAM AP attends key project / design meetings [RIBA Stages 5 - 6] and that BREEAM is a regular agenda item **WPP (BREEAM AP)** to provide copies of BREEAM Progress reports for each relevant work stage ***Third – Fourth Credits:*** **Stiff + Trevillion** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor is to be registered and certified under the Considerate Constructor's Scheme – Code of Considerate Practice and achieve a score of **35 out of 50** or more, with a score of at least **7** in of the 5 sections. Also, a requirement to ensure clear and safe access in and around the buildings at the point of handover. ***Fifth – Sixth Credit:*** **Stiff + Trevillion** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to set targets, monitor, record & report Energy consumption, CO2 Emissions and Water Consumption from the use of construction plant, equipment (mobile & fixed) and site accommodation necessary for completion of all construction processes **Energy Consumption** / **CO2 Emissions** / **Water Consumption** Total kWh / Total KgCO2eq / Total net water consumption m3 Total Kwh / £100K of project value / Total kgCO2eq / £100K of project value / Total net water consumption m3 / £100K of project value **Stiff + Trevillion** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to set targets, monitor, record & report data on transport resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum, this must cover: a. Transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution. The scope of this monitoring must cover the following as a minimum: i. Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01), including insulation materials, ii. Ground works and landscaping materials b. Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate. Scope of this monitoring must cover the construction waste groups outlined in the project's waste management plan. **Materials to Site Consumption** / **Waste from Site Consumption** Total Distance (km) / Total Distance (km) Total Litres of Fuel / Total Litres of Fuel Total kgCO2eq / Total kgCO2eq

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Man 04 Commissioning & Handover **MANDATORY 4TH CREDIT FOR EXCELLENT**	4	**4**	WPP / Gardiner & Theobald	***First Credit [WELL Crosswalk]:*** **WPP** to provide Specification clauses confirming: 1. A requirement for the Main Contractor to produce a schedule of commissioning and testing that identifies and includes: • A suitable timescale for commissioning and re-commissioning of all complex and noncomplex building services and control systems and testing and inspecting building fabric. • The appropriate standards that all commissioning activities will be conducted in accordance with, such as current Building Regulations, BSRIA & CIBSE guidelines and where provided BMS in line with the BREEAM requirements 2. The appointment of an appropriate team member to monitor and programme pre-commissioning, commissioning and where necessary re-commissioning on behalf of the client 3. That the Main Contractor is account for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover ***Second Credit:*** **WPP** to provide Specification clauses confirming: 1. The appointment of a specialist commissioning manager during the design stage for complex systems with responsibility for: • Undertaking design reviews and giving advice on suitability for ease of commissioning • Providing commissioning management input into construction programming and during installation stages • Management of commissioning, performance testing and handover/post-handover stages ***Third Credit:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to: 1. Undertake **BOTH** a Thermographic survey **AND** an Air-tightness test at post construction stage in line with the specific BREEAM requirements 2. If necessary undertake remedial work following any defects highlighted by the Thermographic survey and/or Air-tightness test prior to building handover ***Fourth Credit:*** **WPP** to provide Specification clauses confirming a requirement for the Main Contractor to comply with the following: 1. Develop two BREEAM compliant building user guides for the following users: • A non-technical user guide for distribution to the building occupiers • A technical user guide for the premises facilities managers Draft copies are to be developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. 2. Prepare two BREEAM compliant training schedules timed appropriately around handover and proposed occupation plans for the following users: • A non-technical training schedule for the building occupiers • A technical training schedule for the premises facilities managers
Section Credit Total	**18**	**15**		
Weighted Section Total	**11.00%**	**9.17%**		

Health & Wellbeing Credit Value 0.82%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Hea 01 Visual Comfort	5	**2**	Stiff + Trevillion / WPP	***First Credit [WELL Crosswalk]:*** **Stiff + Trevillion** to provide specification and/or drawings confirming the provision of glare control within all relevant building areas (areas where lighting and resultant glare could be problematic for users e.g. areas with workstations/desks, computer screens etc) in accordance with the following: 1. The potential for disabling glare has been designed out of all relevant building areas using a glare control strategy, either through building form and layout and/or building design measures including: • Building integrated measures (e.g. overhangs or fins) • Occupant-controlled devices such as opaque Venetian or close weave fabric blinds, (where the openness factor of blinds is 1% or less, and where the fabric light transmittance value is <0.1 (10%)) • External shading or brise soleil 2. The glare control strategy does not increase energy consumption used for lighting. This is achieved by: • Maximising daylight levels in all weather, cloudy or sunny AND • Ensuring the use or location of shading does not conflict with the operation of lighting control systems ***Second – Third Credits [WELL Crosswalk]: NOT SOUGHT***

Health & Wellbeing Credit Value 0.82%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Hea 01 Visual Comfort	5	**Continued**	Stiff + Trevillion / WPP	***POSSIBLE Fourth Credit [WELL Crosswalk]:*** **Stiff + Trevillion** to provide: 1. Notional floor layouts demonstrating that 95% of the **office floor area** is within 8m of wall with a 'view out' 2. Elevations with calculations demonstrating: • For areas where the room depth is <8m that the area window/opening is ≥ 20% of the surrounding wall area • For areas where the room depth is >8m the percentage of window/opening is the same as, or greater than, the values in table 1.0 of BS 8206: Part 2 **Definition of View Out:** A view of a landscape or buildings (rather than just the sky) at seated eye level (1.2– 1.3m) within the relevant building areas and should ideally be through an external window. A view into an internal courtyard or atrium will comply provided the distance from the opening to the backwall of the courtyard or atrium is at least 10m (therefore allowing enough distance for the eyes to refocus). The view cannot be an internal view across the room, as this is likely to become obstructed by partitions, filing cabinets etc. In addition to this, an external view out can offer positive effects on health and wellbeing that cannot be offered by an internal view ***Fifth Credit:*** **WPP** to provide specification clauses confirming: 1. Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 2. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7 sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20 3. External Lighting is specified in accordance with BS5489-1:2013 Code for the practice for the design of road lighting. Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of workplaces- Part 2: Outdoor workplaces 4. Furthermore, the lighting installation is be zoned, in all appropriate occupied areas, to allow **separate occupant control** in line with the BREEAM requirements **Definition of Separate Occupant Control:** Light switches or controls for a particular area/zone of the building that can be accessed and operated by the individual(s) occupying that area or zone. Such controls must be located within, or within the vicinity of, the zone or area they control *Remote control light switches can be considered as compliant, on the basis that these are provided in sufficient numbers/locations to meet the aim of the criteria.*

Health & Wellbeing Credit Value 0.82%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Hea 02 Indoor Air Quality	4	**2**	Air Quality Consultant / Stiff + Trevillion / Gardiner & Theobald	***Prerequisite:*** **Air Quality Consultant** to provide a site specific BREEAM compliant Indoor Air Quality Plan produced with the objective to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: • Removal of contaminant sources • Dilution and control of contaminant sources • Procedures for pre-occupancy flush out • 3rd Party testing and analysis • Maintaining Indoor Air Quality in-use ***First Credit [WELL Crosswalk]: NOT SOUGHT*** ***Second Credit [WELL Crosswalk]:*** **Stiff + Trevillion** to provide specification confirming the product categories listed in Table 5.11 of the BREEAM 2018 Technical manual (which are to be present within the building) have been specified to meet the testing requirements and emission levels criteria for volatile organic compound (VOC) emissions **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement that the Main Contractor is to ensure: 1. The product categories listed in Table 5.11 of the BREEAM 2018 Technical manual (which are to be present within the building) have been specified to meet the testing requirements and emission levels criteria for volatile organic compound (VOC) emissions 2. The Main Contractor is to provide the required evidence for the Final Stage assessment to demonstrate credit compliance ***Third Credit [WELL Crosswalk]: NOT SOUGHT*** ***Fourth Credit:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement that the Main Contractor is ensure that testing is carried out by a Suitable Consultant demonstrating: • The formaldehyde concentration level is measured post construction (but pre-occupancy) and is found to be less than or equal to 100µg/m3 averaged over 30 minutes (WHO guidelines for indoor air quality: Selected pollutants, 2010). The formaldehyde sampling and analysis is performed in accordance with ISO16000-2 and ISO16000-3. • The total volatile organic compound (TVOC) concentration level is measured post construction (but pre-occupancy) and does not exceed 500µg/m3 over 8 hours. The TVOC sampling and analysis is performed in accordance with ISO16000-5 and ISO16000-6 or ISO 16017-1 Where VOC and formaldehyde levels are found to exceed the limits detailed above, the main contractor will undertake measures, in accordance with the IAQ plan, to reduce the levels to within these limits
Hea 04 Thermal Comfort	3	**3**	WPP	***First Credit:*** **WPP** to provide a thermal comfort assessment utilising software that is CIBSE AM11 compliant demonstrating that the services strategy can deliver thermal comfort levels in accordance CIBSE Guide A, Table 1.5 Plus, for air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the modelling are confirmed ***Second Credit:*** **WPP** to provide a thermal comfort assessment utilising software that is CIBSE AM11 compliant demonstrating that the services strategy can deliver thermal comfort levels in accordance CIBSE Guide A, Table 1.5 can be achieved for a **projected climate change environment** Plus, for air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the modelling are confirmed ***Third Credit [WELL Crosswalk]:*** **WPP** to provide a thermal comfort strategy (informed by the thermal modelling analysis) for the building and its users. The strategy for proposed heating/cooling system(s) demonstrates that it has addressed the applicable credit requirements

<table>
<tr><th>Health & Wellbeing

Credit Value 0.82%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Offices 'Fully Fitted' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Hea 05

Acoustic Performance</td><td>3</td><td>3</td><td>Acoustician / Gardiner & Theobald</td><td>
First – Third Credits [WELL Crosswalk]:

Acoustician to provide report confirming compliance with the acoustic performance standards and testing requirements applicable to the project scope as follows:
<table>
<tr><td rowspan="2">Sound Insulation</td><td>A programme of pre-completion acoustic testing can demonstrate that the sound insulation between acoustically sensitive rooms (where present within the developer's scope of works) and other occupied spaces comply with the performance criteria detailed in Section 7 of BS 8233:2014</td></tr>
<tr><td>Compliance Notes:
If testing is to be carried out where the office is not yet furnished, then section 7.5 of BS 8233:2014 should be referred to when determining the performance criteria. Where the office is to be furnished at the time testing is carried out, then refer to section 7.7.6 of BS 8233:2014 for the relevant performance criteria
Where the term 'acoustically sensitive rooms' is referenced in this BREEAM issue, it refers to cellular offices, meeting, interview, consulting, treatment rooms
And in addition, any other rooms not listed above which the design team or client deems to be acoustically sensitive for the purposes of privacy</td></tr>
<tr><td>Internal Ambient Noise Levels</td><td>A programme of pre-completion acoustic testing can demonstrate that the indoor ambient noise levels comply with the design ranges detailed in Section 7 of BS 8233:2014</td></tr>
<tr><td rowspan="2">Reverberation</td><td>A programme of pre-completion acoustic testing can demonstrate that the Acoustic Environment (control of reverberation, sound absorption and speech transmission index) achieves the requirements relating to sound absorption and reverberation times, where applicable, set out in Section 7 of BS 8233:2014</td></tr>
<tr><td>Compliance Notes:
Room acoustics, this describes how sound behaves in an enclosed space in terms of the reverberation time (or degree of echo), overall noise levels and speech intelligibility. Room acoustics are influenced by room geometry and distribution of acoustic absorption either through the general room finishes or through the introduction of sound absorbing products</td></tr>
</table>
Gardiner & Theobald to provide main Contract Specification / Tender documentation confirming:
That a Programme of Pre-completion Acoustic Testing will be carried out by a 'Compliant Test Body' to ensure that relevant spaces (as built) achieve the above required performance standards
Where testing identifies that spaces do not meet the standards, remedial works will be carried out by the Main Contractor prior to handover and occupation
</td></tr>
</table>

Health & Wellbeing Credit Value 0.82%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Hea 06 Security	1	**0**	Stiff + Trevillion	***Credit: NOT SOUGHT***
Hea 07 Safe & Healthy Surroundings	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide drawing confirming the provision of an outside space providing building users with an external amenity area in line with accordance the following definition **Definition of Outside space:** The space is of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly intended for building staff but can be used by other building users where relevant and beneficial to the building users. The outside space must: • Be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky • Have appropriate seating areas and be non-smoking • Be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.)
Section Credit Total	**17**	**11**		
Weighted Section Total	**14.00%**	**9.06%**		

Energy Credit Value 0.76%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Ene 01 Reduction of Energy Use & Carbon Emissions **MANDATORY** **4 CREDITS FOR EXCELLENT** **10 CREDITS FOR OUTSTANDING**	13	**6**	WPP	***First – Sixth Credits:*** **WPP** to provide a copy of the Building Regulations Output Document (BRUKL) from the approved software based on the design stage of analysis detailing the modelled building's: • Notional Heating & Cooling demand (MJ/m2/yr) • Actual Heating & Cooling demand (MJ/m2/yr) • Notional Primary Energy demand (kWh/m2/yr) • Actual Primary Energy demand (kWh/m2/yr) • Target Emission Rate (TER) kgCO2/m2/yr • Building Emission Rate (BER) kgCO2/m2/yr ***Tenth – Thirteenth Credits: NOT SOUGHT***
Ene 02 Energy Monitoring **MANDATORY** **1ST CREDIT FOR VERY GOOD**	2	**2**	WPP	***First Credit:*** **WPP** to provide specification clauses and schematics confirming Energy Metering Systems are installed (using an appropriate energy monitoring and management system) that enables at least **90%** of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems (where present): • Space heating • Domestic hot water heating • Humidification • Cooling • Ventilation i.e. fans (major) • Pumps • Lighting • Small power • Renewable or low carbon systems • Controls • Lifts • Other major consuming items ***Second Credit:*** **WPP** to provide specification clauses and schematics confirming that an accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.

Energy Credit Value 0.76%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Ene 03 External Lighting	1	**1**	WPP / External Light Consultant	**WPP** to provide: 1. Specification clauses confirming: • The average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt • All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic 2. Drawings detailing the location and purpose of all external lighting **External Lighting Consultant** to provide (where relevant) site plan & elevations drawings showing the location and purpose of all external lighting
Ene 04 Low Carbon Design	3	**2**	WPP / Stiff + Trevillion	***First Credit:*** **WPP** to provide: 1. The thermal comfort assessment utilising software that is CIBSE AM11 compliant required for the 1st credit for Hea 04 2. A BREEAM compliant Passive Design Analysis carried out by the **end of RIBA Stage 2** which: • Identifies opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services • Details the quantify of the reduced total energy demand and carbon dioxide (CO2-eq) emissions resulting from the passive design measures **Stiff + Trevillion** to provide: 3. Evidence confirming that the building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis (as outlined in the LZC Analysis Report), including: • High performance glazing • Improved building fabric thermal insulation • Low building air leakage rate • High efficiency gas fired boilers • Whole house mechanical supply and extract ventilation systems in each apartment with integral heat recovery • Variable speed fans and pumps • Low energy lighting with PIR occupancy control ***Second Credit: NOT SOUGHT*** ***Third Credit:*** **WPP** to provide: 1. A BREEAM compliant LZC Feasibility study report carried out by the **end of RIBA Stage 2** which: • Determines the most appropriate LZC energy sources for the project • Details the quantity of the reduced regulated carbon dioxide (CO2-eq) emissions resulting from the proposed LZC technology **Stiff + Trevillion** to provide: 2. Evidence confirming that LZC energy sources will be specified in line with recommendations of the feasibility study report (VRF Air Source Heat Pumps for heating and cooling, and Air to Water Heat Pumps for hot water)

Energy Credit Value 0.76%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Ene 06 Energy Efficient Lifts	2	**2**	WPP	***First – Second Credits:*** **WPP** to provide: 1. A Lift Traffic Analysis report confirming: • An analysis of the transportation demand and usage patterns for the building carried out to determine the optimum number and size of lifts. • The energy consumption has been calculated in accordance with BS EN ISO 25745 for one of the following: i. At least two types of system (for each transportation type required); OR ii. An arrangement of systems (e.g. for lifts, hydraulic, traction, machine room-less lift (MRL)); OR iii. A system strategy which is 'fit for purpose' • The use of regenerative drives has been considered 2. Specification confirming: • The lift system with the lowest energy consumption has been specified • The following energy efficient features have been specified: i. The lifts operate in a standby condition during off-peak periods. For example, the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. ii. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 70 lamp lumens/circuit Watt iii. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor iv. The use of regenerative drives where it is demonstrated to save energy
Section Credit Total	**21**	**13**		
Weighted Section Total	**16.00%**	**9.90%**		

Transport Credit Value 0.83%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Tra 01 Transport Assessment and Travel Plan	2	**2**	Momentum / Stiff + Trevillion / Avison Young	***First – Second Credits [WELL Crosswalk]:*** **Momentum** to provide **no later than RIBA Stage 2** a site-specific Travel Plan (including transport assessment) covering as a minimum: • Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant • Travel patterns and transport impact of future building users • Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children) • Reporting of the number and type of existing accessible amenities within 500m of the site • Disabled access (accounting for varying levels of disability and visual impairment) • Calculation of the existing public transport Accessibility Index (AI) • Current facilities for cyclists • Proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use **Stiff + Trevillion** to provide drawings showing the implementation of any suggested recommendation made within the Travel Plan **Avison Young** to provide formal letter, if applicable, confirming the measures detailed within the Travel Plan
Tra 02 Sustainable Transport Measures	10	**8**	WPP (BREEAM AP) / Stiff + Trevillion / Momentum	***First – Eighth Credits [WELL Crosswalk]: BASED ON TRA 01 CREDITS BEING ACHIEVED*** **WPP (BREEAM AP)** to provide a copy of the Transport of London's PTAL summary report confirming the Accessibility Index ≥8 **Stiff + Trevillion / Momentum** to provide Drawing & Specification showing the BREEAM compliant cycle storage provision The **total number of BREEAM compliant** cycle spaces which need to be provided (based on default occupancy figures of Net Internal Area X 0.111) is **21** **Calculation of total number of BREEAM compliant cycle spaces** Total NIA of office = 5624m2, therefore 5624 X 0.111 = 625 **(round up)** BREEAM required No. cycle spaces to be provided as follows: 1-200 users @ 1 space per 10 users = **20 spaces** 201-300 users @ 1 space per 15 users (standard unit of measure x 1.5) = **7 spaces** 301-400 users @ 1 space per 20 users (standard unit of measure x 2) = **5 spaces** 401+ users @ 1 space per 25 users (standard unit of measure x 2.5) = **9 spaces** **Total compliant cycle storage spaces required = 41 spaces (rounded up)** **Total compliant cycle storage spaces required can be reduced by 50% where the project is a city centre location;** **Therefore 21 spaces are required to achieve the first credit** **Definition of BREEAM compliant cycle storage:** 1. Cycles can be secured within spaces in rack(s). They are covered overhead and the cycle racks are set in or fixed to a permanent structure (building or hard-standing). Alternatively, the cycle storage may be located in a locked structure fixed to or part of a permanent structure with appropriate surveillance. 2. The distance between each cycle rack, and cycle racks and other obstructions, e.g. a wall, allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed 3. The storage facility or entrance to the facility is in a prominent site location that is viewable / overlooked from either an occupied building or a main access to a building 4. Where facilities are inside the building, such as in the basement, prominent signage is provided to indicate their location to all building users **WPP** to provide, where relevant, Specification clauses confirming that the external lighting is in accordance with BS 5489-1:2013 'Lighting of roads and public amenity areas' and BS EN 12464-2:2014 'Light and lighting - Lighting of work places - Part 2: Outdoor work places' AND is controlled to avoid out-of-hours use and operation during daylight hours, where there is sufficient daylight in or around the facility

Transport Credit Value 0.83%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Tra 02 Sustainable Transport Measures	10	**Continued**	WPP (BREEAM AP) / Stiff + Trevillion / Momentum	***Continued*** **Stiff + Trevillion** to provide Drawings showing that at least **two** of the following types of compliant cyclist facilities will be provided for all staff use: • Showers (1 shower provided for every 10 cycle spaces, **therefore at least 3 showers**) • Changing facilities • Lockers (equal to the number of cycle spaces required, **therefore at least 21 lockers**) • Dedicated drying space **COMPLIANCE NOTES:** Compliant showers • Any building providing eight showers or more will comply regardless of the number of cycle storage spaces provided • Both male and female users must be catered for, i.e. either separate showers within shared gender-specific facilities (required provision split 50-50) or single shower cubicles and changing space for mixed use • The showers do not need to be dedicated to cyclists and can be those shared with other users/uses Compliant changing facilities • Appropriately sized for the likely/required number of users. The assessor should use their judgement to determine whether the changing area is appropriately sized given the number of cycle storage spaces or showers provided. • Changing areas must include adequate space and facilities to hang or store clothing and equipment while changing or showering, e.g. bench seat and/or hooks • Toilet/shower cubicles cannot be counted as changing facilities Compliant lockers • Lockers are either in, or adjacent to, compliant changing rooms, where provided • The lockers are sized appropriately for the storage of a cyclist's equipment **Transport Consultant** to provide a site-specific Travel Plan highlighting: • The location of the assessed building • Location of the three Core amenities relevant to building type within 500m of the site • The route to amenities along safe pedestrian routes (not as the crow flies) • Plan/map scale Core amenities: • Appropriate food outlet • Cash machine • Access to an outdoor open space (public or private, provided suitably sized and accessible to building users) • Access to a recreation/leisure facility for fitness/sports • Publicly available postal facility • Community facility (e.g. public house) • Over the counter services associated with a pharmacy • Child care of facility or school ***POSSIBLE Nine Credits:*** **In addition to the above:** **Stiff + Trevillion** to provide evidence that a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.
Section Credit Total	**12**	**10**		
Weighted Section Total	**10.00%**	**8.33%**		

<table>
<tr><th>Water

Credit Value 0.78%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Offices 'Fully Fitted' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Wat 01

Water Consumption

MANDATORY
1 CREDIT FOR GOOD
2 CREDITS FOR OUTSTANDING</td><td>5</td><td>4</td><td>WPP / Stiff + Trevillion</td><td>First – Fourth Credits:

WPP to provide:
1. Calculations and Drawings detailing the rainwater harvesting and/or grey water system including sanitary items being served
2. Specification clauses confirming that the main contractor is to provide flow restrictors on the supply to any future provision of tea points/kitchenette taps which are to be flow regulated a max of 4 litres/min

Stiff + Trevillion to provide:

1. Drawings showing the location of all sanitary areas
2. Specification detailing the proposed sanitary ware specification

<table><tr><th colspan="2">EXAMPLE SANITARY-WARE SPECIFICATION TO ACHIEVE CREDITS</th></tr><tr><th>Sanitary Item</th><th>EXAMPLE Flush Volume / Flow Rate</th></tr><tr><td>All WCs cisterns (excluding Disabled/Doc M)</td><td>4 / 2.6 litre dual flush</td></tr><tr><td>All Disabled/DOC M WCs cisterns</td><td>4.5 litre single flush</td></tr><tr><td>Urinals (where provided)</td><td>0.5 litre per flush</td></tr><tr><td>All showers</td><td>Flow regulated to max 9 litres/min</td></tr><tr><td>All wash hand basin taps (including within Disabled WC areas)</td><td>Flow regulated to max 3 litres/min</td></tr><tr><td>If provided (including the facility for future provision) all kitchenette taps</td><td>Flow regulated to max 4 litres/min</td></tr></table></td></tr>
<tr><td>Wat 02

Water Monitoring

MANDATORY
CREDIT FOR GOOD</td><td>1</td><td>1</td><td>WPP</td><td>WPP to provide specification clauses confirming the specification of:

• A water meter on the mains incoming water supply to the building
• Water sub-meters on the individual water consuming plant or building areas consuming ≥10% of the building's total water demand

All water meters must to be pulsed or other open protocol communication output and be connected to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption</td></tr>
<tr><td>Wat 03

Water Leak Detection</td><td>2</td><td>2</td><td>WPP</td><td>First Credit [WELL Crosswalk]:

WPP to provide specification clauses confirming the specification of a BREEAM compliant leak detection system which is capable of detecting a major leak water leak on the mains water supply within the building and utilities water meter will be installed

The leak detection system must be:
• A permanent automated water leak detection system that alerts the building occupants to the leak OR an in-built automated diagnostic procedure for detecting leaks is installed
• Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time
• Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods
• Programmable to suit the owner/occupiers' water consumption criteria
• Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers

Second Credit:

WPP to provide specification clauses confirming the specification of PIR operated solenoid valves to control the water supply for each toilet area in the building</td></tr>
<tr><td>Section Credit Total</td><td>8</td><td>7</td><td colspan="2" rowspan="2"></td></tr>
<tr><td>Weighted Section Total</td><td>7.00%</td><td>6.13%</td></tr>
</table>

Materials Credit Value 1.07%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Mat 01 Environmental Impacts from Construction Products - Building Life Cycle Assessment	7	**4**	Suitably Qualified Third Party	***First – Fourth Credits:*** **Suitably Qualified Third Party** to provide Report confirming compliance with the below: Comparison with the BREEAM benchmark **during RIBA Stage 2:** During the Stage 2, the environmental performance of the building has been demonstrated as follows: • A building Life Cycle Assessment (LCA) has been carried on of the superstructure design using an IMPACT Compliant LCA tool according to the BREEAM methodology • The Mat 01/02 Results Submission Tool will have been submitted to BRE at the **end of RIBA Stage 2 and before planning permission is applied for** (that includes external material or product specifications) Option appraisal **during RIBA Stage 2**: During Stage 2, opportunities have been identified for reducing environmental impacts as follows: • A building LCA options appraisal has been carried of 2 to 4 significantly different superstructure design options, applicable to Stage 2 • The use of an IMPACT Compliant LCA tool (as suitable for assessing superstructure during Stage 2) according to the methodology • For each design option, fulfil the same functional requirements specified by the client and all statutory Requirements (to ensure functional equivalency) • The LCA options appraisal activity has been integrated within the wider design decision-making process and recorded in an options appraisal summary document. • Record the following in the Mat 01/02 Results Submission Tool: a. The differences between the design options; the design option selected by the client to be progressed beyond Stage 2 b. The reasons for selecting it and the reasons for not selecting the other design options • The Mat 01/02 Results Submission Tool have been submitted to BRE at the **end of RIBA Stage 2 and before planning permission is applied for** (that includes external material or product specifications) Comparison with the BREEAM benchmark **during RIBA Stage 4:** During the Stage 4, the environmental performance of the building has been demonstrated as follows: • A building LCA has been carried on of the superstructure design using an IMPACT Compliant LCA tool according to the BREEAM methodology • The Mat 01/02 Results Submission Tool has been submitted to BRE at the **end of RIBA Stage 4** Option appraisal **during RIBA Stage 4:** During Stage 4, opportunities has been identified for reducing environmental impacts as follows: • A building LCA options appraisal has been carried of 2 to 3 significantly different superstructure design options based on the selected Stage 2 option and as applicable to Stage 4 • The use of an IMPACT Compliant LCA tool (as suitable for assessing superstructure during Stage 4) according to the methodology • For each design option, fulfil the same functional requirements specified by the client and all statutory Requirements (to ensure functional equivalency) • The LCA options appraisal activity has been integrated within the wider design decision-making process and recording in an updated options appraisal summary document • Record the following in the Mat 01/02 Results Submission Tool: a. The differences between the design options b. The reasons for selecting it and the reasons for not selecting the other design options • The Mat 01/02 Results Submission Tool have been submitted to BRE at the **end of RIBA Stage 4** **Definition of Suitably Qualified Third Party:** An individual who: • Is a third party • Has received training on using the building LCA tool that is recognised by the tool supplier and has passed the associated tests or exams (if any) • Has completed building LCA for at least three projects for paying customers in the last two years • Is able to interpret construction documentation (drawings, specifications, schedules etc.), which may be evidenced by a suitable construction related qualification or relevant experience **IMPACT**: Is a specification and database for software developers to incorporate into their tools to enable consistent LCA. IMPACT compliant tools work by allowing the user to attribute environmental information to drawn or scheduled items. Further information about IMPACT is available from www.impactwba.com **IMPACT Compliant LCA tool** A tool that has been tested for compliance with the IMPACT specification and is listed here: www.impactwba.com

Materials Credit Value 1.07%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Mat 02 Environmental Impacts from Construction Products - Environmental Product Declarations	1	**0**	Main Contractor	***Credit: NOT SOUGHT***
Mat 03 Responsible Sourcing of Materials **MANDATORY PRE-REQUISITE**	4	**2**	Gardiner & Theobald / Avison Young / Main Contractor	***MANDATORY Pre-requisite:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to source all timber and timber-based products installed within the project's construction is 'Legally harvested and traded timber as outlined in the Central Point of Expertise on Timber (CPET) 5th Edition report on the UK Government Timber Procurement Policy ***First Credit:*** **Avison Young (with input from design team and client)** to provide a copy of the project's Sustainable Procurement Plan developed and in place before the end of **RIBA Stage 2** that sets out a clear framework for the responsible sourcing of materials to guide procurement throughout a project and by all involved in the specification and procurement of construction products. The plan must: • Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved • Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. • Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan

Materials Credit Value 1.07%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Mat 03 Responsible Sourcing of Materials **MANDATORY PRE-REQUISITE**	4	**Continued**	Gardiner & Theobald / Avison Young / Main Contractor	***Second Credit:*** **Main Contractor** to provide 1. A completed **schedule for the construction of the Office areas only** detailing: • The breakdown (by either m3 or kg) of the ***Applicable Materials*** within the ***Superstructure Building Elements*** for each construction/specification type making up the total of each applicable building element • Details confirming the relevant responsible sourcing accreditation schemes (e.g. BES 6001 / ISO 14001 / FSC etc) for each material detailed on the completed responsible sourcing schedule 2. Copies of the responsible sourcing certificates for each material detailed within the completed responsible sourcing schedule ***Third – Fourth Credits NOT SOUGHT:***

Applicable Materials
Timber/ timber-based products
Concrete/ cementitious (plaster, mortar, screed etc.)
Metals (steel, aluminium)
Stone / aggregate
Clay-based (pavers, blocks, bricks, roof tiles, etc.)
Gypsum
Glass
Plastic, polymer, resin, paint, chemicals and bituminous
Animal fibre/skin, cellulose fibre

Superstructure Elements
Frame
Upper floor
Roof
Stairs and ramps
External walls
Windows and external doors
Internal walls and Partitions

Materials Credit Value 1.07%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Mat 05 Designing for Durability and Resilience	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide evidence confirming compliance with points 1 to 3: **1. Protection measures to vulnerable parts of the building from damage have been specified:** Specification and Drawings confirming that protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: • Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.) • Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas • External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails • Potential malicious damage to building materials and finishes, in public and common areas where appropriate Examples of suitable durability measures in areas of higher risk, suitable durability and protection measures to vulnerable parts of the building can include: • Bollards, barriers or raised kerbs to delivery and vehicle drop-off areas • Robust external wall construction, up to 2m high • Corridor walls specified to Severe Duty (SD) as per BS 5234-22 • Protection rails to walls of corridors • Kick plates or impact protection (e.g. trolleys) on doors • Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc.) • Door stoppers to prevent door handles damaging walls • Designing out the risk without the need for additional materials specification to protect vulnerable areas **2. That convenient access to the roof and façade for cost-effective cleaning, replacement and repair is included in the building's design.** Access to the roof and façade is safe and convenient for routine maintenance, cleaning and repair. A façade access strategy designed in line with CIRIA guide C686 would be considered compliant. If access to the majority of the façade requires contracting on a one-off basis an external firm with specialist equipment, or specialist access professionals it would not generally be considered to be convenient **3. The roof and façade is designed to prevent water damage, ingress and detrimental ponding** A common and potentially significantly damaging failure mechanism for external envelopes is water ingress or other type of water damage. The design team should demonstrate that they have carefully considered the drainage mechanisms of the façade and roof on a small and large scale to prevent staining, detrimental oxidation, ponding, rot, ingress, penetration or any other deleterious effect. This should take the form of a risk assessment, the complexity and detail of which is related to the complexity and innovative nature of the façade and roof. The final design should demonstrate that, where possible, these negative impacts have been avoided.

<table>
<tr><th>Materials

Credit Value 1.07%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Offices 'Fully Fitted' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Mat 05

Designing for Durability and Resilience</td><td>1</td><td>Continued</td><td>Stiff + Trevillion</td><td>
Stiff + Trevillion to provide evidence confirming compliance with point 4:

4. Protection measures to exposed parts of the building from material degradation have been specified:
Key exposed building elements have been designed and specified to limit long and short-term degradation due to environmental factors. This can be demonstrated through one of the following:

• The element or product achieving an appropriate quality or durability standard or design guide, see Table below. If none are available, BS 7543:20151 can be used as the default appropriate standard.
OR
• A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors

<table>
<tr><th colspan="2">Relevant industry durability or quality standards and design guides</th></tr>
<tr><td>Timber</td><td>• BS EN 350:2016. Durability of wood and wood-based products - Testing and classification of the durability to biological agents of wood and wood-based materials, BSI; 2016.
• WIS 4-28. Durability by design, TRADA; 2016
• WIS 2/3-60. Specifying timber exposed to weathering, TRADA; 2015
• WIS 1-47. Timber external doors, TRADA; 2015
• BS 8605-1:2014. External timber cladding - Method of specifying, BSI; 2014</td></tr>
<tr><td>Curtain walling</td><td>• Standard for systemised building envelopes, Centre for Window and Cladding Technology; 2006
• CWCT Curtain Wall Installation Handbook, Centre for Window and Cladding Technology; 2006
• BS EN 13830:2015. Curtain walling - Product standard, BSI; 2015</td></tr>
<tr><td>Brickwork, blockwork</td><td>• BDA Design Note 7 - Brickwork durability, Brick Development Association; 2011
• Severely Exposed Brickwork, Brick Development Association; 2014
• BS 8297-2017. (Design, manufacture and installation of architectural precast concrete cladding. Code of practice).
• The standard refers to EN 13369 (Common Rules for precast concrete products) on durability requirements and requires concrete cover to be in accordance to EN 1992-1-1 and BS 8500.
• BS 8500-1:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 1: Method of specifying and guidance for the specifier and
• BS 8500-2:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 2: Specification for constituent materials and concrete</td></tr>
<tr><td>Roof elements</td><td>• BR 504. Roofs and roofing: Performance, diagnosis, maintenance, repair and the avoidance of defects (Third Edition), BRE; 2009
• Profiled sheet roofing and cladding. The guide to design and best practice (4th edition), National Federation of Roofing Contractors; 2016
• Guidelines for the Design & Application of Green Roof Systems, CIBSE; 2013
• Single Ply: Design Guide 2016 Edition, Single Ply Roofing Association; 2016
• SPRA: Guidance and standards
• LRWA: technical guidance notes</td></tr>
<tr><td>Metal cladding</td><td>• Profiled sheet roofing and cladding. The guide to design and best practice (4th edition) National Federation of Roofing Contractors 2016
• Metal Fabrications: Design, Detailing and Installation Guide, Metal Cladding and Roofing Manufacturers Association; 200</td></tr>
<tr><td>Glazing</td><td>• BS EN 12488:2016. Glass in building - Glazing recommendations - Assembly principles for vertical and sloping glazing, BSI; 2016</td></tr>
<tr><td>Masonry</td><td>• PD 6697:2010. Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2, BSI; 2010
• BS EN 1996-2:2006. Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry, BSI; 2006</td></tr>
<tr><td>Other useful standards or design guides</td><td>• BR 292. Cracking in buildings (Second edition), BRE; 2016
• BRE Good Practice guidance's</td></tr>
</table>

BS 7543:2015: Guide to durability of buildings and building elements, products and components
This standard gives a useful overview of the field of durability and provides a process for predicting a materials service life. It provides useful guidance on the methodology for assessing and measuring durability and identifies common durability failures for typical construction materials. In addition, it lists some example predicted service lives for typical materials.
</td></tr>
</table>

Materials Credit Value 1.07%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Mat 06 Material Efficiency	1	**0**	Avison Young / Stiff + Trevillion / AKT II / WPP	***Credit: NOT SOUGHT***
Section Credit Total	**14**	**7**		
Weighted Section Total	**15.00%**	**7.50%**		

<table>
<tr><th>Waste
Credit Value 0.55%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Offices 'Fully Fitted' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Wst 01
Construction Waste Management</td><td>5</td><td>4</td><td>Gardiner & Theobald</td><td>
First Credit:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming that the Demolition Contractor or Competent Person is to complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition before the end of RIBA Stage 2 and prior to strip-out or demolition works

This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the following content & scope:
• Guide the design, consider materials for reuse and set targets for waste management
• Engage all contractors in the process of maximising high-grade reuse and recycling opportunities
• Compare actual waste arisings and waste management routes used with those forecasted and investigate significant deviations from planned targets
• Identification and quantification of the key materials where present on the project
• Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy
• Opportunities for reuse and recycling within the same development
• Identification of local reprocessors or recyclers for recycling of materials
• Identification of overall recycling targets where appropriate
• Identification of reuse targets where appropriate
• Identification of overall landfill diversion rate for all key materials

Second – Fourth Credits:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to produce a BREEAM compliant Resource Management Plan (RMP) covering with the following:
• The non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication) including demolition and excavation waste generated by the building's design and construction
• Accurate data records on waste arisings and management routes
• Meet or improve upon the project target benchmark detailed below for the amount of non-hazardous construction waste (excluding demolition and excavation waste) generated per 100m2 of the gross internal floor area of the building
• Meet or improve upon, where applicable, the project target diversion from landfill benchmark detailed below for non-hazardous construction waste and demolition waste generated
• Sort waste materials into separate key waste groups according to the European Waste Catalogue, either on-site or through a licensed contractor for recovery

<table>
<tr><th colspan="2">Project target benchmark for the amount of non-hazardous construction waste (excluding demolition and excavation waste) generated per 100m2 of the gross internal floor area of the building</th></tr>
<tr><th>Tonnes</th><th>m3 (actual, not bulk volume)</th></tr>
<tr><td>≤6.5</td><td>≤7.5</td></tr>
<tr><th colspan="2">Project target diversion from landfill benchmark for non-hazardous construction waste and demolition waste generated</th></tr>
<tr><th>Tonnes</th><th>m3 (actual, not bulk volume)</th></tr>
<tr><td>Construction 80%</td><td>Construction 70%</td></tr>
<tr><td>Demolition 90%</td><td>Demolition 80%</td></tr>
</table>
Fifth Credit: NOT SOUGHT
</td></tr>
</table>

Waste Credit Value 0.55%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Wst 02 Use of Recycled and Sustainably Sourced Aggregates	1	**0**	Main Contractor	***Credit: NOT SOUGHT***

Waste Credit Value 0.55%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Wst 03 Operational Waste **MANDATORY CREDIT FOR EXCELLENT**	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide Drawings confirming the provision of a central (clearly labelled), dedicated storage space for the recycling of materials which is: • Sized to a minimum of 10m2 • An additional 2m2 per 1000m2 of net floor area where catering is provided in size • Located accessible to building occupants or facilities operators for the deposit of materials and collection by waste management contractors • In addition to the general waste area provision **In addition to the above**, where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must also be provided: • Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space • Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use; OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility • Where organic waste is to be stored/composted on-site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes
Wst 04 Speculative Floor & Ceiling Finishes	1	**1**	Stiff + Trevillion / Avison Young	**Via Compliance Option 1 OR Option 2 or Option 3:** **Stiff + Trevillion** to provide drawings confirming compliance with **EITHER Option 1 OR Option 2 OR Option 3**: Option 1 - **NO** floor finishes **AND** ceiling finishes are to be provided within the developer's Cat A scope of works for the tenanted office areas of the building The credit can be awarded on the following basis: a. Office flooring only consists of raised access flooring with no hard or soft floor finishes e.g. carpets b. Office ceiling has no suspended ceiling tiles etc but can included paint finishes, decorative timber, plaster crown mouldings Option 2 - Floor finishes **AND** ceiling finishes are to be provided only within a show area (no greater than 25% of the total net lettable floor area) within the developer's Cat A scope of works for the tenanted areas of the building Option 3 - **NO** floor finishes are to be provided **BUT** ceiling finishes are to be provided **Avison Young** to provide a clause from the Tenant Lease Agreement confirming that the incoming tenants are not permitted to remove the installed ceiling finishes or allowed to make substantial changes ***Removing small parts of the ceiling finish to enable Cat B installation of wall partitions locally is acceptable. However, fully removing the ceiling on the basis of complicating the installation of internal partitions, would not allow compliance with this issue***

Waste Credit Value 0.55%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Wst 05 Adaption to Climate Change	1	**0**	Stiff + Trevillions / AKT II / WPP	***Credit: NOT SOUGHT***

Waste Credit Value 0.55%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Wst 06 Design for Disassembly and Adaptability	2	**2**	Stiff + Trevillion / AKT II / WPP	***First Credit:*** **Stiff + Trevillion / AKT II / WPP** to provide separately based on applicable consultant's input a building-specific Design for Disassembly and Functional Adaptation Strategy Study **no later than RIBA Stage 2** in accordance with the following credit requirements: **Ease of Disassembly** Facilitated by principles allowing the building or parts of the building to be disassembled at the end of its life, or to be renovated rather than demolished, with individual components being used for other purposes. The study should consider the following as a minimum: • Accessibility • Durability: use materials which require less frequent maintenance, repair or replacement, considering them within the context of the life span of the building • Exposed and reversible connections: making the connections more visible provides opportunities to optimise material and product reuse. Welded connections prohibit disassembly and it is preferable to use screws and bolts to allow for disassembly and material reuse • Layer independence: designing building systems and components in layers so that removal, adjustment or replacement of some elements is feasible, especially when different components have different life spans and maintenance needs • Avoidance of unnecessary toxic treatments and finishes. Some finishes can contaminate the substrate in a way that they are no longer reusable or recyclable. This should be avoided unless finishes serve a specific purpose. • Standardisation can accommodate reuse and upgrading. It involves aspects such as dimensions, components, connections and modularity. **The Functional Adaptation Strategy Study should consider the following as a minimum:** • Feasibility: The likelihood to contain multiple or alternative building uses, area functions and different tenancies over the expected life cycle, e.g. related to the structural design of the building • Accessibility: Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors and walls that can be removed without affecting the structure, providing lifting beams and hoists. Accessibility also involves access to local services, such as local power, data infrastructure etc. • Versatility: The degree of adaptability of the internal environment to accommodate changes in working practices • Adaptability: The potential of the building ventilation strategy to adapt to future building occupant needs and climatic scenarios • Convertibility: The degree of adaptability of the internal physical space and external shell to accommodate changes of in-use • Expandability: The potential for the building to be extended, horizontally or vertically • 'Refurbishment potential': The potential for major refurbishment, including replacing the façade ***Second Credit:*** **Stiff + Trevillion / AKT II / WPP** to provide separately based on applicable consultant's input: 1. An update **no later than RIBA Stage 4** on: • How the recommendations or solutions proposed have been implemented where practical and cost effective with any omissions justified in writing to the assessor • Changes to the recommendations and solutions during the development of the Technical Design 2. Examples detailing design measures and aspects regarding future disassembly and functional adaptation measures included in the Stage 4 design 3. A building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants
Section Credit Total	**11**	**8**		
Weighted Section Total	**6.00%**	**4.36%**		

Land Use & Ecology Credit Value 1.00%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
LE 01 Site Selection	2	**1**	Stiff + Trevillion	***First Credit:*** **Stiff + Trevillion** to provide pre and post development drawings (including areas m2) confirming that at least **75%** of the proposed development footprint is on an area which has been previously been occupied by industrial, commercial or domestic buildings or fixed surface infrastructure ***Second Credit: NOT SOUGHT***
LE 02 Identifying & Understanding the Risks & Opportunities for the Site	2	**2**	Gardiner & Theobald / Ecologist	***Prerequisite:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor is ensure compliance is to be monitored against all relevant UK and EU or international legislation relating to the ecology of the site. **First Credit:** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with: 1. A Suitably Qualified Ecologist (SQE) has been appointed at **RIBA Stage 1 (or equivalent)** to carry out a site survey and evaluation early enough to influence site preparation works, layout and, where necessary, strategic planning decisions 2. An appropriate level of survey and evaluation has been carried out by the SQE to determine the site's ecological including: • Current and potential ecological value and condition of the site, and related areas within the zone of influence. • Direct and indirect risks to current ecological value • Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the zone of Influence 3. Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features ***Second Credit: – Based on the 1st credit being achieved*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with: 1. **During RIBA Stage 2**, the SQE & project team have liaised and collaborated with representative stakeholders early enough to influence key planning decisions to: a. Identify the optimal ecological outcomes for the site b. Identify, appraise and select measures to meet the optimal ecological outcomes for the site in line with the mitigation hierarchy of action: • Avoidance • Protection • Reduction or limitation of negative impacts • On site compensation and, • Enhancement, considering the capacity and feasibility within the site, or where viable, off-site.

Land Use & Ecology Credit Value 1.00%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
LE 03 Managing Negative Impacts on Habitats & Biodiversity on the Site	3	**3**	Ecologist	***Prerequisites:*** 1. The 1st and 2nd LE02 credits have been achieved ***First Credit:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with the Planning and Measures on-site credit in line with the BREEAM 2018 methodology ***Second – Third Credits:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance that negative impacts from site preparation and construction works have been managed according to the BREEAM hierarchy for managing impacts on site and no net loss of ecological value has occurred
LE 04 Change & Enhancement of Ecological Value	4	**3**	Ecologist / Stiff + Trevillion / Landscape Architect / Gardiner & Theobald	***Prerequisites:*** 1. The LE03 credit has been achieved for compliance with a Suitably Qualified Ecologist (SQE) confirming that negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy ***First Credit:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming that: 1. Measures have been highlighted to be implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of credit LE 02. Measures are implemented in the following order: • On site, and where this is not feasible, • Off site within the Zone of Influence. 2. Data collated is analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site. ***Second – Third Credits:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance that a calculated change in ecological value as a result of the development (in accordance with the BREEAM's methodology based on the existing 'Defra biodiversity metric' which is habitat based as documented in BREEAM Guidance Note 36) of a **No net loss of ecological value (percentage score of 95-104)** is applicable The attributes used in the Defra biodiversity metric are the habitat types, their distinctiveness, condition and area / length throughout the assessed project life cycle. This methodology follows the Defra metrics principles to quantify the impact of a development in terms of 'biodiversity units'. **Stiff + Trevillion and/or Landscape Architect** to provide drawings / proposed site plan / planting proposals clearly detailing the implementation of ALL the ecologist's recommendations including specific reference to the ecological enhancement recommendations **Gardiner & Theobald** to provide relevant section of the main Contract Specification / Tender documentation confirming that the Main Contractor is to implement all the ecological enhancement recommendations put forward by the Ecology report

Land Use & Ecology Credit Value 1.00%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
LE 05 Long Term Biodiversity Management & Maintenance	2	**2**	Ecologist / Avison Young	***Prerequisites:*** 1. The contractor is to ensure that compliance is to be monitored against all relevant UK, and EU or International legislation relating to the ecology of the site 2. At least one credit under LE04 has been achieved ***First – Second Credits:*** **Suitably Qualified Ecologist** to provide: 1. Report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with the Management and maintenance throughout the project credit in line with the BREEAM 2018 methodology 2. A Landscape and ecology management plan, or similar, is to be developed in accordance with BS42020:2013 covering as a minimum the first five years after project completion and includes: • Actions and responsibilities of relevant individuals prior to handover • The ecological value and condition of the site at handover and how this is expected to develop and change over time • Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework • Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts • Clearly defined and allocated roles and responsibilities for delivering the plan **Avison Young** to provide relevant section of the main Contract Specification / Tender documentation confirming that the Main Contractor is to as part of the tenant or building owner information supplied, produce a section on Ecology and Biodiversity is provided to inform the owner or occupant of local ecological features, value and biodiversity on or near the site. The tenant/occupier/building manager information pack is to include the following content, as appropriate: • Detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours • Details of the ecological value within the property boundary (e.g. public and private gardens, green roofs), common areas (e.g. communal garden), and the surrounding area (e.g. public recreational space) • The benefits of the ecological value to the occupants and the broader community. • Guidance on how the occupants can make the most of the local ecology and contribute to its management, (e.g. planting ecologically appropriate species in their property), as well as things that should be avoided doing (e.g. disrupting wildlife corridors, planting invasive species or allowing them to colonise and spread) • Highlight relevant actions that can be taken to enhance value within the property that is owned or occupied to help ensure its ongoing management and maintenance. • Contact details for those responsible for the management and maintenance of the local ecology and sources of local information on biodiversity and ecological management including management companies and local wildlife trusts.
Section Credit Total	**13**	**11**		
Weighted Section Total	**13.00%**	**11.00%**		

Pollution Credit Value 0.67%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Pol 01 Impact of Refrigerants	3	**0**	WPP / Main Contractor	***First – Third Credits: NOT SOUGHT***
Pol 02 Local Air Quality	2	**2**	WPP	***First – Second Credits [WELL Crosswalk]:*** **WPP** to provide Specification / Calculations confirming **EITHER**: a. All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity **OR** b. That the emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed NOx emissions of 24mg/kWh @ 0% excess O2

Pollution Credit Value 0.67%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Pol 03 Surface Water Run-Off	5	**4**	AKT II	***First – Second Credits*:** **AKT II** to provide a site-specific Flood Risk Assessment report confirming that the site is located in a flood zone defined as having a low annual probability of flooding (in accordance with current best practice national planning guidance) AND takes into account all current and future sources of flooding into consideration: • Fluvial (rivers) • Tidal • Surface water: sheet run-off from adjacent land (urban or rural) • Groundwater: most common in low-lying areas underlain by permeable rock (aquifers) • Sewers: combined, foul or surface water sewers • Reservoirs, canals and other artificial sources ***Prerequisites for Third & Fourth Credits:*** **AKT II** to provide a site-specific Flood Risk Assessment report confirming 1. Surface water run-off design solutions are bespoke, i.e. taking into account the specific site requirements and natural or man-made environment of and surrounding the site. 2. The appropriate consultant is to follow the priority levels listed below (noting that level 1 has the highest priority). Justification is to be provided for each level which does not contribute to managing surface water run-off. This has been set so the most appropriate water management solutions are used, prioritising water use in the development and infiltration over discharge. This is so that the volume of water that leaves the site is limited as far as practicable: • Priority Level 1 - Water is collected for use in the development (e.g. rainwater harvesting) • Priority Level 2 - Water is infiltrated into the ground • Priority Level 3 - Water is discharged to surface water body • Priority Level 4 - Water is discharged to the drainage system • Priority Level 5 - Water is discharged to a combined sewer **AKT II** to provide a site-specific Flood Risk Assessment report confirming that: 1. Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows **a 30% improvement** for the developed site compared with the pre-developed site, complying at the 1-year and 100-year return period events. 2. Calculations include an allowance for climate change made in accordance with current best practice planning guidance 3. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. ***Fourth Credit:*** **AKT II** to provide a site-specific Flood Risk Assessment report confirming that flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance) **AND:** **EITHER – Option 1:** a. Drainage design measures are specified to ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development for the 100-year 6-hour event, including an allowance for climate change b. Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other Sustainable Drainage System (SuDS) techniques. **OR – Option 2 (only where points a. and b. cannot be achieved):** c. Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. d. Drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: • The pre-development 1-year peak flow rate; OR • The mean annual flow rate Qbar; OR • 2L/s/ha **PLUS** • Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place • For either option, above calculations must include an allowance for climate change; made in accordance with current best practice planning guidance ***PLEASE NOTE*** **Where the man-made impermeable area draining to the watercourse (natural or municipal) has decreased or remains unchanged post development, the peak and volume rate of run-off requirements for the surface water run-off credits will be met by default. Flow rate calculations will not need to be provided. Instead, drawings clearly showing the impermeable areas of the site draining to the watercourse should be provided for the pre- and post-development scenarios. Figures must also be given (ideally on the drawings) to show a comparison between the areas of drained impermeable surfaces pre- and post-development. In this instance, it is still recommended that any opportunities identified to reduce surface water run-off are implemented.** ***Fifth Credit: NOT SOUGHT***

Pollution Credit Value 0.67%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Pol 04 Reduction of Night Time Light Pollution	1	**1**	WPP / External Lighting Consultant	**WPP** to provide: 1. Specification clauses confirming that the external lighting design is designed to be in accordance with the following: • Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011 • All external lighting (except for safety and security lighting) will be automatically switched off between 23:00 to 07:00 • If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes • Illuminated advertisements, where specified, are designed in accordance with ILP PLG 05 – The Brightness of Illuminated Advertisements 2. Site plan & elevations drawings showing the location and purpose of all external lighting **External Lighting Consultant** to provide (where relevant) site plan & elevations drawings showing the location and purpose of all external lighting
Pol 05 Noise Attenuation	1	**1**	Acoustician / Stiff + Trevillion / WPP	**Acoustician** to provide a BREEAM compliant Noise Impact Survey (in accordance with BS 4142:2014) confirming: 1. Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for: a. Existing background noise levels: a.i. at the nearest or most exposed noise-sensitive development to the proposed assessed site a.ii. including existing plant on a building, where the assessed development is an extension to the building b. Noise rating level from the assessed building. 2. The noise impact assessment must be carried out by a suitably qualified acoustic consultant. 3. The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than the background noise throughout the day and night. 4. If the noise sources from the assessed building are greater than the levels described above, measures must be installed to attenuate the noise at its source to a level where it will comply with the criterion. **Stiff + Trevillion** to provide (if applicable) Drawings confirming that any detailed attenuation measures confirmed within the Noise Impact Survey report will be installed **WPP** to provide (if applicable) specification clause confirming that any detailed attenuation measures confirmed within the Noise Impact Survey report will be installed
Section Credit Total	**12**	**8**		
Weighted Section Total	**8.00%**	**5.33%**		

Innovation Credit Value 1.00%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Required Information/Evidence**
Inn Hea 01 Visual Comfort	1	**1**	WPP	**WPP** to provide specification clauses confirming that internal lighting in each zone can be manually dimmed by occupants **down to 20%** of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise **Definition of Separate Occupant Control:** Light switches or controls for a particular area/zone of the building that can be accessed and operated by the individual(s) occupying that area or zone. Such controls must be located within, or within the vicinity of, the zone or area they control *Remote control light switches can be considered as compliant, on the basis that these are provided in sufficient numbers/locations to meet the aim of the criteria.*
Inn Mat 01 Environmental Impacts from Construction Products - Building Life Cycle Assessment	1	**1**	Suitably Qualified Third Party	**In addition to meeting the requirements under Mat 01** **Suitably Qualified Third Party** to: 1. Carry out the building LCA work and produce a report describing how they have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of the applicable criteria under Mat 01 2. For each LCA option, itemise in the report the checks made by the suitably qualified third party including, as a minimum, the quality requirements detailing in Table 9.4 of the BREEAM 2018 Technical Manual 3. Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third-party independence from the project client and design team in the report
Section Credit Total	**10**	**2**		
Weighted Section Total	**10.00%**	**2.00%**		

BREEAM 2018 Offices *'Fully Fitted'* Interim Stage Assessment Results for: 247 Tottenham Court Road, London	
Credit Strategy:	**Current Achievable Credits**
Totals:	**72.79%**
Ratings:	**EXCELLENT**

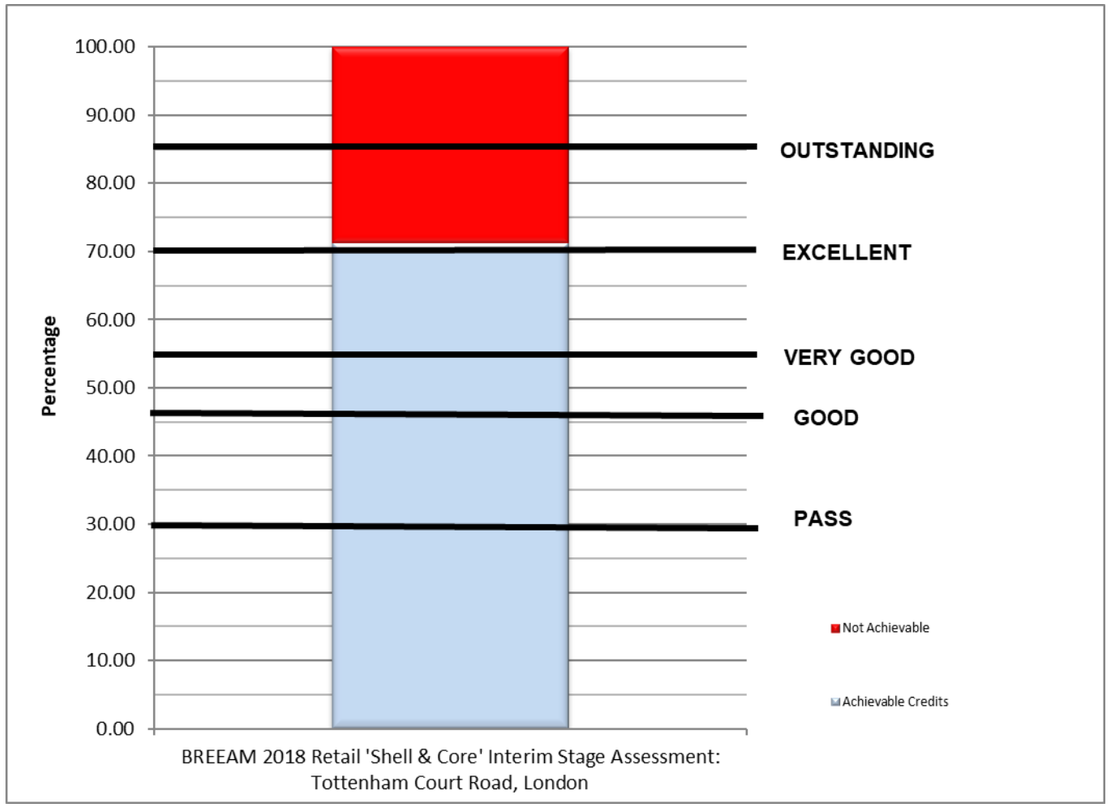
INTERIM STAGE ASSESSMENT: BREEAM (NC) 2018 Retail *'Shell & Core'* – Target Credit Schedule

Watkins Payne Partnership has been commissioned by CO-RE to carry out a BREEAM Retail 2018 Full Assessment of the Tottenham Court Road development, London

The Target ACHIEVABLE BREEAM score is **71.32% - EXCELLENT**

This Credit Schedule details the information required and the responsible parties:

- **Outstanding credit information / requirements - detailed in RED**



Project Directory		
Client / Developer	David Hutton / Luke Wainwright / Bradley Bakes	CO-RE
Project Manager	Jason Plant	Avison Young
Cost Consultant	Philip Saunders / Stuart Le Boutillier / Thomas Butler	Gardiner & Theobald
Architect	Jason Warren / Sean Crummey / Lauren Kehoe	Stiff + Trevillion
Consulting Building Services Engineer	Mike Cousins / Jon Bottrell / Michael Treacy / Paul Wells	Watkins Payne Partnership
Structural Engineer	Kieron Taylor	AKT II
Planning Consultant	Natalie Davies / Liam Lawson Jones	Gerald Eve
Acoustician	TBC	TBC
Transport Consultant	Roy McGowan	Momentum Transport Consultancy
Communications	TBC	TBC
Ecologist	TBC	TBC
Landscape Designer	TBC	TBC
Main Contractor	Not yet appointed	Not yet appointed
Report produced by Watkins Payne Partnership		
BREEAM Assessor / Accredited Professional (AP)	Bradley Lobetta	Watkins Payne

Mandatory credits are to be achieved to reach the **PASS / GOOD / VERY GOOD / EXCELLENT / OUTSTANDING** ratings, credits with mandatory requirements are detailed in **Bold BLUE**

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**4**	Avison Young / WPP (BREEAM AP)	***First Credit:*** **Part A**: **Avison Young** to provide appropriate evidence [meeting minutes / project programme / letters of appointment(s) / responsibilities matrix / Framework agreements etc] confirming: 1. **That prior to end of RIBA Stage 2** the project delivery team have been involved in contributing to the decision-making process for the project This must include meeting(s) to identify & define design team roles, responsibilities and contributions for each key phase of the project ***The roles & responsibilities*** need to include consideration of: Note / Statement to confirm how the following items were considered when defining roles, responsibilities and contributions for each key phase of the project: • End user requirements • Aims of the design and design strategy • Particular installation and construction requirements • Occupiers budget and technical expertise in maintaining any proposed systems • Maintainability and adaptability of the proposals • Operational energy • Requirements for the production of project and end user documentation • Requirements for commissioning, training and aftercare support **Part B**: **Avison Young** to provide a statement demonstrating how the project delivery stakeholder contributions and internal design team consultation process have influenced (where relevant) • Initial Project Brief • Project Execution Plan • Communication Strategy • Concept Design **COMPLIANCE NOTES:** Definition of Project Execution Plan The RIBA Plan of Works 2013 defines a Project Execution Plan as a plan produced in collaboration between the project lead and lead designer, with contributions from other designers and members of the project team. The Project Execution Plan sets out the processes and protocols to be used to develop the design. It is sometimes referred to as a 'project quality plan'. Definition of Communication Strategy: The RIBA Plan of Works 2013 defines the Communication Strategy as a strategy that sets out when the project team will meet, how they will communicate effectively and the protocols for issuing information between the various parties, both informally and at Information Exchanges

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**Continued**	Avison Young / WPP (BREEAM AP)	***Second Credit:*** **Avison Young** to provide: 1. A Consultation plan setting out: • The process and scope of the consultation • Timescales and methods of consultation, clearly identifying at which points consultation groups/relevant parties can usefully contribute • Details on how the consultation groups/relevant parties will be kept informed about progress on the project 2. Copies of agendas and minutes of meetings with the consultation groups/relevant parties demonstrating: • The consultation plan in action • The stage in plan of works that consultation occurred 3. Copies of documentation demonstrating consultation feedback, including (where relevant): • Newsletters, posters, circulars etc. • Agenda and minutes from meetings 4. A summary of any items/issues raised from the consultation 5. A summary of how the consultation may have influenced the Initial Project Brief and Concept Design. 6. A summary of how feedback was given back to the consultation groups/relevant parties **THE ABOVE INFORMATION NEEDS TO DEMONSTRATE COMPLIANCE WITH THE FOLLOWING CREDIT REQUIRMENTS:** 1. **Prior to end of RIBA Stage 2** All **interested parties** have been consulted by the consultation team covering the **minimum consultation content** 2. How the consultation exercise and outcomes have influenced the Initial Project Brief and Concept Design 3. **Prior to end of the RIBA Stage 4** That **Consultation Feedback** has been given and received by all interested parties consulted ***Interested parties*** This includes but is not limited to the following: • Actual/intended building users (if known) including facilities management (FM) staff or those responsible for the day-to-day operation of the building and grounds. • Representative consultation group from the existing community • Existing partnerships and networks that have knowledge of and experience working on existing buildings of the same type. • Potential users of any shared facilities • Local or national historic/heritage groups (over and above any requirements relating to statutory consultees) The ***minimum consultation content*** should typically include the following: • Functionality, build quality and impact (including aesthetics) • Provision of appropriate internal and external facilities (for future building occupants and visitors or users) • Management and operational implications • Maintenance resources implications • Impacts on the local community, e.g. local traffic or transportation impact • Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders • Compliance with statutory (national or local) consultation requirements • Energy use and sustainability measures • Implementing principles and processes that deliver an inclusive and accessible design ***Consultation Feedback*** This is feedback which focuses on the stakeholder suggestions, comments, recommendations and the consultation outcomes. This includes how the suggestions and outcomes influenced, or resulted in modifications to, the proposed design and building operation/use.

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Man 01 Project Brief & Design	4	**Continued**	Avison Young / WPP (BREEAM AP)	***Third Credit:*** **Avison Young** to provide: 1. Evidence (this can be in the form of client or project brief) confirming that the BREEAM target rating has been agreed between client and design/project team 2. Letter of appointment confirming the BREEAM AP's appointment **no later than RIBA Stage 2** in line with the credit requirements **Avison Young** to provide a copy of the Project programme indicating RIBA work stages (Stage 1 – Strategic Definition Appraisal to Stage 7 – In Use) **WPP (AP)** to undertake BREEAM Pre-Assessment at **RIBA Stage 2** detailing the credit strategy to achieve the target BREEAM rating ***Fourth Credit:*** **Avison Young** to provide Continual minutes from Design Team Meetings / Workshops demonstrating: • That the BREEAM AP attends key project / design meetings [RIBA Stages 2, 3 & 4] • That BREEAM is a regular agenda item • That the BREEAM AP is included on the circulation list for all key project / design meetings [RIBA Stages 2, 3 & 4] **WPP (BREEAM AP)** to provide copies of BREEAM Progress reports for each relevant work stage [RIBA Stages 2, 3 & 4]

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Man 02 Life Cycle Costing and Service Life Planning	4	**1**	Gardiner & Theobald	***First – Second Credits: NOT SOUGHT*** ***Third Credit: NOT SOUGHT*** ***Fourth Credit: CAPITAL COST REPORTING*** **Gardiner & Theobald** to provide formal confirmation of the predicted Capital Cost for the building in pounds per square metre (£k/m2) **COMPLIANCE NOTES:** **Life Cycle Cost (LCC):** The cost of an asset, or its parts throughout its life cycle, while fulfilling the performance requirements; a methodology for systematic economic evaluation of life cycle costs over a period of analysis, as defined in the agreed scope **Elemental LCC plan:** This is commonly used for developing solutions at project level during option appraisals. Costs are normally at building elemental level on the entire asset. Information may be a mix of typical benchmark costs for key elements, comparative cost modelling or approximate estimates. It is expressed as cost per square metre of gross internal floor area (GIFA) and presented for elemental analysis, aligned to the level of capital cost plans. **Component Level LCC plan:** A component level LCC plan is commonly used for cost planning specification choices of systems, elements or component levels during design development. Component level LCC appraisal for service life planning at the feasibility stage requires the environment of the building and other local conditions to be identified, and the fundamental requirements to be met in planning the service life of the building. Decisions should be made on: • The likely design life of the building (rather than the contractual design life) • Minimum functional performance criteria for each component over the building's design life • Components that must be repairable, maintainable or replaceable within the design life of the building **Predicted Capital Cost:** The capital cost for the building includes the expenses related to the initial construction of the building: • Construction, including preparatory works, materials, equipment and labour • Site management • Construction financing • Insurance and taxes during construction • Inspection and testing *Costs relating to land procurement, clearance, design, statutory approvals and post occupancy aftercare should not be included*

<table>
<tr><th>Management

Credit Value 0.61%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Retail 'Shell & Core' Interim Stage Required Information/Evidence</th></tr>
<tr>
<td>Man 03

Responsible Construction Practices

MANDATORY PRE-REQUISITE & 3rd CREDIT FOR EXCELLENT / 4th CREDIT FOR OUTSTANDING</td>
<td>6</td>
<td>6</td>
<td>Stiff + Trevillion / Avison Young / Stiff + Trevillion / WPP (BREEAM AP)</td>
<td>
MANDATORY Pre-requisite:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to source all site timber and timber-based products used on the project as 'Legally harvested and traded timber as outlined in the Central Point of Expertise on Timber (CPET) 5th Edition report on the UK Government Timber Procurement Policy

First Credit:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to:
1. Operate an environmental management system (EMS), the EMS must be third party certified to ISO 14001
2. Implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines, Working at construction and demolition-sites: PPG6

Second Credit:

Avison Young to provide a Letter of appointment confirming the BREEAM AP's appointment throughout RIBA Stages 5 – 6 in line with the credit requirements

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation that the BREEAM target rating has been agreed between client and the main contractor

Stiff + Trevillion to provide Continual Meeting minutes from Design Team Meetings / Workshops demonstrating that the BREEAM AP attends key project / design meetings [RIBA Stages 5 - 6] and that BREEAM is a regular agenda item

WPP (BREEAM AP) to provide copies of BREEAM Progress reports for each relevant work stage

Third – Fourth Credits:

Stiff + Trevillion to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor is to be registered and certified under the Considerate Constructor's Scheme – Code of Considerate Practice and achieve a score of 35 out of 50 or more, with a score of at least 7 in of the 5 sections. Also, a requirement to ensure clear and safe access in and around the buildings at the point of handover.

Fifth – Sixth Credit:

Stiff + Trevillion to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to set targets, monitor, record & report Energy consumption, CO2 Emissions and Water Consumption from the use of construction plant, equipment (mobile & fixed) and site accommodation necessary for completion of all construction processes
<table>
<tr><th>Energy Consumption</th><th>CO2 Emissions</th><th>Water Consumption</th></tr>
<tr><td>Total kWh</td><td>Total KgCO2eq</td><td>Total net water consumption m3</td></tr>
<tr><td>Total Kwh / £100K of project value</td><td>Total kgCO2eq / £100K of project value</td><td>Total net water consumption m3 / £100K of project value</td></tr>
</table>
Stiff + Trevillion to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Demolition and Main Contractor to set targets, monitor, record & report data on transport resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum, this must cover:

a. Transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution. The scope of this monitoring must cover the following as a minimum:
i. Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01), including insulation materials,
ii. Ground works and landscaping materials
b. Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate. Scope of this monitoring must cover the construction waste groups outlined in the project's waste management plan.
<table>
<tr><th>Materials to Site Consumption</th><th>Waste from Site Consumption</th></tr>
<tr><td>Total Distance (km)</td><td>Total Distance (km)</td></tr>
<tr><td>Total Litres of Fuel</td><td>Total Litres of Fuel</td></tr>
<tr><td>Total kgCO2eq</td><td>Total kgCO2eq</td></tr>
</table>
</td>
</tr>
</table>

Management Credit Value 0.61%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Man 04 Commissioning & Handover **MANDATORY 4TH CREDIT FOR EXCELLENT**	4	**4**	WPP / Gardiner & Theobald	***First Credit:*** **WPP** to provide Specification clauses confirming: 1. A requirement for the Main Contractor to produce a schedule of commissioning and testing that identifies and includes: • A suitable timescale for commissioning and re-commissioning of all complex and noncomplex building services and control systems and testing and inspecting building fabric. • The appropriate standards that all commissioning activities will be conducted in accordance with, such as current Building Regulations, BSRIA & CIBSE guidelines and where provided BMS in line with the BREEAM requirements 2. The appointment of an appropriate team member to monitor and programme pre-commissioning, commissioning and where necessary re-commissioning on behalf of the client 3. That the Main Contractor is account for the commissioning and testing programme, responsibilities and criteria within their budget and main programme of works, allowing for the required time to complete all commissioning and testing activities prior to handover ***Second Credit:*** **WPP** to provide Specification clauses confirming: 1. The appointment of a specialist commissioning manager during the design stage for complex systems with responsibility for: • Undertaking design reviews and giving advice on suitability for ease of commissioning • Providing commissioning management input into construction programming and during installation stages • Management of commissioning, performance testing and handover/post-handover stages ***Third Credit:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to: 1. Undertake **BOTH** a Thermographic survey **AND** an Air-tightness test at post construction stage in line with the specific BREEAM requirements 2. If necessary undertake remedial work following any defects highlighted by the Thermographic survey and/or Air-tightness test prior to building handover ***Fourth Credit:*** **WPP** to provide Specification clauses confirming a requirement for the Main Contractor to comply with the following: 1. Develop two BREEAM compliant building user guides for the following users: • A non-technical user guide for distribution to the building occupiers • A technical user guide for the premises facilities managers Draft copies are to be developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users. 2. Prepare two BREEAM compliant training schedules timed appropriately around handover and proposed occupation plans for the following users: • A non-technical training schedule for the building occupiers • A technical training schedule for the premises facilities managers
Section Credit Total	**18**	**15**		
Weighted Section Total	**11.00%**	**9.17%**		

Health & Wellbeing Credit Value 0.80%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Hea 01 Visual Comfort	4	**1**	Stiff + Trevillion / WPP	***First – Second Credits: NOT SOUGHT*** ***Third Credit: NOT SOUGHT*** ***Fourth Credit:*** **WPP** to provide specification clauses confirming where relevant to the shell & core works: 1. Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 2. External Lighting is specified in accordance with BS5489-1:2013 Code for the practice for the design of road lighting. Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of workplaces- Part 2: Outdoor workplaces 3. Furthermore, the lighting installation is be zoned, in all appropriate occupied areas, to allow **separate occupant control** in line with the BREEAM requirements **Definition of Separate Occupant Control:** Light switches or controls for a particular area/zone of the building that can be accessed and operated by the individual(s) occupying that area or zone. Such controls must be located within, or within the vicinity of, the zone or area they control

Health & Wellbeing Credit Value 0.80%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Hea 02 Indoor Air Quality	1	**0**	Air Quality Consultant / Stiff + Trevillion / Gardiner & Theobald	***Prerequisite:*** **Air Quality Consultant** to provide a site specific BREEAM compliant Indoor Air Quality Plan produced with the objective to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: • Removal of contaminant sources • Dilution and control of contaminant sources • Procedures for pre-occupancy flush out • 3rd Party testing and analysis • Maintaining Indoor Air Quality in-use ***First Credit: NOT SOUGHT***
Hea 04 Thermal Comfort	2	**2**	WPP	***First Credit:*** **WPP** to provide a thermal comfort assessment utilising software that is CIBSE AM11 compliant demonstrating that the services strategy can deliver thermal comfort levels in accordance CIBSE Guide A, Table 1.5 Plus, for air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the modelling are confirmed ***Second Credit:*** **WPP** to provide a thermal comfort assessment utilising software that is CIBSE AM11 compliant demonstrating that the services strategy can deliver thermal comfort levels in accordance CIBSE Guide A, Table 1.5 can be achieved for a **projected climate change environment** Plus, for air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the modelling are confirmed

Health & Wellbeing Credit Value 0.80%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Hea 05 Acoustic Performance	1	**1**	Acoustician / Gardiner & Theobald	**Acoustician** to provide report confirming that the indoor ambient noise levels acoustic performance standards comply with the design ranges detailed in Section 7 of BS 8233:2014 **for a shell & core scenario** as follows: **The basic built form has a large impact on the acoustic performance of the building and would be outside the control of the tenant. A suitably qualified acoustician (SQA) must carry out a quantifiable assessment of the specification of the build form, construction and any external factors likely to affect the indoor ambient noise levels. The SQA must then confirm the developer's works will enable a future tenant utilising a typical fit-out and specification to meet the levels required to demonstrate compliance.**
Hea 06 Security	1	**0**	Stiff + Trevillion	***Credit: NOT SOUGHT***
Hea 07 Safe & Healthy Surroundings	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide drawing confirming the provision of an outside space providing building users with an external amenity area in line with accordance the following definition **Definition of Outside space:** The space is of an appropriate size to provide enough amenity for the predicted number of building users during coffee or lunch breaks to gather, socialise, relax and connect with the natural environment. The space is predominantly intended for building staff but can be used by other building users where relevant and beneficial to the building users. The outside space must: • Be an outdoor landscaped area, for example a garden, balcony or terrace; the majority of the space should be open to the sky • Have appropriate seating areas and be non-smoking • Be located to ensure it is accessible to all building users and avoids areas that will have disturbances from sources of noise (e.g. building services, car parks, busy roads, delivery areas etc.)
Section Credit Total	**10**	**5**		
Weighted Section Total	**8.00%**	**4.00%**		

Energy Credit Value 0.74%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Ene 01 Reduction of Energy Use & Carbon Emissions **MANDATORY** **4 CREDITS FOR EXCELLENT** **10 CREDITS FOR OUTSTANDING**	13	**6**	WPP	***First – Sixth Credits:*** **WPP** to provide a copy of the Building Regulations Output Document (BRUKL) from the approved software based on the design stage of analysis detailing the modelled building's: • Notional Heating & Cooling demand (MJ/m2/yr) • Actual Heating & Cooling demand (MJ/m2/yr) • Notional Primary Energy demand (kWh/m2/yr) • Actual Primary Energy demand (kWh/m2/yr) • Target Emission Rate (TER) kgCO2/m2/yr • Building Emission Rate (BER) kgCO2/m2/yr ***Tenth – Thirteenth Credits: NOT SOUGHT***
Ene 02 Energy Monitoring **MANDATORY** **1ST CREDIT FOR VERY GOOD**	2	**2**	WPP	***First Credit:*** **WPP** to provide specification clauses and schematics confirming Energy Metering Systems are installed (using an appropriate energy monitoring and management system) that enables at least **90%** of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems (where present): • Space heating • Domestic hot water heating • Humidification • Cooling • Ventilation i.e. fans (major) • Pumps • Lighting • Small power • Renewable or low carbon systems • Controls • Lifts • Other major consuming items ***Second Credit:*** **WPP** to provide specification clauses and schematics confirming that an accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system are provided, covering a significant majority of the energy supply to tenanted areas or, in the case of single occupancy buildings, relevant function areas or departments within the building/unit.

Energy Credit Value 0.74%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Ene 03 External Lighting	1	**1**	WPP / External Light Consultant	**WPP** to provide: 1. Specification clauses confirming: • The average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt • All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic 2. Drawings detailing the location and purpose of all external lighting **External Lighting Consultant** to provide (where relevant) site plan & elevations drawings showing the location and purpose of all external lighting
Ene 04 Low Carbon Design	3	**2**	WPP / Stiff + Trevillion	***First Credit:*** **WPP** to provide: 1. The thermal comfort assessment utilising software that is CIBSE AM11 compliant required for the 1st credit for Hea 04 2. A BREEAM compliant Passive Design Analysis carried out by the **end of RIBA Stage 2** which: • Identifies opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services • Details the quantify of the reduced total energy demand and carbon dioxide (CO2-eq) emissions resulting from the passive design measures **Stiff + Trevillion** to provide: 3. Evidence confirming that the building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis (as outlined in the LZC Analysis Report), including: • High performance glazing • Improved building fabric thermal insulation • Low building air leakage rate • High efficiency gas fired boilers • Whole house mechanical supply and extract ventilation systems in each apartment with integral heat recovery • Variable speed fans and pumps • Low energy lighting with PIR occupancy control ***Second Credit: NOT SOUGHT*** ***Third Credit:*** **WPP** to provide: 1. A BREEAM compliant LZC Feasibility study report carried out by the **end of RIBA Stage 2** which: • Determines the most appropriate LZC energy sources for the project • Details the quantity of the reduced regulated carbon dioxide (CO2-eq) emissions resulting from the proposed LZC technology **Stiff + Trevillion** to provide: 2. Evidence confirming that LZC energy sources will be specified in line with recommendations of the feasibility study report
Section Credit Total	**19**	**11**		
Weighted Section Total	**14.00%**	**8.11%**		

Transport Credit Value 0.96%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Tra 01 Transport Assessment and Travel Plan	2	**2**	Momentum / Stiff + Trevillion / Avison Young	***First – Second Credits:*** **Momentum** to provide **no later than RIBA Stage 2** a site-specific Travel Plan (including transport assessment) covering as a minimum: • Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant • Travel patterns and transport impact of future building users • Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children) • Reporting of the number and type of existing accessible amenities within 500m of the site • Disabled access (accounting for varying levels of disability and visual impairment) • Calculation of the existing public transport Accessibility Index (AI) • Current facilities for cyclists • Proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use **Stiff + Trevillion** to provide drawings showing the implementation of any suggested recommendation made within the Travel Plan **Avison Young** to provide formal letter, if applicable, confirming the measures detailed within the Travel Plan
Tra 02 Sustainable Transport Measures	10	**8**	WPP (BREEAM AP) / Stiff + Trevillion / Momentum	***First – Eighth Credits: BASED ON TRA 01 CREDITS BEING ACHIEVED*** **WPP (BREEAM AP)** to provide a copy of the Transport of London's PTAL summary report confirming the Accessibility Index ≥8 **Stiff + Trevillion / Momentum** to provide Drawing & Specification showing the BREEAM compliant cycle storage provision The **total number of BREEAM compliant** cycle spaces which need to be provided (based on default occupancy figures of Net Internal Area X 0.111) is **8** **Calculation of total number of BREEAM compliant cycle spaces** Total NIA of retail = 1442m2, therefore 1442 X 0.111 = 161 **(round up)** BREEAM required No. cycle spaces to be provided as follows: 1-200 users @ 1 space per 10 users = **160 spaces** 201-300 users @ 1 space per 15 users (standard unit of measure x 1.5) = **0 spaces** 301-400 users @ 1 space per 20 users (standard unit of measure x 2) = **0 spaces** 401+ users @ 1 space per 25 users (standard unit of measure x 2.5) = **0 spaces** **Total compliant cycle storage spaces required = 16 spaces (rounded up)** **Total compliant cycle storage spaces required can be reduced by 50% where the project is a city centre location;** **Therefore 16 spaces are required to achieve the first credit** **Definition of BREEAM compliant cycle storage:** 1. Cycles can be secured within spaces in rack(s). They are covered overhead and the cycle racks are set in or fixed to a permanent structure (building or hard-standing). Alternatively, the cycle storage may be located in a locked structure fixed to or part of a permanent structure with appropriate surveillance. 2. The distance between each cycle rack, and cycle racks and other obstructions, e.g. a wall, allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed 3. The storage facility or entrance to the facility is in a prominent site location that is viewable / overlooked from either an occupied building or a main access to a building 4. Where facilities are inside the building, such as in the basement, prominent signage is provided to indicate their location to all building users **WPP** to provide, where relevant, Specification clauses confirming that the external lighting is in accordance with BS 5489-1:2013 'Lighting of roads and public amenity areas' and BS EN 12464-2:2014 'Light and lighting - Lighting of work places - Part 2: Outdoor work places' AND is controlled to avoid out-of-hours use and operation during daylight hours, where there is sufficient daylight in or around the facility

Transport Credit Value 0.96%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Tra 02 Sustainable Transport Measures	10	**Continued**	WPP (BREEAM AP) / Stiff + Trevillion / Momentum	***Continued*** **Stiff + Trevillion** to provide Drawings showing that at least **two** of the following types of compliant cyclist facilities will be provided for all staff use: • Showers (1 shower provided for every 10 cycle spaces, **therefore at least 1 showers**) • Changing facilities • Lockers (equal to the number of cycle spaces required, **therefore at least 8 lockers**) • Dedicated drying space **COMPLIANCE NOTES:** Compliant showers • Any building providing eight showers or more will comply regardless of the number of cycle storage spaces provided • Both male and female users must be catered for, i.e. either separate showers within shared gender-specific facilities (required provision split 50-50) or single shower cubicles and changing space for mixed use • The showers do not need to be dedicated to cyclists and can be those shared with other users/uses Compliant changing facilities • Appropriately sized for the likely/required number of users. The assessor should use their judgement to determine whether the changing area is appropriately sized given the number of cycle storage spaces or showers provided. • Changing areas must include adequate space and facilities to hang or store clothing and equipment while changing or showering, e.g. bench seat and/or hooks • Toilet/shower cubicles cannot be counted as changing facilities Compliant lockers • Lockers are either in, or adjacent to, compliant changing rooms, where provided • The lockers are sized appropriately for the storage of a cyclist's equipment **Transport Consultant** to provide a site-specific Travel Plan highlighting: • The location of the assessed building • Location of the three Core amenities relevant to building type within 500m of the site • The route to amenities along safe pedestrian routes (not as the crow flies) • Plan/map scale Core amenities: • Appropriate food outlet • Cash machine • Access to an outdoor open space (public or private, provided suitably sized and accessible to building users) • Access to a recreation/leisure facility for fitness/sports • Publicly available postal facility • Community facility (e.g. public house) • Over the counter services associated with a pharmacy • Child care of facility or school ***POSSIBLE Nine Credits:*** **In addition to the above:** **Stiff + Trevillion** to provide evidence that a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure. This may include signposting to public transport, cycling, walking infrastructure or local amenities.
Section Credit Total	**12**	**10**		
Weighted Section Total	**11.50%**	**9.58%**		

<table>
<tr><th>Water

Credit Value 0.88%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Retail 'Shell & Core' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Wat 01

Water Consumption

MANDATORY
1 CREDIT FOR GOOD
2 CREDITS FOR OUTSTANDING</td><td>5</td><td>4</td><td>WPP / Stiff + Trevillion</td><td>First – Fourth Credits:

WPP to provide:
1. Calculations and Drawings detailing the rainwater harvesting and/or grey water system including sanitary items being served
2. Specification clauses confirming that the main contractor is to provide flow restrictors on the supply to any future provision of tea points/kitchenette taps which are to be flow regulated a max of 4 litres/min

Stiff + Trevillion to provide:

1. Drawings showing the location of all sanitary areas
2. Specification detailing the proposed sanitary ware specification

EXAMPLE SANITARY-WARE SPECIFICATION TO ACHIEVE CREDITS
Sanitary Item | EXAMPLE Flush Volume / Flow Rate
All WCs cisterns (excluding Disabled/Doc M) | 4 / 2.6 litre dual flush
All Disabled/DOC M WCs cisterns | 4.5 litre single flush
Urinals (where provided) | 0.5 litre per flush
All showers | Flow regulated to max 9 litres/min
All wash hand basin taps (including within Disabled WC areas) | Flow regulated to max 3 litres/min
If provided (including the facility for future provision) all kitchenette taps | Flow regulated to max 4 litres/min</td></tr>
<tr><td>Wat 02

Water Monitoring

MANDATORY
CREDIT FOR GOOD</td><td>1</td><td>1</td><td>WPP</td><td>WPP to provide specification clauses confirming the specification of:

• A water meter on the mains incoming water supply to the building
• Water sub-meters on the individual water consuming plant or building areas consuming ≥10% of the building's total water demand

All water meters must to be pulsed or other open protocol communication output and be connected to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption</td></tr>
<tr><td>Wat 03

Water Leak Detection</td><td>2</td><td>2</td><td>WPP</td><td>First Credit:

WPP to provide specification clauses confirming the specification of a BREEAM compliant leak detection system which is capable of detecting a major leak water leak on the mains water supply within the building and utilities water meter will be installed

The leak detection system must be:
• A permanent automated water leak detection system that alerts the building occupants to the leak OR an in-built automated diagnostic procedure for detecting leaks is installed
• Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time
• Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods
• Programmable to suit the owner/occupiers' water consumption criteria
• Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers

Second Credit:

WPP to provide specification clauses confirming the specification of PIR operated solenoid valves to control the water supply for each toilet area in the building</td></tr>
<tr><td>Section Credit Total</td><td>8</td><td>7</td><td colspan="2" rowspan="2"></td></tr>
<tr><td>Weighted Section Total</td><td>7.00%</td><td>6.13%</td></tr>
</table>

Materials Credit Value 1.25%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Mat 01 Environmental Impacts from Construction Products - Building Life Cycle Assessment	7	**4**	Suitably Qualified Third Party	***First – Fourth Credits:*** **Suitably Qualified Third Party** to provide Report confirming compliance with the below: Comparison with the BREEAM benchmark **during RIBA Stage 2:** During the Stage 2, the environmental performance of the building has been demonstrated as follows: • A building Life Cycle Assessment (LCA) has been carried on of the superstructure design using an IMPACT Compliant LCA tool according to the BREEAM methodology • The Mat 01/02 Results Submission Tool will have been submitted to BRE at the **end of RIBA Stage 2 and before planning permission is applied for** (that includes external material or product specifications) Option appraisal **during RIBA Stage 2**: During Stage 2, opportunities have been identified for reducing environmental impacts as follows: • A building LCA options appraisal has been carried of 2 to 4 significantly different superstructure design options, applicable to Stage 2 • The use of an IMPACT Compliant LCA tool (as suitable for assessing superstructure during Stage 2) according to the methodology • For each design option, fulfil the same functional requirements specified by the client and all statutory Requirements (to ensure functional equivalency) • The LCA options appraisal activity has been integrated within the wider design decision-making process and recorded in an options appraisal summary document. • Record the following in the Mat 01/02 Results Submission Tool: a. The differences between the design options; the design option selected by the client to be progressed beyond Stage 2 b. The reasons for selecting it and the reasons for not selecting the other design options • The Mat 01/02 Results Submission Tool have been submitted to BRE at the **end of RIBA Stage 2 and before planning permission is applied for** (that includes external material or product specifications) Comparison with the BREEAM benchmark **during RIBA Stage 4:** During the Stage 4, the environmental performance of the building has been demonstrated as follows: • A building LCA has been carried on of the superstructure design using an IMPACT Compliant LCA tool according to the BREEAM methodology • The Mat 01/02 Results Submission Tool has been submitted to BRE at the **end of RIBA Stage 4** Option appraisal **during RIBA Stage 4:** During Stage 4, opportunities has been identified for reducing environmental impacts as follows: • A building LCA options appraisal has been carried of 2 to 3 significantly different superstructure design options based on the selected Stage 2 option and as applicable to Stage 4 • The use of an IMPACT Compliant LCA tool (as suitable for assessing superstructure during Stage 4) according to the methodology • For each design option, fulfil the same functional requirements specified by the client and all statutory Requirements (to ensure functional equivalency) • The LCA options appraisal activity has been integrated within the wider design decision-making process and recording in an updated options appraisal summary document • Record the following in the Mat 01/02 Results Submission Tool: a. The differences between the design options b. The reasons for selecting it and the reasons for not selecting the other design options • The Mat 01/02 Results Submission Tool have been submitted to BRE at the **end of RIBA Stage 4** **Definition of Suitably Qualified Third Party:** An individual who: • Is a third party • Has received training on using the building LCA tool that is recognised by the tool supplier and has passed the associated tests or exams (if any) • Has completed building LCA for at least three projects for paying customers in the last two years • Is able to interpret construction documentation (drawings, specifications, schedules etc.), which may be evidenced by a suitable construction related qualification or relevant experience **IMPACT**: Is a specification and database for software developers to incorporate into their tools to enable consistent LCA. IMPACT compliant tools work by allowing the user to attribute environmental information to drawn or scheduled items. Further information about IMPACT is available from www.impactwba.com **IMPACT Compliant LCA tool** A tool that has been tested for compliance with the IMPACT specification and is listed here: www.impactwba.com

Materials Credit Value 1.25%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Mat 02 Environmental Impacts from Construction Products - Environmental Product Declarations	1	**0**	Main Contractor	***Credit: NOT SOUGHT***
Mat 03 Responsible Sourcing of Materials **MANDATORY PRE-REQUISITE**	4	**2**	Gardiner & Theobald / Avison Young / Main Contractor	***MANDATORY Pre-requisite:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to source all timber and timber-based products installed within the project's construction is 'Legally harvested and traded timber as outlined in the Central Point of Expertise on Timber (CPET) 5th Edition report on the UK Government Timber Procurement Policy ***First Credit:*** **Avison Young (with input from design team and client)** to provide a copy of the project's Sustainable Procurement Plan developed and in place before the end of **RIBA Stage 2** that sets out a clear framework for the responsible sourcing of materials to guide procurement throughout a project and by all involved in the specification and procurement of construction products. The plan must: • Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved • Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. • Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan

<table>
<tr><th>Materials

Credit Value 1.25%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Retail 'Shell & Core' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Mat 03

Responsible Sourcing of Materials

MANDATORY PRE-REQUISITE</td><td>4</td><td>Continued</td><td>Gardiner & Theobald / Avison Young / Main Contractor</td><td>
Second Credit:

Main Contractor to provide

1. A completed schedule for the construction of the Retail areas only detailing:
• The breakdown (by either m3 or kg) of the *Applicable Materials* within the *Superstructure Building Elements* for each construction/specification type making up the total of each applicable building element
• Details confirming the relevant responsible sourcing accreditation schemes (e.g. BES 6001 / ISO 14001 / FSC etc) for each material detailed on the completed responsible sourcing schedule

2. Copies of the responsible sourcing certificates for each material detailed within the completed responsible sourcing schedule

<table>
<tr><th>*Applicable Materials*</th></tr>
<tr><td>Timber/ timber-based products</td></tr>
<tr><td>Concrete/ cementitious (plaster, mortar, screed etc.)</td></tr>
<tr><td>Metals (steel, aluminium)</td></tr>
<tr><td>Stone / aggregate</td></tr>
<tr><td>Clay-based (pavers, blocks, bricks, roof tiles, etc.)</td></tr>
<tr><td>Gypsum</td></tr>
<tr><td>Glass</td></tr>
<tr><td>Plastic, polymer, resin, paint, chemicals and bituminous</td></tr>
<tr><td>Animal fibre/skin, cellulose fibre</td></tr>
</table>
<table>
<tr><th>*Superstructure Elements*</th></tr>
<tr><td>Frame</td></tr>
<tr><td>Upper floor</td></tr>
<tr><td>Roof</td></tr>
<tr><td>Stairs and ramps</td></tr>
<tr><td>External walls</td></tr>
<tr><td>Windows and external doors</td></tr>
<tr><td>Internal walls and Partitions</td></tr>
</table>
Third – Fourth Credits: NOT SOUGHT
</td></tr>
</table>

Materials Credit Value 1.25%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Mat 05 Designing for Durability and Resilience	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide evidence confirming compliance with points 1 to 3: **1. Protection measures to vulnerable parts of the building from damage have been specified:** Specification and Drawings confirming that protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: • Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.) • Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas • External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building façade and where delivery areas or routes are within 2 metres of the façade, i.e. specifying bollards or protection rails • Potential malicious damage to building materials and finishes, in public and common areas where appropriate Examples of suitable durability measures in areas of higher risk, suitable durability and protection measures to vulnerable parts of the building can include: • Bollards, barriers or raised kerbs to delivery and vehicle drop-off areas • Robust external wall construction, up to 2m high • Corridor walls specified to Severe Duty (SD) as per BS 5234-22 • Protection rails to walls of corridors • Kick plates or impact protection (e.g. trolleys) on doors • Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e. main entrance, corridors, public areas etc.) • Door stoppers to prevent door handles damaging walls • Designing out the risk without the need for additional materials specification to protect vulnerable areas **2. That convenient access to the roof and façade for cost-effective cleaning, replacement and repair is included in the building's design.** Access to the roof and façade is safe and convenient for routine maintenance, cleaning and repair. A façade access strategy designed in line with CIRIA guide C686 would be considered compliant. If access to the majority of the façade requires contracting on a one-off basis an external firm with specialist equipment, or specialist access professionals it would not generally be considered to be convenient **3. The roof and façade is designed to prevent water damage, ingress and detrimental ponding** A common and potentially significantly damaging failure mechanism for external envelopes is water ingress or other type of water damage. The design team should demonstrate that they have carefully considered the drainage mechanisms of the façade and roof on a small and large scale to prevent staining, detrimental oxidation, ponding, rot, ingress, penetration or any other deleterious effect. This should take the form of a risk assessment, the complexity and detail of which is related to the complexity and innovative nature of the façade and roof. The final design should demonstrate that, where possible, these negative impacts have been avoided.

<table>
<tr><th>Materials

Credit Value 1.25%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Retail 'Shell & Core' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Mat 05

Designing for Durability and Resilience</td><td>1</td><td>Continued</td><td>Stiff + Trevillion</td><td>
Stiff + Trevillion to provide evidence confirming compliance with point 4:

4. Protection measures to exposed parts of the building from material degradation have been specified:
Key exposed building elements have been designed and specified to limit long and short-term degradation due to environmental factors. This can be demonstrated through one of the following:

• The element or product achieving an appropriate quality or durability standard or design guide, see Table below. If none are available, BS 7543:20151 can be used as the default appropriate standard.
OR
• A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors

<table>
<tr><th colspan="2">Relevant industry durability or quality standards and design guides</th></tr>
<tr><td>Timber</td><td>• BS EN 350:2016. Durability of wood and wood-based products - Testing and classification of the durability to biological agents of wood and wood-based materials, BSI; 2016.
• WIS 4-28. Durability by design, TRADA; 2016
• WIS 2/3-60. Specifying timber exposed to weathering, TRADA; 2015
• WIS 1-47. Timber external doors, TRADA; 2015
• BS 8605-1:2014. External timber cladding - Method of specifying, BSI; 2014</td></tr>
<tr><td>Curtain walling</td><td>• Standard for systemised building envelopes, Centre for Window and Cladding Technology; 2006
• CWCT Curtain Wall Installation Handbook, Centre for Window and Cladding Technology; 2006
• BS EN 13830:2015. Curtain walling - Product standard, BSI; 2015</td></tr>
<tr><td>Brickwork, blockwork</td><td>• BDA Design Note 7 - Brickwork durability, Brick Development Association; 2011
• Severely Exposed Brickwork, Brick Development Association; 2014
• BS 8297-2017. (Design, manufacture and installation of architectural precast concrete cladding. Code of practice).
• The standard refers to EN 13369 (Common Rules for precast concrete products) on durability requirements and requires concrete cover to be in accordance to EN 1992-1-1 and BS 8500.
• BS 8500-1:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 1: Method of specifying and guidance for the specifier and
• BS 8500-2:2015 +A1:2016. Concrete – complementary British Standard to BS EN 2016 part 2: Specification for constituent materials and concrete</td></tr>
<tr><td>Roof elements</td><td>• BR 504. Roofs and roofing: Performance, diagnosis, maintenance, repair and the avoidance of defects (Third Edition), BRE; 2009
• Profiled sheet roofing and cladding. The guide to design and best practice (4th edition), National Federation of Roofing Contractors; 2016
• Guidelines for the Design & Application of Green Roof Systems, CIBSE; 2013
• Single Ply: Design Guide 2016 Edition, Single Ply Roofing Association; 2016
• SPRA: Guidance and standards
• LRWA: technical guidance notes</td></tr>
<tr><td>Metal cladding</td><td>• Profiled sheet roofing and cladding. The guide to design and best practice (4th edition) National Federation of Roofing Contractors 2016
• Metal Fabrications: Design, Detailing and Installation Guide, Metal Cladding and Roofing Manufacturers Association; 200</td></tr>
<tr><td>Glazing</td><td>• BS EN 12488:2016. Glass in building - Glazing recommendations - Assembly principles for vertical and sloping glazing, BSI; 2016</td></tr>
<tr><td>Masonry</td><td>• PD 6697:2010. Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2, BSI; 2010
• BS EN 1996-2:2006. Eurocode 6. Design of masonry structures. Design considerations, selection of materials and execution of masonry, BSI; 2006</td></tr>
<tr><td>Other useful standards or design guides</td><td>• BR 292. Cracking in buildings (Second edition), BRE; 2016
• BRE Good Practice guidance's</td></tr>
</table>

BS 7543:2015: Guide to durability of buildings and building elements, products and components
This standard gives a useful overview of the field of durability and provides a process for predicting a materials service life. It provides useful guidance on the methodology for assessing and measuring durability and identifies common durability failures for typical construction materials. In addition, it lists some example predicted service lives for typical materials.
</td></tr>
</table>

Materials Credit Value 1.25%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Mat 06 Material Efficiency	1	**0**	Avison Young / Stiff + Trevillion / AKT II / WPP	***Credit: NOT SOUGHT***
Section Credit Total	**14**	**7**		
Weighted Section Total	**17.50%**	**8.75%**		

<table>
<tr><th>Waste
Credit Value 0.70%</th><th>Max Credits</th><th>Target Achievable Credits</th><th>Responsible Party</th><th>BREEAM 2018 Retail 'Shell & Core' Interim Stage Required Information/Evidence</th></tr>
<tr><td>Wst 01
Construction Waste Management</td><td>5</td><td>4</td><td>Gardiner & Theobald</td><td>
First Credit:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming that the Demolition Contractor or Competent Person is to complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition before the end of RIBA Stage 2 and prior to strip-out or demolition works

This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the following content & scope:
• Guide the design, consider materials for reuse and set targets for waste management
• Engage all contractors in the process of maximising high-grade reuse and recycling opportunities
• Compare actual waste arisings and waste management routes used with those forecasted and investigate significant deviations from planned targets
• Identification and quantification of the key materials where present on the project
• Potential applications and any related issues for the reuse and recycling of the key materials in accordance with the waste hierarchy
• Opportunities for reuse and recycling within the same development
• Identification of local reprocessors or recyclers for recycling of materials
• Identification of overall recycling targets where appropriate
• Identification of reuse targets where appropriate
• Identification of overall landfill diversion rate for all key materials

Second – Fourth Credits:

Gardiner & Theobald to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor to produce a BREEAM compliant Resource Management Plan (RMP) covering with the following:
• The non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication) including demolition and excavation waste generated by the building's design and construction
• Accurate data records on waste arisings and management routes
• Meet or improve upon the project target benchmark detailed below for the amount of non-hazardous construction waste (excluding demolition and excavation waste) generated per 100m2 of the gross internal floor area of the building
• Meet or improve upon, where applicable, the project target diversion from landfill benchmark detailed below for non-hazardous construction waste and demolition waste generated
• Sort waste materials into separate key waste groups according to the European Waste Catalogue, either on-site or through a licensed contractor for recovery

<table>
<tr><th colspan="2">Project target benchmark for the amount of non-hazardous construction waste (excluding demolition and excavation waste) generated per 100m2 of the gross internal floor area of the building</th></tr>
<tr><th>Tonnes</th><th>m3 (actual, not bulk volume)</th></tr>
<tr><td>≤6.5</td><td>≤7.5</td></tr>
<tr><th colspan="2">Project target diversion from landfill benchmark for non-hazardous construction waste and demolition waste generated</th></tr>
<tr><th>Tonnes</th><th>m3 (actual, not bulk volume)</th></tr>
<tr><td>Construction 80%</td><td>Construction 70%</td></tr>
<tr><td>Demolition 90%</td><td>Demolition 80%</td></tr>
</table>
Fifth Credit: NOT SOUGHT
</td></tr>
</table>

Waste Credit Value 0.70%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Wst 02 Use of Recycled and Sustainably Sourced Aggregates	1	**0**	Main Contractor	***Credit: NOT SOUGHT***

Waste Credit Value 0.70%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Wst 03 Operational Waste **MANDATORY CREDIT FOR EXCELLENT**	1	**1**	Stiff + Trevillion	**Stiff + Trevillion** to provide Drawings confirming the provision of a central (clearly labelled), dedicated storage space for the recycling of materials which is: • Sized to a minimum of 10m2 • An additional 2m2 per 1000m2 of net floor area where catering is provided in size • Located accessible to building occupants or facilities operators for the deposit of materials and collection by waste management contractors • In addition to the general waste area provision **In addition to the above**, where the consistent generation in volume of the appropriate operational waste streams is likely to exist, e.g. large amounts of packaging or compostable waste generated by the building's use and operation, the following facilities must also be provided: • Static waste compactor(s) or baler(s); situated in a service area or dedicated waste management space • Vessel(s) for composting suitable organic waste resulting from the building's daily operation and use; OR adequate space(s) for storing segregated food waste and compostable organic material prior to collection and delivery to an alternative composting facility • Where organic waste is to be stored/composted on-site, a water outlet is provided adjacent to or within the facility for cleaning and hygiene purposes

Waste Credit Value 0.70%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Wst 05 Adaption to Climate Change	1	**0**	Stiff + Trevillions / AKT II / WPP	***Credit: NOT SOUGHT***

Waste Credit Value 0.70%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Wst 06 Design for Disassembly and Adaptability	2	**2**	Stiff + Trevillion / AKT II / WPP	***First Credit:*** **Stiff + Trevillion / AKT II / WPP** to provide separately based on applicable consultant's input a building-specific Design for Disassembly and Functional Adaptation Strategy Study **no later than RIBA Stage 2** in accordance with the following credit requirements: **Ease of Disassembly** Facilitated by principles allowing the building or parts of the building to be disassembled at the end of its life, or to be renovated rather than demolished, with individual components being used for other purposes. The study should consider the following as a minimum: • Accessibility • Durability: use materials which require less frequent maintenance, repair or replacement, considering them within the context of the life span of the building • Exposed and reversible connections: making the connections more visible provides opportunities to optimise material and product reuse. Welded connections prohibit disassembly and it is preferable to use screws and bolts to allow for disassembly and material reuse • Layer independence: designing building systems and components in layers so that removal, adjustment or replacement of some elements is feasible, especially when different components have different life spans and maintenance needs • Avoidance of unnecessary toxic treatments and finishes. Some finishes can contaminate the substrate in a way that they are no longer reusable or recyclable. This should be avoided unless finishes serve a specific purpose. • Standardisation can accommodate reuse and upgrading. It involves aspects such as dimensions, components, connections and modularity. **The Functional Adaptation Strategy Study should consider the following as a minimum:** • Feasibility: The likelihood to contain multiple or alternative building uses, area functions and different tenancies over the expected life cycle, e.g. related to the structural design of the building • Accessibility: Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors and walls that can be removed without affecting the structure, providing lifting beams and hoists. Accessibility also involves access to local services, such as local power, data infrastructure etc. • Versatility: The degree of adaptability of the internal environment to accommodate changes in working practices • Adaptability: The potential of the building ventilation strategy to adapt to future building occupant needs and climatic scenarios • Convertibility: The degree of adaptability of the internal physical space and external shell to accommodate changes of in-use • Expandability: The potential for the building to be extended, horizontally or vertically • 'Refurbishment potential': The potential for major refurbishment, including replacing the façade ***Second Credit:*** **Stiff + Trevillion / AKT II / WPP** to provide separately based on applicable consultant's input: 1. An update **no later than RIBA Stage 4** on: • How the recommendations or solutions proposed have been implemented where practical and cost effective with any omissions justified in writing to the assessor • Changes to the recommendations and solutions during the development of the Technical Design 2. Examples detailing design measures and aspects regarding future disassembly and functional adaptation measures included in the Stage 4 design 3. A building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants
Section Credit Total	**10**	**7**		
Weighted Section Total	**7.00%**	**4.90%**		

Land Use & Ecology Credit Value 1.15%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
LE 01 Site Selection	2	**1**	Stiff + Trevillion	***First Credit:*** **Stiff + Trevillion** to provide pre and post development drawings (including areas m2) confirming that at least **75%** of the proposed development footprint is on an area which has been previously been occupied by industrial, commercial or domestic buildings or fixed surface infrastructure ***Second Credit: NOT SOUGHT***
LE 02 Identifying & Understanding the Risks & Opportunities for the Site	2	**2**	Gardiner & Theobald / Ecologist	***Prerequisite:*** **Gardiner & Theobald** to provide a copy of the relevant section of the main Contract Specification / Tender documentation confirming a requirement for the Main Contractor is ensure compliance is to be monitored against all relevant UK and EU or international legislation relating to the ecology of the site. ***First Credit:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with: 1. A Suitably Qualified Ecologist (SQE) has been appointed at **RIBA Stage 1 (or equivalent)** to carry out a site survey and evaluation early enough to influence site preparation works, layout and, where necessary, strategic planning decisions 2. An appropriate level of survey and evaluation has been carried out by the SQE to determine the site's ecological including: • Current and potential ecological value and condition of the site, and related areas within the zone of influence. • Direct and indirect risks to current ecological value • Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the zone of Influence 3. Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features ***Second Credit: – Based on the 1st credit being achieved*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with: 1. **During RIBA Stage 2**, the SQE & project team have liaised and collaborated with representative stakeholders early enough to influence key planning decisions to: a. Identify the optimal ecological outcomes for the site b. Identify, appraise and select measures to meet the optimal ecological outcomes for the site in line with the mitigation hierarchy of action: • Avoidance • Protection • Reduction or limitation of negative impacts • On site compensation and, • Enhancement, considering the capacity and feasibility within the site, or where viable, off-site.

Land Use & Ecology Credit Value 1.15%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
LE 03 Managing Negative Impacts on Habitats & Biodiversity on the Site	3	**3**	Ecologist	***Prerequisites:*** 1. The 1st and 2nd LE02 credits have been achieved ***First Credit:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with the Planning and Measures on-site credit in line with the BREEAM 2018 methodology ***Second – Third Credits:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance that negative impacts from site preparation and construction works have been managed according to the BREEAM hierarchy for managing impacts on site and no net loss of ecological value has occurred
LE 04 Change & Enhancement of Ecological Value	4	**3**	Ecologist / Stiff + Trevillion / Landscape Architect / Gardiner & Theobald	***Prerequisites:*** 1. The LE03 credit has been achieved for compliance with a Suitably Qualified Ecologist (SQE) confirming that negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy ***First Credit:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming that: 1. Measures have been highlighted to be implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of credit LE 02. Measures are implemented in the following order: • On site, and where this is not feasible, • Off site within the Zone of Influence. 2. Data collated is analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site. ***Second – Third Credits:*** **Suitably Qualified Ecologist** to provide report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance that a calculated change in ecological value as a result of the development (in accordance with the BREEAM's methodology based on the existing 'Defra biodiversity metric' which is habitat based as documented in BREEAM Guidance Note 36) of a **No net loss of ecological value (percentage score of 95-104)** is applicable The attributes used in the Defra biodiversity metric are the habitat types, their distinctiveness, condition and area / length throughout the assessed project life cycle. This methodology follows the Defra metrics principles to quantify the impact of a development in terms of 'biodiversity units'. **Stiff + Trevillion and/or Landscape Architect** to provide drawings / proposed site plan / planting proposals clearly detailing the implementation of ALL the ecologist's recommendations including specific reference to the ecological enhancement recommendations **Gardiner & Theobald** to provide relevant section of the main Contract Specification / Tender documentation confirming that the Main Contractor is to implement all the ecological enhancement recommendations put forward by the Ecology report

Land Use & Ecology Credit Value 1.15%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
LE 05 Long Term Biodiversity Management & Maintenance	2	**2**	Ecologist / Avison Young	***Prerequisites:*** 1. The contractor is to ensure that compliance is to be monitored against all relevant UK, and EU or International legislation relating to the ecology of the site 2. At least one credit under LE04 has been achieved ***First – Second Credits:*** **Suitably Qualified Ecologist** to provide: 1. Report (in accordance with Guidance Note 40: BREEAM Ecology Assessment Issues Reporting Template) confirming compliance with the Management and maintenance throughout the project credit in line with the BREEAM 2018 methodology 2. A Landscape and ecology management plan, or similar, is to be developed in accordance with BS42020:2013 covering as a minimum the first five years after project completion and includes: • Actions and responsibilities of relevant individuals prior to handover • The ecological value and condition of the site at handover and how this is expected to develop and change over time • Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework • Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts • Clearly defined and allocated roles and responsibilities for delivering the plan **Avison Young** to provide relevant section of the main Contract Specification / Tender documentation confirming that the Main Contractor is to as part of the tenant or building owner information supplied, produce a section on Ecology and Biodiversity is provided to inform the owner or occupant of local ecological features, value and biodiversity on or near the site. The tenant/occupier/building manager information pack is to include the following content, as appropriate: • Detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours • Details of the ecological value within the property boundary (e.g. public and private gardens, green roofs), common areas (e.g. communal garden), and the surrounding area (e.g. public recreational space) • The benefits of the ecological value to the occupants and the broader community. • Guidance on how the occupants can make the most of the local ecology and contribute to its management, (e.g. planting ecologically appropriate species in their property), as well as things that should be avoided doing (e.g. disrupting wildlife corridors, planting invasive species or allowing them to colonise and spread) • Highlight relevant actions that can be taken to enhance value within the property that is owned or occupied to help ensure its ongoing management and maintenance. • Contact details for those responsible for the management and maintenance of the local ecology and sources of local information on biodiversity and ecological management including management companies and local wildlife trusts.
Section Credit Total	**13**	**11**		
Weighted Section Total	**15.00%**	**12.69%**		

Pollution Credit Value 0.75%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Pol 01 Impact of Refrigerants	3	**0**	WPP / Main Contractor	***First – Third Credits: NOT SOUGHT***
Pol 02 Local Air Quality	2	**2**	WPP	***First – Second Credits:*** **WPP** to provide Specification / Calculations confirming **EITHER**: a. All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity **OR** b. That the emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed NOx emissions of 24mg/kWh @ 0% excess O2

Pollution Credit Value 0.75%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Pol 03 Surface Water Run-Off	5	**4**	AKT II	***First – Second Credits*:** **AKT II** to provide a site-specific Flood Risk Assessment report confirming that the site is located in a flood zone defined as having a low annual probability of flooding (in accordance with current best practice national planning guidance) AND takes into account all current and future sources of flooding into consideration: • Fluvial (rivers) • Tidal • Surface water: sheet run-off from adjacent land (urban or rural) • Groundwater: most common in low-lying areas underlain by permeable rock (aquifers) • Sewers: combined, foul or surface water sewers • Reservoirs, canals and other artificial sources ***Prerequisites for Third & Fourth Credits:*** **AKT II** to provide a site-specific Flood Risk Assessment report confirming 1. Surface water run-off design solutions are bespoke, i.e. taking into account the specific site requirements and natural or man-made environment of and surrounding the site. 2. The appropriate consultant is to follow the priority levels listed below (noting that level 1 has the highest priority). Justification is to be provided for each level which does not contribute to managing surface water run-off. This has been set so the most appropriate water management solutions are used, prioritising water use in the development and infiltration over discharge. This is so that the volume of water that leaves the site is limited as far as practicable: • Priority Level 1 - Water is collected for use in the development (e.g. rainwater harvesting) • Priority Level 2 - Water is infiltrated into the ground • Priority Level 3 - Water is discharged to surface water body • Priority Level 4 - Water is discharged to the drainage system • Priority Level 5 - Water is discharged to a combined sewer **AKT II** to provide a site-specific Flood Risk Assessment report confirming that: 1. Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows **a 30% improvement** for the developed site compared with the pre-developed site, complying at the 1-year and 100-year return period events. 2. Calculations include an allowance for climate change made in accordance with current best practice planning guidance 3. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. ***Fourth Credit:*** **AKT II** to provide a site-specific Flood Risk Assessment report confirming that flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance) **AND:** **EITHER – Option 1:** a. Drainage design measures are specified to ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development for the 100-year 6-hour event, including an allowance for climate change b. Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other Sustainable Drainage System (SuDS) techniques. **OR – Option 2 (only where points a. and b. cannot be achieved):** c. Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. d. Drainage design measures are specified to ensure that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: • The pre-development 1-year peak flow rate; OR • The mean annual flow rate Qbar; OR • 2L/s/ha **PLUS** • Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place • For either option, above calculations must include an allowance for climate change; made in accordance with current best practice planning guidance ***PLEASE NOTE*** **Where the man-made impermeable area draining to the watercourse (natural or municipal) has decreased or remains unchanged post development, the peak and volume rate of run-off requirements for the surface water run-off credits will be met by default. Flow rate calculations will not need to be provided. Instead, drawings clearly showing the impermeable areas of the site draining to the watercourse should be provided for the pre- and post-development scenarios. Figures must also be given (ideally on the drawings) to show a comparison between the areas of drained impermeable surfaces pre- and post-development. In this instance, it is still recommended that any opportunities identified to reduce surface water run-off are implemented.** ***POSSIBLE Fifth Credit: NOT SOUGHT***

Pollution Credit Value 0.75%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Pol 04 Reduction of Night Time Light Pollution	1	**1**	WPP / External Lighting Consultant	**WPP** to provide: 1. Specification clauses confirming that the external lighting design is designed to be in accordance with the following: • Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011 • All external lighting (except for safety and security lighting) will be automatically switched off between 23:00 to 07:00 • If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes • Illuminated advertisements, where specified, are designed in accordance with ILP PLG 05 – The Brightness of Illuminated Advertisements 2. Site plan & elevations drawings showing the location and purpose of all external lighting **External Lighting Consultant** to provide (where relevant) site plan & elevations drawings showing the location and purpose of all external lighting
Pol 05 Noise Attenuation	1	**1**	Acoustician / Stiff + Trevillion / WPP	**Acoustician** to provide a BREEAM compliant Noise Impact Survey (in accordance with BS 4142:2014) confirming: 1. Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for: a. Existing background noise levels: a.i. at the nearest or most exposed noise-sensitive development to the proposed assessed site a.ii. including existing plant on a building, where the assessed development is an extension to the building b. Noise rating level from the assessed building. 2. The noise impact assessment must be carried out by a suitably qualified acoustic consultant. 3. That the noise level from the proposed site/building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5dB lower than the background noise throughout the day and night. 4. If the noise sources from the assessed building are greater than the levels described above, measures must be installed to attenuate the noise at its source to a level where it will comply with the criterion. **Stiff + Trevillion** to provide (if applicable) Drawings confirming that any detailed attenuation measures confirmed within the Noise Impact Survey report will be installed **WPP** to provide (if applicable) specification clause confirming that any detailed attenuation measures confirmed within the Noise Impact Survey report will be installed
Section Credit Total	**12**	**8**		
Weighted Section Total	**9.00%**	**6.00%**		

Innovation Credit Value 1.00%	**Max Credits**	**Target Achievable Credits**	**Responsible Party**	**BREEAM 2018 Retail *'Shell & Core'* Interim Stage Required Information/Evidence**
Inn Hea 01 Visual Comfort	1	**1**	WPP	**WPP** to provide specification clauses confirming that internal lighting in each zone can be manually dimmed by occupants **down to 20%** of the maximum light output using dimmer switches positioned in accessible locations. Dimming and control gear should avoid flicker and noise **Definition of Separate Occupant Control:** Light switches or controls for a particular area/zone of the building that can be accessed and operated by the individual(s) occupying that area or zone. Such controls must be located within, or within the vicinity of, the zone or area they control *Remote control light switches can be considered as compliant, on the basis that these are provided in sufficient numbers/locations to meet the aim of the criteria.*
Inn Mat 01 Environmental Impacts from Construction Products - Building Life Cycle Assessment	1	**1**	Suitably Qualified Third Party	**In addition to meeting the requirements under Mat 01** **Suitably Qualified Third Party** to: 1. Carry out the building LCA work and produce a report describing how they have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of the applicable criteria under Mat 01 2. For each LCA option, itemise in the report the checks made by the suitably qualified third party including, as a minimum, the quality requirements detailing in Table 9.4 of the BREEAM 2018 Technical Manual 3. Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third-party independence from the project client and design team in the report
Section Credit Total	**10**	**2**		
Weighted Section Total	**10.00%**	**2.00%**		

BREEAM 2018 Retail *'Shell & Core'* Interim Stage Assessment Results for: 247 Tottenham Court Road, London	
Credit Strategy:	**Current Achievable Credits**
Totals:	**71.32%**
Ratings:	**EXCELLENT**

Appendix 2 – Detailed Circular Economy Statement

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247 Tottenham Court Road
London

Detailed Circular Economy Statement

Planning Issue 2

Client Name:	Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 2 Limited
Client Address:	10 Fenchurch Avenue London EC3H 5AG
Property:	247 Tottenham Court Road, London, W1T 7HH; 3 Bayley Street, London, WC1B 3HA; 1 Morwell Street, London, WC1B 3AR; 2-3 Morwell Street, London, WC1B 3AR; and 4 Morwell Street, London, W1T 7QT
Project Reference:	4650
Issue:	Planning Issue 2
Date:	July 2020
Prepared by:	BL
Checked by:	YS
Validated by:	MDC

C O N T E N T S

EXECUTIVE SUMMARY

This statement gives an overview of the circular economy strategies to be implemented relating to the re-development of 247 Tottenham Court Road.

Current and future trends demonstrate the need for a paradigm shift in the way resources are consumed to avoid ecological collapse, significant disruption to production lines and other business risks. A circular economy has been defined by WRAP as 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. There are also considerable economic opportunities created by a shift to a circular economy.

In contrast to a linear 'take-make-dispose' economy, a circular economy builds overall system health by gradually decoupling economic activity from the consumption of finite resources. This should be underpinned by a transition towards renewable energy sources, and is based on three principles:

1. Conserve resources and source ethically
2. Design to eliminate waste (and for ease of maintenance)
3. Manage waste sustainably and at the highest value

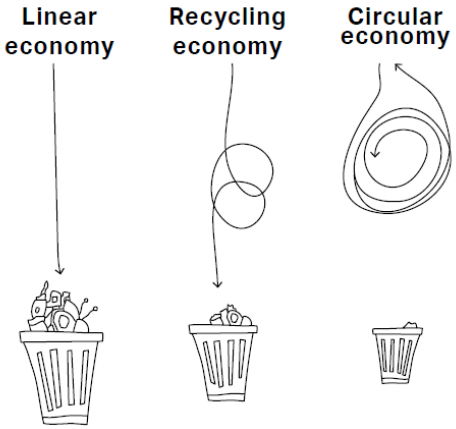

Figure 1: Courtesy of Circular Flanders

The end goal is to retain the value of materials and resources indefinitely, with no residual waste at all. This is possible, requiring transformational change in the way that buildings are designed, built, operated and deconstructed.

Circular Economy Approach for The New Development

The following circular economy strategic approaches will be considered in relation to the new development:

- Use reclaimed materials and products with a high level of recycled content.
- Talk to suppliers about returnable packaging solutions.
- Consider opportunities for offsite fabrication, where components are installed in a factory environment the waste rate should be lower compared with onsite installation.
- Use less material in the design – e.g. use new thin insulation materials to reduce the depth of wall thickness and maximise overall building net areas.
- Reduce the weight of structures; this will reduce the loadings and therefore less material will be required due to thinned foundations and structural members.
- Do not over-specify, e.g. consider the required purpose of a room when specifying sound insulation to avoid the unnecessary use of materials; however, this has to be weighed against flexibility in the use of the room.
- Simplify and optimise materials and components (e.g. use full height doors or doors with fan lights above (i.e. to ceiling) to avoid cutting sheets of plasterboard).
- Apply tighter specifications to work procedures to avoid waste and allow the use of offcuts.

- Consider how work sequences affect the generation of construction waste and work with the contractor and specialist subcontractors to understand and minimise these.
- Discuss options for packaging reduction with contractors and suppliers.
- Use ordering procedures that avoid waste, e.g. no over-ordering and take-back schemes for material surplus and offcuts.
- Ensure the products are stored correctly and handled carefully to avoid damage. This includes organising a systematic approach to storing off-cuts for further use on the site, or for local community reuse projects.
- The project will target 95% diversion from landfill of construction waste.

1.00 INTRODUCTION

1.01 Application

This Detailed Circular Economy Statement has been prepared on behalf of Prudential UK Real Estate Nominee 1 Limited and Prudential UK Real Estate Nominee 2 Limited in support of an application at 247 Tottenham Court Road for full planning permission for:-

Demolition of 247 Tottenham Court Road, 3 Bayley Street, 1 Morwell Street, 2-3 Morwell Street and 4 Morwell Street and the erection of a mixed use office led development comprising ground plus five storey building for office (Class B1) use, flexible uses at ground and basement (Class A1/A2/A3/B1/D1/D2), residential (Class C3) use, basement excavation, provision of roof terraces, roof level plant equipment and enclosures, cycle parking, public realm and other associated works.

1.02 Existing Building

247 Tottenham Court Road

The existing building is comprised of basement, ground plus seven stories with shop and café (Class A1) uses at ground floor and the upper floors within an office (Class B1) use. Office carparking is provided within the basement with access from Morwell Street.

3 Bayley Street

The existing building joins the northern boundary with 247 Tottenham Court Road and is comprised of ground plus five storeys. The upper floors contain four residential dwellings and the first floor forms part of the office at 247 Tottenham Court Road.

1 Morwell Street

At ground floor, the existing building is linked to the shop (Class A1) at 242 Tottenham Court Road, and is currently occupied by Tiger on the ground and lower ground floors. We understand that this change of use was granted planning permission on 13 April 1981 (ref. 31936). The first and second floors (and part of the basement) are in use as an office (Class B1) and are accessible from office floorplates on Tottenham Court Road.

4 Morwell Street

The existing building is occupied by the Architectural Association at basement, ground, first and second floor and comprises a mix of storage, studios and offices and is a mix of Class B1/D1 uses.

1.03 Purpose

The aim of this circular economy statement is to demonstrate how the development will incorporate circular economy measures into all aspects of the design, construction and operation process.

This statement is structured as follows:

- **Section 1** - an introduction to the site and the buildings.
- **Section 2** - a description of the main policies for circular economy relevant to the application.

- **Section 3** - an outline of the circular economy goals and strategic approach of the project.
- **Section 4** - a summary of the circular economy commitments for this development.

1.04 Reservation

This report has been prepared solely for the use of the applicant and Watkins Payne Partnership accept no responsibility for its use by any third parties.

2.00 POLICY REVIEW

2.01 Emerging London Plan (2019)

The new London Plan (intent to publish) version, dated December 2019 sets out the Mayor's vision and overall strategic plan for London. It sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years.

Policy SI7 (reducing waste and supporting the circular economy) is considered most pertinent to this report:

B. Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:

1) *how all materials arising from demolition and remediation works will be re-used and/or recycled*
2) *how the proposal's design and construction will enable building materials, components and products to be disassembled and re-used at the end of their useful life*
3) *opportunities for managing as much waste as possible on site*
4) *adequate and easily accessible storage space to support recycling and re-use*
5) *how much waste the proposal is expected to generate, and how and where the waste will be handled.*

2.02 London Environment Strategy (2018)

The Greater London Authority's (GLA's) London Environmental Strategy sets out an ambitious vision for improving London's environment for the benefit of all Londoners. One of the key themes, as set out in Chapter 10, is the transition to a low carbon circular economy:

A low carbon circular economy is one in which as much value as possible is extracted from resources, through their use and reuse, before they become waste. As London grows, it must invest in low carbon infrastructure and services to achieve healthier, zero emission, resource efficient growth. This can be achieved by manufacturing goods that are made to last, rather than be disposed of, and by creating systems that allow existing goods to be reused and recycled.

3.00 CIRCULAR ECONOMY GOALS AND STRATEGIC APPROACH

The strategic approach for this development centres on the following themes on the basis of this development being classified as a long life new development. This classification has been selected because the development has been designed for an expected life of over 25 years, in keeping with the project brief and design objectives for an adaptable and future proofed building designed for long-life use to allow for alternative uses in the future.

- Flexibility: Designed to balance the needs of the present with how those needs will change in the future and designed for change through frequent reconfiguring including reconfiguration of non-structural parts – configurations are likely to be pre-agreed with planning and building control and not involve 'wet trades' or any waste.
- Longevity: Tailored to well-defined, long term needs while being durable and resilient or able to cope with change with little modification/no replacement of parts due to its 'loose fit', generous proportions and readiness for alternative technologies, different ways of living or working and a changing climate.

3.01 Building in layers

A building comprises several 'layers', each with their own life-cycle (see Figure 2). The design approach for this development acknowledges these distinctions and these 'layers' will form the basis of several of the circular economy strategies covered within this report.

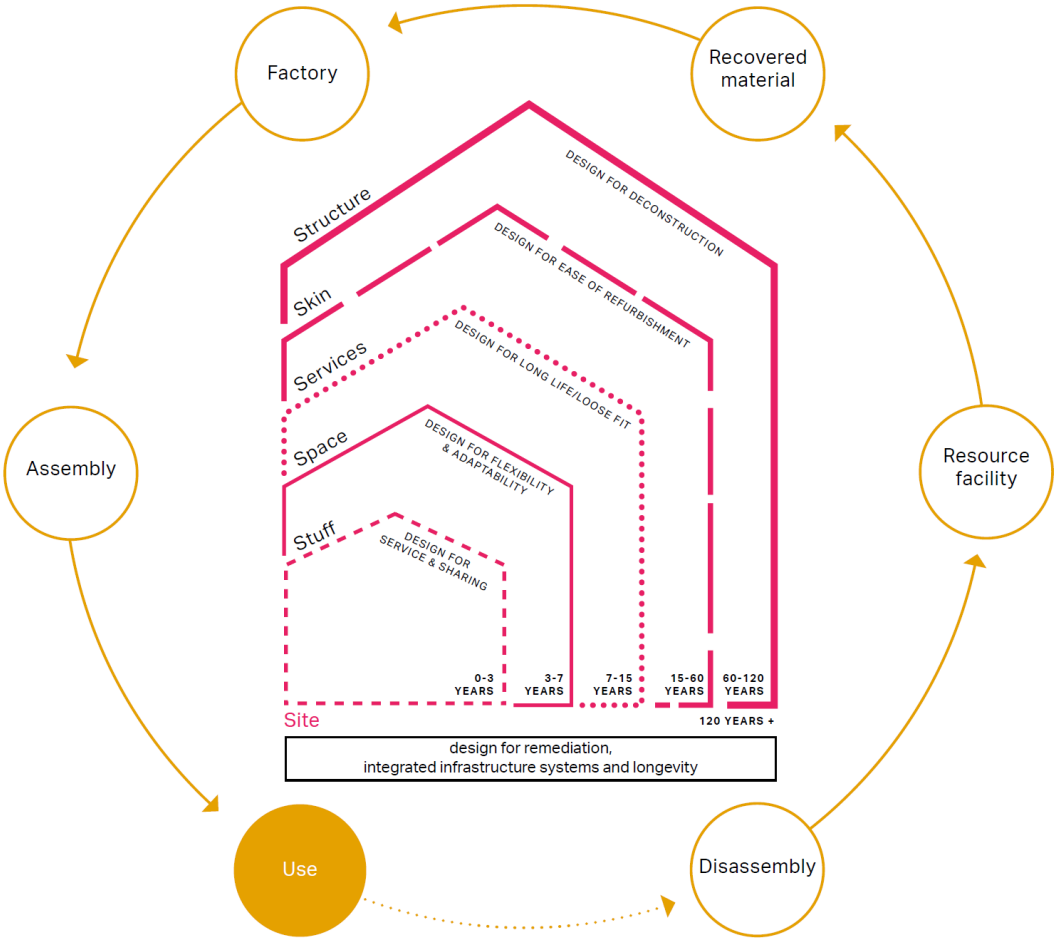

Figure 2: Courtesy of Useful Projects (see Frank Duffy's 'Shearing Layers' concept described in 'How Buildings Learn' by S. Brand, 1994)

3.02 Circular economy approach for the new development

The following circular economy strategic approaches will be considered in relation to the new development:

- Use reclaimed materials and products with a high level of recycled content.
- Talk to suppliers about returnable packaging solutions.
- Consider opportunities for offsite fabrication, where components are installed in a factory environment the waste rate should be lower compared with onsite installation.
- Use less material in the design – e.g. use new thin insulation materials to reduce the depth of wall thickness and maximise overall building net areas.
- Reduce the weight of structures; this will reduce the loadings and therefore less material will be required due to thinned foundations and structural members.
- Do not over-specify, e.g. consider the required purpose of a room when specifying sound insulation to avoid the unnecessary use of materials; however, this has to be weighed against flexibility in the use of the room.
- Simplify and optimise materials and components (e.g. use full height doors or doors with fan lights above (i.e. to ceiling) to avoid cutting sheets of plasterboard).
- Apply tighter specifications to work procedures to avoid waste and allow the use of offcuts.
- Consider how work sequences affect the generation of construction waste and work with the contractor and specialist subcontractors to understand and minimise these.
- Discuss options for packaging reduction with contractors and suppliers.
- Use ordering procedures that avoid waste, e.g. no over-ordering and take-back schemes for material surplus and offcuts.
- Ensure the products are stored correctly and handled carefully to avoid damage. This includes organising a systematic approach to storing off-cuts for further use on the site, or for local community reuse projects.

The project will target 95% diversion from landfill of construction, excavation and demolition waste, as per policy 5.16 of the current London Plan (2016) and policy SI 7 of the emerging London Plan (2019).

3.03 Circular economy approach for the existing site

To maximise the opportunities arising from demolition including soft-strip materials, a pre-demolition audit shall be carried out at the earliest opportunity and preferably during early design stages (Concept and Developed Design of the RIBA Plan of Work stages). The aim of the audit is to identify and quantify the materials that will arise and, based on this information, targets can be set for the demolition contractor to maximise reuse and recycling opportunities. The audits should encompass the following:

- Collection and examination of information (this could be existing site plans, drawings and surveys, for example, an asbestos survey)
- Site visit to collect further information (for example, on the type and condition of materials that are present; if the building is relatively simple in design and the existing plans are good, it may be possible to undertake a virtual (i.e. deskbased) pre-demolition audit)
- Estimation of the types and amounts of materials (based on previous information, the volume of materials can be estimated using standard density conversion factors)
- Assessment of the suitability of materials for reuse and recycling (this can refer back to the design stage, where appropriate)
- Setting of targets (these can be for overall diversion of waste from landfill, by material type and/or specific targets for reuse and recycling)
- Recording the material arisings during the demolition process (this can be done using standard templates or software such as BRE's SMARTWaste system and the results fed into a site waste management plan (SWMP) or resource management plan (RMP)
- Comparison of actual performance against targets

The project will target 95% diversion from landfill of construction, excavation and demolition waste, as per policy 5.16 of the current London Plan (2016) and policy SI 7 of the emerging London Plan (2019).

3.04 Circular economy approach for municipal waste during operation

The following circular economy strategic approaches will be considered in relation to the development in operation:

- Enable building elements and components to be maintained, upgraded, or replaced without creating waste.
- Enable products to be removed without damage, i.e. use items which are easy to disassemble such as mechanical fixings.
- Pass relevant information on designing for flexibility and deconstruction to building owner/occupier using a BIM model or building handbook.

4.00 CIRCULAR ECONOMY COMMITMENT

4.01 Minimising the quantities of materials used

The possibility of refurbishing the existing building has been explored. However, it fails to meet the standard expected by modern office occupiers on the following grounds (for each key discipline area).

Architectural:

- Tired external appearance
- Poor thermal performance
- Poor quality internal space and lack of flexibility
- Inadequate floor to ceiling heights
- Insufficient inclusive access provision
- Fragmented arrangement of existing building
- Elements of the façade reaching the end of their serviceable life
- Insufficient vertical transportation
- Asbestos is present in all the existing buildings

M&E:

- Original equipment is already regarded as life expired
- Current M&E systems are insufficient for modern sustainable design
- Majority of equipment has a useful life expectancy of circa 3-5 years
- Replacement equipment will need to be houses on the existing roof
- Lifts require a major overhaul and additional capacity
- New M&E systems would need to be integrated with new or significantly upgraded façade to result in a fully sustainable solution

Structurally:

- A replacement façade is likely to require additional structural support.
- This in combination with the integration of a new M&E system could have an impact on the already compromised / low floor to ceiling heights.
- If the existing building needs to ‘upgraded’ meet current Eurocode fire requirements, additional structural works may be required
- Necessary core amendments to lifting, goods access, cycling entrances, etc. would require significant demolition and adaption of the existing structural frame
- Risk of carbonation within primary structural elements could limit the ability to retain the existing superstructure
- Existing structure limits the scope of ‘heavier’ touch refurbishment options including new roof top plant and air tight / thermally efficient facades
- Setting out of the existing superstructure is limiting to the design of a new high performance façade system

To minimise material usage on site, consideration will be given to what is already available for retention and repurposing.

To ensure only the minimum materials required will be used during construction, elements of the project will be prefabricated and delivered to site. The planning and delivery of prefabricated façade and CLT panels ensures only necessary materials reach site in the first instance, reducing manufacturing waste, which can be recycled in the factory, and site waste which will be minimised as only assembly is required on site.

As well as material savings, the off site pre-fabrication of the CLT panels and the facade panels where possible will mean a vast reduction in deliveries to site. This will provide a range of benefits including less embodied carbon due to transportation, less congestion and disruption around the site, and less pollution due to transportation.

These measures are in line with the most preferred option under the waste hierarchy – a common framework embedded in EU legislation.

4.02 Minimising the quantities of other resources used (energy, water, land)

The proposals include a variety of active and passive measures to reduce energy consumption and contribute to a sustainable development, which are presented in more detail in the Sustainability and Energy Statements issued with the planning application. The focus of the energy strategy is on carbon dioxide reduction by using a highly efficient building envelope with high efficiency mechanical and electrical services.

A rooftop mounted PV array will be installed for on-site electricity generation. Air source heat pump (ASHP) have been sized to meet heating and cooling loads efficiently and without wasted over-capacity. Air source heat pumps located on the roof of the building will provide heating and cooling for the building throughout the year, minimising reliance on fossil fuels in the heating and cooling of the building, thereby reducing the building's in-use carbon footprint.

The overall carbon emission analysis shows that the commercial parts of the development is predicted to achieve a 43.5% improvement over the Building Regulations Part L requirements together with a predicted 27.0% saving due to renewable energy solutions being provided.

In addition, water efficiency features shall include water monitoring, leak detection and the specification of efficient low water consumption sanitaryware to facilitate a 50% improvement over the baseline water consumption (as per the BREEAM New Construction 2018 standard for credit Wat01) for the office and retail parts.

4.03 Specifying and sourcing materials responsibly and sustainably

A whole life carbon assessment has been undertaken by Hoare Lee which has led to the implementation of several alterations in materials to reduce material use and embodied carbon emissions. For instance, the steel frame is to comprise 60% recycled content.

It is envisaged that all materials will meet the following criteria:

- All timber to be certified under the Programme for the Endorsement of Forest Certification (PEFC) or Forest Stewardship Council (FSC).
- All plasterboard, aggregates, concrete, cement, asphalt, blockwork and rebar to conform to BES 6001 (Responsible Sourcing of Construction Products) Very Good or Excellent rating.
- All windows will require ISO 14001 certification.
- Refrigerants and insulants to be specified with a Global Warming Potential of less than 10.
- Paints, coating, adhesives and sealants to be applied with low or zero Volatile Organic Compounds (VOCs) as per BREEAM Hea 02 credit requirements.

A sustainable procurement plan will be produced and used by the design team to guide specification towards sustainable construction products, as per BREEAM Mat 03 credit requirements. This will include a requirement for assessing the potential to procure construction products locally where possible.

In addition, the following further strategies will be considered to all sourcing decisions:

- Timber marked as 'Grown in Britain' where appropriate.
- Locally extracted and manufactured materials used wherever possible.
- Preference to be given to material suppliers who provide verified Environmental Product Declarations (EPDs).

- Preference to be given to manufacturers or supply chain partners with a social justice policy, or demonstrable track record in championing social equity throughout the industry.
- Flooring, furniture and insulation (thermal and acoustic) with low or zero VOCs as per BREEAM Hea 02 requirements.
- Products should report full chemical inventory of ingredients.
- Products should adopt a precautionary principle to chemical content, removing substances with potential health risks from ingredient lists.

4.04 Design for reusability / recoverability / longevity / adaptability / flexibility

The new building form provides better future adaptation and flexibility than existing form. A tenant fitout manual will detail how the floorplates can be divided into various types of spaces including open plan offices, enclosed offices, meeting rooms and breakout spaces. The improved slab to slab height, with improved access and open plan design, helps to minimise need for future interventions. This supports the circularity of the 'skin' and 'space' layers of the building (see Figure 2).

Design includes review of reuse of foundations, where feasible. Demolition material to be used to balance levels and for infill as appropriate.

New building design to include resilient and robust materials for long life use. The steel frame structure will be designed with bolted and reversible connections for possible deconstruction and reuse at the end of the building's useful life. Similarly, the CLT floor panels will be screw fixed /bolted to the steel frame to allow for alterations / disassembly and reuse. This supports the circularity of the 'structure' layer of the building (see Figure 2).

Building services systems will be designed for ease of maintenance and future climate conditions to minimise frequency of central plant replacement. The design incorporates strategies that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors and walls that can be removed without affecting the structure. Accessibility also considers access to local services, such as local power and data infrastructure, ensuring the building can be modified and upgraded in future. This supports the circularity of the 'services' layer of the building (see Figure 2).

Minimal use of plastics in building services installations so that recycled metals can be included in the installations (e.g. steel electrical containment, steel ductwork, steel/copper pipework).

4.05 Design out construction, demolition, excavation and municipal waste arising

Much of the façade will be manufactured off-site in factory conditions. This will offer a high standard of manufacture and ensure only necessary materials arrive on-site, reducing opportunities for waste.

Additionally, the use of standard components, dimensions, repetition and coordination of design across elements will be encouraged in order to reduce the number of variables, avoiding unnecessary cutting/jointing that generates waste.

Take back schemes (such as British Gypsum Plasterboard scheme) will be considered to ensure any unused materials are returned to supplier rather than going to construction waste.

4.06 Demolition waste (how waste from demolition of the layers will be managed)

A full pre-demolition audit of the existing development is to be carried out to determine whether refurbishment or reuse if feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications.

In line with the BREEAM Wst01 requirements, at least 80% by volume of non-demolition waste is to be diverted from landfill. However, the project shall better this with a commitment to a recycling, reuse and recovery rate exceeding 95%, as set out in the London Plan.

4.07 Excavation waste (how waste from excavation will be managed)

Since no major excavation works will be carried out, reusing excavation waste on-site is not applicable.

4.08 Construction waste (how waste arising from construction of the layers will be reused or recycled)

In line with the BREEAM Wst01 requirements, the development is to target no more than 7.5m3 of construction waste to be generated per 100m2 gross internal floor area. Furthermore, at least 70% by volume of non-demolition waste is to be diverted from landfill.

A Resource Management Plan will be developed by an appointed contractor before the commencement of construction, based on the sustainable procurement plan and the pre-demolition audit to ensure those targets will be met. Waste management routes will be recorded for construction and demolition waste.

After prevention and reuse of waste has been considered (as previously discussed), the project will endeavour to recycle any waste that is produced and procure materials with a high recycled content (where possible). This is in keeping with the waste hierarchy – a common framework which is embedded in EU legislation.

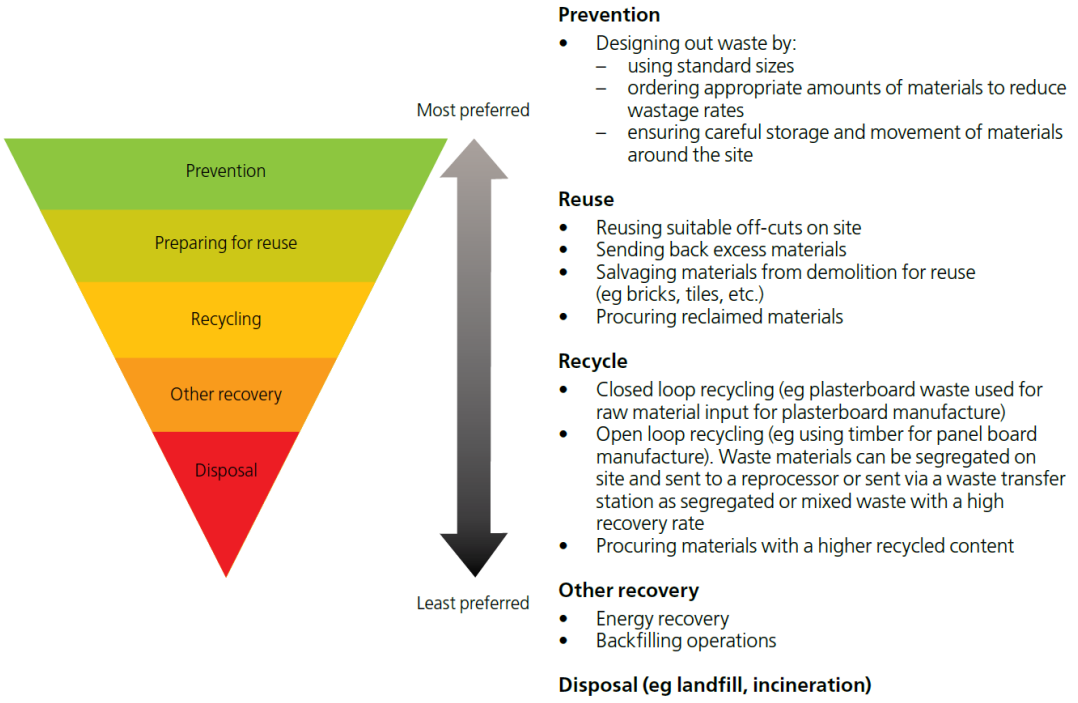

Figure 3: Courtesy of the BRE

4.09 Municipal waste (how the building will be designed to support operational waste management)

In line with BREEAM Wst03 requirements, a dedicated space will be provided for the segregation and storage of operational recyclable waste generated. The space will be clearly labelled to assist with the segregation, storage and collection of the recyclable waste streams. The store shall be accessible to the building occupants or facilities operators for the deposit of materials and collections by waste management contractors. The dedicated store shall be of a capacity appropriate to the building type, size and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates.