Sustainability Statement

14-19 Tottenham Mews
Fitzrovia, London

Derwent Valley Properties Developments Ltd

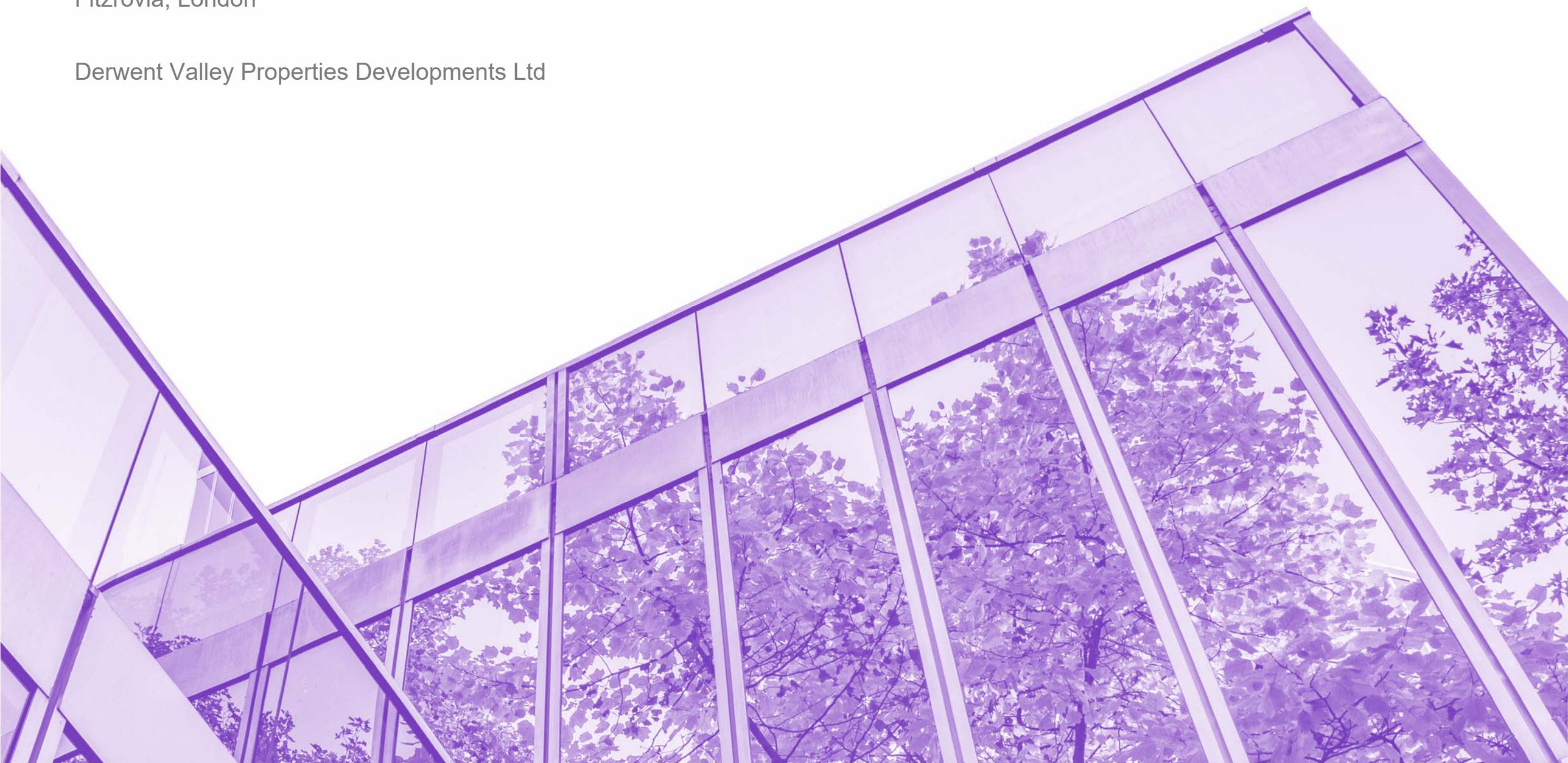

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Figure 1-1 Proposed image of Tottenham Mews

Contents

1.0 Executive Summary

1.1 14-19 Tottenham Mews Sustainability Statement

This statement has been prepared on behalf of Derwent Valley Property Developments Ltd (hereinafter referred to as The Applicant) by TFT. The Sustainability Statement appraises and reports on the environmental and social performance of 14-19 Tottenham Mews (hereinafter referred to as the Proposed Development) against local, regional and national sustainability policy.

This Sustainability Statement sets out:

- A description of the existing site and Proposed Development
- A brief overview of key planning policy (with further details provided in Appendix A)
- Certification
- An appraisal of the sustainability performance of the Proposed Development under key environmental, social and governance themes, and alignment with planning policy.

1.2 Site Description

The Proposed Development covers a site of approximately 532m^2 and occupies the end portion of Tottenham Mews, with an additional entrance on Bedford Passage. The site comprises a temporary prefabricated building dating from the 1970s, which is located on the western side of Tottenham Mews and is currently vacant and soon to be demolished by the Applicant.

The eastern side of the mews is occupied by a series of individual mews buildings of varied design which are predominantly 4 storeys high from the ground level (several with additional half basements). The mews is accessed from the south from Tottenham Street.

The site is located within the Central London Activities Zone and the site is also within the Fitzrovia Area Action Plan (2014) (FAAP), where is it designated for redevelopment.

1.3 Proposed Development

The Applicant will be submitting a full planning application for the demolition of the existing building and the erection of a new building comprising one basement level and ground floor plus 5 storeys above ground with a terrace at level five and a roof top level that will host the plantroom. This scheme will comprise of Class E-g office and C3 residential uses and will have a maximum height of 19.150 meters.

The new building will provide approximately 375m^2 GIA of office space across the lower ground floor and ground floor and approximately 2,339m^2 GIA of residential dwellings, comprising thirteen intermediate and ten social housing 1-3-bedroom units. The Proposed Development has been developed in conjunction with The Network Building development at 95-100 Tottenham Court Road, which includes the demolition of seven flats as part of the project. These have been relocated as part of the Tottenham Mews project as an off-site contribution.

1.4 Policy Context

The Proposed Development is considered to deliver a positive contribution to the key principles of environmental, economic, and social sustainability. The Proposed Development meets and exceeds the majority of planning policy requirements across all the themes of sustainable development in the current and emerging London Plan, as shown in Table 3-2. In addition, the Proposed Development will satisfy the planning requirements of the London Borough of Camden, as displayed in Table 3-3 and Table 3-4.

1.5 Sustainability Certification

The Proposed Development's residential space will be assessed under the latest Home Quality Mark (HQM) methodology, HQM One and aspires to target a Level 4 rating as a minimum. A HQM pre-assessment has been undertaken for the C3 areas of the building.

The B1 office space across at ground and below ground floor will not undergo a formal BREEAM assessment as the area of the space falls below the minimum threshold required for an assessment to be deemed

appropriate However the design team aims to incorporate The Applicant's sustainability objectives and incorporate best practice into the design and construction principles of the scheme.

Energy and carbon considerations have been looked at holistically, both the operational energy and its carbon performance as well as its embodied carbon from construction materials. The London Plan energy hierarchy has been followed resulting in a highly thermally efficient design due to the fabric first approach, exceeding the minimum London Plan 'be lean' standards for residential developments. High efficiency heating, ventilation and air conditioning including heat pumps for space heating and domestic hot water (DHW) contribute significantly to the energy efficiency performance of the building and renewable energy solutions have been optioneered. The final design achieves a 61.2% energy savings in comparison to the Building Regulations Part L notional building, translating into an on-site saving of 18 tonnes of carbon per year.

1.6 Water

An assessment on the main impacts of climate change including the mitigation against threats from extreme flood events, surface water runoff and the urban heat island effect, have been undertaken to determine the Proposed Development's future resilience. As part of the design proposals the scheme includes a blue roof as an attenuation measure to reduce surface water runoff from the development.

In addition internal water consumption will be optimized through the specification of high efficiency sanitaryware that will ensure total internal water usage does not exceed maximum of 110 litres per person per day, in compliance with HQM One requirements and the London Borough of Camden's (LBC) planning guidance.

1.7 Materials

The strategic approach to circularity for the Proposed Development will be to prioritise sustainable procurement, longevity and highly durable materials as well as providing flexibility and spatial utilization. Healthy materials with low levels of toxicity will be specified alongside the application of circular design principles which will be explored during the developed and technical design stages.

1.8 Land Use and Biodiversity

A Preliminary Ecological Appraisal (PEA) has been undertaken to assess the baseline ecological information about the site and to identify any constraints and opportunities linked with the Proposed Development. This highlights that the existing building can support breeding birds and the Proposed Development could be designed to ensure the same. The habitats identified are of ecological importance at site level only and will not be able to support wider ecological corridors within central London. Strategies to enhance the local biodiversity will be explored in future design stages to ensure ecological value can be enhanced on site wherever possible.

1.9 Transport

The Proposed Development is located in a highly accessible area of central London benefitting from a wide variety of public transport services. The results of a PTAL calculation show that the Proposed Development site has a PTAL of 6b, equating to the highest level achievable.

For this reason, the Proposed Development will be a "car free" development with zero car parking spaces. In addition, a total of 6 long stay cycle parking spaces located at ground floor will be dedicated to the office space users, while 44 cycle parking racks in the basement have been proposed for the residents with 2 mobility scooters/ cycle parking for visitors on the ground floor.

1.10 Pollution Management

Land contamination could not be assessed completely due to the risks of finding asbestos in the existing building. Therefore, a more detailed investigation is proposed to be undertaken prior to construction.

An air quality assessment undertaken for the scheme demonstrates that the Proposed Development and its transport related emissions are both below the relevant benchmarks. The proposals are air quality positive and therefore complies with the London Plan requirement for all new developments in London to be air quality neutral as a minimum. It is concluded that no offsetting of emissions is required.

The air quality assessment has demonstrated that the overall air quality effect of the Proposed Development will be 'not significant'. Several measures to reduce local air quality impacts including a Travel Plan to promote sustainable travel, no parking provision, non-combustion technology for space and hot water heating have been included within the design proposals. Demolition and construction dust will also be managed to minimise risk associated with dust emissions, already considered as a small risk due to the size of the site.

An environmental noise survey and noise impact assessment has also been undertaken for the Proposed Development which highlights the need for the dwellings to keep the windows closed during most of the day to reduce noise nuisances from outdoor. This is usual within an urban environment and subsequently the ventilation strategy has included for strategies to attenuate noise while providing fresh air. In addition, to minimise any noise pollution from the new external plant to the building the building services kit will be placed in an individual acoustic enclosure.

1.11 Community and Wellbeing

The impact on the community and stakeholders has been assessed despite the challenges of social distancing as a result of the global pandemic via online consultations and meetings. The Applicant has developed an engagement programme for a variety of local elected representatives, local stakeholders and the general public to ensure that the proposals meet the needs of the community. This programme of consultation has been ongoing between July and October 2020 and the applicant will continue to meet with local groups and individuals as appropriate throughout the design process.

2.0 Introduction

2.1 The Applicant

The Applicant is Derwent Valley Property Developments Ltd which has appointed TFT to assess the sustainability performance of the Proposed Development against relevant sustainability planning policy.

2.2 Purpose

This statement has been prepared on behalf of The Applicant by TFT. The Sustainability Statement appraises and reports on the environmental and social performance of the Proposed Development against local, London wide and national sustainability policy.

This Sustainability Statement sets out:

- A description of the existing site and Proposed Development;
- A brief overview of key planning policy (with further details provided in Appendix A)
- Certification;
- An appraisal of the sustainability performance of the Proposed Development under key environmental, social and governance themes, and alignment with planning policy.

This Sustainability Statement forms part of a suite of documents that accompanies the planning application, and should be read in conjunction with the following documents that provide detailed evidential inputs:

- Design & Access Statement
- Inclusive Design and Access Statement
- Energy Statement
- Structural Engineering Report and Subterranean Construction Method Statement
- Preliminary Basement Impact Assessment
- Transport Statement
- Travel Plan
- Delivery, Servicing & Waste Management Plan
- Air Quality Assessment
- Environmental Noise Survey and Acoustic Design Statement Report
- Plan Noise Assessment Report
- Surface Water Drainage Statement
- Daylight and Sunlight Report
- Statement of Community involvement
- HQM Pre-assessment report.

2.3 Site Description

The Proposed Development covers a site of about 532m^2 and occupies the end portion of Tottenham Mews, with an additional entrance on Bedford Passage. The site comprises a temporary prefabricated building dating from the 1970s, which is located on the western side of Tottenham Mews. See Figure 2-1 for a map of the site location.

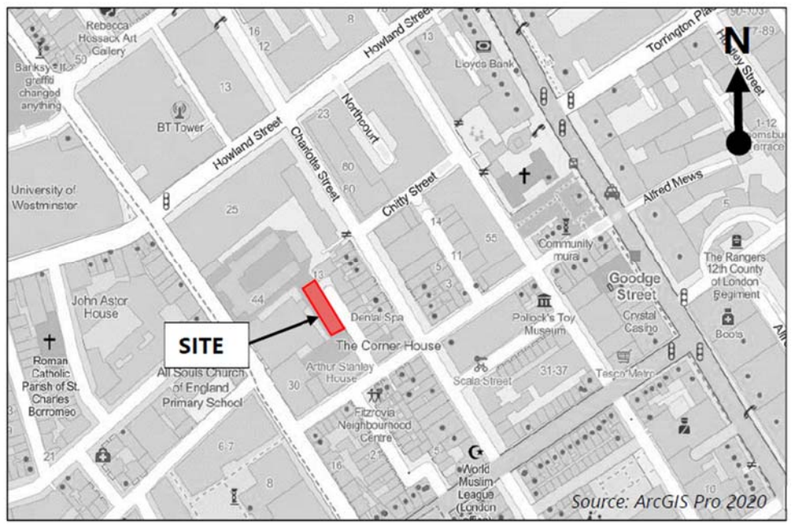

Figure 2-1 Site location of Tottenham Mews site

2.4 Proposed Development

The Applicant will be submitting a full planning application for the demolition of the existing building and the erection of a new building comprising a basement level and ground floor plus 5 upper storeys including office and residential use. The proposed building on site will have a maximum height of 19.150 meters.

The new building will provide approximately 375m^2 GIA of office space across the lower ground floor and ground floor and approximately 2,339m^2 GIA of dwellings, comprising thirteen intermediate and ten social housing 1-3-bedroom units. The Proposed Development has been designed in conjunction with The Network Building development at 95-100 Tottenham Court Road, which includes the demolition of seven flats as part of the project. These have been relocated as part of the Tottenham Mews project as an off-site contribution.

The Proposed Development will be a “car free” development. A total of 6 long stay cycle parking spaces located at ground floor will be dedicated to the office space users, while 45 cycle parking racks have been designed in the basement for the residents.

2.5 Sustainability Vision

The Applicant is the largest London-focused real estate investment trust (REIT) and owns a 5.6 million sqft portfolio of mainly commercial real estate across central London. Their ethos is to deliver the most innovative properties on the market, using its well-known design-led philosophy and creative management approach to development.

The Applicant’s strategy towards sustainability issues is grounded in an environmental, social and governance (ESG) structure which is suitable for investment organisations. The overall aim of the ESG strategy is to ensure their business demonstrates high standards of integrity, transparency and safety while ensuring that spaces are designed, built and operated in a responsible way. The Applicant recognises that the stewardship of investment assets brings many responsibilities, including to the wider environment and to the local community.

Figure 2-2 Derwent London responsibility strategy for 2020.

The Applicant has four key long-term priorities for ensuring spaces are designed, delivered and operated responsibly, these are:

- Designing and Delivering Buildings Responsibly
- Managing their Assets Responsibly:
- Creating Value of in the Community
- Engaging and Developing their Employees.

To cascade their long-term priorities and objectives effectively into their development program, The Applicant has developed their Sustainability Framework for Developments[1]. The Framework sets out the activities and processes required to manage the sustainability performance of new build and refurbishment development projects, outlining roles and responsibilities from the outset, to ensure sustainability is considered and implemented at every stage of the design and delivery of the project. The Applicant’s approach to sustainability, and development projects in particular, is highlighted in their Sustainability Map illustrated below in Figure 2-3:

[1] Derwent Framework for Developments
https://www.derwentlondon.com/uploads/downloads/Responsibility/Derwent_London_Sustainability_Framework_Developments_2017.pdf

Sustainability Map

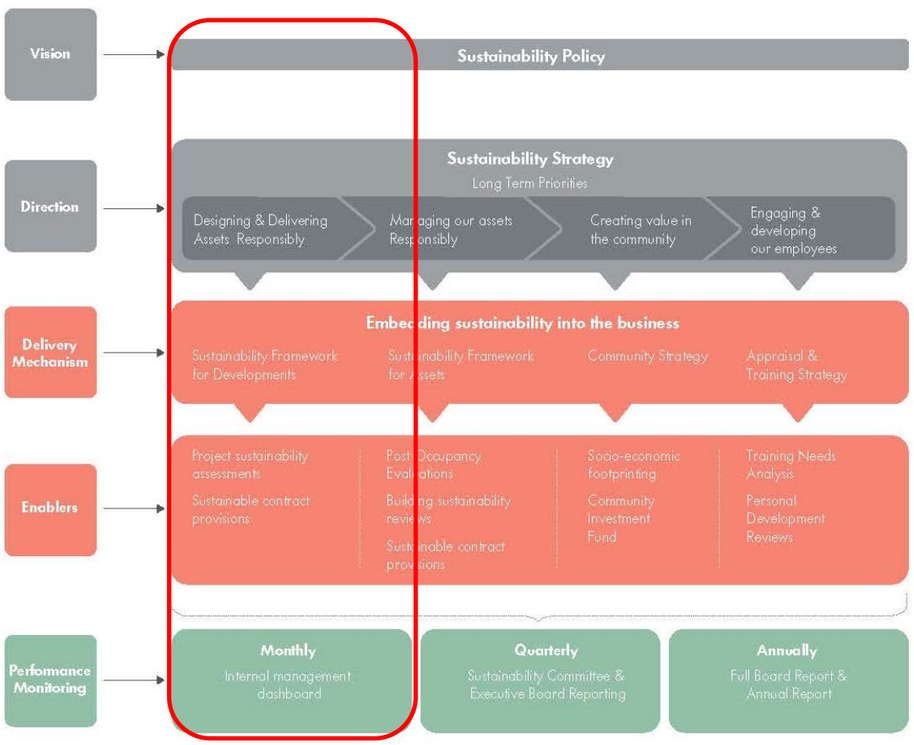

Figure 2-3 The Applicant's Sustainability Map from their Sustainability Framework for Developments and their Sustainability Strategy[1]

Environmental sustainability has been engrained in the approach to the design and development of The Applicant's development projects. Modern methods of construction, integration of circular economy strategies and minimising waste are internal drivers and project teams are challenged to be at the forefront of delivering innovative and next generation solutions to servicing and consolidation on its properties. The Applicant also aims to develop innovative and sustainable strategies for its buildings and business with a view for their operations to be net zero carbon by 2030. As part of its net zero carbon targets, The Applicant is a Better Building Partnership (BBP) member and integrates performance monitoring and operational verification into project brief and ongoing management of their portfolio, supporting design and refurbishment actions to optimise carbon emissions across a building's lifecycle.

Social considerations will be more important than ever during and post-COVID-19 as the UK moves towards recovery and as employees expect more flexibility from their employers and from their workplaces. Derwent London developed an integrated approach which considers health and safety at every stage during the buildings' life cycle, to protect and ensure wellbeing of employees, occupiers and building's staff.

3.0 Legislation and Planning Policy

This section summarises the key legislative requirements, and the current policy requirements of the Camden Local Plan (CLP), the Greater London Authority (GLA) and wider national legislation where required. It provides the legislative and regulatory planning context against which this Sustainability Statement appraises the Proposed Development.

3.1 The Applicant

The following statutory regulations relating to sustainable development and carbon efficiency have been considered as part of the planning submission for the Network Building at 95-100 Tottenham Court Road, key relevant legislative instruments include:

- Energy Act 2011[2]
- Environmental Protection Act 1990[3]
- Air Quality Standards Regulations 2007[4]
- Floods and Water Management Act 2010[5]
- The Natural Environment and Rural Communities Act 2006[6]
- Wildlife and Countryside Act 1981[7]
- Building Regulations Approved Document Part L Conservation of Heat & Power[8]
- Control of Pollution Act 1974[9]
- Clean Neighbourhoods and Environment Act 2005[10]
- The Waste (England and Wales) Regulations 2011[11]
- The Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products (Amendment) Regulations 2010[12]
- Climate Change Act 2008 (2050 Target Amendment) Order 2019[13]

3.2 National Planning Policy Framework (February 2019)

The National Planning Policy Framework (NPPF) 2019 [14] sets out the government's approach to promoting sustainable development in England through the planning system. The delivery of sustainable development lies at the heart of the NPPF, which is confirmed by the ministerial foreword to the document noting 'the purpose of planning is to help achieve sustainable development', and 'sustainable development is about positive growth – making economic, environmental and social progress for this and future generations'.

It recognises the proactive role planning authorities should adopt towards meeting the objectives and provisions of the Climate Change Act 2008 by shaping places to secure a low carbon future and minimising vulnerability to climate change over the long term through the implementation of adaptation and mitigation

[2] Energy Act (2011), Chapter 16: http://www.legislation.gov.uk/ukpga/2011/16/pdfs/ukpga_20110016_en.pdf

[3] Environmental Protection Act (1990), Chapter 43: http://www.legislation.gov.uk/ukpga/1990/43/pdfs/ukpga_19900043_en.pdf

[4] The Air Quality Standards Regulations (February 2007) https://www.legislation.gov.uk/uksi/2007/64/pdfs/uksi_20070064_en.pdf

[5] Flood and Water Management Act (2010), Chapter 29 : https://www.legislation.gov.uk/ukpga/2010/29/pdfs/ukpga_20100029_en.pdf

[6] Natural Environment and Rural Communities Act (2006), Chapter 16: http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf

[7] Wildlife and Countryside Act (1981), Chapter 69: http://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf

[8] The Building Regulation (October 2010): Conservation of fuel and Power – Approved Document L2B: https://www.labc.co.uk/sites/default/files/content/br_pdf_ad_l2b_2015.pdf

[9] Control of Pollution Act 1974 http://www.legislation.gov.uk/ukpga/1974/40/contents

[10] Clean Neighbourhoods and Environment Act 2005 http://www.legislation.gov.uk/ukpga/2005/16/contents

[11] The Waste (England and Wales) Regulations 2011 http://www.legislation.gov.uk/uksi/2011/988/regulation/12/made

[12] The Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products (Amendment) Regulations 2010

[13] Climate Change Act 2008 (2050 Target Amendment) Order 2019 https://www.legislation.gov.uk/ukdsi/2019/9780111187654

[14] National Planning Policy Framework 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

measures such as Green Infrastructure. The NPPF also encourages local planning authorities to ensure good design, the viability of town centres, the delivery of a wide choice of high quality homes, promote sustainable transport, deliver high quality communications infrastructure, ensure the conservation and enhancement of the natural and historic environment, the sustainable use of natural resources, and promotes healthy communities.

3.3 The Mayor's London Plan (March 2016)

The London Plan[15] sets out the overall strategic plan for London, providing an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years. The Plan brings together the geographic and locational (although not site specific) aspects of the Mayor's other strategies – including those dealing with Transport, Economic Development, Housing, Culture, and a range of social issues such as children and young people, health inequalities and food, as well as a range of environmental issues such as climate change (adaptation and mitigation), air quality, noise and waste.

In particular, the London Plan includes a range of policies, primarily in Chapters 5 and 7 that deal with matters relating to sustainable design and construction. The appraisal of the environmental performance and sustainable design of the Proposed Development is based on a review against both relevant London Plan policies, with cross reference made to relevant local planning policy. The full list of London Plan policies against which the Proposed Development has been analysed can be found in Table 3-1 below.

London Plan	Proposed Development Compliance
Policy 2.13 Opportunity areas and intensification areas	✓
Policy 2.18 Green Infrastructure	✓
Policy 3.3 Increasing housing supply	✓
Policy 3.4 Optimising housing potential	✓
Policy 3.5 Quality and design of housing developments	✓
Policy 3.8 Housing choice	✓
Policy 3.10 Definition of affordable housing	✓
Policy 3.11 Affordable housing targets	✓
Policy 3.13 Affordable housing thresholds	✓
Policy 5.2 Minimising carbon dioxide emissions	✓
Policy 5.3 Sustainable design and construction	✓
Policy 5.9 Overheating and cooling	✓
Policy 5.10 Urban Greening	✓
Policy 5.11 Green roofs and development site environ	✓
Policy 5.13 Sustainable drainage	✓
Policy 5.16 Waste Net Self Sufficiency	✓
Policy 5.17 Waste Capacity	✓
Policy 5.18 Construction, excavation and demolition waste	✓
Policy 5.21 Contaminated land	✓
Policy 6.3 Assessing effects if development on transport capacity	✓
Policy 6.13 Parking	✓
Policy 7.1 Lifetime Neighbourhoods	✓
Policy 7.2 An inclusive design	✓
Policy 7.4 Local character	✓
Policy 7.14 Improving air quality	✓
Policy 7.15 Reducing and managing noise, improving and enhancing the acoustic environment and promoting appropriate soundscapes	✓
Policy 7.19 Biodiversity and access to nature	✓
Policy 8.2 Planning obligations	✓

Table 3-1 Compliance of Proposed Development with the London Plan sustainable development policies

3.4 The Mayor's draft New London Plan (December 2019)

The draft New London Plan was published for consultation on 1st December 2017 outlining the ambitions of the new Mayor of London with a priority to provide affordable homes whilst protecting the Greenbelt and investing in Green Infrastructure. On 13th August 2018 the Mayor published a version of the draft Plan that includes minor suggested changes. These suggested changes have been prepared following a review of consultation responses, and consist of clarifications, corrections and factual updates to the draft Plan that informed the Examination in Public (EiP). The EiP was carried out from January to May 2019 and an Intend to Publish version of the draft London Plan was published in December 2019[16]. In March 2020, the Secretary of State issued Directions requiring amendments to the Plan prior to adoption. The Mayor is currently considering how to proceed with the draft Plan as amended.

The project team has considered the Proposed Development in the context of the latest draft new London Plan with the amendments. The Proposed Development responds positively to many of the aspirations, and the long-term vision of the Mayor, as detailed in this Sustainability Statement. The policies displayed in Table 3-2 will be discussed in the context of this sustainability statement for Tottenham Mews, although it

[15] London Plan (March 2016) https://www.london.gov.uk/sites/default/files/the_london_plan_2016_jan_2017_fix.pdf

[16] Draft New London Plan - Intend to Publish version, December 2019 https://www.london.gov.uk/sites/default/files/intend_to_publish_-_clean.pdf

must be noted that the scheme is not referable to the Mayor and therefore there are only considered within the scheme's proposals where possible.

Draft New London Plan (emerging) Sustainable Development Polices	Proposed Development Compliance
Policy GG1 Building strong and inclusive communities	✓
Policy GG2 Making the best use of land	✓
Policy GG3 Creating a healthy city	✓
Policy GG4 Delivering the homes Londoners need	✓
Policy GG6 Increasing efficiency and resilience	✓
Policy D3 Optimising site capacity through the design-led approach	
Policy D5 Inclusive design	✓
Policy D6 Housing quality and standards	✓
Policy D7 Accessible housing	
Policy D11 Safety, security and resilience to emergency	✓
Policy D13 Agent of Change	✓
Policy D14 Noise	✓
Policy H1 Increasing housing supply	✓
Policy H4 Delivering affordable housing	✓
Policy H5 Threshold approach to applications	✓
Policy H6 Affordable housing tenure	✓
Policy H8 Loss of existing housing and estate redevelopment	✓
Policy H10 Housing size mix	✓
Policy S1 Developing London's social infrastructure	✓
Policy G5 Urban greening	x
Policy G6 Biodiversity and access to nature	✓
Policy SI1 Improving air quality	✓
Policy SI2 Minimising greenhouse gas emissions:	
• Be Lean – domestic (10% reduction)	✓
• Be Clean	✓
• Be Green	✓
• WLC	✓
• Zero-carbon target (≥35% beyond the Part L baseline)	✓
Policy SI3 Energy infrastructure	✓
Policy SI4 Managing heat risk	✓
Policy SI5 Water infrastructure	✓
Policy SI7 Reducing waste and supporting the circular economy	✓
Policy SI 8 Waste capacity and net waste self- sufficiency	✓
Policy SI10 Aggregates	✓
Policy SI12 Flood risk management	✓
Policy SI13 Sustainable drainage	✓
Policy T1 Strategic approach to transport	✓
Policy T2 Healthy Streets	✓
Policy T3 Transport capacity, connectivity and safeguarding	✓
Policy T4 Assessing and mitigating transport impacts	✓
Policy T5 Cycling	✓
Policy T6.1 Car parking	✓
Policy T7 Deliveries, servicing and construction	✓

Table 3-2 Compliance of Proposed Development with emerging New London Plan sustainable development policies

3.5 The Mayor's Sustainable Design and Construction Supplementary Planning Guidance (Apr 2014)

The Mayor's Sustainable Design and Construction Supplementary Planning Guidance[17] (referred to hereafter as 'the SPG') provides detailed guidance on how to implement The London Plan policies. The Proposed Development is classed as a 'major development' but is the offsite residential contribution to the proposed Network Building development on 95-100 Tottenham Court Road and is not a referable scheme.

The role of the SPG is to set clear targets and highlight efficient ways to reach these. Setting clear sustainability and performance targets helps shape the brief to which the design team will respond. The SPG sets out a number of 'priority' and 'best practice' standards that should be addressed by major new developments. All the 'priority' targets should be addressed by major development proposals whilst the SPG strongly encourages the 'best practice' ambitions to be adopted. The SPG recognises that implementing the guidance provided will enable the fullest contribution to sustainable design and construction by a development. The approaches should be adapted to the specific characteristics of the development.

Mayor's Sustainable Design and Construction SPG	Proposed Development Compliance
Sustainable design and construction	✓
Optimising the use of land	✓
Site Layout and design	✓
Energy and carbon dioxide emissions	✓
Energy demand assessments	✓
Use less energy	✓
Renewable energy	✓
Carbon dioxide off-setting	✓

[17] Mayor's Sustainable Design and Construction Supplementary Planning Guidance: https://www.london.gov.uk/sites/default/files/osd34_sustainable_design_construction_spg.pdf

Mayor's Sustainable Design and Construction SPG	Proposed Development Compliance
Monitoring energy uses	✓
Supporting a resilient energy supply	✓
Water efficiency	✓
Water saving measures	✓
Materials and waste	✓
Nature conservation and biodiversity	✓
Overheating	✓
Urban greening	✓
Surface water flooding and sustainable drainage	✓
Air pollution	✓
Noise	✓
Light pollution	✓

Table 3-3 Compliance of Proposed Development with CLP sustainable development policies

3.6 Camden Local Plan (July 2017)

The CLP adopted in July 2017[18], sets out the Council's vision, strategy, objectives and policies to cover the period from 2016 to 2031. It provides guidance on how to deliver the following objectives that address the biggest challenges for the borough: create the conditions for harnessing the benefits of economic growth, reduce inequality and secure sustainable neighbourhoods.

The policies displayed in Table 3-4 Compliance of Proposed Development with CLP sustainable development policies will be discussed in the context of this sustainability statement for Tottenham Mews.

Camden Local Plan Polices	Proposed Development Compliance
Policy G1 Delivery and location of growth	✓
Policy H1 Maximising housing supply	✓
Policy H2 Maximising the supply of self-contained housing from mixed-use schemes	✓
Policy H3 Protecting existing homes	✓
Policy H4 Maximising the supply of affordable housing	✓
Policy H6 Housing choice and mix	✓
Policy H7 Large and small homes	✓

Camden Local Plan Polices	Proposed Development Compliance
Policy C1 Health and wellbeing	✓
Policy C5 Safety and security	✓
Policy C6 Access for all	✓
Policy A1 Managing the impact of development	✓
Policy A3 Biodiversity	✓
Policy A4 Noise and vibration	✓
Policy D1 Design	✓
Policy CC1 Climate change mitigation	✓
Policy CC2 Adapting to climate change	✓
Policy CC3 Water and flooding	✓
Policy CC4 Air quality	✓
Policy CC5 Waste	✓
Policy T1 Prioritising walking, cycling and public transport	✓
Policy T2 Parking and car-free development	✓
Policy T3 Transport infrastructure	✓
Policy T4 Sustainable movement of goods and materials	✓

Table 3-4 Compliance of Proposed Development with CLP sustainable development policies

3.7 Camden Supplementary Planning Guidance (2018-2019)

The Local Plan includes supporting policies known as Supplementary Planning Guidance (SPG), which are defined as Camden Planning Guidance (CPG). These have been updated and adopted between 2018 and 2019. The policies displayed in Table 3-5 Compliance of Proposed Development with CGP sustainable development policies.

Camden Supplementary Planning Guidance	Proposed Development Compliance
CPG: Air quality[19]	✓
CPG: Amenity[20]	✓
CPG: Biodiversity[21]	✓
CPG: Design[22]	✓

[18] Camden Local Plan (July 2017): https://www.camden.gov.uk/documents/20142/4820180/Local+Plan.pdf/ce6e992a-91f9-3a60-720c-70290fab78a6

[19] CPG: Air quality: https://www.camden.gov.uk/documents/20142/4823269/Air+Quality+CPG+-+March+2019.pdf/6af88798-1d48-6c27-a238-b6b832c8ac46

[20] CPG: Amenity: https://www.camden.gov.uk/documents/20142/4823269/Amenity+CPG+Adopted+March+2018.pdf/ae2f2cbd-62a7-38b8-7be5-e92547bb66d3

[21] CPG: Biodiversity: https://www.camden.gov.uk/documents/20142/4823269/Biodiversity+CPG+March+2018.pdf/daf83dad-d68d-6964-99b4-aef65d639304

[22] CPG: Design: https://www.camden.gov.uk/documents/20142/4823269/Design+March+2019.pdf/ae6cf83c-5077-f930-cf77-846d3f6018eb

Camden Supplementary Planning Guidance	Proposed Development Compliance
CPG: Energy efficiency and adaptation[23]	✓
CPG: Housing[24]	
CPG: Planning for health and wellbeing[25]	✓
CPG: Transport[26]	✓
CPG: Water and flooding[27]	✓

Table 3-5 Compliance of Proposed Development with CGP sustainable development policies

[23] CPG: Energy efficiency and adaptation https://www.camden.gov.uk/documents/20142/4823269/Energy+Efficiency+and+Adaptation+CPG+-+March+2019.pdf/6732a28c-2c90-7101-c11e-3372e29e032d

[24] CPG: Housing: https://www.camden.gov.uk/documents/20142/231241308/Housing+CPG+-+Draft+July+2020.pdf/fe7253a2-52fb-ce35-0680-560dbee26962?t=1597150598620

[25] CPG: Planning for health and wellbeing https://www.camden.gov.uk/documents/20142/4823269/Planning+for+health+and+wellbeing+CPG+March+2018.pdf/6c953782-0a0b-13d1-3097-2383237e7054

[26] CPG: Transport https://www.camden.gov.uk/documents/20142/4823269/Transport+CPG+March+2019.pdf/6755f92a-5059-b1df-9c12-ffc02366c581

[27] CPG: Water and flooding https://www.camden.gov.uk/documents/20142/4823269/Water+and+Flooding+CPG+-+March+2019.pdf/c7633c7d-2b93-cb52-ee01-717fa0416e84

4.0 Sustainability Certifications

4.1 Background

As noted in the introduction, the Applicant is submitting a full planning application for the demolition of the existing building and the erection of a new building comprising basement levels and ground floor plus five upper storeys including office and residential uses, with cycle parking, servicing, refuse and plant areas. The building footprint is generally consistent throughout all levels.

In the context of a residential development the Home Quality Mark (HQM) One is the UK's first and most widely used holistic sustainability rating scheme for householders, and together with the equivalent commercial schemes for the built environment, such as BREEAM, has contributed to the emerging focus in the UK on sustainability in building design, construction and use. Through its application and use HQM One helps developers and householders measure and reduce the environmental impacts of their buildings and in doing so creates higher value, lower risk assets that support the environment and occupants' wellbeing.

The Applicant is keen to assess and reduce the design, construction and maintenance impacts of their portfolio on the environment by using this certification. To do so an HQM One pre-assessment was prepared and reported against during RIBA Stage 1 and 2 and can be found in Appendix B.

A formal BREEAM assessment was not considered appropriate for the office space located at ground and lower ground floor, as the area and scope for this portion of the building will be too limited for certification. However, best practice design, construction and operational strategies will be adopted to support the sustainability of the site.

4.2 Policy requirement

HMQ One is a voluntary certification and is not required by any planning policy at a national, regional or local level, although it is encouraged within Camden Planning Guidance - Energy[23]. Assessing against the HQM will support compliance with policies that focus on energy and water conservation, waste reduction and adaptation to climate change.

4.3 HQM One

The HQM is an independent environmental rating for new homes, that aims to go above and beyond the requirements set in Building Regulations. The assessment focus is to develop homes that meet the needs and expectations of occupiers while minimising the impact on the environment and reducing operational costs. The scheme's score is based on a simple rating divided in five levels or stars, the more stars a home achieves the higher the score.

This formal recognition of a home performance is now relevant more than ever, considering the quick cultural shift to working from home and digital learning adopted in the last few months as a result of the current pandemic.

The brief for Proposed Development embeds sustainable design as a driving principle. Tottenham Mews has been developed on best practice principles with a view to achieving a HQM One Level 4 (48%) rating as a minimum. The team have undertaken a HQM One pre-assessment to ascertain the potential rating and action early design criteria to ensure future flexibility and pursual of formal certification.

The scheme will be designed to reduce energy and water use through efficient building services systems, minimise waste and optimise materials efficiency and will test principles of the circular economy. At the same time, efficient building services have been proposed to contribute to improving local air quality and ensuring improved energy performance. Homes connectivity will be included in the design to support broadband and telecommunications uses.

The Applicant has appointed TFT as the HQM Assessor for the early stage of design development who has been responsible for ensuring the design team action early design considerations to achieve the targeted rating. A score summary taken from the pre-assessment has been detailed below (Table 4-1).

HQM - Pre-assessment Rating

Flat 1

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Target score
Our Surroundings	**153.0**	**0.0**	**67.0**	**0.00%**	**43.79%**
1 Transport and Movement	48.0	0.0	34.0	0.00%	70.83%
2 Outdoors	58.0	0.0	9.0	0.00%	15.51%
3 Safety and Resilience	47.0	0.0	24.0	0.00%	51.06%
My Home	**261.0**	**0.0**	**141.0**	**0.00%**	**54.02%**
4 Comfort	68.0	0.0	33.0	0.00%	48.52%
5 Energy	83.0	0.0	45.0	0.00%	54.21%
6 Materials	69.0	0.0	40.0	0.00%	57.97%
7 Space	24.0	0.0	15.0	0.00%	62.50%
8 Water	17.0	0.0	8.0	0.00%	47.05%
Delivery	**86.0**	**0.0**	**57.0**	**0.00%**	**66.27%**
9 Quality Assurance	33.0	0.0	19.0	0.00%	57.57%
10 Construction Impacts	31.0	0.0	25.0	0.00%	80.64%
11 Customer Experience	22.0	0.0	13.0	0.00%	59.09%
Total	**500.0**	**0.0**	**265.0**	**0.00%**	**53.00%**
Rating	-	-	-	**0 Star**	**4 Star**

Table 4-1 – HQM preassessment scoring summary

The scheme balances performance across the 11 categories performing particularly well under sections relating to Home Delivery (90%), Water Use (72%), Transport and Movement (71%) and Space (65%). In line with current CLP policy and planning guidance, the scheme also prioritises reducing energy use and promotes material optimisation, identifies opportunities to contribute to a circular economy and exemplary building performance during construction and operation. This supports the ethos and efforts of the CLP and CGP policy. For full details of the HQM One pre-assessment tracker with outlined Level 4 strategy targeting 53%, see Appendix B.

4.4 Policy Alignment

The HMQ One preassessment aligns with the requirements of the following statutory policies:

Policy Document	Policies
Draft London Plan	Policy SI2 Minimising greenhouse gas emissions
	Policy SI5 Water infrastructure
	Policy SI6 Digital connectivity infrastructure
Camden Local Plan	Policy CC2 Adapting to climate change
Camden Planning Guidance	CPG: Energy efficiency and adaptation
	CPG: Digital Infrastructure

The following chapters set out the response to key issues that demonstrate the sustainability, environmental, social and wellbeing performance of the Proposed Development.

5.0 Energy and Carbon Emissions

As per the Camden Local Plan sustainable development planning requirements, this section sets out the following information for the Proposed Development:

- Energy demand of the building including
  - energy efficiency measures (air tightness, energy efficient plant and light installations) and demand management measures (passive ventilation and solar shading)
  - low and zero carbon technologies (district heating, combined heat and power, air source heat pumps, photovoltaic cells, solar cells, ground source heat pumps) calculations of carbon emissions savings
- Whole life carbon assessment of the building including:
  - LCA methodology
  - Embodied carbon data.

5.1 Policy requirement

The Climate Change Act 2008, last updated in 2019, sets legally binding greenhouse gas emission reduction targets for the UK to deliver a net zero carbon economy by 2050 (with an interim target of 26% by 2020) and has positioned the UK on a transition to a low-carbon economy.

Within London, the GLA has set emissions targets for all major developments (defined as over 10 residential units and/or over 1,000 m^2 floor area). Following policy amendments adopted on 1st October 2016, all major developments must achieve a 35% regulated carbon reduction over minimum Building Regulations 2013.

The Mayor of London has committed to working with the construction industry to achieve a zero-carbon city by 2050. As one of 19 cities to initially sign up to the 'net zero carbon' pledge by 2050, there is an increasing shift from property developers and construction companies to prioritise low carbon design. In the draft New London Plan, Policy SI2 Minimising greenhouse gas emissions states that "major development should be net zero-carbon".

Within the adopted Camden Local Plan it is noted that the reduction of energy demand to minimise the effects of climate change is part of the strategic objective of the borough which set objective 9: "To make sure that development in Camden minimises its energy use by encouraging local efficient energy generation, achieving the highest possible environmental standards, and is designed to adapt to, and reduce the effects of, climate change".

5.2 Energy Demand Assessment

In support of the planning application, an Energy Statement that examines the potential for reduction of carbon emissions for the Proposed Development at Tottenham Mews, has been compiled on request of the Applicant by TFT.

Th London Borough of Camden (LBC) and the draft New London Plan have specific requirements with regards to improvements on operational carbon emissions in comparison to 2013 Building Regulations Part L. In line with the draft London Plan (Policy SI 2), any major development should aim to be net-zero carbon and demonstrate a minimum 35% improvement on Part L 2013 carbon emissions. Residential development should achieve 10 per cent through energy efficiency measures ("Be Lean" stage of the energy hierarchy). Where the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided as a carbon offset fund.

The Energy Strategy has been prepared in accordance with guidance outlined in the 'Greater London Authority guidance on preparing assessments (October 2018)' and with the further guidance set out in the 'Mayor's Sustainable Design and Construction Supplementary Planning Guidance (April 2014)' to comply fully with London Plan Policies 5.2 to 5.9. The Energy Statement demonstrates how the Proposed Development will comply with the LBC and GLA's policy requirement of a 35% minimum reduction of carbon emissions on 2013 Building Regulations Part L.

The GLA's hierarchical approach has been adopted which comprises four key principles for reducing regulated energy demand:

1. 'Be Lean' considers passive design measures to reduce energy demand;
2. 'Be Clean' explores how system efficiencies maximise the use of energy;

3. ‘Be Green’ identifies additional energy production opportunities through installation of low and zero carbon technologies.
4. ‘Be Seen’ monitoring and reporting of energy performance in operation to ensure actual consumption are in line with the GLA’s zero carbon target.

The GLA’s Energy Hierarchy is illustrated in Figure 5-1.

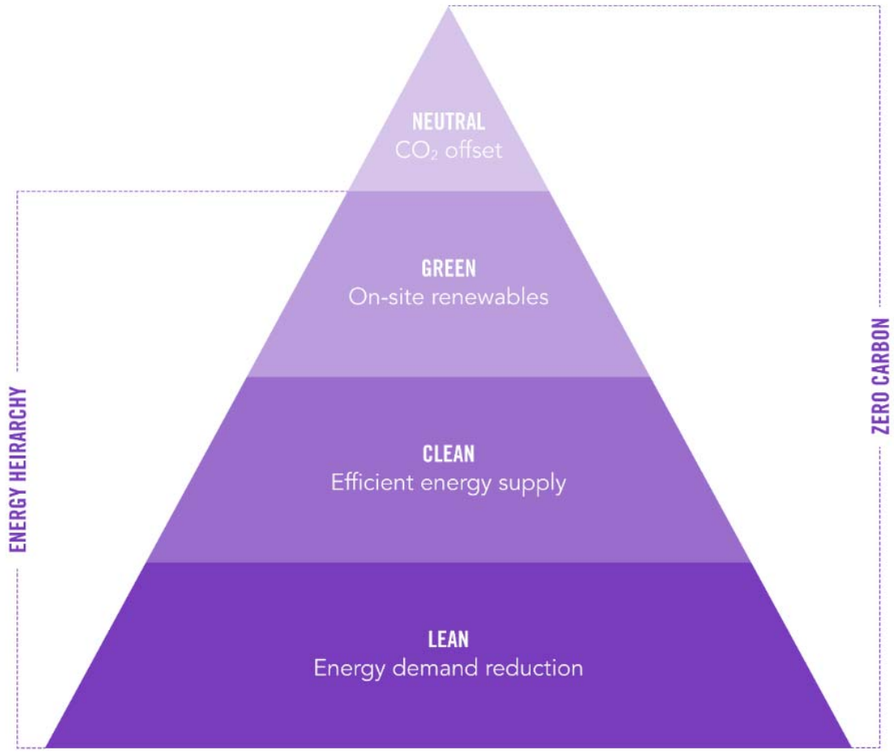

Figure 5-1 The GLA Energy Hierarchy

5.3 Carbon dioxide equivalent (CO_2e) emissions for a Part L 2013 Compliant Development

In order to predict and benchmark the carbon emissions of the Proposed Development, Part L 2013 calculations have been performed by using approved dynamic thermal modelling software (IES).

In line with GLA guidance on preparing Energy Statements, to establish the regulated CO_2 emissions for a Part L 2013 compliant development, it has been assumed that the heating for the notional building will be provided by gas boilers and any active cooling will be provided by electrically powered equipment. In addition, the assessment uses the latest SAP 10 Carbon Factors to reflect associated emissions of different fuel types.

5.4 Lean - Use Less Energy

Planning policy encourages development to achieve Part L 2013 Building Regulations requirements through design and energy efficiency alone, as far as is practically possible. In response, the Proposed Development has followed a fabric first approach and is designed with enhanced thermal envelope performance and envelope airtightness to reduce regulated energy demands of the Proposed Development and includes the following performance measures:

- Utilising building materials with good thermal performance and airtightness to reduce energy demand from heating and cooling (where applicable);
- Passive solar control measures are balanced through specification of high-performance solar control glass to limit solar gains in summer and to allow useful solar gains during heating period;
- High-efficiency Heating, Ventilation and Air Conditioning (HVAC) including heat pump system to provide renewable heating and domestic hot water (DHW), cooling (B1 use only) and balanced mechanical ventilation with heat recovery;
- High performance LED lighting is adopted throughout the development with improved controls such as occupancy sensing and daylight dimming in high density areas and where appropriate;
- A target air permeability rate of 3.0 $m^3/h/m^2$, surpassing Building Control requirements;

The design also follows the cooling hierarchy through the following measures:

- Selective solar control glazing (high light transmittance with low g-values) has been specified to prevent the excessive solar gains in summer;
- Fabric insulation and airtightness levels have been improved above Building Regulations requirements to reduce heat gains in the summer;
- Internal heat gains have been minimised where possible through energy efficient lighting design with automatic daylight and occupancy controls where applicable. Heat losses from distribution pipework and HIUs have also been significantly reduced through specification of high performance pipe insulation;
- The thermal mass of the occupied areas will absorb heat gains during the day through the use of concrete slab, internal masonry walls and structural columns. Ceiling height is maintained at 2.4m minimum to improve air circulation and reduce overheating risks;
- Although there are certain limitations associated with urban constraints (noise/pollution), the design includes manually openable windows. These will be supplemented by efficient mechanical ventilation system for fresh air provision;

- Mechanical ventilation with high efficiency heat recovery system has been specified. Ventilation plant has been designed to avoid excessively long duct runs and increased fan power. The system will circulate fresh air in the occupied zones and remove hot stale air from wet rooms. Boost mode operation of MVHR and summer bypass would also be available to increase fresh air supply during hot summer months
- No active cooling is specified for the Proposed Development, with the B1 office unit to be fitted out by tenant.

The carbon savings on regulated carbon emissions after the 'Lean' stage of the energy hierarchy for the Proposed Development is 5% (residential) and 18.9% (commercial), totalling a (7.3%) 2.1 tCO_2e/year saving site wide. The residential elements do not fully meet the emerging GLA's expectation for schemes to achieve a 10% reduction via 'Be' Lean' measures as required for referable scheme's to the mayor however the measures proposed balance energy efficiency with other considerations including noise (see section 10.0) and thermal comfort (see section 5.0).

For more details of the energy efficiency measures proposed for Tottenham Mews, refer to TFT's Energy Statement submitted as part of the planning application.

5.5 Clean - Energy Efficient Supply

In line with London Plan Policy 5.6 the Energy Statement details the considerations of decentralised energy and energy systems and explored:

- a connection to an existing district heating networks;
- connection to planned district heating networks;
- implementing a site wide private district heating network; and
- a combined heat and power (CHP) system.

There is currently no existing network within immediate reach of the Proposed Development. A future heat network has been identified more than 500m from the Proposed Development, which therefore does not offer an opportunity for connection when it becomes available. Due to the lack of existing district heating network in the vicinity, and the likelihood that any new system would take several years before it becomes available for connection, we believe it would be unreasonable to suggest allowances should be made for a future connection to this future heat network.

Responding to decarbonisation of the UK's electrical grid with the aim to reduce environmental impact the Proposed Development has been designed to be 100% electrically powered. At present, the proposal is to use a communal high-efficiency air source heat pump system to meet heating and DHW needs of the Proposed Development.

Combined Heat and Power (CHP), is the simultaneous generation of usable heat and power in a single process, utilising the heat produced in electricity generation rather than releasing it as waste. Typically, a good CHP scheme can reach efficiencies up to 85%, deliver an increase of around 20% in efficiency against the separate energy system it replaces, and can result in savings of up to 50% of the annual CO_2 emissions from a site. A CHP requires predictable and relatively constant loads for the best performance, as well as an adequate plant area for the associated equipment. Due to building's intended commercial use it is not considered to present a sufficient baseline heating load for a CHP to operate effectively. Several other limitations have been identified which make an on-site CHP option not appropriate for Tottenham Mews development:

• A gas-fired CHP running 24/7 would generate significant emissions on site which could potentially have an adverse impact on air quality; and

• The National Grid in the UK is decarbonising rapidly, and electrification becomes the most effective solution for carbon reduction strategies, while CHP cease to be a carbon-saving option for many projects

Adhering to the requirements within the emerging Draft New London Plan (Policy SI3), as a Major Development within a Heat Network Priority Area, it is required that the following technologies stated in the heating hierarchy are considered:

a) connect to local existing or planned heat networks – as identified in TFT's Energy Statement there is no existing or proposed heat networks in close vicinity of the site.

b) use zero-emission or local secondary heat sources (in conjunction with heat pump, if required) – no locally available secondary het sources were identified for the site. High efficiency central heating plant (heat pump) is proposed for the development offering opportunities to further reduce carbon emissions through decarbonisation of the grid.

c) use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network) – as identified a CHP option is not considered to be feasible for the development. Due to continuing decarbonisation of the electrical grid communal heat pump solution offers greater carbon savings for the development.

d) use ultra-low NOx gas boilers – all heating and hot water for the building is supplied by electrically powered non-combustion system, as such it is assumed there will be no NOx emissions associated with heating at the Proposed Development.

Therefore, there are no additional energy savings after the "Clean" stage of the energy hierarchy.

5.6 Green - Renewable Energy

The Energy Statement contains the feasibility appraisal of Low and Zero Carbon (LZC) technologies suitable for the Proposed Development to further reduce regulated carbon emissions over the 'Be Clean' scenario. LZC technologies that have been appraised are:

- Wind Turbines;
- Ground Source Heat Pumps (GSHP);
- Air Source Heat Pumps (ASHP);
- Solar Photovoltaic (PV) panels; and
- Solar Water Heating Systems.

Wind turbines: Turbines would require installing at roof level which would protrude from the highest point of the building, impeding height restrictions and views. A report by BRE highlighted inherent problems and the poor performance to date of urban micro wind installations. They are considered marginally viable in-built environments by the majority of small wind turbine manufacturers due to the relatively low (and turbulent) wind speed prevailing in an urban environment. The RenSMART windspeed database estimates a predicted wind speed of around 5.6 m/s @ 25m above ground level at the location.

Hence, due to the configuration of the site, the character of the location, the lack of space and the relatively low wind speed in this built environment, the use of these technologies is not considered to be feasible.

Ground Sourced Heat Pumps: Due to the nature of the project (building in a dense urban environment) there is no available ground space for incorporation of GSHP boreholes. In addition, the fact that the study would potentially have to be extended beneath the main road and adjacent buildings, significantly increasing the risk, cost and the complexity of the scheme, makes GSHP technology not suitable for this site. .

Air and Water Source Heat Pumps: Air and water source heating could provide a large proportion of Proposed Development's annual energy demand without a large space requirement for mounting equipment. Through the design of a highly efficient façade system, the space heating requirement for the building has been minimised, however a heat pump system could provide the space heating and the domestic hot water, serving all the basement showers and 'end of journey' facilities. The heat pumps shall use the evaporative cooling water storage tank as a source of heat and shall be capable of generating 60°C domestic hot water without the need for additional top-up

Air Source Heat Pumps providing space heating and domestic hot water is therefore a viable option for the Proposed Development.

Solar Photovoltaics (PVs): Photovoltaic Cells (PV) generate electricity from sunlight using semiconductor cells linked together to form a module. Electricity can still be generated in cloudy and overcast conditions, although more can be generated in direct sunlight. The conditions that provide optimal generation in the UK are with South facing panels with a 30°elevation and no overshadowing. The building has a significant roof area available for solar technologies which has been fully utilised by the proposed PV array (see Figure 5-2 below). It consists of 53no 300Wp PV panels tilted at 30° and facing Southeast. The array is projected to generate around 13,096kWh annually.

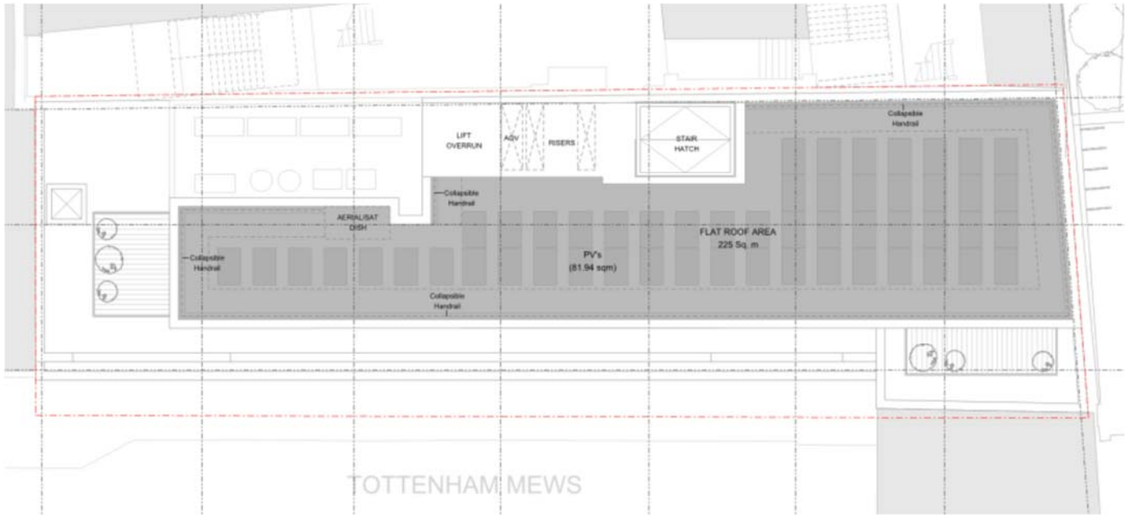

Figure 5-2– Proposed PV array

Solar water heating: Solar hot water systems are more cost efficient on buildings with a high demand for domestic hot water. All available roof space has been allocated for 53no PV panels. An alternative renewable solution in the form of the dedicated high efficiency heat pump is proposed for DHW provision.

In summary, the Proposed Development has the potential of benefiting from an ASHP for the space heating and domestic hot water requirements of the building. The carbon savings site wide for the "Green" stage of the energy hierarchy, are 15.9 tCO_2e/year constituting an additional 54% saving.

5.7 Seen – Energy Monitoring and Verification

In accordance with the London Plan Policy 5.2, developments should make the fullest contribution to minimising carbon dioxide emissions and should meet the 35% reduction targets on site unless clearly demonstrated that this cannot be met. Where 35% targets are not achievable on site, a cash in lieu contribution is required to the local authority to secure the delivery of carbon dioxide savings elsewhere.

The Proposed Development acknowledges that the New London Plan is expected to extend the zero-carbon standard to domestic buildings in the near future. In line with the emerging London Plan, the Energy Statement prepared by TFT confirms the following will be reported for a minimum of 5 years to ensure the actual operational performance will be in line with the GLA's zero carbon target:

- Building energy use (gas, electricity)

- Renewable energy generation
- Report on details of the building's energy storage equipment
- Performance of heating and cooling generation plant
- Carbon emissions and any carbon offsetting contributions.

The different savings at each stage of the energy hierarchy for the development are shown in Table 5-1.

Stage of the GLA Energy Hierarchy	CO2 Emissions (residential)		CO2 Emissions (Non-domestic)	
	Regulated emissions (tCO_2/yr)	Unregulated emissions (tCO_2/yr)	Regulated emissions (tCO_2/yr)	Unregulated emissions (tCO_2/yr)
Baseline	25.0	13.4	4.5	2.5
Be Lean	23.7	13.4	3.6	2.5
Be Clean	23.7	13.4	3.6	2.5
Be Green	8.1	13.4	3.4	2.5

Regulated CO_2 emissions savings	Residential		Non-domestic	
	Tonnes CO_2 per annum	%	Tonnes CO_2 per annum	%
Be lean: Savings from energy demand reduction	1.3	5%	0.8	18.9%
Be clean: Savings from heat network	-	-	0.0	-
Be green: Savings from renewable energy	15.6	63%	0.3	6.1%
Total cumulative savings	**16.9**	**68%**	**1.1**	**25.1%**
Annual savings from off-set payment	8.1	-	3.4	-
Shortfall in Regulated CO2 savings	**Tonnes of CO_2**		**Tonnes of CO_2**	
Cumulative savings from offset payment	**242**	**-**	**101**	
Cash-in-lieu contribution (based on £95/tonne)	**£22,973**	**-**	**£9,572**	

Stage of the GLA Energy Hierarchy	Combined Regulated carbon savings	
	Tonnes of CO_2 per annum	%
Baseline	29.4	-
Be Lean	27.3	7.3%
Be Clean	27.3	-
Be Green	11.4	54%
Cumulative on-site savings	18.0	**61.2%**

Table 5-1 Summary of regulated CO_2 savings from each stage of the energy hierarchy for non-domestic buildings

The scheme achieves a total regulated carbon emission reduction of 61% over Part L2 Building Regulations 2013 exceeding London Plan and Camden Planning Policy.

5.8 Seen – Energy Monitoring and Verification

The Mayor's Environment Strategy and the draft New London Plan also place an increasing emphasis on new non-domestic buildings to reduce regulated carbon emissions to deliver zero carbon developments. The Proposed Development acknowledges that the New London Plan is expected to extend the zero-carbon standard to non-domestic buildings in the near future. In line with the emerging London Plan, the Energy Statement prepared by Arup confirms the following will be reported for a minimum of 5 years to ensure the actual operational performance will be in line with the GLA's zero carbon target:

- Building energy use (gas, electricity)
- Renewable energy generation
- Report on details of the building's energy storage equipment
- Performance of heating and cooling generation plant
- Carbon emissions and any carbon offsetting contributions.

5.9 Monitoring Energy Use During Construction Phases

During the construction phase the demolition and Main Contractor, and their supply chain will adopt best practice monitoring of energy and water consumption, which could involve setting energy consumption targets and monitoring energy use including all utilities (electricity and natural gas), and liquid fuels on site.

The impact of innovative techniques can be demonstrated by including life cycle analyses for materials/processes or basic carbon footprinting. Energy monitoring will also form part of the Main Contractor's Site Environmental Management Plan (SEMP).

5.10 Policy Alignment

The Energy Statement and approach to reducing site wide operational carbon emissions demonstrates the following policies have been considered:

Policy Document	Policies
London Plan	Policy 5.2 Minimising carbon dioxide emissions
	Policy 5.3 Sustainable design and construction
	Policy 8.2 Planning obligations
Mayor's Sustainable Design and Construction SPG	Energy and carbon dioxide emissions
	Energy demand assessments
	Use less energy
	Renewable energy
	Carbon dioxide off-setting
	Monitoring energy uses
	Supporting a resilient energy supply
Draft New London Plan	Policy GG2 Making the best use of land
	Policy GG6 Increasing efficiency and resilience
	Policy SI3 Energy infrastructure
	Policy SI4 Managing heat risk
Camden Local Plan	Policy CC1 Climate change mitigation
	Policy CC4 Air quality
Camden Planning Guidance	CPG: Air quality
	CPG: Energy efficiency and adaptation

6.0 Water

This section sets out design information regarding the Proposed Development's strategies to embed energy efficient systems so that water use can be reduced. In addition, appropriate measures to mitigate and manage treats from flood events and surface water runoff.

Sustainable drainage systems (SuDS) can reduce the impact of urbanisation on watercourse flows, ensure the protection and enhancement of water quality and encourage recharging of groundwater in a manner which mimics nature. The NPPF requires that surface water be managed in a sustainable manner and mimic surface water flows arising from the site prior to the Proposed Development, whilst reducing flood risk to the site itself and elsewhere, taking climate change into account.

6.1 Background

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change and the ability of countries to deal with the impacts of climate change[28]. The Met Office's annual State of the UK Climate report 2019 [29] confirms that the UK's summers are becoming hotter with 2018 as the seventh warmest year for the UK since the 1880s, and the most recent decade (2009–2018) has been on average 0.3°C warmer than the 1981–2010 average and 0.9°C warmer than 1961–1990. UK winters are becoming warmer and wetter, with six of the ten wettest years for the UK since the 1800s have occurred since 1998.

The intensity and frequency of extreme weather has significant consequences on our built environment and these risks need to be actively managed. With one or more types of extreme and diverse weather events occurring annually in the UK, buildings, infrastructure and urban landscape need to adapt to tolerate current and future predicted changes in the UK climate to minimise insurance premiums; disruption to business continuity and operation; and risks to health, well-being and productivity.

In support of a resilient London, developments need to be able to cope with long term climatic changes and associated extreme weather events, to reduce potential adverse impacts from typical climate resilience issues such as flooding and urban heat island (UHI) effect, but more widely to issues such as disruption to energy security, increased wind speeds, unusual subsidence and more, and the associated risks these extreme issues bring for maintenance, insurance, tenancy voids from uncomfortable and unhappy tenants.

6.2 Policy Requirements

The following planning policies and technical standards identify the requirements to prepare a Surface Water Drainage Statement:

- Planning Practice Guidance (PPG)
- GOV.UK Sustainable Drainage Systems: Non-statutory Technical Standards
- The New London Plan
- London Borough of Camden Advice Note on contents of a Surface Water Drainage Statement
- Camden's Strategic Flood Risk Assessment (SFRA) 2014.

6.3 Flooding Risk

Elliott Wood Partnership Ltd has undertaken a flood risk review (FRA) identifying associated flood risks from all sources and has created a Drainage Strategy which outlines proposals to effectively manage surface water run-off and future on site flood risks. The site is less than 1 ha and is located within Flood Zone 1: low

[28] United Nations Framework Convention on Climate Change http://unfccc.int/paris_agreement/items/9485.php

[29] Met Office, State of the UK Climate Annual Report 2019, https://rmets.onlinelibrary.wiley.com/doi/full/10.1002/joc.6213

risk of flooding from fluvial and tidal sources. In addition, this site is not within an area identified by the Lead Local Flood Authority as having critical drainage issues. For these reasons, a full FRA report is not deemed necessary.

6.4 Drainage Strategy

To define the Proposed Development's drainage strategy the following hierarchy has been considered:

1. Store rainwater for later use
2. Use infiltration techniques, such as porous surfaces in non-clay areas
3. Attenuate rainwater in ponds or open water features for gradual release
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release
5. Discharge rainwater direct to a watercourse
6. Discharge rainwater to a surface water sewer/drain
7. Discharge rainwater to the combined sewer.

Following the above hierarchy and the requirements from Building Regulations the following measures have been discarded due to site constraints or building typology:

- Rainwater harvesting system (RWHS)
- Infiltration techniques such as soakaways
- Open water features
- Permeable surfaces
- Tanked systems.

The drainage strategy for the Proposed Development will include a combination of a green and blue roof which will contribute to minimising the site's UHI effect and helping reduce the total and peak surface water discharge from the site. This will subsequently avoid the need for a below ground attenuation or attenuation in the basement which would require pumping which is not considered good practice due to the increased risk of flooding.

The Camden Advice Note states that developments should aim to achieve greenfield runoff rates, which are very low and not feasible for the site of the Proposed Development. In this case the council requires that a minimum 50% reduction in run off rate across the development is achieved. The strategy to achieve this requirement is to install a blue roof. Following to initial calculation it has been considered that a total of 364m^2 will be destined to the blue roof systems. An unrestricted area of 176m^2 located at ground floor within the site boundary that can't be used for an attenuation measure have been considered in the surface water run off rate calculations.

Return Period	Existing runoff rate (l/s)	Proposed runoff rate (l/s)	Percentage betterment (%)
Peak 1 in 1-year	5.0	1.9	62%
Peak 1 in 30-year	12.4	4.6	63%
Peak 1 in 100-year	16.1	5.9	63%
1 in 100 years + 40% Climate Change	n/a	7.6	>63%

Table 6-1 Calculated existing and proposed surface water discharge rates from the site

The proposed runoff rate shows a significant betterment from the existing case and will exceed the minimum target of 50% improvement over the existing runoff rates, including a climate change scenario, at all times.

Considering there are no nearby accessible water courses surface water generated from site will be attenuated by the blue roof and unrestricted areas before discharging at a restricted rate to the Thames Water combined water sewer in Tottenham Mews.

6.5 Water Efficiency

A RWHS was considered for the site but discarded as it does not offset the limited quantity of water it removes from the surface water drainage system, in the context of the Proposed Development, for which water efficient measures will make a greater difference in water conservation.

Following the national and local policies and the requirements of HQM One the site will be designed to meet a water consumption target of less than or equal to 110 litres per person per day, calculated in accordance within the HQM methodology (without specifying rainwater or greywater systems) where all water fitting categories in the optional fittings standard have been met. This is equivalent to 8 HQM credits under the "water efficient fittings" requirement. A water calculation has been undertaken following HQM One's methodology and can be found in Appendix C detailing a typical units internal water consumption in line with LBC and HQM.

Construction

In line with the requirements of the Applicant, HQM One and industry best practice, the water consumption will be recorded by the Main Contractor and reported monthly to the sustainability coordinator during construction.

Every effort shall be put in place by the Main Contractor to minimise the amount of water used during construction site activities, including welfare set up, and to avoid any pollutants from site activities being released in the water stream.

6.6 Policy Alignment

The overheating analysis, the Landscape and public realm strategy, the FRA and the Drainage Strategy align with the requirements set out in:

Policy Document	Policies
London Plan	Policy 2.18 Green Infrastructure
	Policy 5.3 Sustainable design and construction
	Policy 5.10 Urban Greening
	Policy 5.13 Sustainable drainage
	Policy 7.19 Biodiversity and access to nature
Draft New London Plan	GG6 Increasing efficiency and resilience
	D11 Safety, security and resilience to emergency
	G1 Green infrastructure
	G5 Urban greening
	G6 Biodiversity and access to nature
	G7 Trees and woodlands
	SI 4 Managing heat risk
	SI 5 Water infrastructure
	SI 12 Flood risk management
	SI 13 Sustainable drainage
Camden Local Plan	Policy A3 Biodiversity
	Policy CC1 Climate change mitigation
	Policy CC2 Adapting to climate change
	Policy CC3 Water and flooding
Camden Planning Guidance	CPG: Air quality
	CPG: Biodiversity
	CPG: Energy efficiency and adaptation
	CPG: Trees
	CPG: Water and flooding

7.0 Materials & Waste

This section sets out the policy and applicant requirements in terms of materials and the industry best to reduce carbon impacts on the construction industry and procure materials and products that have a responsible and transparent supply chain. A circular economy hierarchy is proposed in this section that will be applied at later stages of the design and construction process.

7.1 Background

Materials and circular economy issues are quickly becoming a key material consideration for all major planning applications in an attempt to reduce the amount of virgin resources, and the corresponding carbon, energy and waste generated for each unit of manufactured material, that are required for new buildings.

To reduce the environmental impacts of the proposals, the design team will consider the principles of materials optimisation and opportunities to contribute to a circular economy in construction for the Proposed Development. Figure 7.1 shows the circular economy concepts that will be consideration and the synergies with several other sustainability aspects such as sustainable procurement.

7.2 Policy Requirement

The scheme is not referable therefore is not proposed to align fully with the draft New London Plan Policy SI 7. A circular economy statement has not been prepared however principles of circularity have been applied during the early design process which will be further developed during later deisgn stages.

There is an acknowledgement that the circularity of the Proposed Development will largely be a function of:

- Mindful materials selection and specification during Stages 3 and 4 to ensure low carbon and high recycled content products are prioritised, wherever possible;
- Careful management of the existing materials on the site during demolition and deconstruction;
- Minimisation of waste from new materials brought on to site for the construction stage and minimisation through designing out waste.

7.3 Circular Economy Aspirations

The design team have an aspiration to ensure that the Proposed Development comprises elements of circularity. For this reason, the team will focus on the following circular economy principles as appropriate, to avoid the depletion of new natural resources and close the waste gap:

- Reduce the need for new materials by:
  - Optimising the design
  - Design the space and use products that allow for high intensity usage and easy repair
  - Reduce or return shipping packaging
- Reuse materials on site
- Reuse materials from other sites
- Return excess of new materials to the supplier via a ‘take-back’ scheme.
- Procure materials with recycled content and that are recyclable
- Procure leased materials that can be returned to suppliers at the end of their useful life for recycling within their own manufacturing process.
- Recycle construction waste at its highest value possible
- Recover energy from waste items that can’t be recycled

- Avoid landfill and incineration without energy recovery in all possible instances.

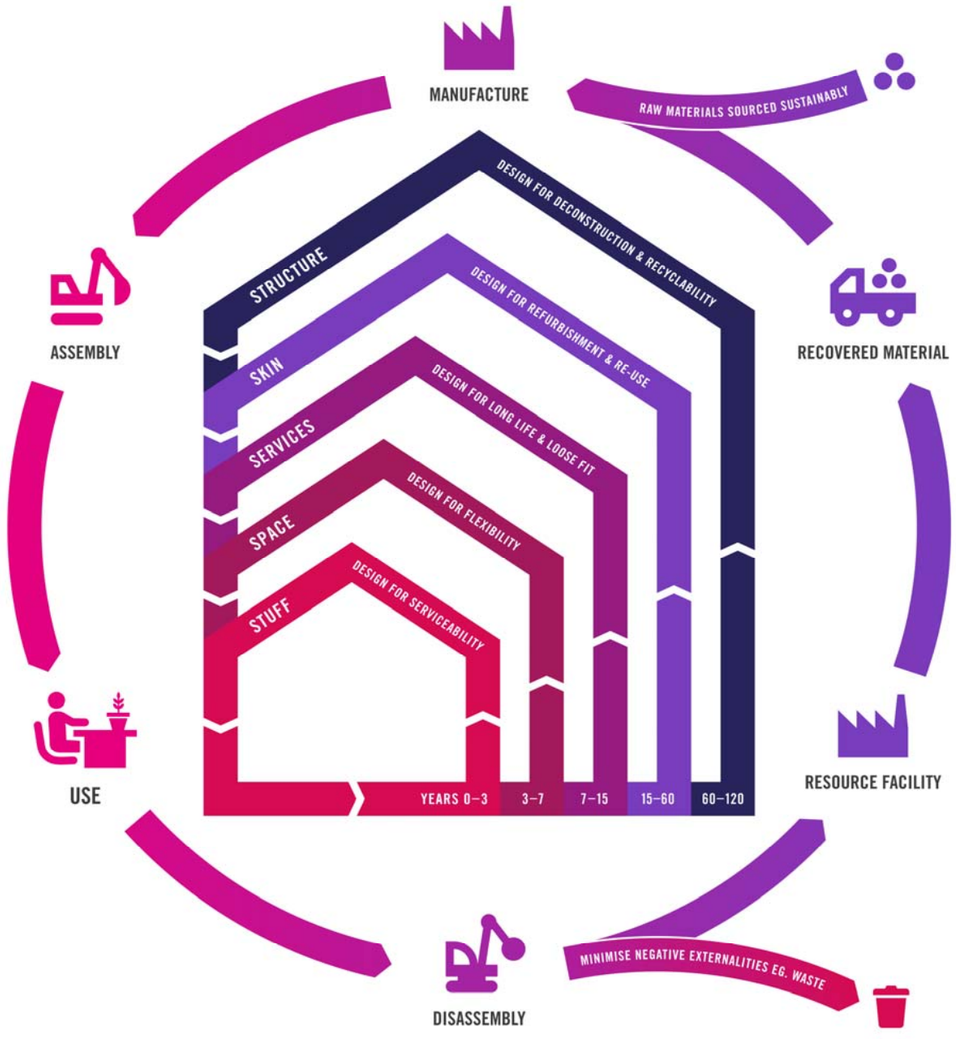

Figure 7-1- The Circular Economy Hierarchy

The circular strategy for the Proposed Development will also focus on the future flexibility of the building and how their components could be adapted to different uses, easily maintained and/or disassembled following the strategies below, as applicable:

- Accessibility to ease maintenance
- Durability
- Exposed and reversible connections
- Layer independence
- Avoidance of unnecessary toxic treatments and finishes
- Standardisation to accommodate reuse and upgrading.

Construction

To support a sustainable procurement of materials during construction it is recommended that the Main Contractor will prepare a site waste management plan (SWMP) to be used together with a project specific Resource Management Plan (RMP) during the procurement and construction process.

The waste generated during strip-out and construction shall be monitored and recorded by the Main Contractor and the data shall be reported monthly to the project sustainability coordinator. If any material is identified during the strip out that can be reused onsite or offsite at its highest value, this should be salvaged by the Main Contractor instead of being destined to the waste stream.

In conclusion, the Proposed Development will be further explore this issue in later design stages and during the construction phase to set targets and maximise circular outcomes in order reduce the amounts of virgin materials required for the build.

These strategies are also in line with the targeted HQM One credits for responsible sourcing and environmental impact reduction.

7.4 Waste

The construction waste arising from the site will benefit from the adoption of one or more of the circular economy strategies proposed, mostly if stripped out materials can be reused, as the total amount of construction waste could be reduced. This will support policy requirements and help the project comply with the HQM One targets for waste reduction and diversion from landfill.

The waste generated during demolition and construction shall be monitored and recorded by the Main Contractor and the data shall be reported monthly to the project sustainability coordinator.

7.5 Policy Alignment

This material and waste strategy aligns with the below planning requirements:

Policy Document	Policies
London Plan	Policy 5.16 Waste Net Self Sufficiency
	Policy 5.17 Waste Capacity
	Policy 5.18 Construction, excavation and demolition waste
	Policy 5.3 Sustainable design and construction
Camden Local Plan	Policy CC1 Climate change mitigation
	Policy CC5 Waste
Camden Planning Guidance	CPG: Design

8.0 Land Use and Biodiversity

This section sets out the impact of the Proposed Development on the land use and its overall approach to improving the ecology and biodiversity value of the site. The main design strategy is to maximise the footprint of the site and the massing in order to deliver additional residential floorspace, whilst also supporting the site-specific habitats. The roof top of the new built development aims to deliver a green area that can support local biodiversity.

8.1 Background

London has limited land reserves, so it is important to make efficient use of the land contained within the site boundary. Within London, particularly Central London, open space and green space is also limited, with most green space within Camden originating from part of Regent's Park and urban gardens such as Malet Street Gardens, Crabtree Fields and Fitzroy Square Garden which create small green pockets across the borough.

Developments which can make significant contributions to the increase in open green space are encouraged by the CLP and the GLA. Green infrastructure features can be challenging to achieve with urban environments, as their purpose is to link habitats for flora and fauna to network across an area. However, within urban settings, effective provision can be made for insects, particularly pollinating insects, and birds through mindful planting schemes and adequate roosting habitat.

8.2 Policy Requirements

The adopted and emerging policy points to urban greening and ecological enhancement being a high priority for new London developments. The draft New London Plan includes progressive policies for green infrastructure, urban greening, biodiversity and access to nature. In addition, the CLP and CGP include requirements for biodiversity protection and enhancement which the Proposed Development also satisfies.

It has been recognised that the site is not part of any statutory or non-statutory designated nature conservation area within the borough. However, there are five non-statutory sites designated as Sites of Importance for Nature Conservation (SINC) within 1km radius from site e.g. Gordon Square.

In addition, there are no European or national statutory sites located within a 1km radius of the site.

8.3 Land Use, Site Layout and Building Design

The Proposed Development is located within an intensely urban environment, bounded by commercial properties. The proposed new building occupies 100% previously developed land.

To optimise land use efficiency, in accordance with The London Plan and draft New London Plan, the scale and massing have been carefully considered taking into account daylight, views, and existing noise sources. This will also support the development of additional homes within the borough as required by the CLP and CPG.

A Preliminary Ecological Appraisal (PEA) has been undertaken to assess the baseline ecological information about the site and identify any constraints and opportunities linked with the Proposed Development. The PEA highlighted the role of the existing site in the surrounding area's habitat, and proposed mitigation measures and strategies to support the local fauna, where required. These are detailed in the PEA that has been submitted as part of this planning application.

8.4 Biodiversity

The existing building on site alongside the Proposed Development has been considered as suitable to support breeding birds. The habitats identified are of ecological importance at site level only and will not be able to support wider ecological corridors within central London.

In light if this the PEA recommends mitigating the impacts of the demolition and construction works by implementing measures to minimise disruption to breading birds during nesting season. Demolition of the existing building should be undertaken between September and February, avoiding the main bird nesting season (which runs from March to August). The Main Contractor works will need to follow the best practice recommendation by the PEA report and the CIRIA portal.

Recommendations to enhance the biodiversity value of the site in accordance with national and local planning policies comprise the inclusion of a green walls, Sustainable Drainage System (SuDS) and biosolar green roof combining the proposed PV system with a biodiverse green roof.

In addition, to support the biodiversity requirements of applicable planning policies site ecology considerations will be given by introducing soft landscaping. This will aim to introduce native species and wildlife planting and include a high diversity of plant types, rich in pollen for insects, and consider shrubs as well as smaller species such as grass and flowers. In addition, the installation of bird boxes to support the fauna in close proximity to the habitats provided above will be considered.

The application of the above strategies will provide an enhancement of the site for birds and bats, contributing to Camden, London and UK wide biodiversity objectives. These strategies will be considered in the next stages of the design.

The urban greening factor (UGF) calculated for The Network Building planning submission confirms 0.22. Despite the site not being adjacent the introduction of biodiversity enhancement strategies will support wider ecological enhancements being proposed by the Applicant.

8.5 Policy Alignment

The Proposed Development makes a significant contribution and complies with to the following policies:

Policy Document	Policies
London Plan	Policy 2.18 Green Infrastructure
	Policy 5.3 Sustainable design and construction
	Policy 5.10 Urban Greening
	Policy 5.11 Green roofs and development site environ
	Policy 5.13 Sustainable drainage
	Policy 7.19 Biodiversity and access to nature
Draft New London Plan	G1 Green infrastructure
	G5 Urban greening
	G6 Biodiversity and access to nature
Camden Local Plan	Policy A3 Biodiversity
	Policy CC2 Adapting to climate change
Camden Planning Guidance	CPG: Amenity
	CPG: Biodiversity
	CPG: Design

9.0 Transport

This section sets out the design response of the Proposed Development to sustainable transport in order to encourage residents, visitors and office occupants to use lower carbon methods of travel including walking, cycling and public transport and avoid the use of private car travel. The approach to delivery, servicing and logistics is also relevant and requires consideration in the context of reducing journeys, congestion and idling.

The central location of the Proposed Development with its accessibility to a wide range of public transport facilities and opportunities for active modes of transport makes the case that the site is highly suited to the proposed residential and office uses. This is also supported by the car-free nature of the proposal.

9.1 Background

Low carbon transport is a key focus for a healthy city. Fewer fossil fuel vehicles on the road, and a reduced reliance on car travel, will benefit the local community by reducing congestion and improving air quality and moving London towards becoming a zero-carbon city. The London Environment Strategy[30] aims for London to be a zero-carbon city by 2050 with clean transport being a priority area of focus. Greater uptake of low carbon transport that requires physical activity, such as walking and cycling, also has an impact on public health and should be encouraged and fostered. Encouraging walkability and cycling reduces reliance on private cars but also alleviates pressure on the public transport system, particularly at peak times, both of which contribute to congestion, reduced air quality and increased noise pollution.

9.2 Policy Requirements

The Mayor's Transport Strategy (March 2018) sets out a range of policies and proposals that aim to create healthy streets and healthy people with the aim for 80% of trips in London to be made on foot, by cycle or using public transport by 2041.

The policy context expands within the London Plan, New London Plan, CLP and CPG with the aim to reduce traffic and road congestion and support the population's health by improving accessibility and safety of active ways of travel.

9.3 Accessibility and Public Transport

The Proposed Development is located in a highly accessible area of central London benefitting from a wide variety of public transport services. Access to local buses near the Proposed Development also facilitate shorter journeys by public transport, with thirteen bus lines stopping within 300 meters from the site.

It is a short walk to the transport hubs at Goodge Street (280m), Warrant Street (750m), Tottenham Court Road (750m), and Great Portland Street (800m) stations. This provides access to the following underground lines within 10 minutes' walk from the site: Northern, Victoria, Central, Hammersmith & City, Circle and Metropolitan Line.

The Bakerloo and Piccadilly line are also accessible within a 16-minute walk from site respectively via Regents Park and Russel Square. These stations facilitate medium to long commutes into central London for work and leisure purposes.

Further rail network accessibility for national and international travels is available within 16- and 20-minutes' walk from site via Euston and Kings Cross St. Pancras Stations.

The Public Transport Accessibility Level (PTAL) is a measure of the accessibility of a point of interest to the public transport network, considering walk access time and service availability. The score is categorised in six levels, 1 to 6 where 6 represents an excellent level of accessibility and 1 a poor level of accessibility. The results of a PTAL calculation show that the Proposed Development site has a PTAL of 6b, the highest level achievable.

[30] London Environment Strategy, GLA. https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf

9.4 Walkability

To improve the site's walkability, accessibility to Bedford Passage, which historically connected Cleveland Street and Charlotte Street, will be reinstated. This will provide pedestrian and cycle route connections along Foley Street and Chitty Street, opening up the site.

This intervention will be possible by rounding off the building's office corner at ground floor. The passage will be covered by the upper floors creating an undercroft that will protect the office entrance from extreme weather. This portion of the site will effectively be given back to the public realm and will increase the pedestrian and cycle permeability and connectivity of the area. The redevelopment of the site will sponsor a stronger connection between the northern and southern ends of Tottenham Mews, with the northern end benefitting from an enhanced public realm access to the Mews.

9.5 Cycling

The Proposed Development have considered promoting cycling to reduce reliance on public transport as well as a response to Covid-19. The site is surrounded by several cycle routes, the nearest of which is a Quietway route operating along Malet Street. In addition, cycle superhighway No. 3 operates along Euston Road offering access between Euston station and King's Cross station.

A number pf public cycle parking (Sheffield stands) and cycle hire docking stations are available within 30 metres from the site.

The Proposed Development will also provide on-site secured cycling facilities. These will be separate for the residents and the office users. The office will be serviced by a cycling parking facility at ground floor, while the residential cycle parking will be provided at basement level accessible via lift. An additional two cycle/mobility scooters parking spaces are provided at ground floor that can be used by the building's residents.

It is proposed to provide 44 cycle parking spaces in the basement and 2 mobility scooters/ cycle parking for visitors on the ground floor for the building's residents, which is three more than is required by GLA. At the same time 6 cycle parking spaces will be provided for the office users, exceeding the GLA requirements of 2 parking spaces.

Type of cycle stand	Provided for	Number of spaces	GLA requirements
Two Tier Rack	Office	6	4
Mobility scooters/ Visitors parking	Residential	2	2
Sheffield Stand	Residential	44	43
Total	-	52	49

Table 9-1 Long Stay Cycle Provision

9.6 Parking

The Proposed Development will be "car free" as a way of promoting and incentivising more sustainable and lower carbon means of transport. This approach is considered appropriate due to the high accessibility to public transportation and walkable and cyclable ways.

There are three on-street disabled parking bays available to the local community on Tottenham Street, approximately 45 metres from the site. As the residents and visitors of 14-19 Tottenham Mews will be able to use these as needed, no accessible car parking will be provided on site or on-street in Tottenham Mews.

9.7 Servicing and Logistics

A Delivery, Servicing, and Waste Management Plan (DSWMP) was prepared to manage the servicing and waste strategies for the site in order to ensure these are undertaken successfully, without conflict between vehicles and or pedestrians, and without adversely impacting the local highway network. The aim of the strategy is to manage deliveries as follows:

- Time deliveries to avoid multiple arrivals at any one time
- Prioritise deliveries undertaken by small to medium sized vehicles e.g. bicycles, motorbikes, and vans, and using electric or hybrid vehicles where possible
- Switch off the engine when vehicles load or unload
- Consolidate deliveries and share suppliers, where possible to reduce deliveries numbers.

Considering the site size constraints, vehicle access into the building will not be possible. As a consequence, all deliveries and waste collection will be undertaken from sections of single yellow line kerbside within Tottenham Mews. This will follow the consolidated process applied to the rest of the Mews. Deliveries will be undertaken via the relevant entrance for the residential units and office space.

The site is located within Camden's Controlled Parking Zone CA-E which applies time controls on permit holder bays Monday to Saturday between the hours of 08:30-18:30. Loading is allowed an unlimited time before 11.00 and after 18.30. Between 11.00 and 18.30 heavy goods vehicles (3.5 tonnes and above) can load or unload for up to 40 minutes, cars and light goods vehicles for up to 20 minutes.

The waste storage located at ground floor, will also be divided for the office and residential units and collection will be undertaken by the waste collection operatives from the waste storage entrances on Tottenham Mews. Waste collection will be undertaken privately for the office to enable a collection that can be timed outside of peak delivery times. This will also allow for multiple collections per week if such a demand for waste collection is required. Residential waste will be collected by London Borough of Camden as part of the weekly collections for other residential buildings in the area.

9.8 Travel Plan

A Travel Plan has been produced in support of this planning application and will help to encourage sustainable trips and travel choices to and from the Proposed Development.

To continue to promote the health and fitness benefits of active travel to all users and increase the office occupant's awareness of the advantages and accessibility of alternative modes of transportation a Travel Plan Coordinator (TPC) will be appointed when the site is occupied. The TPC will be responsible for all aspects of the Travel Plan including:

- Overseeing the management, development, implementation, monitoring and review of the Travel Plan
- Liaison with employees
- Managing the development and implementation of the Travel Plan measures
- Promoting the objectives and benefits of the Travel Plan
- Monitoring the success of the Travel Plan against the agreed targets.

The TPC roles also include explaining the purpose of the Travel Plan and the opportunities it offers.

In addition, a baseline travel survey will be undertaken within 3 months from occupation. Travel mode share targets for staff in the Proposed Development have been set at completion, first, third and fifth years with percentages for transportation mode split variation as follows:

Target for employees	Indicator	Transport mode split			
		Year 0	Year 1	Year 3	Year 5
Achieve a 3% increase in the mode share for walking	Modal Split monitoring surveys for walking	6%	7%	8%	9%
Achieve a 3% increase in the mode share for cycling	Modal Split monitoring surveys for cycling	7%	8%	9%	10%
Achieve a 6% decrease in the mode share of public transport	Modal Split monitoring surveys for public transport	86%	84%	82%	80%
Increase the awareness of cycling and walking as viable options available to access the Site.	No surveys necessary	-	-	--	-

Table 9-2 Travel Plan targets

The TPC will make sure that details of the local facilities for sustainable transport are available to occupiers.

The following could be used to share information with the building occupants:

- Notice boards
- Newsletters
- Travel Information Pack
- Internet / intranet developments
- E-groups and forums.

Employees will be provided with appropriate travel advice to ensure that visitors are aware of the available sustainable travel modes other than the private car wherever possible, so that they can make an informed decision. Where travel by private car is required, information will be provided so that visitors can be directed to the nearest appropriate on-street spaces.

Travel Plans are normally monitored on a five-year cycle, and comprehensive surveys are not necessary on an annual basis after the initial baseline survey. It is recommended to undertake an annual review using "snapshot surveys" which will be completed in-house and as a minimum should include the core TRAVL (now incorporated into TRICS) questions. The questionnaire will cover the following areas of information:

- Typical arrival and departure time in/out of the development
- Origin and destination postcodes (full if known)
- Main mode to/from place of work – form of travel used for the greatest amount of time
- Final mode to/from place of work – the last form of travel used before arriving at the development
- Journey time and distance to/from place of work
- Time to walk to the development (if applicable)
- If the respondent has a disability affecting their travel to/from work.

The Travel Plan will be monitored for the first five years of the Proposed Development. Afterwards an updated and improved plan should be prepared. The London Borough of Camden will be provided with a copy of the yearly monitoring report and invited to share feedback.

9.9 Policy Alignment

Facilities to support sustainable transportation will be provided in line with the requirements of the CLP (July 2017) and the Draft London Plan (December 2019).

Policy Document	Policies
London Plan	Policy 6.10 Walking
	Policy 6.13 Parking
	Policy 7.1 Lifetime neighbourhoods
Draft New London Plan	Policy T1 Strategic approach to transport
	Policy T2 Healthy Streets

Policy Document	Policies
	Policy T3 Transport capacity, connectivity and safeguarding
	Policy T4 Assessing and mitigating transport impacts
	Policy T5 Cycling
	Policy T6 Car parking
	Policy T7 Deliveries, servicing and construction
Camden Local Plan	Policy C6 Access for all
	Policy A1 Managing the impact of development
	Policy D1 Design
	Policy T1 Prioritising walking, cycling and public transport
	Policy T2 Parking and car-free development
	Policy T3 Transport infrastructure
Camden Planning Guidance	CPG: Air quality
	CPG: Design
	CPG: Planning for health and wellbeing
	CPG: Transport

10.0 Pollution Management

This section sets out the risks posed by the Proposed Development's design, construction and operation to the following aspects of pollution:

- impacts on land contamination
- external air quality, including dust, particulates and nitrous oxide emissions
- internal and external noise
- impact on night-time light pollution.

10.1 Background

London has limited land reserves, so it is important to make efficient use of the land contained within the site boundary. In addition, treating the contaminated soil so that these can be used again is an opportunity to efficiently deal with hazards to the environments and the community's health.

London's poor air quality and iconic smog of the 1950s have improved since thanks to a steady reduction of burning solid fuels in homes and limits on pollution from industry. However, with an estimated 28,000 – 36,000 deaths each year attributable to human-made air pollution in the UK[31], more action is needed to improve outdoor air quality.

Research suggests that exposure to noise sources, such as traffic and transportation have been shown to hinder the health and well-being of people in a number of different ways such as elevated stress levels, sleep disturbance, cardiovascular diseases and general occupant dissatisfaction. Protection of the Proposed Development from existing noise source and minimisation of noise and vibration nuisance from the Proposed Development uses and building services needs to be considered.

Light is the main driver of the visual and circadian systems and exposure to light stimulates the human body's circadian rhythm, which is the hormonal reaction that regulates the sleep-wake cycle. For this reason, access to daylight and electric light is paramount for people's wellbeing. External electric light is also important at night to support crime-free streets and discourage anti-social behaviors. At the same time, if this is not designed properly it might negatively affect wildlife species.

10.2 Policy Requirements

Land contamination can affect both the local environment, posing threats for the water streams supply and wildlife, and people's health. Risk of contamination shall always be mitigated to avoid harmful effects and contaminated soil shall be made good again so that can be used to support the local community.

Air quality within London is becoming an increasing concern for residents and businesses alike with many of the worst air quality areas within the country located within the capital. Media coverage, governmental attention and increasing research into the effects of poor air quality have led to a number of emerging policies looking to minimise air quality impacts from the construction and transport industry. Alongside the European Air Quality Directives[32] , Local Air Quality Management[33] and The Road to Zero[34] there are several local air quality strategy specific to London and the London Bourgh of Camden which include:

- Clearing the air: The Mayor's Air Quality Strategy (2010)[35];
- London' Environment Strategy 2018[36] ;
- GLA (2014): Sustainable Design and Construction SPG

[31] Review of interventions to improve outdoor air quality and public health https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_air_quality.pdf

[32] European Air Quality Directive 2008/50/EC (2008) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02008L0050-20150918

[33] DEFRA (1995) Local Air Quality Management (LAQM) - https://laqm.defra.gov.uk/

[34] The Road to Zero: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf

[35]Mayor of London (2010) Clearing the air: https://www.london.gov.uk/sites/default/files/Air_Quality_Strategy_v3.pdf

[36] Mayor of London (2018) Environmental Strategy https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf

- GLA (2014) The Control of Dust and Emissions from Construction and Demolition SPG[37]
- GLA (2018) Mayor's Transport Strategy.

The management of noise in central London is paramount for the wellbeing of the community. Encouraging the design and construction of right acoustic environments within and around a building is important to promote a good quality of life. An environmental noise survey and noise impact assessment has been undertaken in accordance with:

- Noise Policy Statement for England (NPSE)
- National Planning Policy Framework (NPPF)
- Planning Practice Guidance (ProPG)
- British Standard BS8233:2014
- British Standard BS 4142: 2014
- Local Authority requirements: assess the NOAL – No Observed Effect Level, LOAEL - Lowest Observed Adverse Effect Level, SOAEL – Significant Observed Adverse Effect Level of the site.

10.3 Land Contamination

Following identification of an asbestos risk of the existing NHS building, as flagged within the Asbestos Demolition Survey undertaken, a limited soil survey was undertaken in the outdoor areas of the site in August 2020.

Therefore, it has been decided to undertake a 30 meters deep intrusive borehole post-demolition survey to detect any soil contamination.

10.4 Air Quality

The Proposed Development is located in Camden's Air Quality Management Area (AQMA). This is due to the high concentrations of annual mean nitrogen dioxide (NO_2) and 24-hour mean particulate matter (PM_{10}), related to road traffic emissions, in the area.

The Government has set specific standards that have been adopted for the air quality assessment of the site. These can find below:

Pollutant	Time Period	Objective
Nitrogen Dioxide	1-hour Mean	200 µg/m^3 not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m^3
Fine Particles (PM10)	24-hour Mean	50 µg/m^3 not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m^3
Fine Particles (PM2.5)	Annual Mean	25 µg/m^3

Table 10-1 Air Quality targets

Operation

There are several measures to reduce local air quality impacts. A site-specific travel plan has been produced to promote the use of public transport, cycling and walking which minimises the 'air quality impact' of the Proposed Development. Specific measures include no on-site parking provision, which will minimise an increase in local road traffic. Therefore, it is considered that the AQMA thresholds will not be exceeded.

In addition, no centralised plant with gas boilers or diesel life-safety generators have been proposed as part of the development, hence there will be no exhaust flues. Heat and electric will be supplied using an air source heat pump (ASHP) and the mechanical ventilation provided for the dwellings and office space will have heat recover (MVHR) which will support a more efficient use of energy. These do not have any associated emissions to air, and there are no direct building emissions either. The strategy will support the operational air quality effect of the Proposed Development on the local are to be judged as "non-significant". As a consequence, it is considered that pollutant concentrations within 14-19 Tottenham Mews will all be below the objectives, thus future residents will experience acceptable air quality.

The building and transport related emissions associated with the Proposed Development are both below the relevant benchmarks and that the Proposed Development is better than air quality neutral and complies with the requirement that all new developments in London should be at least air quality neutral. Therefore, no offsetting of emissions is required.

Demolition and Construction

There are no government criteria to formally assess construction dusts impacts on local air quality, for this reason an IAQM in line with the GLA's SPG on the Control of Dust and Emissions During Construction and Demolition requirements was prepared. This considers the potential for impacts within 350 meters of the site boundary, or within 50 meters of roads used by construction vehicles within 500 meters of the site. Concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been predicted at four locations within the Proposed Development; concentrations have also been predicted for each proposed floor.

The overall dust emission class for construction is considered to be **small** considering the following factors:

[37]GLA (2014), The Control of Dust and Emissions from Construction and Demolition SPG: https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/control-dust-and

- Considering the reduced size of the site, very few vehicles will travel over unpaved ground and dust will arise mainly from the handling of dusty materials (dry soil)
- It is anticipated that no more than 15 heavy vehicles will access the site on any given day.

Mitigations

Mitigations actions can be adopted to lower the already small risk of dust emissions by applying sufficient water to damp down the materials and soil, while avoiding potential contamination of the local watercourses

10.5 Noise Quality

In accordance with the national and local planning framework, an environmental noise survey and noise impact assessment has been undertaken for the Proposed Development. As a consequence, the following design targets for internal noise levels have been proposed for habitable rooms, in accordance with BS8233:2014.

Activity	Location	Desirable Internal Ambient Criteria	
		07:00 – 23:00	23:00 to 07:00
Resting	Living Rooms	35 dB LAeq[38], 16hour	-
Dining	Dining Room/Area	40 dB LAeq, 16hour	-
Sleeping (Daytime Resting)	Annual Mean	35 dB LAeq, 16hour	30 dB LAeq, 8hour

Table 10-2 Internal Noise design targets

Mitigation

The predicted worst-case internal noise levels are based on a simulation with windows partially opened and this exceed the proposed target levels. Considering that ventilation will be provided to the dwellings following the requirements of Building regulations Approved Document F the occupants will have the option to keep the windows closed to avoid noise nuisance and open them for purge ventilation.

This is often the case in urban areas for this reason it is recommended that ventilation and thermal comfort are achieved independently, without the need of fully opening windows. The external envelope of the proposed residences will incorporate suitably specified glazing to achieve good indoor acoustic levels and if ventilation is provided through the façade it shall be suitably acoustically attenuated to provide acoustic comfort.

In addition, to control the noise emitted from the following plant the building services kit on the roof are to require individual acoustic enclosures, as a screen is not likely to suffice as the plant area is overlooked by other surrounding buildings:

- 4No. ASHP: operational 24 hours
- Heat Recovery VRF: operational from 07:00 to 23:00
- Hot Water Circulating pumps: operational 24 hours

Similarly, suitable vibration isolation should be incorporated for all units and associated pipework, considering their location on the level 05 floor slab on a residential property.

With the introduction of the above mitigation measures the Proposed Development should be capable of achieving the proposed plant noise criteria below, be achieved at 1 metre from the nearest noise sensitive residential window, which is the nearest residential noise sensitive windows are located on Tottenham Mews, approximately 15m from the proposed plant installation.

Position	Plant Noise Emission Criteria (dBA) At 1m from the nearest noise sensitive residential window	
	Daytime (07:00 – 23:00 hours)	Night-time (23:00 – 07:00 hours)
1	35 dBA	35 dBA
2	33 dBA	33 dBA

Table 10-3 Plant Noise criteria

The noise attenuation report confirms the above criteria will be achieved with all of the proposed plant operating simultaneously.

10.6 Light Pollution, Daylight, Sunlight, Overshadowing, and Solar Glare

Light pollution is defined as any light emitting from artificial sources into spaces where it is unwanted, such as spillage of light from office or commercial buildings onto residential accommodation, where this would cause nuisance to the occupants. The ILP Guidance Notes provide suggested lighting level values to ascertain the acceptability of lighting levels of light pollution. The Proposed Development will consider minimising external light sources with any external lighting (other than security lighting) on a sensor or time clock to avoid light disturbances between the hours of 23:00 and 07:00.

[38] L_{Aeq}: A-weighted, equivalent continuous sound level in decibels measured over a stated period of time

Daylight, Sunlight, Overshadowing

The proximity of Middlesex House to the rear of the Proposed Development pose mechanical restrictions to the view of the sky to any room located within the back of the scheme, and so daylight is compromised. In addition, the works to open Bedford Passage to Tottenham Mews at ground floor requires for a few rooms to be recessed, limiting their access to daylight.

Mitigation

To mitigate this, rooms with lower daylight requirement, such as bedrooms, have been located to the rear of the scheme or in areas that receive less daylight, where possible to maximise daylight access to the main habitable accommodation within the flats such as living rooms and kitchens. The layout of dwellings where rooms are below desirable daylight levels, have access to alternative habitable rooms with better opportunity for daylight amenity.

To assess the daylight access of each dwelling an average daylight factor (ADF) simulation was undertaken which confirmed the following results:

- 68% of rooms will achieve suggested ADF values for their relevant room use
- 32% of rooms that do not meet the required ADF include 7 living-kitchen-dining (LKD) rooms and 15 bedrooms:
    - 3 LKD will achieve levels of ADF between 1.5%-1.7%, frequently accepted by the local authorities
    - 1 LKD achieve an ADF of 1.4%, still acceptable for a central London mews
    - 1 LKD achieves an ADF of 1.1%, this is due to the large dimension of the room
    - 2 LKD achieve an ADF of between 0.2% and 0.5%, as located on the ground floor
    - 3 bedrooms will achieve an ADF between 0.7%-0.9%, which is just below the 1% suggested within the BRE
    - 11 bedrooms achieve an ADF between 0.5% and 0.1%.
    - 1 bedroom achieves an ADF of 0%, as it is located to the rear of the Proposed Development.

An ADF of 0% doesn't indicate that a room will not receive any daylight or that it will be completely dark. However, to understand the levels of daylight the ground floor rooms will receive, a detailed radiance-based assessment was undertaken which takes into consideration other external factors such as the reflectance of buildings, building materials as well as diffuse light. These have shown an improvement demonstrating that even the rooms facing the mews achieve some daylight. The light levels in the room will most likely require supplemental artificial lighting.

10.7 Policy Alignment

The Proposed Development makes a significant contribution to reducing and managing pollution and makes consideration to the following policies:

Policy Document	Policies
London Plan	Policy 5.3 Sustainable design and construction
	Policy 5.21 Contaminated land
	Policy 7.14 Improving air quality
	Policy 7.15 Reducing and managing noise, improving and enhancing the acoustic environment and promoting appropriate soundscapes
Draft New London Plan	GG3 Creating a healthy city
	D8 Public realm
	D13 Agent of Change
	D14 Noise
	SI 1 Improving air quality
Camden Local Plan	Policy A1 Managing the impact of development
	Policy A4 Noise and vibration
	Policy CC2 Adapting to climate change
	Policy CC4 Air quality
	Policy T1 Prioritising walking, cycling and public transport
	Policy T2 Parking and car-free development
	Policy T4 Sustainable movement of goods and materials
Camden Planning Guidance	CPG: Air quality
	CPG: Amenity

11.0 Community & Wellbeing

This section sets out the response of the Proposed Development to include the local community and relevant stakeholders in the design process as well as considerations around how the design may impact upon their health and wellbeing. Mitigation of health impacts and suggestions towards enhancement of permanent and temporary visitors' health is also addressed. This encompasses the processes with regards to stakeholder engagement, accessible and inclusive design, health impact assessment and a future wellbeing certification.

11.1 Policy Requirements

The NPPF and Camden Council's ask for a Statement of Community Involvement to consult with the site's neighbours who may be affected by the Proposed Development before a planning application is submitted. In addition, other groups such as local Conservation Area Advisory Committees (CAACs) and any other local interest groups should also be consulted.

The London Plan's Policy 7.1 Lifetime Neighbourhoods focuses on providing new developments which interface well with the surroundings to improve social and community infrastructure. Developments should work towards fostering community diversity, inclusion and cohesion and contributing to people's sense of place, safety and security The design of new buildings and the spaces they create should help reinforce or enhance the character, legibility, permeability, and accessibility of the neighbourhood and should meet the needs of the community at all stages of people's lives.

11.2 Inclusive Design

The Proposed Development designs aims to incorporate accessible and inclusive design measures to facilitate and support the use by a large variety of people. Equality Act 2010, Building Regulation Part M and the Technical Housing Standards - Nationally Described Space Standard are amongst the standards used by the design team.

Consideration has been given to facilitate access and mobility of people with disability as well as those with infants. For this reason, the dwelling's interiors design and communal circulation areas considers wheelchair users' needs. The additional ground floor storage can be used for mobility scooters, that can also be charged, or for adapted or oversized cycles that might be used for families and physically impaired such as deaf-or blind people who may use a tandem or trike. Similarly the office WC's provision has been designed to be accessible to disabled people.

11.3 Public Realm

The opening of the connection between Tottenham Mews and Bedford Passage supports the pedestrian and cycle permeability and connectivity of the area, helping create a permeable urban grid. The passage will be covered by the upper floors creating an undercroft that will protect the office entrance. The external lighting design will also support the safety of this area and discourage antisocial behaviours.

11.4 Stakeholder Consultation

A Statement of Community Involvement (SOCI) has been undertaken for the Proposed Development on behalf of the Applicant, based on the following:

- Conducted an engagement programme that is appropriate for the local community and key stakeholders;
- Conducted a well-publicised and accessible digital exhibition;
- Explained clearly what the scope of the consultation is;
- Analysed the results from the consultation objectively;
- Publicised collective responses, with due regard to the Data Protection Act and GDPR requirements;
- Summarised how these responses have informed the proposals.

Due to Covid-19 restrictions the stakeholder consultation, usually undertaken in person, was organised to be hosted online to follow the governments health and safety guidelines. Two webinars where also provided.

The Applicant has engaged with local residents and the following stakeholders:

- Bloomsbury Ward Councillors
- Bloomsbury Conservation Area Advisory Committee

- The Charlotte Street Association
- The Fitzrovia Partnership BID
- Fitzrovia Neighbourhood Association
- The Bloomsbury Association.

The Applicant has ensured that there is an engagement programme for a variety of local elected representatives, local stakeholders and the general public to ensure that the proposals meet the needs of the community. The programme has been ongoing between July and October 2020 and the applicant will continue to meet with local groups and individuals as appropriate throughout the process.

The details of the consultation website were advertised via hand-delivered letters to 1,745 addresses, where people were encouraged to visit the consultation website and provide feedback between the 5th and the 19th of October 2020. Overall, 278 people viewed the online exhibition website and 5 provided feedback with a completed survey. No significant objections were raised from this process.

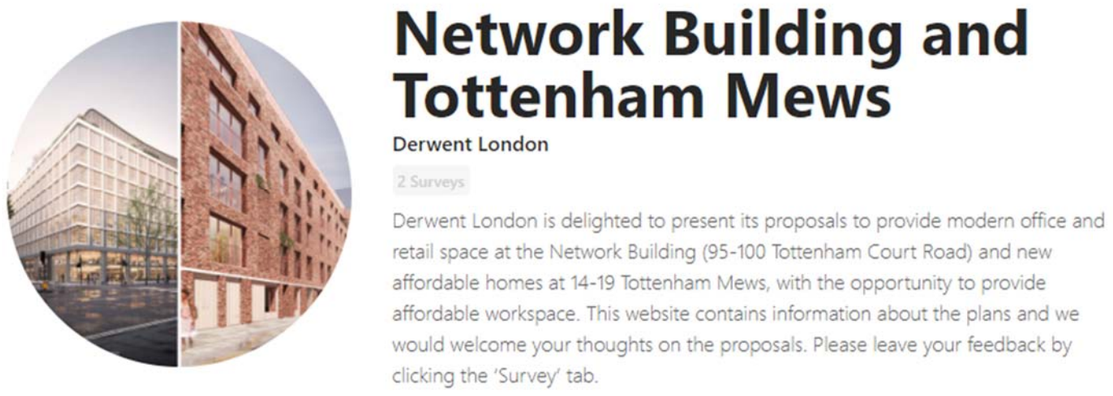

Figure 11-1 Home page of the Tottenham Mews online consultation

11.5 Policy Alignment

The Proposed Development meets the following statutory requirements

Policy Document	Policies
London Plan	Policy 7.1 Lifetime Neighbourhoods
Draft New London Plan	GG1 Building strong and inclusive communities
	GG3 Creating a healthy city
	D5 Inclusive design
	D11 Safety, security and resilience to emergency
	S1 Developing London's social infrastructure
	T2 Healthy Streets
Camden Local Plan	Policy C1 Health and wellbeing
	Policy C5 Safety and security
	Policy A1 Managing the impact of development
	Policy D1 Design
	Policy CC1 Climate change mitigation
	Policy CC2 Adapting to climate change
	Policy T1 Prioritising walking, cycling and public transport
	Policy T4 Sustainable movement of goods and materials
Camden Planning Guidance	CPG: Planning for health and wellbeing

12.0 Conclusion

This Sustainability Statement demonstrates the Applicant is taking a proactive approach to ensuring the Proposed Development aligns with national, regional and local sustainability objectives and planning policy requirements.

The Proposed Development provides much needed affordable housing for the area whilst ensuring high sustainable design and construction principles have been applied which can be summarised as follows:

- Alignment with the HQM One assessment methodology to target a Level 4 Star Rating
- Improvements over Part L Building regulations through passive design measures and incorporation of renewable technologies to align with current London Plan and LBC planning policy
- Overheating assessment to ensure thermal comfort under current and future climate scenarios
- Water efficient sanitaryware fittings to reduce internal water consumption contributing to a future resilient development
- Attenuation strategy to include a blue roof to reduce surface water run-off and minimise localized flood risks during extreme weather events
- Consideration to material procurement and prioritizing responsibly sourced materials, circularity principles and material optimisation and efficiency
- Responsible construction practices to minimise waste generation, reduce air quality impacts and carry out appropriate pollution management strategies whilst on site.
- Preliminary ecological survey to establish appropriate biodiversity measures to enhance site ecology
- Improved public transport accessibility with cycle storage facilities and inclusive design considerations ensuring access for all
- Stakeholder consultation and local community engagement to ensure a purposeful, community considered development

The proposals accord with the current London Plan and Camden's Local Plan 2017 whilst also considering the emerging London Plan.

APPENDIX A: Planning Policy

The Mayor's Supplementary Planning Guidance

The Mayor's Sustainable Design and Construction Supplementary Planning Guidance[39] (referred to hereafter as 'the SPG') provides detailed guidance on how to implement The London Plan policies. The SPG sets standards for new developments that are referable to the Mayor and the Greater London Authority (GLA). The Proposed Development is a Major development but is not referable to the Mayor, however it uses the Mayor's Sustainable Design and Construction SPG as a guide for this Sustainability Statement to ensure a comprehensive review of the proposal's environmental and sustainability performance.

The role of the SPG is to set clear targets and highlight efficient ways to reach these. Setting clear sustainability and performance targets helps shape the brief to which the design team will respond. The SPG sets out a number of 'priority' and 'best practice' standards that should be addressed by Major new developments. All the 'priority' targets should be addressed by Major development proposals whilst the SPG strongly encourages the 'best practice' ambitions to be adopted. The SPG recognises that implementing the guidance will enable the fullest contribution to sustainable design and construction by a development but that the approaches should be adapted to the specific characteristics of the Proposed Development.

The Mayor has set out the priorities and best practice ambitions under the following overarching topics:

Resource Management

- Land
- Site layout and Building Design
- Energy and carbon dioxide emissions
- Carbon dioxide off-setting
- Retrofitting
- Monitoring energy use
- Supporting a resilient energy supply
- Water efficiency
- Materials and waste
- Nature conservation and biodiversity

Climate change adaptation

- Tackling increased temperature and drought
- Increasing green cover
- Flooding
- Pollution Management
- Land contamination
- Air quality
- Noise
- Light pollution

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[39] Mayor of London (August 2017*). London Environment Strategy Dr Aft For Public Consultation.* GLA. https://www.london.gov.uk/sites/default/files/8314_gla_les_online_single_page.pdf

- Water pollution

Mayor’s London Environment Strategy

The Mayor of London Environment Strategy includes a range of actions to improve the environment now, setting London on the path to create a better future[40]. This is the first strategy to bring together approaches from every aspect of London’s environment. It is divided into the following areas:

- Air quality
- Green infrastructure
- Climate change mitigation and energy
- Waste
- Adapting to climate change
- Ambient noise

The following four strategic approaches inform all aspects of the Strategy which require a holistic approach to addressing London’s environmental challenges and make the most of environmental opportunities:

- Low carbon circular economy
- Smart digital city
- Green infrastructure and natural capital accounting
- The Healthy Streets Approach.

[40] Mayor of London Environment Strategy: https://www.london.gov.uk/sites/default/files/8314_gla_les_online_single_page.pdf

APPENDIX B: HQM One Pre-Assessment Report

HQM Tracker

Project Details	
Project Name:	Tottenham Mews
Assessment Scheme:	HQM SD239:0.0
Assessment Building Type:	Residential New Build
Assessment Type:	HQM One
Project Stage:	Pre-assessment - RP
Author:	Oliver Morris
Date:	13/11/2020

Status Key	Status
	Credit Unawarded
	Credit in progress
	Credit Awarded
	Credit not targeted

HQM Targets	
Target Rating	Level 4
Minimum Score	48% 240 points

Responsibility Key		
Specialism	Organisation	Consultant
Architecture	Piercy & Co	Harry Bucknall, Andre Nave, Humphreys
Structural Engineer	Elliot Wood	George Georgiou / James Hinks
Client	Derwent London	Caroline Haines, Tom French
Cost Consultant	Aecom	Brian Smith / William Bell / Richard Van Breda
MEP	NDY	Allen Williamson / Ashley Merrett / George Sundac
Sustainability Coordinator / Assessor	TFT	Oliver Morris, Giulia Mori, Natalia Ford
PM	Blackburn & Co	Chris Blackburn / Donald Findlater / Matthew Schaaf
Acoustician	Hann Tucker	Andrew Fermer / Firas Farhan
Transport	Caneparo	Sam McCartney
Planning	DP9	Jim Pool / Hannah Willcock

Chapters	Section	Number of Awarded Credits	Awarded Score (%)	Number of Targeted Credits	Target Score (%)	Number of Potential Credits	Potential Score (%)	Credit worth (%)	Section Weighting	Credits available
Our Surroundings	Transport and Movement	12	2.4%	34	6.8%	34	6.8%	0.20%	9.60%	48
	Outdoors	0	0%	9	1.8%	44	8.8%	0.20%	10.00%	50
	Safety and Resilience	0	0%	24	4.8%	35	7.0%	0.20%	8.80%	44
My Home	Comfort	15	3%	33	6.6%	51	10.2%	0.20%	14.00%	70
	Energy and Cost	0	0%	45	9.0%	57	11.4%	0.20%	16.60%	83
	Materials	0	0%	40	8.0%	63	12.6%	0.20%	18.00%	90
	Space	0	0%	15	3.0%	24	4.8%	0.20%	4.60%	23
	Water Use	0	0%	8	1.6%	11	2.2%	0.20%	2.20%	11
Knowledge Sharing	Home Delivery	0	0%	44	8.8%	60	12.0%	0.20%	9.80%	49
	User Experience	0	0%	6	1.2%	11	2.2%	0.20%	4.40%	22
	Future Learning	0	0%	7	1.4%	10	2.0%	0.20%	2.00%	10
	TOTAL	27	5.4%	265	53.0%	400	80.0%	-	-	500.0

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Transport and Movement										
01 Public Transport Availability	1.1 - Accessibility Index	The public transport Accessibility Index (AI) for the assessed building is calculated and HQM credits awarded in accordance with the AI benchmarks given in Table 1 for rural and urban locations The Accessibility Index is determined by entering the following information in to the HQM transport calculator: The distance (m) from the main building entrance to each compliant public transport node The public transport type(s) serving the compliant node e.g. bus or rail The average number of services stopping per hour at each compliant node during the operating hours of the building for a typical day (see compliance notes and Table 30 in the Additional Information section). During peak hours for a weekday (09.30-16:00 and 19:00-06:30) and off-peak hours at the weekend (between 06.30-19:00), the average number of services stopping per hour should not reduce to less than a quarter of the weekday on-peak-service (06:30-09:30 and 16:00-19:00)	12	12	12		12	TFT	2	PTAL index confirms **12** credits under this section
	1.2- Improved local service	crit 4 - Transport companies have been contacted and an increase in the local service provision for the development has been negotiated, which results in the existing AI score of at least 1.00 crit 5- Contracts are in place to ensure that the increased service provision will be place for a minimum of 5 years following occupation of all homes.	3	0	0			-	2,3	
02 Sustainable Transport Options	2.00- Home information	Home information needs to be provided as part of or all of the criteria in this issue	YES	YES	YES			RP	6	
	2.01- Cycle Storage	Credits are awarded based on the number of cycle storage spaces provided for individual homes or as part of a communal facility in line with table 2. Storage must be associated with the home or be in close proximity of the homes entrance.	6	6	6			Piercy & Co	3	Cycle storage provision meets HQM requirements
	2.02- Cycle Networks	During preparation of the brief, the design team consult with the local authority on the state of the local cycling network and identifies improvement the development could make. the design team has agreed to an will implement one improvement chosen with the local authority. The improvement chosen is additional to existing local plans. The home is connected to a safe cycle route via a safe pedestrian route.	4	0	0			Piercy & Co/Caneparo		Not targeted, to be revisited post-planning
	2.03- Electric charging points	The home has access to a dedicated electric charging point or a communal charging point, located within close proximity to the home via a safe pedestrian route. Home information will need to be provided on electric charging points as part of a Home User Guide	4	0	0			Piercy & Co/Caneparo	3	Not targeted, to be revisited post-planning
	2.04- Car Clubs	Two credits can be awarded where a compliant car club is within 650m of the home via a safe pedestrian route. Where this is met a further credit can be awarded where at least 60% of the vehicles available from the compliant car club are hybrid or electric vehicles.	3	0	0					Not targeted, to be revisited post-planning
03 Local Amenities	3.01- Key Local Amenities	Three or more of the following amenities are located within walking distance of the home via safe pedestrian routes: - Administrative services (e.g. Post box bank or cash point etc). - Health services (e.g. GP, health centre, pharmacy etc.) - Small scale retail services (e.g. grocers, butchers, corner shops, etc).	11	11	11			Piercy & Co	3	Amenities map to confirm local amenities will be required, location suggsts credits can be targeted
	3.02 Beneficial Local Amenities	**KEY LOCAL AMENITIES CRITIERA MUST BE MET TO TARGET THESE CREDITS:** Two or more of the following amenities are located within 30 minutes of the home via safe pedestrian routes or via public transport: - Purpose built recreation or leisure facilities - Primary or early education facilities - Large scale retail e.g. restaurants, cinemas, clothes shops etc. - One or more community facilities e.g. community hall or a library	5	5	5			Piercy & Co	3	As above, location suggests credits can be met
		SECTION TOTAL (Credits)	48	34	34		12			
		SECTION TOTAL (%)	9.6%	6.8%	6.8%		2.4%			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Outdoors										
	4.00 - Assessment route selection	An assessment route for the project has been determined using Guidance Note 34: BREEAM, CEEQUAL, HQM Ecology Risk Evaluation Checklist.	YES	YES	YES			The Ecology Consultancy		Appointment made - The Ecology Consultancy to undertake site survey asap

	04 Identifying Ecological Risks and Opportunities	4.01 Survey and evaluation (project team member/Suitably qualified ecologist	A suitably qualified ecologist or a local wildlife professional is appointed sufficiently early in the project stage to ensure involvement with site configuration and, where necessary, influence over strategic planning decisions. Before the deisgn brief (typically RIBA Stage 1 or equivalent), a suitably qualified ecologist has carried out an appropriate level of survey and evaluation for the site and its zone of influence to determine the ecological baseline 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 to enhance the ecological value of the site and, where relevant, areas within the zone of influence. -information and data are collated and shared with the project team to inform the site preparation, design or construction works.	3	3	3		3	The Ecology Consultancy	2	The SQE has undertaken the ecology appraisal and
		4.02 Determining ecological outcomes (project team member/suitably qualified ecologist	During early design stages (typically RIBA Stage 2) the project team liaise and collaborate with representative stakeholders to identify, appraise and agree actions for the project that will achieve optimal ecological outcomes in line with the first two points of the mitigation hierarchy: avoidance and protection.	4	0	2			The Ecology Consultancy	2	As above
	05 Managing Impacts on Ecology	5.00 - Ecological risks and opportunities for the project	Pre-requisite: The survey evaluation and determining ecological outcomes criteria within 04 issue have been achieved via either the foundation or comprehensive routes	YES	0	YES			The Ecology Consultancy	2	As above
		5.01 - Liaison, implementation and data	Liaison, implementation and data : Roles and responsivities have been clearly defined, allocated and implemented to successfully deliver the actions for achieving optimal ecological outcomes agreed in issue 2: identifying ecological risks and opportunities and early enough to influence the concept design and design brief (typically RIBA 2). Site preparation and construction works have been planned for and implemented early enough to deliver the actions for achieving optimal ecological outcomes agreed in issue 2	3	0	3			The Ecology Consultancy / RP	2	The **suitably qualified ecologist** will identify risks and opportunities to influence the concept design and deisgn brief. The **RP** will be required to ensure site preparation and construction works have been planned for and implemented early enough to deliver against optimal ecological outcomes as identified by the ecologist.
		5.03 - Managing negative impacts *project team member/suitably qualified ecologist	Foundation (3 credits)- Project team member : Negative impacts from site preparation and construction works have been managed to minimise their effect and ensure that no net impact has resulted. Comprehensive (6 credits)- Suitably qualified ecologist: Negative impact from site preparation and construction works have been managed according to the mitigation hierarchy. No overall loss of ecological value has occurred :	6	0	6			The Ecology Consultancy /RP	2	The **suitably qualified ecologist** will be required to include mitigation measures for the RP to deliver. The **RP** will be required to manage any negative impacts from site preparation and construciton works in accordance with the mitigation hierarchy
	06 Ecological Change and Enhancement	6.01 - Previously occupied land	At least 75% of the proposed development's footprint is on an area of land which has previously been occupied	2	2	2			The Ecology Consultancy	2	As above
		6.02 - Ecological risks and opportunities for the project	Ecological risks and opportunities (Pre-requisite) : The survey and evaluation and determining ecological outcomes criteria within the (identifying ecological risk and opportunities issue have been achieved either via the foundation or comprehensive routes. the client or contractor has confirmed that compliance has, or will be monitored against all relevant UK, EU, and international legislative requirements relating to the ecology of the site.	YES	YES	YES			The Ecology Consultancy /RP	2	The **suitably qualified ecologst** will be required to include relevant legislative requirements in the ecology report . The **RP** will need to confirm that compliance will be monitored against all relevant UK, EU and international legislative requirements relating to the ecology of the site.
		6.03 - Liaison, implementation and data (project team member/SQE	Liaison, implementation and data : Roles and responsivities have been clearly defined, allocated and implemented to successfully deliver the actions for achieving optimal ecological outcomes agreed in issue 2: identifying ecological risks and opportunities and early enough to influence the concept design and design brief (typically RIBA 2). Site preparation and construction works have been planned for and implemented early enough to deliver the actions for achieving optimal ecological outcomes agreed in issue 2 Foundation (2 credits) The project team have liaised and collaborated with representative stakeholders, taking into consideration data collected and shared, to determine and implement actions that enhance the ecological value of the site. The recommendations above are based on recognised 'local' ecological expertise, specialist input and guidance to inform the adoption of locally relevant ecological actions which enhance the ecological value of the site. Comprehensive (up to 8) Credits are awarded based on the following: - (2) Minimising loss of ecology - (4) No net loss in ecology - (6) Net gain in ecology - (8) Exceeds net gain	10	0	10			The Ecology Consultancy / RP	2	The **suitably qualified ecologist** will be required to work with the design team to identify ecological enhancements for the site to include within the ecology report The **RP** will be required to deliver the recommendations included within the ecologist's report.
	07 Long Term Ecological Management and Maintenance	7.00- Roles and responsibilities, implementation, statutory obligations	Roles, responsibilities, implementation, statutory obligations (Pre-requisite) Home information (Pre-requisite) Liaison, review and management (Pre-requisite)	YES	YES	YES			The Ecology Consultancy / RP	2	As above
		7.01 - Home information	Information is provided to the home occupier detailing the long term ecological management actions and requirements part of the 11.2 Home Information	YES	YES	YES			RP	2	As above
		7.02 - Liaison, review and management	The project team liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, to determine and implement the actions made and structure required for Landscaping and ecology management and monitoring and update criteria, where pursued (see below)	YES	YES	YES			RP	2	As above
		7.03 - Landscape and ecology management plan	A management plan is in place for the landscape and ecology accessible to the assessed home that meets the following - 1. Is appropriate for the type of home and site being assessed, in line with the methodology section 2. Builds on the actions carried out for protecting and enhancing ecology, to ensure that commitments and efforts made during the development to achieve optimal ecological outcomes, are retained and continued during handover and as far as possible in-use.	4	0	4			The Ecology Consultancy / RP	2	The **suitably qualified ecologist** will be required to produce a landscape and habitat management plan detailing the maintenance strategy for recommended ecological enhancements. The **RP** will be required to deliver the recommendations made by the suitably qualified ecologist
		7.04 - Monitoring and update	Home information pre-requisite and landscape and ecology management plan have been met. Formal commitments are in place, as appropriate, for the following to be carried out: 1. Monitoring and reporting of the actions implemented during the project for protecting and enhancing ecology and the outcomes from these actions 2. Arrangements for the ongoing management of landscaping and ecology connected to the project on and, where relevant, off-site. 3. Maintaining the ecological value of the site and its relationship or connection to its zone of influence. 4. Maintaining the site in line with any sustainability linked activities, for example ecosystem benefits. 5. Remedial or other management actions are carried out which relate to those identified in the Identifying Ecological Risks and Opportunities, Managing Impacts of Ecology and Ecological Change and Enhancement issues The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.	4	0	4			RP	2	

08 Recreational Space	8.00 - Home information	Provide information about recreational amenities and public space within the home information	YES	YES	YES			RP		
	8.01- Accessible Public Recreational Space	The home is within walking distance of public recreational space	4	4	4			Piercy & Co	2	Location plan showing proximity to public space required
	8.02- Private Space	Private space requirements are as follows: 1-2 bedrooms: 1 credit - Balcony or roof terrace 5m2(minimum depth of 1.5m) 3 credits - 50m2 6 credits - 70m2 3-4 bedrooms: 1 credit - 1-2 bedroom requirements plus 1m2 per additional bedroom 3 credits -1-2 bedroom requirements plus 10m2 per additional bedroom 6 credits - 12 bedroom requirements plus 20m2 per additional bedroom 5 and above: 1 credit - 1-2 bedroom requirements plus 1m2 per additional bedroom 3 credits -1-2 bedroom requirements plus 5m2 per additional bedroom 6 credits - 1-2 bedroom requirements plus 10m2 per additional bedroom	6	0	1			Piercy & Co / RP	3	Not all units have private outdoor provision
	8.03- Communal Space	The home is within close proximity to communal space, see table for distance/area requirements	7	0	0			RP	3	Communal space requirements are onerous 5% GDA - 4 credits 7.5% GDA - 7 credits
	8.05- Growing Space	Where growing space is provided in close proximity to the home. This space must be in addition to any space used to achieve credits in the private space or communal space criteria	3	0	3			Landscape Architect/Ecologist	3	
	8.06- Expert Input	**GROWING SPACE REQUIREMENTS MUST BE MET TO TARGET THESE CREDITS.** Expert advice is sought at the design stage to inform the design of the growing space.	2	0	2			Landscape Architect/Ecologist	3,4	
		SECTION TOTAL (Credits)	**58**	**9**	**44**					
		SECTION TOTAL (%)	**11.6%**	**1.8%**	**8.8%**					

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Safety and Resilience										
09 Flood Risk	9.00- Flood risk assessment	Minimum requirement : A site specific flood risk assessment is undertaken in accordance with current best practice national planning guidance	YES	YES	YES			Elliot Wood	2,3	Surface drainage statement has been prepared, to revisit post-planning to ensure necessary requirements have been met
	9.01b - Medium/High Flood Risk	Upto 17 credits available: Where a site specific flood risk assessment confirms the development site is situated in a flood zone by country that is defined as having a medium or high annual probability of flooding from all sources of flooding. The FRA must take all current and future sources of flooding into consideration. To increase the resilience and resistance of the development to flooding one of the following must be followed: - Ensure ground levels of all habitable parts of the home and access to both the site and homes are designed so that they are at least 600mm above the design flood level of the flood zone -The final design of the building and the wider site reflects the recommendations made by the AQP in accordance with the hierarchy outlined in BS85500:2015	19	17	17			Elliot Wood	2	Depends on site location and flood risk , should be low risk
	9.02 -Prerequisite	Home information is provided	YES	YES	YES			RP	6	
10 Managing the Impact of Rainfall	10.00- Prerequisite	Rainfall management home information must be provided upon handover	YES	YES	YES			RP	6	
	10.01b - Comprehensive Route	Upto 12 credits available: Peak-rate of run-off (upto 5 credits): Drainage measures are specified to ensure that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for either: - The pre-developed site (3 credits) OR - An equivalent run-off for a greenfield run-off rate site (5 credits) This should comply at the 100-year return period events. Volume of run-off (upto 7 credits): Drainage design measures are specified to ensure that the post development volume of run-off, for the 100 year 6-year hour event is no greater than it was for either: - The re-development site (4 credits) - Greenfield volumes of run-off site (7 credits) Calculations include an allowance for climate change; this should be made in accordance with current best practice national planning guidance	14	7	9			Elliot Wood	2	To be discussed as the design develops, surface water drainage calculations to be undertaken
	10.02 -Water Quality	An appropriately qualified professional is appointed to carry out, demonstrate or confirm the development site's compliance with the following: - In areas with a low risk source of watercourse pollution an appropriate level of pollution prevention treatment is provided using appropriate sustainable Urban Drainage System (SuDS) techniques. -Where there is a high risk of contamination or spillage of substances such as petrol and oil, separators are installed in surface water drainage systems. - All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as Pollution Prevention Guideline 3 or where applicable the SuDS manual. **At least 3 credits through the comprehensive route must be sought for these credits to be available**	3	0	3			Elliot Wood / RP	3,4	Possibility of SuDs?
	10.03- Designing for Maintenance and Operation	Agreements are put in place for the ownership, long term operation and maintenance of all SuDS for the design life of the development.	2	0	2			TBC	6,7	
11 Security	11.00 - Prerequisite	A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design	YES	YES	YES			Blackburn to appoint	2	Kabsec have been appointed
	11.01 - Prerequisite	Home information provided	YES	YES	YES			Blackburn to appoint		
	11.02- Security Features	Recommendations or solutions are presented by the SQSS during or prior to the Concept Design and are incorporated into the design. 4 credits - 50% of recommendations 9 credits - 100% of recommendations Home information relating to the implemented security measures must be provided.	9	0	4			Blackburn to appoint	2	Kabsec have been appointed. 4 credits can be awarded where 50% of the security consultants recommendations have been implemented
		SECTION TOTAL (Credits)	**47**	**24**	**35**		**0**			
		SECTION TOTAL (%)	**9.4%**	**4.8%**	**7.0%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Comfort										
	Prerequisite	Home information needs to be provided as part of or all of the criteria in this issue. (See 11.2 Home information)	YES	YES	YES			RP	3	To be included within the Home Information pack
	Prerequisite	All combustion appliances within a home must have flues that discharge outdoors.	YES	YES	YES			NDY / RP	4	To be included within the compliance letter

	12 Indoor Pollutants	12.01- Minimising the effects of cooking	Naturally ventilated homes: In each kitchen, a cooker hood is provided that is extractive (discharge air outdoors). Mechanically ventilated homes In each kitchen, a cooker hood is provided that is re-circulating. This information must be included within the home information to the occupant	1	1	1			NDY	4	Confirmed as part of the design
		12.02 - Cooking fuel	Only cooking appliances with zero emissions from the fuel are specified (for example electric appliances)	1	1	1			NDY		Confirmed as part of the design (i.e.electric)
		12.03- Minimising Emissions from Building Products	Credits are awarded based on the number of building product types that meet emission limits, testing requirements and additional requirements as outlined in the HQM guidance doc (Table 9). Credits are awarded as follows: Quantity of building products types: 1 = 1 credit, 3 = 2 credits, All = 4 credits This requires review of materials to ensure low VOC products are specified	4	1	2			RP	4	Materials schedule to be reviewed and relevant sections included within the tender documentation Commitment letter
		12.04- Minimising Airborne Formaldehyde From All Sources	The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 0.1mg/m3 (100ug/m3), averaged over 30 minutes	3	3	3			RP	4	Post completion testing is required - can be combined with 12.05
		12.05- Minimising Airborne TVOCs	The TVOC concentration in indoor air is measured post construction (but pre-occupancy and does not exceed 0.3 mg/m3 (300 ug/m3) averaged over 8 hours, with no individual compound exceeding 0.03mg/m3 (30 ug/m3).	3	3	3			RP	4	Post completion testing is required - can be combined with 12.04
	13 Daylight	13.01-Average Daylight Factor (kitchens)	All kitchens achieve a minimum average daylight factor of at least 2%.	5	0	5			Piercy & Co	3	Requires daylighting calculations to be undertaken High level review at RIBA 2 could be undertaken to determine if this should be included in the strategy
		13.02- Average Daylight Factor (living spaces)	All living spaces meet the following average daylight factors with credits awarded as follows: 2 credits - 1.5% 4 credits - 1.8% 5 credits - 2.0%	5	0	0			Piercy & Co	3	Requires daylighting calculations to be undertaken High level review at RIBA 2 could be undertaken to determine if this should be included in the strategy
		13.03- View Of The Sky	80% of the working plane in each kitchen, living room, dining room and study receives direct light from the sky.	3	0	0			Piercy & Co / RP	3	Unlikely to be achievable for all units
	14 Internal and External Noise	14.01- Internal Noise Levels	A Suitably Qualified Acoustician (SQA) is appointed The home has been designed and built to the meet the following internal noise requirements: Day (07:00-23:00): Habitable rooms - 35db, Kitchens - 35db, Open plan rooms that a kitchen is part of - 35db Night (23:00-07:00): Bedrooms only - 30db, Kitchens - 35db, Open plan rooms that a kitchen is part of - 35db	2	2	2			Hann Tucker / RP	3,4	To be confirmed by Hann Tucker
		14.02- External Noise Levels	14.02 has been met. The external function spaces have been designed to the meet the following external noise requirements: Day (07:00-23:00): 55db (1 credit) Night (23:00-07:00): 50db (2 credits)	2	2	2			Hann Tucker / RP	3,4	To be confirmed by Hann Tucker
	15 Sound Insulation	15.01- Sound Insulation Between Homes	It must be demonstrated that the following airborne and sound impact sound insulation levels have been meet between separating wall and floors through pre completion testing or implementation of Robust Details: Airborne sound insulation values: Separating walls and floors: / Separating walls and floors between homes / Separating floors only: 48 (1 credit) +3 / 56 (1 credit) / 56 (1 credit) -5 50 (3 credits) / 58 (3 credits) / 54 (3 credits) 53 (5credits) / 60 (5 credits) / 52 (5 credits)	5	1	3			Hann Tucker / RP	3,4	**Separating walls and floors between homes requirements added** **Requirements for Separating floors only between homes have increased by 1db** Walls, floors and stairs (separating) 45db - Part E building regs (airborne) 62db - Part E building regs (impact sound)
		15.02- Sound Insulation levels for internal walls and floors	Airborne sound insulation levels are met and demonstrated through testing with an acoustics laboratory with critical information to relevant construction professionals outlining key issues that have the potential to reduce sound insulation during the construction process. The following airborne sound insulation levels are required: (airborne sound insulation values) 44db (2 credits) 45db (3 credits) 48db (4 credits)	4	2	3			Hann Tucker / RP	3,4	**Requirements for one 2 credits have increased by 1db** walls and floor (internal) 40db - Part E (airborne)
	17 Temperature	Prerequisite	Home information is provided to the occupant relating to the temperature controls	YES	YES	YES			RP	6,7	
		17.01b - Thermal Modelling Comprehensive Route	Upto 17 credits available: Current Conditions (11 credits): Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Environmental Modelling. The software used to carry out the simulation needs to provide a full dynamic thermal analysis. The modelling demonstrates that: 1. For air conditioned buildings - Summer operative temperature ranges in the home are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5. 2. For naturally ventilated or free running buildings - The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in CIBSE TM52. Predicated climate change environment (upto 6 credits): The thermal modelling demonstrates that the relevant requirements set out in Current Conditions criteria are achieved for a projected climate change environment. Where thermal comfort criteria are not met for the projected climate change environment, the project team demonstrates how the building has been adapted, or designed to be easily adapted in the future using passive design solutions in order to subsequently meet projected climate change environment scenario. (Only available if Current Conditions criteria is met).	17	17	17			TFT	3	Number of credits for comprehensive thermal modelling has decreased by 3 credits. (climate change adaptation scenario reduced by 2 credits). Foundation route has increased by 2 credits under HQM One
		Minimum requirement	An information sign (written in plain English) is securely fixed to the rear of a boiler, meter or airing cupboard door confirming: - Location of all components - How to operate the system - How to maintain good IAQ in the home through background ventilation - The purpose of boost ventilation	YES	YES	YES			RP	6,7	
		18.01- Ventilation Air Intakes	The home's ventilation air intakes should avoid drawing in pollution in accordance with CIBSE TM21	4	0	0			NDY	3	TM21 compliance required
		Minimum requirement	The relevant requirements in Table 25 are met. System 1 and 2 - no minimum requirement System 3 and 4 - The minimum ventilation rate according to the size of the home and the minimum boost rate for the home	YES	YES	YES			NDY / RP		Ventilation requiements to be checked and confirmed

18 Ventilation	18.02- Ventilation Rates	**VENTILATION AIR INTAKES REQUIREMENTS MUST BE MEET TO TARGET THESE CREDITS:** The following is achieved according to the specified ventilation system: The ventilation system achieves an internal noise level of 35 dB)a) or less in all non-bedroom spaces within the home and 30dB(a) or less in all bedrooms within the home in line with the methodology in ANC Guidelines Part 1 2011, operating at the minimum rate for continuous extract ventilation systems and for intermittent extract ventilation system, it should not be for running. System 3/ System 4: The applicable minimum ventilation rates during continuous operation and an boost air flow of at least 25% greater than the applicable minimum ventilation rate. Internal and external noise levels (Sub credit ID 11.01-11.02) must be achieved to target these credits Minimum Ventilation Rate (L/s) = 0.6 x Total Floor Area	5	0	5			NDY /RP	3	NDY to confirm post planning
	Minimum requirement	The relevant requirements in Table 28 are met. System 1-2: Extract fans in wet rooms to be controlled via humidity sensors in accordance with manufacturer's literature System 3-4: A ventilation system that has the ability to be manually boosted in wet rooms by the home occupant when required	YES	YES	YES			NDY / RP	3	Ventilation requiements to be checked and confirmed
	18.03- Maintenance and Controls	**VENTILATION RATES REQUIREMENTS MUST BE MEET TO TARGET THESE CREDITS:** Any required maintenance of any part of the ventilation system can be completed safely by the occupant. Any safety activity intended to be carried out by a building services engineer can be carried out safely by the building services engineer. For MVHR systems, controls must be provided that enable sufficient control of the background continuous ventilation rate to meet varying occupancy levels without having to enable boost mode.	4	0	4				4	
		SECTION TOTAL (Credits)	**68**	**33**	**51**		**0**			
		SECTION TOTAL (%)	**13.6%**	**6.6%**	**10.2%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Energy and Cost										
19 Energy and Cost	Prerequisite	Provide relevant home information regarding energy performance and strategy for the development	YES	YES	YES			RP	6,7	PV and ASHP to be included in home information if specified
	19.01 - Energy Performance	Credits are awarded according to the home energy performance ratio (HEPR) generated in the online assessment tool, in line with table 29. 40 credits = 0.900 AND zero net regulated CO2 emissions	40	20	30			TFT / RP	3	HEPR = 0.450 Will form part of the energy strategy TFT are undertaking initial performance modelling to confirm predicated performance to be verified by the RP at design
	19.02- Towards Carbon Negative	Credits are awarded based on confirmation of the percentage of the building's unregulated operational energy consumption: 1 credit : 10% 2 credits : 20% 3 credits: 40% 4 credits : 60% 5 credits : 80% 6 > 100% (i.e. carbon negative)	6	2	2			TFT	3	Specification of low energy lighting, sanitaryware and white goods will ensure credits in this section can be targeted
	19.03 - Cost	Credits are awarded according to the outputs scored for cost	14	4	6			TFT	3	Specification of low energy lighting, sanitaryware and white goods will ensure credits in this section can be targeted.
20 Decentralised Energy	Prerequisite	Provide relevant home information regarding any LZCT system installations or retrofit options available to the householder	YES	YES	YES			RP	6,7	PV and ASHP to be included in home information if specified
	Prerequisite	An independent assessment prepared by an appropriately qualified professional is carried out to establish the most feasible recognised local (on-site or near site) low or zero carbon (LZC energy source for the building development as well as any suitable infrastructure for future retrofit	YES	YES	YES			TFT	2	An extension of energy strategy, fees have been provided
	20.02a - LZC Installation	4 credits available where appropriate infrastructure is installed to allow future retrofit of LZCTs in accordance with the feasibility study recommendations (in instances where the feasibility study confirms the installation of LZCTs is not currently viable	8	4	4			TBC	3	
21 Impact on Local Air Quality	21.01b - Electricity	All installed plant must meet the following emission levels. The measurement must be provided by manufacturers following the labelling requirements of the European Directive 2009/125EC. ≤27 Dry NOx emission level (mg/kWh) - 7 credits ≤24 Dry NOx emission level (mg/kWh) - 10 credits	15	15	15		15	NDY	2	**All electric will achieve 15 credits** Confirmed as all-electric proposals
		SECTION TOTAL (Credits)	**83**	**45**	**57**		**15**			
		SECTION TOTAL (%)	**16.6%**	**9.0%**	**11.4%**		**3.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Materials										
22 Responsible Sourcing	Prerequisite	All timber and timber based products used in the buildings meeting the definition of 'legally harvested and legally traded timber'.	YES	YES	YES			RP	3	Include within contractor's requirements. Specific preliminaries document to be developed
	22.01- Product Procurement	By the end of **RIBA stage 2** the client/developer has a documented policy and procedure that sets out procurement requirements for all suppliers and trades to adhere to relating to the responsible sourcing of construction products. This document must be disseminated to all relevant internal and external personnel and included within the construction contract to ensure that they are enforceable on the assessed project.	2	2	2			Derwent / Blackburn	2	Derwent have procurement policy that can be used
	22.02- Responsible Sourcing of Construction Products Assessment	The dwelling has been assessed under the HQM methodology to determine the number of responsible sourcing credits awarded. For full credits to be awarded at least 50% of all applicable materials must be responsibly sourced. 30% = 15 credits	23	15	18			Piercy & Co / RP	3	**Will require the contractor to source materials for certified suppliers (BES6001 Very Good, FSC etc)** Reduced number of credits available for RSM (28 under BETA for 65% of RSM)
23 Environmental Impact of Construction Products	23.01- Product Procurement Policy	By the end of **RIBA stage 2** the client/developer has a documented policy and procedure that sets out procurement requirements for all suppliers and trades to adhere to relating to the responsible sourcing of construction products with lower environmental impact. This document must be disseminated to all relevant internal and external personnel and included within the construction contract to ensure that they are enforceable on the assessed project.	2	2	2			Derwent / Blackburn	2	As per 22.01 Reduced number of credits for procurement policy (3 under BETA)
	23.02 - Product environmental information	**Environmental Product Declarations (up to 4 credits)**: Where a range of products specified at the Design Stage and installed by the Post Construction Stage are covered by verified EPDs. the credits are awarded on the basis of the number of products covered across product categories as follows: Number of EPDs: 4 (1 credits) 6 (2 credits) 8 (3 credits) 10 (4 credits)	4	2	3			RP		**Reduced number of credits for specifying EPDs**

		23.02b - Building Life Cycle Comprehensive Route	Upto 19 credits available: The home has been assessed using an IMPACT compliant tool	19	12	19			Piercy & Co, TFT	3	Based on an IMPACT compliant modelling to be undertaken as part of the planning application, to be passed on to the RP for completion
	24 Life Cycle Costing	24.01- Occupant's life cycle cost report	At the end of process stage 2 (RIBA Stage 2), life cycle cost (LCC) analysis is produced by a suitably qualified cost consultant at a level of detail to inform the homeowner of key maintenance and operational costs. A homeowners report based on the most up-to-date LCC needs to be made available to potential homeowners prior to a commitment to purchase. The report needs to include a summary which requires no expert knowledge to understand. As a minimum it must include: - Cost (current prices) reported at intervals of 1 year, up to year 60. - A summary highlighting the most significant findings of the LCC analysis including significant planned maintenance, as determined by the cost consultant . Cost items to be included are listed in the HQM guidance	6	0	6				2	Not proposing to include in the strategy as this requires additional resourcing and fees at RIBA 2
		24.02- Component Level Life Cycle Cost Optimisation	By the end of process stage 4 (RIBA Stage 4) a component level LCC appraisal is carried out and appropriate examples are provided the design team to demonstrate how the component level LCC optimisation has been used to influence building and systems design or specification to reduce the overall maintenance and operational costs to the homeowner. The analysis is provided as a report to the client.	6	0	6			RP	4	Life Cycle Cost reporting would be required by the end of RIBA stage 4. To be included for completion by RP
	25 Durability of Construction Products	21.01- Integral Elements	The relevant integral building element at risk of severe material degradation have been identified. Appropriate measures have been incorporated into the design and specifications to limit the degradation effects identified.	5	5	5			Piercy & Co	3	Similar to BREEAM Mat 5 : durability and resilience Team to provide high level review against criteria, RP to provide at design/construction.
		21.02- Finishing Elements	**ONLY AVAILABLE IF INTEGRAL ELEMENTS CREDITS ARE TARGETED.** The relevant finishing building elements at risk of cosmetic material degradation have been identified. Appropriate measures have been incorporated into the design and specification to limit the degradation effects identified.	2	2	2			RP	3	Similar to BREEAM Mat 5 : durability and resilience RP to provide details at design
			SECTION TOTAL (Credits)	**69**	**40**	**63**		**0**			
			SECTION TOTAL (%)	**13.8%**	**8.0%**	**12.6%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Space										
25 Drying Space	25.01- External Drying Space	An adequate external drying space is provided. The drying space is secure and can accommodate a drying length of: - 20m	1	0	1			RP	4	Possible inclusion within the RP deliverables
	25.02- Internal Drying Space	A tumble dryer or washer dryer, that is energy efficiency and has an acceptable level of condensation, is installed prior to handover Tumble dryer - A+ = 2 credits Washer dryer - A = 1 credit	2	0	2			Piercy & Co	4	Possible inclusion within the RP deliverables
26 Access and Space	Pre-requisite	Home information needs to be provided as part of or all of the criteria in this issue	YES	YES	YES			RP		
	26.01- National Space Standards	The home meets that Technical Housing Standards - Nationally Described Space Standard.	5	5	5			Piercy & Co	2,3	Piercy & Co to confirm
	26.02- Accessible and adaptable design	Internal functional space within the home office offers flexible design options present within the home	3	3	3			RP	3,4	Team to provide high level review, RP to develop further during design
	26.03- Accredited access consultant confirmation	The accredited access consultant confirms that the homes have been built following the advice given in crit 6 via one (or more) of the following according to the level of assurance they deem required based on the nature of the development	3	0	3			RP	3,4	Access consultant appointment required to achieve this credit
27 Recyclable Waste	Pre-requisite	Home information needs to be provided as part of or all of the criteria in this issue	YES	YES	YES			RP		
	24.01- Consultation with Waste Collection Authority	The waste collection authority is consulted to determine the waste collection patterns, identifying the: - Number of recyclable streams (including composting) - Type and size of waste collection containers (e.g. dedicated wheelie bins, boxes, communal bins etc).	2	2	2			Caneparo / RP	3	Caneparo to confirm waste service strategy (if part of scope)
	24.02- Internal Waste Storage	Dedicated internal space, with fixed units to store recyclable waste, is provided. The number of internal recyclable waste facilities should reflect the number of recyclable waste streams collected by the waste collection authority. The combined capacity of internal recyclable waste facilities should be a minimum of: - 30 litres for homes with 1-2 bedrooms - 40 litres for home with 3 or more bedrooms **- All homes are provided with dedicated internal space, with fixed units to store food waste that are a minimum of 10 litres in volume.**	5	5	5			Piercy & Co/TFT/RP	4,5	RP to develop internal waste storage design
	24.03- Composting	All homes are provided with composting facilities, for garden or food waste, in the form of one or more of the following: - Individual home-composting facilities. - Local communal facilities within close proximity of the home. - Composting collection services run by the waste collection authority. All homes must be provided within internal composting waste storage that is a minimum of 10 litres in volume.	3	0	3					Unless required by Camden, not envisaged to be targeted as part of HQM strategy
		SECTION TOTAL (Credits)	**24**	**15**	**24**		**0**			
		SECTION TOTAL (%)	**4.8%**	**3.0%**	**4.8%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Water										
28 Water Efficiency	28.01- Water Efficient Fittings	**Five credits are awarded where the home has achieved:** - A modelled water consumption of less than or equal to 110 litres per person per day, calculated in accordance within the HQM methodology (without specifying rainwater or greywater systems)/ **Eight credits are awarded where the home has achieved:** - A modelled water consumption of less than or equal to 110 litres per person per day, calculated in accordance within the HQM methodology (without specifying rainwater or greywater systems) where all water fitting categories in the optional fittings standard have been met. **11 credits are awarded where the home has achieved:** **- A modelled water consumption of less than or equal to 100 litres per person per day, calculated in accordance within the HQM methodology (without specifying rainwater or greywater systems) where all water fitting categories in the optional fittings standard have been met.**	11	8	11			RP	3	<110 litres for 8 credits (with optional fittings) <100 litres for 11 (advanced fittings)
	28.02- Water Recycling	**ONLY AVAILABLE IF WATER EFFICIENT FITTINGS CRITERIA HAS BEEN TARGETED.** Rainwater or greywater recycling systems have been specified and it is demonstrated that there is sufficient water supplied by these systems to offset the demand for WC flushing for the home in accordance with the HQM guidance.	6	0	0			RP	3	Greywater harvesting required to meet 50% of WC flushing demand (for 3 credits) Confirm if there is budget for greywater
		SECTION TOTAL (Credits)	**17**	**8**	**11**		**0**			
		SECTION TOTAL (%)	**3.4%**	**1.6%**	**2.2%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Home Delivery										
29 - Project Preparation	29.01- Feedback from Previous Projects	Where it is demonstrated that lessons learnt from the previous developments have been incorporated into the assessed home which follow the process set out in the HQM methodology: 1. An individual has been appointed who will be responsible for facilitating the lessons learnt activities and its implementation in the assessed project. 2. Residential project completed in the last two years that are similar to the assessed project have been identified. 3. In the early stages of the project the following information is gathered about the selected past projects: a. best practice in design specification, construction and procurement b. areas of improvement c. risks to avoid 4. The causes of issues in past projects have been investigated and solutions identified to address them in the assessed project to avoid defects or mistakes, or to repeat successes. 5. A report detailing all lessons learnt activities is developed and made accessible to all in the organisation for future reference.	4	0	4			RP	3	Post occupancy evaluation results to feed into design. Does RP have experience of delivering HQM to feed into project design and lessons learnt
	Minimum requirement - **Project delivery plan**	Before detailed design has started (typically RIBA Stage 3) the project delivery stakeholders have met to discuss: a. Project design and client requirements with regards to meeting HQM compliance b. Roles responsibilities and the contribution of each member of the project delivery team to meet the above c. HQM performance targets to be achieved . Before any activities (including clearance/demolition or any other construction activity) have started on-site(typically before RIBA stage 4 or equivalent): a. A set of actions to manage the construction process and build quality are established and an inspection routine and the format of the construction record have been set. b. A set of actions are established for managing risks of poor performance by adapting design or introducing procedures to ensure appropriate site operatives are aware of how to manage these risk during construction and handover. c. A schedule of commissioning and testing that identifies and includes a suitable time scale for commissioning of all building services and control systems and testing building fabric, in line with appropriate commissioning best practice guidance. d. The principal contractor accounts 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. e. The principal contractor accounts 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. f. A target for the home's air permeability (m3/hm2@50PA) is agreed and a strategy for how it will be met is established, including: roles and responsibilities, how performance will be monitored and details of any testing that will be carried out. g. The project delivery stakeholders have discussed and agreed on the project's post-construction and handover requirements.	YES	YES	YES			RP		Requires project performance to be agreed, this will form part of discussions with RP provider.
	Minimum requirement - **Product procurement and substation policy**	The client or the PC has a product procurement policy that - Sets out performance requirements for products and specifications to be procured for the assessed project. The performance requirements should: a. Encourage products and specifications, to be procured according to best practice standards b. Encourage specifications that lead to high build quality. - Sets out instances where substitutions will be allowed and what should be taken into account when considering substitutions. c. States clearly that any substitution of products of specifications will need to meet the performance requirements set out for the project. It should set out clear approval and verification procedures for the contractor to follow when substituting products.	YES	YES	YES			RP		Derwent procurement policy to be used to satisfy this requirement
	Minimum requirement - **Dissemination of information**	Processes are in place to ensure communication of the above minimum requirements to all relevant trades as appropriate for their specific involvement. Information should be communicated in an understandable way, in an appropriate language, which includes the following content as a minimum in order to : - Promote good practice of workmanship and highlight potential issues that can undermine build quality for the elements at key stages throughout construction. - Explain processes for ensuring quality on-site, including the role of the appropriately qualified person and how they can help - Clarify the process for making design and materials substitutions - Highlight areas where their work could impact (positively or negatively) on performance of other elements in terms of areas such as energy performance, and health and wellbeing.	YES	YES	YES			RP		
	29.02 - Site worker feedback	The client or the principal contractor has a documented policy and procedure in place to enable staff to make protected The policy should clearly: crit 8.a: Communicate the significance that the company attaches to identifying and resolving wrongdoing. crit 8.b: Encourage workers to raise concerns within their organisation as soon as possible and to give them the confidence to do so. crit 8.c: Remind workers of the standards of behaviour expected of them. crit 8.d: Ensure workers know whom to approach with a concern, and enable them to bypass the person, management level or part of the organisation to which the concern relates. crit 8.e: Include an option to raise concerns anonymously and set out a process for it. crit 8.f: Outline the procedures for investigating disclosures and what steps might be taken if wrongdoing is uncovered. crit 8.g: Set out safeguards for those making genuine disclosures. crit 8.h: Communicate what will happen to those who victimise genuine disclosures or abuse the system by making malicious allegations. crit 8.i: Provide access to further sources of advice and guidance on making disclosures. The principal contractor is responsible for prominently displaying the policy and contact details on the construction site and has ensured all site workers and the client (where a policy has been put in place by the principal Contractor under crit 7) have been made aware of the policy.	2	2	2			RP		RP to deliver as part of strategy
30 - Commissioning and Testing	Minimum Requirement	Appropriate project team members have been appointed to conduct and manage commissioning activities and where applicable the following building systems listed below are commissioned in line with appropriate commissioning best practice: - Hot water - Heating - Ventilation - Comfort cooling - Low and zero carbon technologies For buildings with complex building services and system (e.g. communal systems with a centralised plant), a specialist commissioning manager must be appointed to conduct and manage commissioning activities	YES	YES	YES			RP	5	
	30.02- Fabric pre-testing	A member of an appropriate body has been appointed to: crit4.a: Determine the appropriate inspection and pre-testing methods for the site, using their professional discretion in line with the Methodology section and their professional body best practice guidance. crit4.b: Provide quality assurance of the assessed home's fabric performance, including continuity of insulation, through inspection and air permeability testing, after the Primary air barrier is complete and while it is still accessible (see Methodology). crt 4c: Outline recommendations to help meet the designed fabric performance standards at post-construction crit 4.d: Broaden the sample size and carry out additional pre-testing of more homes if there is evidence of potential causes for the air test targets not being met for other dwelling types, which may affect other units not tested. crit 5: The recommendations made as part of crit 4.c are carried out. Credits are awarded based on the % of homes pre-tested	4	2	4			RP (Contractor)	5	Testing following application of primary air barrier 50% of homes to be inspected/testing for 2 credits
	30.03- Testing Building Fabric	Where post-construction testing and inspection of the integrity of building fabric is carried out, in accordance within an appropriate standard and includes the quality assurance of at least one of the following: - Continuity of insulation (3 credits) - Avoidance of thermal bridging (5 credits) - Air leakage paths (7 credits)	7	3	7			RP (Contractor)	5,6	Airtightness testing = 3 credits Thermographic testing = 4 credits Combined = 7 credits

	31 - Inspections and Completion	Minimum Requirement	Visual defects inspection An appropriate qualified person, who is independent from site activities has done the following, before the occupant moves in : - Carried out a visual defects inspection of all the aspects in the visual defects inspection table to check installation and finishes are in line with the e specification. - Identified, monitored and reported on any remedial work that is needed, to the developer or client - Ensured the home is finished and habitable, including the following: a. access to the home is safe and clear (i.e. unobstructed by construction works) including drives and pathways to the home. b. There are no health and safety hazards inside the home c. Electrics and plumbing are all functioning d. All active systems inside the home are installed, working and ready for occupant use# e. All fixtures and fittings are installed and finished f. Finishes and decoration are completed internally and externally. The results of the visual defects inspection and any outstanding remedial work are reported and given to occupants before they move in as part of their home information.	YES	YES	YES			RP (Contractor)	5,6	Part of aftercare/handover strategy
		Minimum Requirement	**Construction inspection** Where an appropriately qualified person is based on site and has done the following, as a main part of their role - outlined and agreed the strategy, roles and responsibilities for meeting this issues criteria, as part of the activities in the 'project delivery plan'. - Carried out systematic and scheduled inspections of build quality for all assessed homes at key stage throughout construction and ensured they comply with the home's required performance characteristics, including the following, as a minimum: - design specifications - warranty standards - building regulations, planning permissions and other local authority and statutory requirements Ensured any design variations or material substitutions are appropriately managed and approved by an appropriate member of the design team or the client.	YES	YES	YES			RP (Contractor)	5,6	Part of aftercare/handover strategy
		Minimum Requirement	**Construction record** Where an appropriately qualified person has been appointed to ensure a construction record is kept throughout the construction stage that demonstrates the quality assurance measures taken to meet the home's required performance characteristics. The record is available to: - Site operatives throughout the construction stage for them to directly contribute to, as appropriate - Occupants on request, as part of any visual defects inspections and when moving in, it needs to be available for the duration of the building warranty in place	YES	YES	YES			RP (Contractor)	5,6	Part of aftercare/handover strategy
		31.01 - Right to inspect	Potential owners of the homes are given the right to carry out their own, non-invasive, visual inspection or snagging check. This may be carried out up to be month before committing to buy the home, or up to one month before completion of the build and purchase if the home is not built at the time of committing to buy. The home's specification and construction record is available to the potential owner or their representative carrying out the inspection	2	2	2			RP (Contractor)	5,6	Part of aftercare/handover strategy
		31.02 - Feedback dissemination	Where the appropriately qualified person provides feedback on any lessons learnt and examples of good practice, regarding quality assurance from activities on the assessed site, to the developer client consultants and designers, to inform future projects via recorded meetings or an easily accessible platform.	1	1	1			RP (Contractor)	5,6	Part of aftercare/handover strategy
		31.03 -Third Party Verification	The appropriately qualified person appointed to carry out the role is an independent third party	5	5	5			RP (Contractor)	5,6	Part of aftercare/handover strategy
		31.04- Early inspection visit	Where a contracted commitment is in place for a visit to be made, between four and six weeks after occupants have moved in, that includes the following: - An inspection of the active systems referred to in AFTERCARE 02: HANDOVER VISIT to check they are functioning in line with their design intent and manufacturer's guidance. If needed, the following actions are taken to ensure the active systems are functioning as intended: repairs, remedial work, recommissioning, replacement or guidance given to occupants.	4	4	4			RP (Contractor)	5,6	Part of aftercare/handover strategy
		31.05- Seasonal inspection visit	Where a contracted commitment is in place for a visit to be made, between 8 and twelve months after the occupant has moved in, to do the following: - Carry out the same checks referred to in 31.04 criteria - Make any adjustments or provide occupants with guidance to ensure the home and its systems are performing as expected throughout the year, allowing for season variation. - Offer to check heating bills and take action to investigate and ensure homes are performing in line with their design intent. This may include : a. Occupant guidance where occupant behaviour is a significant factor b. Remedial measures to address any sources of unexpected heat loss, where this is identified by testing such as thermal imaging at junctions and meeting points. c. Systems adjustments or replacement where they are not running efficiently or are faulty. d. Offer to align any inspection visits with visits required for meeting criteria for the 11.4 Post Occupancy Evaluation issue, as appropriate	4	0	4					Depends of agreement of terms and extent of aftercare/handover
	32 Responsible Construction Practices	32.01- Responsible Construction Management	Achieve items required for one credit in the HQM table 57 (checklist). - 2 credits Achieve any additional six items - 4 credits Achieve all remaining items - 5 credits CCS scheme satisfies the criteria above for full credits	5	5	5			RP (Contractor)	4	Include within contractor's requirements. Minimum BL SB of 40 CCS score
	33 Construction Energy Use	29.01-Contractor's Energy Efficiency Checklist	Contractor's energy efficiency checklist has been completed	2	2	2			RP (Contractor)	4	To be included within contractor's requirements
		29.02- Energy Monitoring and Reporting	Target, monitor and report data on the principal contractor's and subcontractors' metered energy consumption as a result of the use of construction plant, equipment and site accommodation.	2	2	2			RP (Contractor)	4	To be included within contractor's requirements
		29.03- Detailed Monitoring and Reporting	Conduct the monitoring and reporting of energy data on a weekly basis.	1	1	1			RP (Contractor)	4	To be included within contractor's requirements
	34 Construction Water Use	30.01- Contractor's Water Efficiency Checklist	Contractor's water efficiency checklist has been completed	2	2	2			RP (Contractor)	4	To be included within contractor's requirements
		30.02- Water Monitoring and Reporting	Target, monitor and report data on the principal contractor's and subcontractors' metered water consumption as a result of the use of construction plant, equipment and site accommodation.	2	2	2			RP (Contractor)	4	To be included within contractor's requirements
		30.03- Detailed Monitoring and Reporting	Conduct the monitoring and reporting of water data on a weekly basis.	1	1	1			RP (Contractor)	4	To be included within contractor's requirements
		35.01- Product Procurement	By the end of **RIBA Stage 2**, the client or developer has as documented policy and procurement that sets out the procurement requirements for all suppliers and trades to adhere to relating to opportunities for minimising construction waste on-site. The documented policy must be disseminated to all relevant internal and external personnel and must encourage the specification of products which can help to minimise waste arisings.	1	1	1			Derwent / RP	2	Derwent have procurement policy To be included within contractor's requirements

	35 Site Waste Management	35.02- Construction Resource Efficiency	A Resource Management Plan (RMP) has been developed covering the non-hazardous waste related to on-site construction and where applicable dedicated on-site manufacture or fabrication meets lower than the following benchmarks: - ≤13.9m3 (≤8.5 tonnes) - 2 credits - ≤8.1m3 (≤4.9 tonnes) - 4 credits - ≤4.8.9m3 (≤2.9 tonnes) - 6 credits - ≤3.5m3 (≤1.9 tonnes) - 8 credits Where existing building on the site will be demolished a pre-demolition audit of any existing buildings, structures or hard surfaces is completed.	8	2	4			RP (Contractor)	4	To be included within contractor's requirements
		35.03- Diversion from Landfill	Waste materials will be sorted into separate key waste groups, either on-site or through a licensed contractor for recovery. Credits are awarded for meeting the following percentages of waste diverted from landfill: **2 credits:** Construction: 70% (by volume), 80%(by tonnage) Demolition : 80% (by volume), 90% (by tonnage) **4 credits:** Construction: 85% (by volume), 90%(by tonnage) Demolition: 85% (by volume), 95% (by tonnage)	4	4	4			RP (Contractor)	4	To be included within contractor's requirements Requirements for two credits have changed: construction waste targets have been reduced (from 80% volume/90% tonnage) and demolition waste has been added
		35.04- Diversion Excavation Waste from Landfill	**ONLY AVAILABLE IF MAXIMUM CREDITS FOR DIVERSION FROM LANDFILL CRITERA HAS BEEN TARGETED.** At least 95% (either by tonnage or volume) of excavation waste is diverted from landfill.	3	3	3			RP (Contractor)	4	To be included within contractor's requirements 3 credits now available for this section under HQM one
			SECTION TOTAL (Credits)	**64**	**44**	**60**		**0**			
			SECTION TOTAL (%)	**12.8%**	**8.8%**	**12.0%**		**0.0%**			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
User Experience										
36 Aftercare	Minimum Requirement	The home is covered by a building warranty provider who is a member of and fully complies with 'The Consumer Code for Home Builders' or is recognised by the Trading Standards Institute.	YES	YES	YES			RP (Contractor)	4	
	Minimum Requirement	**Handover visit :** Where a commitment has been made to offer a home visit to be carried out within the first 4-6 weeks of occupation and where this visit is provided : Introduction to the home information available, including its purpose and communication of the content for the below topics as a minimum: - Introduction, including the quick start guide and HQM certificate - Health and safety - Operation and maintenance - Support - Demonstration of ventilation and heating systems and general advice of how to conserve energy including when to open windows, put the heating on, maintenance etc. - Demonstration of how to use and maintain low and zero carbon technologies. This must include guidance on how to easily check when LZCTs are working properly and the support available when they are not (MCS, warranties etc.) -Demonstration of how to use any installed smart meters or other monitors and controls. - Provisionally agree dates for the 4-6 week and 8-12 month aftercare visits, where these criteria are met in INSPECTIONS AND COMPLETION -Where post occupancy evaluations have been committed to, details regarding what a POE is, how they can get involved and the benefits of being involved.	YES	YES	YES			RP (Contractor)	6	
	36.01- On-call support	Where a commitment has been made to provide on call support, to the occupants of the home being assessed, which meets the following: a. Covers all parts of the home (i.e. all building fabric, system and services) b. Is available for the whole duration of time specified in the criteria. c. Is free for occupants to use. Credits are not available where aftercare support is offered as an optional feature of the home at an additional cost of the occupants. d. Is available to whoever occupies the home, during the time the support is specified as being available for. This means that in the event that a home changes occupancy before the arranged aftercare support is due to finish, the support must still be available to any new occupants for the time originally agreed to. - 3 credits for two years - 4 credits for three years	4	3	4			RP (Contractor)	6,7	
37 Home Information	Minimum Requirement	Where it can be demonstrated that home information will be provided to occupants of all homes from the first day of moving in, meeting the following requirements : - Available in an accessible format - Available in both a hard and soft copy - Written in plain English that is jargon free - Includes key home information as listed in the HQM guidance Where specific issues listed within the HQM guidance is provided within the Home Information pack	YES	YES	YES			RP (Contractor)	6	Now a mandatory requirement with no credits available under HQM one
38 Smart Homes	Pre-requisite	Home information: Needs to be provided as part of or all of the criteria in this issue.	YES	YES	YES			RP (Contractor)		
	38.01- Connectivity to the home	Where a good indoor signal is available to the home for at least two of the following: - Connections from the street for broadband, telecommunications and cable TV are installed in duct work provided by the service provider, overhead from the street or via direct burial cable, to support future change, as defined in PAS 35491 2017, Section 5.2.2 - Broadband (1 credit for 2.4Mbits/s, 2 credits for 100Mbits/s) - Cabled connection is available to occupants when they move in	2	1	1			RP (Contractor)	6	Additional requirements in respect to internet connection,
	38.02 - Connectivity within the home	There is a primary home distribution space (PHDS) containing a patching panel which together provides a central location for all wiring to be run, including connections from incoming services and Distrubution of cabling around the home, in accordance with PAS35491 2017.	1	1	1			RP (Contractor)		Additional requirements in respect to ethernet cabling and installation
	38.03- Basic smart heating	**ONLY AVAILABLE IF CONNECTIVITY CRITERA HAS BEEN TARGETED.** Accessible smart home devices or systems have been installed at no additional cost to the occupant that: - Provide a smart heating functionality by monitoring internal temperature levels in the main living room, as a minimum, and keep it within a fixe range for energy savings and comfort, and - has a 12 month warranty on the smart heating devices. This includes smart thermostat, temperature sensors, boiler transceiver unit and any communications hub provided specifically within the smart heating system. Use a smartphone application interface for the smart devices that displays internal temperature levels over a weekly, monthly and yearly basis, provides remote control of heating with the ability to change schedules and provides instant on/off controls. Home over 150m2 must have temperature sensors in a main bedroom, in additional to the main living room.	1	1	1			RP (Contractor) /Aecom	6	Energy display devices
	38.04 - Advanced smart heating	**ONLY AVAILABLE IF BASIC SMART HEATING CRITERA HAS BEEN TARGETED.** Provide additional smart heating functionality that: - Uses multi-zone heating: the ability to independently measure and control the internal temperature of multiple zones for all principal rooms within the home - Uses external temperature sensing - Allows 'away from home' or geo-location control. - Allows active frost protection - Uses stored environmental and behavioural data to tailor experience - Occupancy sensing that can be used to trigger heating schedules (such as 'away from home 'modes	1	0	1			RP (Contractor)		May increase cost substantially

	38.05 - Basic smart lighting	**ONLY AVAILABLE IF BASIC SMART HEATING CRITERA HAS BEEN TARGETED.** crit16.a:Monitor and control the internal lighting in principal rooms, using pre-set lighting controls for energy savings and comfort, and have the ability to be controlled remotely via a smart phone app. crit16b.Allow for remote dimming control of individual lights in principal rooms. crit16c. Occupancy sensing that is used to trigger lighting schedules (for example 'away from home' modes).	1	0	1			RP (Contractor)		
	38.06- Smart energy management	**ONLY AVAILABLE IF BASIC SMART LIGHTING CRITERA HAS BEEN TARGETED.** Accessible smart home devices or systems have been installed at no additional cost to the occupant that: - Monitor, control and report energy use of individual devices via a smartphone app in at least the principle rooms, using smart plugs or sufficient energy disaggregation methods. - Provide additional lighting functionality that automatically senses ambient light levels and adjusts light levels to meet pre-set requirements (for example, by altering brightness or temperature of the light). - Monitor and display the operational status and availability of LZCTs where these are installed (such as where solar PVs are installed).	1	0	1			RP	4	May increase cost substantially
	38.07- Additional Smart Solutions	**ONLY AVAILABLE IF BASIC HEATING AND LIGHTING CRITERA HAS BEEN TARGETED.** Accessible smart home devices or systems have been installed at no additional cost to the occupant for at least three of the following: - Monitor air quality in all principle rooms and either report information to a smart phone app or to an in-home display - Enable voice control of the smart heating and smart lighting devices, independent from a smartphone. - Monitor and report humidity in the kitchen, bathroom and a main bedroom. - Smart ventilation or filtering, linked with an air quality sensor that measures at least three of the following: carbon monoxide, carbon dioxide, humidity, particulates, VOCs - Gesture control for smart devices - Geofencing: ability to control devices based on the location of the user (for example, where they are within a set radius of the home). Other controls	1	0	1			RP	4	May increase cost substantially
		SECTION TOTAL (Credits)	12	6	11					
		SECTION TOTAL (%)	2.4%	1.2%	2.2%		0.0%			

Credit ID - Name	Sub Credit ID	Credit Summary	Available	Targeted	Potential	Status	Awarded	Responsibility	RIBA Stage	Comments
Future Learning										
39 Post Occupancy Evaluation	39.01 - Occupant satisfaction feedback and bill data	Where a commitment has been made for an appropriately qualified professional to carry out the following: - Within 6 weeks of occupation: a. Occupants are formally offered to be involved with the POE, in an accessible format or in person - the formal offer must include the following as appropriate: - Details of the actions to be carried out with the occupant's permission. - Benefits of the POE to the occupants, including any services available to them as part of the POE (for example, incentives or if the Aftercare issue has been pursued), to encourage occupant involvement. - Broader reasons for POE's to be carried out and the importance for house building. - Approximate timescales for any home visits or opportunities for occupant feedback. - Contact details for the company and persons responsible for carrying out POEs. - Details of how occupant feedback and any performance data will be used.	2	2	2			RP	6	Section has been split to recognise levels of POE content and third party verification 10 credits
	39.02 - Energy and temperature monitoring	Where an appropriately qualified professional has also been appointed to do the following: - Collect and monitor the following data for at least one year, recorded hourly: a. Energy consumption data in kWh/person or kWh/m2. b. Internal temperature in degrees C recorded in the main bedroom and living room as a minimum - Compare actual and predicted energy costs using the home's Energy Performance Certificates (EPC). - Analyse results and outline future lessons, as part of crit 2, to improve the performance of future projects.	2	2	2			RP	6	
	39.03- Advanced POE	**ONLY AVAILABLE IF OCCUPANT SATISFACTION FEEDBACK AND BILL DATA CRITERA HAS BEEN TARGETED.** Where the appropriately qualified professional has also been appointed to do the following: Where an independent third party has been appointed as the appropriately qualified professional and is contractually obliged to fulfil any POE commitments referred to in the previous POE credit issue **s**	3	3	3			RP	6	
	39.04 - Independent third party	**ONLY AVAILABLE IF OCCUPANT SATISFACTION FEEDBACK AND BILL DATA CRITERA HAS BEEN TARGETED.** Where an independent third party has been appointed as the appropriately qualified professional and is contractually obliged to fulfil any POE commitments referred to in the previous POE credit issues	3	0	3			RP	6	
		SECTION TOTAL (Credits)	10	7	10					
		SECTION TOTAL (%)	2.0%	1.4%	2.0%		0.0%			

APPENDIX C: BRE Internal Water Calculation Tool

breglobal

Job no:	
Date:	20.11.20
Assessor name:	Oliver Morris
Registration no:	
Development name:	Tottenham Mews
Issue Date:	20.11.20

Rainwater **Greywater** **Results**

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS

(for use with the Code for Sustainable Homes issues Wat 1 for the May 2009 and subsequent versions)

Dwelling Description	1-3 bedroom flats within 23 unit development

1st step - Select from options below:

Is a Rain and/or Greywater system specified?	**No**
Is a shower AND bath present?	**Yes**
Has a washing machine been specified?	**Yes**
Has a dishwasher been specified?	**Yes**

2nd step - Build spreadsheet (click button below)

BUILD SPREADSHEET

As soon as this button is pressed the spreadsheet will change according to the options selected previously in the 1st step. Scroll down to see the changes.

3rd step - Enter consumption details for the specified fittings

TAPS (excluding kitchen taps)	Fitting type	Flow rate (litres/min)	Number of fittings
1	TBC	6.00	2
2			
3			
4			
	Proportionate flow rate (litres/min)		4.20
	Consumption / person / day (Litres)		**11.06**

BATHS	Fitting type	Capacity to overflow (litres)	Number of fittings
1	TBC	110.00	1
2			
3			
4			
	Proportionate capacity to overflow (litres)		77.00
	Consumption / person / day (Litres)		**12.10**

SHOWERS	Fitting type	Flow rate (litres/min)	Number of fittings
1	TBC	8.00	1
2			
3			
4			
	Proportionate flow rate (litres/min)		5.60
	Consumption / person / day (Litres)		**34.96**

DISHWASHER	Fitting Type	Litres per place setting	Number of fittings
1	TBC	1.25	1
2			
3			
4			
	Proportionate litres per place setting		0.88
	Consumption / person / day (Litres)		**4.50**

WASHING MACHINES	Fitting Type	Litres per kilogram of dry load	Number of fittings
1	TBC	7.00	1
2			

3			
4			
Where no washing machines have been specified but plumbing for future supply of grey/rainwater was installed, please enter details:			
		Proportionate of litres/kg of dry load	4.90
		Consumption / person / day (Litres)	**14.70**

WC's	Fitting Type	Flush Type	Volume**	Number of fittings
1	TBC	Full Flush	3.00	2
		Part Flush	4.50	
2		Full Flush		
		Part Flush		
3		Full Flush		
		Part Flush		
4		Full Flush		
		Part Flush		
		Average effective flushing volume (litres)		4.01
		Consumption / person / day (Litres)		**17.72**

KITCHEN SINK TAPS	Fitting Type	Flow rate (litres/minute)	Number of fittings
1	TBC	7.00	1
2			
3			
4			
	Proportionate flow rate (litres/min)		4.90
	Consumption / person / day (Litres)		**13.44**

WASTE DISPOSAL UNIT		
Is a waste disposal unit specified for the dwelling?	No	
Consumption / person / day (Litres)		**0.00**

WATER SOFTENER

Water Softener in use?	No
Total capacity used per regeneration (%)	
Water consumed per regeneration (litres)	
Average number of regeneration cycles per day (No.)	
Number of occupants served by the system (No.)	
Water consumed beyond 4% person / day (Litres)	**0.00**

4th step - Analyse Results

Go to Start

INTERNAL WATER CONSUMPTION

NET INTERNAL WATER CONSUMPTION	(litres/person/day)	**108.48**
RAINWATER ONLY COLLECTION SAVING	(litres/person/day)	**0.00**
GREYWATER ONLY RECYCLING SAVING	(litres/person/day)	**0.00**
RAIN/GREYWATER COLLECTION SAVING (combined system)	(litres/person/day)	**0.00**
NORMALISATION FACTOR	(litres/person/day)	**0.91**
TOTAL WATER CONSUMPTION	(litres/person/day)	**98.7**
CSH CREDITS ACHIEVED		**3**
CSH MANDATORY LEVEL:		**Level 3/4**

17. K COMPLIANCE

EXTERNAL WATER USE	(litres / person / day)	5.00
TOTAL WATER CONSUMPTION	(litres / person / day)	**103.7**
17. K COMPLIANCE?		**Yes**

PRINTING: before printing please make sure that in "Page Setup" you have selected the page to be as "Landscape" and that the Scale has been set up to 75% (maximum)

End