Crosstree Real Estate Management Ltd

Camden Town Hall Annexe

Sustainability Statement

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Job number 235190

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Executive Summary

This report is the Sustainability Statement that is prepared on behalf of Crosstree Real Estate Management Ltd and submitted in support of the planning application for the change of use, refurbishment and extension of the Camden Town Hall Annexe, Argyle Street, London WC1H 8NJ.

The sustainability statement provides details of the sustainable design and construction measures which have been adopted in the proposed design of the scheme.

The statement identifies relevant National, Regional and Local planning policy and outlines how the proposed design responds to these policies. In particular, the Sustainability Statement sets out how the design team proposes to reduce the energy, water and materials used in design and construction.

The design of the building has followed the energy hierarchy in order to reduce overall CO_2 emissions. A combination of passive design measures, efficient systems and appropriate renewable technologies are proposed which result in a 35% reduction in CO_2 emissions for the existing building and for the proposed new addition.

The development will use greywater harvesting to reduce potable water use. This will collect water from showers which will then be treated and used for toilet flushing.

Surface water run-off will be reduced from the existing site condition through the use of landscaping and a “blue roof” system which attenuates water within the roof build up during periods of heavy rainfall.

The design team have sought to minimise the use of new materials by reusing as much of the existing structure as possible. The environmental impact of new materials will be assessed using the BREs Green Guide to Specification and suppliers operating third party certified environmental management systems will be sought.

The proposed development will target a rating of Very Good, under the BREEAM Non-Domestic Refurbishment Scheme.

1 Description of Scheme

The proposed development is for the remodelling, refurbishment and vertical extension of the existing building in connection with the change of use from offices to a luxury hotel; along with associated highway, landscaping and public realm improvement works as described below.

The development includes the replacement of the Ground Floor façade and retention of the 1st to 7th façade of the existing building. The existing external south west fire escape staircase is to be removed as part of the renovation to open up the public footpath to Euston Road from Tonbridge Walk. The new build part of the building consists of three floors that will be formed of guest rooms and ancillary hotel facilities.

The aim of the redevelopment is to also significantly improve the public realm and create a frontage onto the street that is welcoming, open, of a high quality design and built from good quality materials. The Design and Access Statement includes further detail on the design principles and vision for the redevelopment.

2 Methodology

The sustainability statement provides details of the sustainable design and construction measures which have been adopted in the proposed design of the scheme.

The statement identifies relevant National, Regional and Local planning policy and outlines how the proposed design responds to these policies. In particular, the Sustainability Statement sets out how the design team proposes to reduce the energy, water and materials used in design and construction.

A baseline policy review of relevant National, Regional and Local planning policy has been conducted and is included in Appendix A.

The structure of the Sustainability Assessment section of this document groups relevant policies under seven main headings to be addressed. These are Energy, Water, Materials and Waste, Sustainability Assessment Tools, Biodiversity, Flooding and Drainage, and Pollution and Construction Impacts.

The Sustainability Statement references other documents which are submitted in support of the planning application and should be read in conjunction with these referenced documents.

3 Sustainability Assessment

3.1 Energy

London Plan Policy 5.2, the Mayor's SPG on Sustainable Design and Construction, Camden's Policy CS13 and the Camden Planning Guidance on Sustainability (CPG 3) all require carbon dioxide emissions from the development to be minimised by following the steps in the energy hierarchy below:

1. Be Lean: Use Less Energy
2. Be Clean: Supply Energy Efficiently
3. Be Green: Use Renewable Energy

The project team's response to the energy hierarchy is outlined fully in the Energy Statement which is submitted as part of the application for planning permission. In total, it is proposed to reduce the regulated CO_2 emissions of the whole development (both existing and new) by 35% against a Part L 2013 notional building baseline (regulated energy).

This section of the Sustainability Statement summarises the measures which are to be implemented in the design of the building and the effect of these measures on the overall CO_2 emissions of the development.

3.1.1 Be Lean: Use Less Energy

The development incorporates a number of passive measures to improve the overall energy efficiency of the building. These include:

- Thermal Envelope Performance
- Linear Thermal Transmittance
- Envelope Air Tightness
- Minimising Solar Gain
- Thermal Mass
- Natural Ventilation

The building also utilises energy efficient systems. In the office areas, these will include:

- Low energy artificial lighting installation,
- Variable speed drives on pumps and fans where appropriate
- Reduced specific fan power at central ventilation plant (1.6W/l/s)
- High efficiency natural gas fired boilers (96%)
- High efficiency turbo air cooled chillers (SEER > 5)
- High efficiency heat recovery devices to all ventilation plant (>70%)
- Shower Waste Water Heat Recovery (40% DHW Load & Storage Saving)
- CHP Unit providing 40% of the heat capacity of the new building portion.

In total, passive design measures and efficient systems will deliver an estimated saving of 24% from the baseline (regulated) energy emissions for the new build element of the scheme and 36% for the refurbishment element.

3.1.2 Be Clean: Supply Energy Efficiently

London Plan Policies 5.5 and 5.6 and both the GLA and Camden Supplementary Planning Guidance support connection to existing decentralised energy networks or the creation of new networks where possible.

As part of the energy strategy for the proposed development, a CHP feasibility study was undertaken to determine which option is most suitable for the site. Based on the analysis the CHP serving only the hotel was selected on the basis that it has a low simple payback.This CHP options results in a saving of 40% in CO_2 emissions over the passive measures outlined above. Refer to Appendix 2 of the Energy Statement for further detail on the feasibility study.

3.1.3 Be Green: Use Renewable Energy

London Plan Policy 5.7 Camden's core strategy policy CS13 and development policy DP22 support the use of renewable energy technologies in developments. CPG 3 states that developments should aim to achieve a 20% reduction in CO_2 emissions through the use of on-site energy generation unless it can be demonstrated that such provision is not feasible. The feasibility of various renewable technologies is considered in full in the Energy Statement.

The viable technologies for this site and for the hotel include the following:

- Photovoltaic
- Solar thermal for pre-heating DHW
- Ground source heating and cooling

An analysis of the feasibility of these technologies is included in the Energy Statement. It concludes that both solar hot water heating and photovoltaic panels are technically feasible for the development, but can not be incorporated dur to height restrictions. Ground Source Heating and Cooling is deemed not feasible for the site.

3.2 Water

London Plan Policies 5.15, Camden's Core Strategy Policy CS13 and Development Policy DP23 require developments to be designed to be water efficient and to minimise the need for further water infrastructure.

The development will use greywater harvesting to reduce potable water use. This will collect water from showers which will then be treated and used for toilet flushing.

The building will have water metering connected to the building management system which will also incorporate a major leak detection system.

The toilet and shower areas within the communal areas will be fitted with shut-off valves linked to presence detectors to shut off the water supply when the areas are unoccupied to prevent minor leaks.

Rainwater harvesting is not proposed for the development as greywater harvesting is already incorporated and there is limited flushing demand which can be met by recycled water.

3.3 Materials and Waste

London Plan policies 5.16 aims to minimise waste generation and encourage the reuse, recycling/composting and reduction in the use of materials. In addition, policy 5.17 states that developments should include suitable waste and recycling storage facilities. Furthermore, policy 5.20 sets targets for, and encourages the recycling or re-use of construction, demolition and excavation waste.

Camden's sustainability policies include Core Strategy policies CS13 and CS18, supported by Development Policy DP22, which seek to reduce waste and encourage recycling.

CPG 3 further sets out 5 key measures for sustainable material use in developments:

1. Managing existing resources;
2. Specifying materials using the Building Research Establishment's Green Guide to Specification;
3. Ensuring that materials are responsibly sourced;
4. Minimising the harmful effects of some materials on human health;
5. Ensuring that specified materials are robust and sensitive to the building type and age.

The design team's response to the above policies is set out below in line with this hierarchy.

3.3.1 Managing existing resources

As described in the Design and Access statement, the proposed design of the development will reuse a significant part of the existing building structure and sub-structure. The RICS publication "Methodology to Calculate Embodied Carbon of Materials" (figure 6, page 9) gives a benchmark range for embodied carbon of a new build city hotel of between 550 and 1100 $kgCO_{2e}/m^2$. Based on the possible single point value of $870kgCO_{2e}/m^2$, this would put the amount of embodied carbon saved through retention of the existing building at approximately 13,000 tonnes; equivalent to more than 8 years of operational carbon emissions for the extended building.

The demolition contractor will be required to carry out a pre-demolition audit of the building to identify the materials on site which are to be removed and to identify how these will be reused or recycled. Although re-use on site will be restricted by the availability of storage space, the project will aim to achieve high rates of diversion from landfill.

The Principal Contractor will be required to develop a site waste management plan. This will outline measures to monitor the project's waste generation of non-hazardous waste and diversion of waste from landfill. Targets will be set that are in line with best practice. Co-mingled waste will be collected on site and will be removed by a licenced contractor to be sorted for recycling or disposal.

3.3.2 Green Guide to Specification

BREEAM requires major building materials to be assessed in terms of Green Guide to Specification performance.

CPG3 seeks for development projects of more than 500m^2 of any floorspace achieve an area weighted average of A+ to B for the major building elements (roof, external walls, floor finishes, internal partitions and windows) in accordance with the BRE Green Guide to Specification.

Detailed material selections have not yet been made, however, based on previous project experience, it is expected that an area weighted average rating of A+ to B will be achievable for External Walls, Floor Finishes and Upper Floors.

Although every effort will be made to specify the lowest impact materials possible, it may not be possible to specify a roof which achieves a Green Guide rating of A+ to B and also meets the performance requirements for loading, thermal performance and attenuation. Similarly, windows will be specified to have the highest Green Guide rating possible within the performance constraints of the façade.

3.3.3 Ensuring that Materials are Responsibly Sourced

Wherever possible, material specifications will call for materials to be sourced from suppliers with third party responsible sourcing certification. This will include the following:

- Timber (including temporary site timber) will be FSC or PEFC certified.
- Concrete will be certified to BES6001 (minimum Very Good level)
- Reinforcing steel will be certified by the CARES Sustainable Reinforcement or EcoReinforcement Schemes
- Plasterboard and framing will be certified to BES6001 (minimum Very Good rating)
- Insulation will have ISO14001 certification for both the product manufacture and key supply chain process

As the design progresses, other options to incorporate materials which are responsibly sourced will be investigated. There will be a target for products to have ISO14001 certification for the product manufacture as a minimum where this is available from a number of suppliers in the market.

3.3.4 Minimising the harmful effects of some materials on human health

Low volatile organic compound (VOC) materials will be specified for the following finishes in line with the requirements of BREEAM credit Hea 02:

- Paints, adhesives and varnishes
- Flooring and floor coverings
- Wall coverings
- Ceilings

- Any other wood finishes

Internal air quality testing will be carried out prior to handover of the building to verify that total VOC and formaldehyde levels are within acceptable limits.

3.3.5 Ensuring that specified materials are robust and sensitive to the building type and age

The project will target BREEAM materials credit 05 “Designing for Robustness”. During the detailed design stage, the Architect will carry out an assessment of the building to identify areas which are at particular risk of wear or damage such as vehicle movement areas and circulation spaces.

When these areas have been identified, appropriate protection measures and robust finishes will be specified.

3.3.6 Operational Waste

In addition to the above measures set out in the waste hierarchy, recycling of waste during the operation of the building has been considered and appropriate, accessible space for collection of recyclables has been provided.

3.4 Sustainability Assessment Tools

The Building Research Environmental Assessment Method (BREEAM) is an environmental assessment methodology for buildings. Most commonly, it is used to assess the design, procurement and construction of new buildings or buildings undergoing major refurbishment.

The assessment scheme considers site and building level environmental issues in the following categories: Energy, Water, Transport, Waste, Materials, Pollution, Ecology, Management and Health and Wellbeing. CSH separately considers Surface Water Run-Off while BREEAM has additional sections dedicated to transport issues and innovation.

Camden's Core Strategy policy CS13, notes that BREEAM provides helpful assessment tools for general sustainability. Camden's Development Policy DP22, *Promoting Sustainable Design and Construction,* requires applications for non-domestic developments of more than 500m^2 submitted before 2016 to achieve BREEAM "Very Good".

The Mayor of London's SPG on Sustainable Design and Construction also references BREEAM as a means of demonstrating compliance with some regional planning policy. In particular, BREEAM is referenced in relation to responsible sourcing of materials, robustness of materials, "healthy" materials, water use and air quality (NOx emissions).

The applicant has appointed BREEAM Assessors and the pre-assessment for the scheme has been carried out and the proposed development will achieve Very Good, with a target score of 58.71%.

3.5 Biodiversity

London Plan Policies 2.18 and 5.10 seek to increase the provision of green space in the region. Policy 5.11 specifically encourages developers to include planting and green roofs on their developments. In addition, London plan policy 7.19 directs that development should avoid areas of ecological value and should seek to promote and enhance the ecological value of existing sites.

Camden's development policy 22 states that schemes must incorporate green or brown roofs and green walls wherever suitable. This is supported by section 10 of CPG 3. Core Strategy Policy CS15 also aims to protect and enhance open spaces and promote biodiversity.

An Ecologist has been appointed for the project and will carry out a phase 1 habitat survey. Based on the nature of the site, it is expected that it will be of low ecological value and any recommendations will enhance the ecology of the site. The principal contractor will be required to comply with the ecologist's recommendations and the tree protection measures outlined in the Arboricultural Impact Assessment.

3.6 Flooding and Drainage

London Plan Policy 5.12 Flood Risk Management requires developments to comply with the flood risk assessment and management requirements set out in NPPF and associated technical guidance over the lifetime of the development and to have regard to measures proposed in Thames Estuary 2100 and Catchment Flood Management Plans.

London Plan Policy 5.13 *Sustainable Drainage* requires developments to utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, to aim to achieve greenfield run-off rates, and to ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

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.

London Plan Policy 5.14 *Water Quality and Wastewater Infrastructure*, requires adequate provision to be made for waste water infrastructure, and that water quality is protected and improved.

Camden's Development Policy DP22 *Promoting Sustainable Design and Construction* requires developments to be resilient to climate change by including appropriate climate change adaption measures including reducing water consumption and limiting run-off.

Camden's Development Policy DP23 *Water*, encourages developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding.

The Mayor of London's Supplementary Planning Guidance on Sustainable Design and Construction sets out the Mayor's priorities for developers as following the SUDs hierarchy, moving towards greenfield run-off rates, considering all sources of flooding and providing mitigation measures where appropriate.

The Camden Planning Guidance 3 document requires all sites in Camden over one hectare or 10,000m^2 to have a Flood Risk Assessment in line with Planning Policy Statement 25. Although the development site is less than one hectare, a Flood Risk Statement will have to be produced to fulfil the Flood Risk requirements for BREEAM. The statement must evaluate the risk of flooding from all relevant sources including fluvial, tidal, ground water, surface water and infrastructure failure.

The development site is not within the areas at risk from surface water flooding outlined in Camden's Development Policies Map 2.

Based on the Environment Agency maps the flood risk is low and the risk of all sources of flooding will be assessed in the Flood Risk Statement, which will be produced at a later stage. The conclusions will inform the detailed drainage design.

The SUDs hierarchy set out in CPG 3 has been addressed in the design of the building as shown below:

1. Store rainwater for later use

Rainwater harvesting has not been selected for the proposed development as greywater harvesting will be used instead. There is not enough landscape to irrigate therefore the only grewayter demand is for toilet flushing. Additionally, there are space restrictions due to the limited plant space at basement level which would make it unfeasible to install a rainwater harvesting tank.

2. Use Infiltration Techniques

The landscaping strategy includes some soft landscaping that will provide a degree of attenuation.

3. Attenuate rainwater in ponds or open water features for gradual release

Due to the central London site location, site restrictions and soil conditions, soakaways can not beinstalled.

4. Collect and store rainwater in tanks or sealed water features for gradual release

The design team's proposals use the roof area to attenuate rainwater from the development and reduce the surface water run-off rate.

This is through the incorporation of a "blue roof" system as a means of attenuating the surface water, without the need for an attenuation tank. By limiting the flows from the roof, water can build up above the roof outlets during peak storm conditions. Available storage volume at roof level has been looked at to ensure this meets the requirement, in order to reduce the surface water discharge from the roof.

5. Discharge rainwater direct to a watercourse

There is no watercourse local to the development to which rainwater can be discharged directly.

6. Discharge rainwater to a surface water sewer/drain

7. Discharge rainwater to the combined sewer

Rainwater will eventually run off to the surface water drain although the existing local drainage infrastructure is such that this subsequently joins the combined sewer.

In summary, the proposed surface water discharge rate will be 35 litres / second, which is through the use of a blue roof, terraces, and the ground floor landscaped areas. The current surface water run-off rate is 41.5 l/second. Therefore, the surface run-off rate is reduced from the proposed development.

The foul discharge has increased due to the change of use of the building.However, this has been mitigated through the use of greywater treatment and water saving fittings.

3.7 Pollution and Construction Impacts

This section is primarily concerned with the impact of the development on the local environment, particularly air quality and noise.

A Construction Management Plan (CMP) has been written to outline the pratical aspects of delivering the redevelopment of CTHA. The CMP outlines measures and protocols that will be put in place to ensure the scheme is delivered in a safe manner that causes minimal disruption to the local community.

3.7.1 Air Quality

Pollution issues are a consideration in addressing London Plan Policy 3.2 which considers health issues and promotes health equality.

In addition, London Plan Policy 7.14 aims to reduce exposure to poor air quality in London as well as to reduce emissions from development, including during the demolition and construction phases and seeks new development to be 'air quality neutral'.

Camden's Core Strategy Policy CS16 and Development Policy DP32 also support the assessment of air quality and mitigation measures where required.

The Air Quality Assessment for the site states that the construction of the proposed development is unlikely to generate significant air quality effects in the surrounding area. However, mitigation measures are still provided for inclusion in the Construction Environmental Management Plan (CEMP) when it is developed at a later stage.

Given the currently high pollutant concentrations in the Euston Road, bedrooms within the hotel will require mitigation for poor air quality up to the fifth floor. Mitigation will be achieved through mechanical ventilation provided to all bedrooms within the hotel where windows are sealed.

3.7.2 Noise

London Plan Policy 7.15 seeks to reduce overall exposure to noise within London as well as to protect new occupiers from noise within their developments.

Camden's development policy 28 outlines that the Council will seek to minimise the impact on local amenity from the demolition and construction phases of development. It also states that permission will not be granted to developments which exceed noise thresholds.

A Noise Impact Assessment (NIA), undertaken for planning, has provided recommended for measures to keep noise emissions at compliant levels. Required sound insulation performances have been established based on the findings in the Noise Impact Assessment. If the performance levels are met, as per the recommendations, noise intrusion into the development will be controlled to acceptable levels.

4 Conclusion

This statement sets out the sustainability commitments and aspirations of the applicant for this scheme. Under a number of key sustainability headings, it explains the sustainable development considerations that have been taken into account in the design, and sets out the features, measures and technologies that have been included in the proposals to help deliver local CoL, London, and national policy requirements and targets.

The scheme will achieve BREEAM Non-Domestic Refurbishment 2014 score of "Very Good," with a current targeted score of 58.71%. It is considered that the scheme achieves an appropriate balance between social, economic and environmental considerations and will therefore make a positive contribution in terms of the sustainable development of the wider area.

Appendix A

Baseline Policy Review

A1 Baseline Policy Review

A1.1 National Policy

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The policy constitutes the Government's view of what sustainable development in England means in practice for the planning system.

The Government believes that sustainable development can play three critical roles in England:

- An economic role, contributing to a strong, responsive, competitive economy;
- A social role, supporting vibrant and healthy communities; and
- An environmental role, protecting and enhancing our natural, built and historic environment.

The NPPF constitutes guidance for local planning authorities and decision-takers both in drawing up plans and as a material consideration in determining applications.

The key principle applied as part of the NPPF is a presumption in favour of sustainable development. This is to be incorporated into both plan making and decision making at the local level.

The NPPF sets out 12 core planning principles which "should underpin both planmaking and decision-taking." These stipulate that planning should:

- Be led by local plans which set out a vision for the future of the area and provide a practical framework within which decisions on planning applications can be made efficiently;
- Emphasise enhancing and improving the places in which people live their lives, not scrutiny alone;
- Drive sustainable development to deliver homes, business and industrial units, infrastructure and support local vitality, objectively identifying local need and setting out a clear strategy for allocating land;
- Seek to secure a high-quality of design and a good standard of amenity for occupants;
- Protect the diversity of different areas of England, protecting Green Belts and recognising the "intrinsic character and beauty of the countryside";
- Support the transition to a low-carbon future, take account of flood risk and coastal change and encourage the reuse of existing and renewable resources;
- Help conserve and enhance the natural environment and reduce pollution, allocating land of "lesser environmental value";
- Encourage the re-use of land that has been previously developed (brownfield land);
- Promote mixed use developments, encouraging multiple benefits from urban and rural land;

- Conserve heritage assets "in a manner appropriate to their significance";
- Manage development to make full use of public transport, walking and cycling; and
- Take account of local strategies to improve health, social, and cultural wellbeing.

A1.2 Regional Policy

A1.2.1 The London Plan, 2011

The Regional Spatial Development Strategy, in the form of The London Plan, 2011, sets out the overall strategic plan for the development of London over the next 20–25 years. It provides the London-wide policy context within which the 32 London boroughs and the Corporation of the City of London are expected to set their detailed local planning policies and is the framework for the Mayor's own decisions on the strategic planning applications referred to him.

The London Plan sets out six key objectives for London:

- A city that meets the challenges of economic and population growth in ways that ensure a sustainable, good and improving quality of life and sufficient high quality homes and neighbourhoods for all Londoners, and help tackle the huge issue of deprivation and inequality among Londoners, including inequality in health outcomes.
- An internationally competitive and successful city with a strong and diverse economy and an entrepreneurial spirit that benefit all Londoners and all parts of London; a city which is at the leading edge of innovation and research and which is comfortable with – and makes the most of – its rich heritage and cultural resources.
- A city of diverse, strong, secure and accessible neighbourhoods to which Londoners feel attached, which provide all of its residents, workers, visitors and students – whatever their origin, background, age or status – with opportunities to realise and express their potential and a high quality environment for individuals to enjoy, live together and thrive.
- A city that delights the senses and takes care over its buildings and streets, having the best of modern architecture while also making the most of London's built heritage, and which makes the most of and extends its wealth of open and green spaces, natural environments and waterways, realising their potential for improving Londoners' health, welfare and development.
- A city that becomes a world leader in improving the environment locally and globally, taking the lead in tackling climate change, reducing pollution, developing a low carbon economy, consuming fewer resources and using them more effectively.
- A city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities with an efficient and effective transport system which actively encourages more walking and cycling, makes better use of the Thames and supports delivery of all the objectives of this Plan.

The London Plan Policies which relate to sustainable design and construction are defined in appendix 1 of the Major's Supplementary Planning Guidance on Sustainable Design and Construction (see section A1.2.2) and are reproduced below:

Policy 2.18 Green Infrastructure aims to protect, promote, expand and manage the extent and quality of, and access to, London's network of open and green spaces.

Policy 3.2: Addressing health and reducing health inequalities supports the provision and improvement of health facilities and encourages the design of buildings to promote healthy lifestyles.

Policy 5.1: Climate change mitigation sets out the Mayor's strategic target for the reduction of carbon dioxide emissions across London of 60% (below 1990 levels) by 2025. It expects the GLA group, the boroughs and other organisations to make a contribution towards this target and that all new development fully contributes towards the London wide reduction target.

Policy 5.2: Minimising carbon dioxide emissions sets out the Mayor's energy hierarchy which developers are to follow when designing their schemes. It also sets out carbon dioxide reduction targets that developers are to aim for from their developments over the lifetime of the Plan and that where these can't be achieved an off-site or financial contribution in lieu can be sought by the local borough.

Policy 5.3 Sustainable Design and Construction requires that developments demonstrate that sustainable design standards are considered at the beginning of the design process and are integral to proposals. It also requires major development proposals to meet the minimum standards outlined in the Mayor's Supplementary Planning Guidance.

Policy 5.4: Retrofitting encourages the retro-fitting of measures to reduce carbon dioxide emissions, improving the efficiency of resource use (such as water) and minimising generation of pollution and waste from existing building stock and states that any opportunities created by new development for retro-fitting should be identified.

Policy 5.5: Decentralised energy networks sets out the Mayor's strategic target for decentralised energy, which is that 25% of the heat and power used in London is to be from local sources by 2025. The policy sets out how plans can identify and support opportunities for decentralised energy networks.

Policy 5.6: Decentralised energy in proposals sets out a hierarchy for selecting a development's heating system and states that the feasibility of combined heat and power (CHP) should be evaluated for the proposed development as well as the potential for extending the heating network beyond the site boundary.

Policy 5.7: Renewable energy seeks to increase the proportion of energy generated from renewable sources, including through their incorporation into new developments and by identifying specific opportunities within London.

Policy 5.8: Innovative energy technologies encourages the use of innovative energy technologies that will provide an alternative energy source and reduce carbon dioxide emissions.

Policy 5.9: Overheating and cooling states that developments should be designed to limit their contribution to the heat island effect and encourages spaces to be designed to avoid overheating, including by following the cooling hierarchy set out in the policy.

Policy 5.10: Urban greening encourages the greening of London's buildings and spaces and specifically those in central London by including a target for increasing the area of green space (including green roofs etc) within the Central Activities Zone.

Policy 5.11: Green roofs and development site environs specifically supports the inclusion of planting within developments and encourages boroughs to support the inclusion of green roofs.

Policy 5.12: Flood risk management outlines the requirement for boroughs and developers to carry out flood risk assessments and that developments must comply with national planning policy on flood risk assessments and management to ensure they are designed and built to be resilient to flooding.

Policy 5.13: Sustainable drainage promotes the inclusion of sustainable urban drainage systems in developments and sets out a drainage hierarchy that developers should follow when designing their schemes.

Policy 5.14: Water quality and waste water infrastructure seeks to ensure that adequate provision is made for waste water infrastructure, and that water quality is protected and improved.

Policy 5.16: Waste self-sufficiency sets out how the Mayor will support London authorities to manage as much of their waste as possible within London including through minimising waste generation and encouraging the reuse, recycling/composting and reduction in the use of materials.

Policy 5.17: Waste capacity sets out criteria for assessing waste management facilities and states that developments should include suitable waste and recycling storage facilities.

Policy 5.20: Aggregates sets targets for, and encourages the recycling or re-use of construction, demolition and excavation waste within London.

Policy 5.21: Contaminated land supports the remediation of contaminated sites and seeks to ensure that developments don't activate or spread contamination.

Policy 6.1: Strategic approach stresses the importance of integrating development with transport and encourages the reduction of car dependence.

Policy 6.3: Assessing effects of development on transport capacity sets out the necessity of assessing development impacts on transport capacity and the transport network at both corridor and local level.

Policy 6.14: Freight focuses on improving freight distribution including servicing and deliveries.

Policy 7.6 Architecture encourages the highest architectural quality, including that the development does not harm privacy, overshadowing, wind and micro-climate and so they incorporate best practice in resource management and climate change mitigation and adaptation.

Policy 7.14: Improving air quality aims to reduce exposure to poor air quality in London as well as reduce emissions from development, including during the demolition and construction phases and seeks new development to be 'air quality neutral'.

Policy 7.15: Reducing noise and enhancing Soundscapes seeks to reduce overall exposure to noise within London as well as protect new occupiers from noise within their developments.

Policy 7.19: Biodiversity and access to nature seeks a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity.

Policy 7.20: Geological conservation seeks to protect, enhance and enable access to areas of national, regional and locally important geological sites.

Policy 7.21: Trees and woodlands seeks to protect, maintain and enhance trees and woodlands on a strategic scale as well as protect and promote the provision of additional trees in the public realm as well as on development sites.

Policy 7.22: Land for food seeks to protect allotments and encourages the use of land for food growing close to urban areas.

A1.2.2 Supplementary Planning Guidance

The Mayor of London's Supplementary Planning Guidance published in April 2014 contains guidance on the implementation of relevant London Plan policies and forms part of the Implementation Framework to the London Plan. The document is a material planning consideration when determining planning applications made to the Mayor.

The SPG provides guidance in three main areas as shown below and links these to this guidance to the relevant London Plan Policies:

1. Resource management
    - Land
    - Site layout and building design
    - Energy and carbon dioxide emissions
    - Renewable energy
    - Water efficiency
    - Materials and Waste
    - Nature conservation and biodiversity
2. Adapting to climate change and greening the city
    - Tackling increased temperature and drought
    - Increasing green cover and trees
    - Flooding
3. Pollution management - land, air, noise, light and water
    - Land contamination
    - Air pollution

- Noise
- Light pollution
- Water pollution

A1.3 Local Policy

A1.3.1 Camden Core Strategy, November 2010

Section three of Camden's Core Strategy document relates to tackling climate change, protecting the environment and improving quality of life.

Policy CS13 Tackling climate change through promoting higher environmental standards, requires all developments to take measures to minimise the effects of, and adapt to, climate change and to meet the highest environmental standards that are financially viable during construction and occupation . This includes a target of 20% of energy to be generated from renewable sources on site.

Developments must also demonstrate that they incorporate efficient water and foul water infrastructure and that they avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and downstream flooding.

The policy also promotes use of the energy hierarchy approach set out in the London Plan and encourages local energy generation and connection to energy networks.

Policy CS15 Protecting and improving our parks and open spaces and encouraging biodiversity, seeks to protect and enhance the borough's green and open spaces and biodiversity. Developers are expected to provide opportunities for biodiversity within the fabric and curtilage of buildings.

Policy CS18 Dealing with our waste and encouraging recycling contains a requirement for developments to provide adequate facilities for recycling and the storage and disposal of waste. The policy also seeks to secure the re-use of construction waste on development sites to reduce resource use and the need to transport materials.

A1.3.2 Camden Development Policies

Camden's Development Policies are part of the Local Development Framework and contribute towards delivering the Core Strategy by setting out detailed planning policies that the Council use when determining applications for planning permission in the borough to achieve the vision and objectives of the Core Strategy.

Policy DP22 Promoting sustainable design and construction requires the inclusion of sustainable development principles, BREEAM assessment, green/brown roofs and resilience to climate change.

Policy DP23 Water requires the inclusion of water efficient fixtures, limits to run-off, assessment of flood risk, reducing pressure of the water and sewer network and encouraging water features.

A1.3.3 Camden Planning Guidance CPG3 Sustainability

CPG3 supports the policies in the Core Strategy and is an additional "material consideration" in planning decisions. The key areas and messages and council expectations set out in CPG3 are summarised below:

Section	Key Message	What does the council expect?
The Energy Hierarchy	All developments are to be design to reduce carbon dioxide emissions Energy strategies are to be designed following the steps set out by the energy hierarchy	All new developments are to be designed to minimise carbon dioxide emissions by being as energy efficient as is feasible and viable.
Energy Efficiency	All new developments are to be designed to minimise carbon dioxide emissions The most cost-effective ways to minimise energy demand are through good design and high levels of insulation and air tightness.	A full model of the building should be carried out to ensure the building design optimises solar gain and daylight without resulting in overheating for developments comprising 5 dwellings or more or 500sq m or more of any floorspace Consider maximising the use of natural systems within buildings before any mechanical services are considered. Any development proposing electric heating (including heat pumps) will need to demonstrate the carbon efficiency of the proposed heating system. Specifications of the electric heating system and calculations will need to be provided to demonstrate that the proposed electric heating system would result in lower carbon dioxide emissions than an efficiency gas fuelled heating system. Where traditional mechanical cooling e.g. air conditioning units are proposed applicants must demonstrate that energy efficient ventilation and cooling methods have been considered first, and that they have been assessed for their carbon efficiency. Air source heat pumps will be considered to provide air conditioning in the summer unless it can be demonstrated that the model chosen is not capable of providing cooling.

Section	Key Message	What does the council expect?
Energy Efficiency – Existing Buildings	As a guide, at least 10% of the project cost should be spent on environmental improvements. Potential measures are bespoke to each property Sensitive improvements can be made to historic buildings to reduce carbon dioxide emissions	All buildings, whether being updated or refurbished, are expected to reduce their carbon emissions by making improvements to the existing building. Work involving a change of use or an extension to an existing property is included. As a guide, at least 10% of the project cost should be spent on the improvements. Where retro-fitting measures are not identified at application stage we will most likely secure the implementation of environmental improvements by way of condition. Appendix 1 sets out a checklist of retro fit improvements for applicants. Development involving a change of use or a conversion of 5 or more dwellings or 500sq m of any floorspace, will be expected to achieve 60% of the un-weighted credits in the Energy category in their EcoHomes or BREEAM assessment, whichever is applicable. (See the section on Sustainability assessment tools for more details). Special consideration will be given to buildings that are protected e.g. listed buildings to ensure that their historic and architectural features are preserved.
Decentralised energy networks and combined heat and power	Decentralised energy could provide 20% of Camden's heating demand by 2020. Combined heat and power plants can reduce carbon dioxide emissions by 30-40% compared to a conventional gas boiler. Where feasible and viable your development will be required to connect to a decentralised energy network or include CHP.	Where there is more than one occupier, use or building a community heating network will be expected. When demonstrating the feasibility and viability of not connecting to a decentralised energy network or including a combined heat and power plant developers will be required to address the relevant considerations in section 5.22. Where a development is not connecting immediately to a network the following measures need to be included in your scheme: • space in the plant room for a heat exchanger, any other plant and pipe and electricity connections; and • pipes from the plant room to the property boundary where the decentralised energy pipe is most likely to be located.

Section	Key Message	What does the council expect?
Renewable energy	There are a variety of renewable energy technologies that can be installed to supplement a development's energy needs. Developments are to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.	All developments are to target at least a 20% reduction in carbon dioxide emissions through the installation of on-site renewable energy technologies. Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved. When assessing the feasibility and viability of renewable energy technology, the Council will consider the overall cost of all the measures proposed and resulting carbon savings to ensure that the most cost-effective carbon reduction technologies are implemented in line with the energy hierarchy. Individual technology references not listed here.
Water	At least 50% of water consumed in homes and workplaces does not need to be of drinkable quality re-using water All developments are to be water efficient Developments over 10 units or 1000sq m should include grey water recycling.	The Council expects all developments to be designed to be water efficient by minimising water use and maximising the re-use of water. This includes new and existing buildings. The Council will require buildings with gardens or landscaped areas that require regular maintenance to be fitted with water butts. The Council will require developments over 10 units or 1000sq m and/or intense water use developments, such as hotels, hostels, student housing etc to include a grey water harvesting system, unless the applicant demonstrates to the Council's satisfaction that this is not feasible.
Sustainable Use of Materials	Reduce waste by firstly re-using your building, where this is not possible you should implement the waste hierarchy. The waste hierarchy prioritises the reduction, re-use and recycling of Materials. Source your materials responsibly and ensure they are safe to health.	All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources. This should relate to the WRAP Quick Wins assessments or equivalent as (highlighted in the waste hierarchy information section). Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved. Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.

Section	Key Message	What does the council expect?
Brown roofs, green roofs and green walls	All developments should incorporate green and brown roofs The appropriate roof or wall will depend on the development, the location and other specific factors Specific information needs to be submitted with applications for green/brown roofs and walls	The Council will expect all developments to incorporate brown roofs, green roofs and green walls unless it is demonstrated this is not possible or appropriate. This includes new and existing buildings. Special consideration will be given to historic buildings to ensure historic and architectural features are preserved. What information will the council expect? • a statement of the design objectives for the green or brown roof or green wall • details of its construction and the materials used, including a section at a scale of 1:20 • planting details, including details of the planting technique, plant varieties and planting sizes and densities. • a management plan detailed how the structure and planting will be maintained.

Section	Key Message	What does the council expect?
Flooding	All developments are required to prevent or mitigate against flooding. All developments are expected to manage drainage and surface water. There is a hierarchy you should follow when designing a sustainable drainage system	Developments must not increase the risk of flooding, and are required to put in place mitigation measures where there is known to be a risk of flooding. Within the areas shown on Core Strategy Map 5 (Development Policies Map 2) we will expect water infrastructure to be designed to cope with a 1 in 100 year storm event in order to limit the flooding of, and damage to, property. All sites in Camden over one hectare or 10,000sq m require a Flood Risk Assessment in line with Planning Policy Statement 25. The assessment should be site specific and concentrate on the management of surface water run-off, and / or ground water where applicable, and should address the amount of impermeable surfaces resulting from the development and the potential for increased flood risk both on site and elsewhere within the catchment. These must be prepared by a suitably qualified professional and should be submitted with a planning application. All developments are expected to manage drainage and surface water on-site or as close to the site as possible, using Sustainable Drainage Systems (SUDS) and the hierarchy set out below. The Council will expect plans and application documents to describe how water will be managed within the development, including an explanation of the proposed SUDS, the reasons why certain SUDS have been ruled out and detailed information on materials and landscaping. The Council will expect developments to achieve a greenfield surface water run-off rate once SUDS have been installed. As a minimum, surface water run-off rates should be reduced by 50% across the development.
Adapting to climate change	All development should consider how it can be occupied in the future when the weather will be different. The early design stage is the most effective time to incorporate relevant design and technological measures.	All development is expected to consider the impact of climate change and be designed to cope with the anticipated conditions.

Section	Key Message	What does the council expect?
Biodiversity	Proposals should demonstrate: • how biodiversity considerations have been incorporated into the development; • if any mitigation measures will be included; and • what positive measures for enhancing biodiversity are planned.	Lighting can have particular negative impacts on biodiversity. Unnecessary lighting should be avoided. Where lighting may harm biodiversity timers or specific coloured lighting will be required to minimise any disturbance.
Local food growing	We encourage food to be grown wherever possible and suitable Rooftops and shared spaces such as gardens and parks provide opportunities for food growing.	

Appendix B

BREEAM Hotel Refurbishment Pre-Assessment

Credit	Available	Target Score	Responsibility
Management			
Man 01 - Project brief and design	4	2	BREEAM AP, Assessor
Man 02 - Life cycle cost and service life planning	4	4	Client, Cost Consultant
Man 03 - Responsible construction practices	6	5	Contractor
Man 04 - Commissioning and handover	4	3	Client, Contractor
Man 05 - Aftercare	3	2	Client, Contractor
Management Totals:	**21**	**16**	
% Management Score Totals:	**13.28**	**10.12**	
Health & Wellbeing			
Hea 01 - Visual Comfort	7	2	Lighting Designer, Electrical Engineer, Architect
Hea 02 - Indoor Air Quality	5	3	Architect, Contractor, Mechanical Engineer
Hea 04 - Thermal comfort	3	3	Contractor, Mechanical Engineer
Hea 05 - Acoustic Performance	3	2	Acoustician
Hea 06 - Safety and Security	1	1	Architect, Security Consultant
Health & Wellbeing Totals:	**19**	**11**	
% Health & Wellbeing Score Totals:	**14.33**	**8.3**	
Energy			
Ene 01 - Reduction of energy use and carbon emissions	15	3	Mechanical Engineer
Ene 02 - Energy Monitoring	1	1	Electrical Engineer, Mechanical Engineer, Public Health Engineer
Ene 03 - External Lighting	1	1	Electrical Engineer
Ene 04 - Low carbon design	3	2	Mechanical Engineer
Ene 05 - Energy Efficient Cold Storage	2	1	Mechanical Engineer
Ene 06 - Energy Efficient Transportation Systems	3	2	Electrical Engineer
Ene 08 - Energy Efficient Equipment	2	0	Client
Energy Totals:	**27**	**10**	
% Energy Score Totals:	**16.7**	**6.18**	
Transport			
Tra 01 - Public Transport Accessibility	5	5	Transport Consultant
Tra 02 - Proximity to amenities	1	1	Architect
Tra 03 - Cyclist facilities	2	1	Architect, Electrical Engineer
Tra 04 - Maximum Car Parking Capacity	2	1	Architect
Tra 05 - Travel Plan	1	1	Client
Transport Totals:	**11**	**9**	
% Transport Score Totals:	**8.11**	**6.64**	
Water			
Wat 01 - Water Consumption	5	2	Public Health Engineer, Architect
Wat 02 - Water Monitoring	1	1	Public Health Engineer
Wat 03 - Leak Detection	2	2	Public Health Engineer
Wat 04 - Water Efficient Equipment	1	1	Landscape Architect

Water Totals:	**9**	**6**	
% Water Score Totals:	**6.64**	**4.43**	
Materials			
Mat 01 - Life Cycle Impacts	4	2	Structural Engineer, Architect
Mat 03 - Responsible Sourcing of Materials	4	0	Structural Engineer, Architect
Mat 04 - Insulation	1	1	Architect, Mechanical Engineer
Mat 05 - Designing for durability and resilience	1	1	Architect
Mat 06 - Material efficiency	1	0	Structural Engineer
Materials Totals:	**11**	**4**	
% Materials Score Totals:	**12.17**	**4.43**	
Waste			
Wst 01 - Construction Waste Management	7	3	Contractor
Wst 02 - Recycled Aggregates	1	1	Structural Engineer
Wst 03 - Operational Waste	1	1	Architect
Wst 04 - Speculative Floor and Ceiling Finishes	1	1	Civil Engineer
Wst 05 - Adaptation to climate change	1	0	Structural Engineer
Wst 06 - Functional adaptability	1	1	Architect, Mechanical Engineer
Waste Totals:	**12**	**7**	
% Waste Score Totals:	**8.85**	**5.16**	
Land Use & Ecology			
LE 02 - Ecological Value of Site and Protection of Ecological Features	1	1	Ecologist
LE 04 - Enhancing site ecology	1	1	Ecologist
LE 05 - Long Term Impact on Biodiversity	2	1	Ecologist, Contractor
Land Use & Ecology Totals:	**4**	**3**	
% Land Use & Ecology Score Totals:	**8.85**	**6.64**	
Pollution			
Pol 01 - Impact of Refrigerants	3	1	Mechanical Engineer
Pol 02 - NOx emissions	3	1	Mechanical Engineer
Pol 03 - Surface Water Run Off	5	5	Civil Engineer, Public Health Engineer
Pol 04 - Reduction of Night Time Light Pollution	1	0	Electrical Engineer
Pol 05 - Noise Attenuation	1	1	Acoustician
Pollution Totals:	**13**	**8**	
% Pollution Score Totals:	**11.07**	**6.81**	
OVERALL TOTALS:		**74**	
OVERALL SCORE TOTALS:		**58.71%**	