



HODKINSON



**Sustainability
Statement**

Highgate Care Ltd

**Former Mary
Fielding Care
Home**

Final

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We are able to advise at all stages of projects from planning applications to handover.

Our emphasis is to provide innovative and cost-effective solutions that respond to increasing demands for quality and construction efficiency.

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Executive Summary

The purpose of this Sustainability Statement is to demonstrate that the proposed development at Former Mary Fielding Care Home by Highgate Care Ltd in the London Borough of Haringey is considered sustainable, as measured against relevant local, regional and national planning policies.

The proposed development will comprise of a 50-bed rehabilitation clinic (Class C2 - Residential Institutions), together with a separate residential building fronting North Hill accommodating 9 Class C3 flats (5 x 1 bed and 4 x 2 bed) and associated works.

Through the incorporation of sustainable design and construction methods, energy and water saving measures, sustainable transport methods, waste reduction techniques and measures to enhance the ecological value of the site, a good quality and sustainable development is proposed.

The key sustainability features outlined in this Sustainability Statement are listed below:

- > **BREEAM:** All non-residential/commercial units will be designed and built to achieve a BREEAM 'Very Good' rating under the New Construction 2018 scheme.
- > **Energy efficiency:** The proposed development will achieve a 47.3% reduction over the Building Regulations Part L 2021 baseline through a range of energy efficiency measures, including a communal heating system consisting of air source heat pumps and solar photovoltaics.
- > **Overheating:** The scheme has been designed to ensure overheating risk is reduced to acceptable levels in accordance with CIBSE TM59:2017 requirements.
- > **Water efficiency:** Flow control devices and water efficient fixtures and fittings will be installed in all dwellings to target a maximum internal daily water consumption of 105 litres/person/day. Rainwater harvesting tanks will be installed to reduce the demand on potable water and promote effective use of water supplies.
- > **Waste and recycling:** Adequate facilities will be provided for domestic and construction related waste, including segregated bins for refuse and recycling.
- > **Circular Economy:** The principles of a circular economy shall be incorporated into the development, where possible.
- > **Materials:** Where practical, new building materials will be sourced locally to reduce transportation pollution and support the local economy. New materials will be selected based on their environmental impact and responsible suppliers will be used where possible.
- > **Pollution:** The proposed development will be considered 'air quality neutral'. Regarding noise, the proposed development is located within Noise Risk Category 2 which suggests a medium

level of risk for daytime and a Noise Risk Category 3 which suggests a high level of risk for night time levels. Therefore, further mitigation levels will be required at Stage 2.

- > **Flood Risk and SUDs:** The proposed development site lies in a low flood risk zone and will benefit from SUDs such as living roofs, geo-cellular storage and permeable paving.
- > **Security:** Consultation with a Security Specialist will take place to ensure the development is safe and secure for its residents.
- > **Sound insulation:** The dwellings are to target an improvement on Building Regulations Part E through party walls and floors.
- > **Inclusive access:** 90% of the new dwellings will be designed to meet Building Regulations Approved Document M4(2) and 10% will meet Part M4(3).
- > **Sustainable transport:** The site will benefit from a good existing public transport network and sustainable modes will be encouraged through the provision of 13no. cycle storage spaces and electric vehicle charging points.
- > **Biodiversity and ecology:** Enhancements will be implemented through the provision of landscaped areas, bio-solar roofs and additional tree and shrub planting across the site.
- > **Sustainable construction:** The site will aim to achieve a Very Good score with the Considerate Constructors Scheme and will closely monitor construction site impacts.

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Appendix A BREEAM New Construction Care Home ‘Very Good’ Pre-Assessment

Appendix B Water Efficiency Calculator

1. INTRODUCTION

- 1.1** This Sustainability Statement has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development, appointed by Highgate Care Ltd.
- 1.2** This Statement sets out the sustainable design and construction measures included in the planning application for the proposed development at Former Mary Fielding Care Home in the London Borough of Haringey.

Sustainability Statement Structure and Methodology

- 1.3** The formulation of the Sustainability Strategy for the proposed development has taken into account several important objectives, including:
- > To address all national, regional and local planning policies and requirements;
 - > To achieve a viable reduction in CO₂ emissions with an affordable, deliverable and technically appropriate strategy;
 - > To provide a high quality development that is adaptable to future changes in climate;
 - > To minimise the negative impact of the proposed development on both the local and wider climate and environment;
 - > To achieve the highest viable levels of sustainable design and construction;
 - > To minimise emissions of pollutants such as oxides of nitrogen and particulate matter; and
 - > To create a pleasant, safe and friendly working and living environment that will be flexible to its occupants' needs.
- 1.4** This Sustainability Statement does not duplicate the work of the technical reports prepared in support of the application, but presents the findings in the overall context of sustainability.
- 1.5** **Chapter 2** provides an introduction to the site and the proposed development.
- 1.6** **Chapter 3** sets out the relevant national, regional and local policy documents which have been used to guide and inform the sustainability strategy for the proposed development.
- 1.7** **Chapters 4 to 17** outline the sustainability strategy of the proposed development in relation to the policy documents listed in Chapter 3.
- 1.8** **Chapter 18** provides a summary of the key sustainability features associated with the proposed development.

2. DEVELOPMENT OVERVIEW

Site Location

- 2.1 The proposed development site at Former Mary Fielding Care Home is located at 103-107 North Hill in the London Borough of Haringey is located at Highgate, London N6 4DP, as shown in Figure 1 below.



Figure 1: Site Location – Map data © 2024 Google

- 2.2 The site measures 0.374 hectares and is occupied by a series of five interlinked buildings which wrap around the site in an L shape. The current Mary Feilding Guid Care Home is a registered care home for the elderly. The building has the main frontage on to North Hill to the east and a back entrance with parking spaces on to View Road to the south-east.

Proposed Development

2.3 The proposed development is described as follows:

Demolition of existing buildings and redevelopment to provide a new 50-bed rehabilitation clinic (Class C2 – Residential Institutions) principally fronting onto and accessed from View Road together with a separate residential (Class C3 - Dwelling House) block fronting North Hill. This consists of 9 flats (5 x 1 bed; 3 x 2 bed and 1 x 3 bed).

2.4 Figure 2 below illustrates the proposed site layout.



Figure 2: Proposed Ground Floor GA Plan (RM Design Group, March 2024)

Planning History

- 2.5** The site has planning permission (planning application references HGY/2021/3481 dated October 2022 and HGY/2022/4415 dated February 2023) for the demolition of existing buildings and redevelopment to provide a new care home (Class C2 - Residential Institution), for up to 70 bedrooms, a hydrotherapy pool, steam room, sauna, gym, treatment/medical rooms, hairdressing and beauty salon, restaurant, cafe, lounge, bar, well-being shop, general shop, car and cycle parking, refuse/recycling storage, mechanical and electrical plant, landscaping, and associated works.
- 2.6** The site was previously occupied by a care home known as the Mary Feilding Guild Care Home and has now come under new management as the Highgate Care Home. The care home was operational until May 2021.

3. RELEVANT PLANNING POLICY

- 3.1** The following planning policies and requirements have informed the sustainable design of the proposed development.

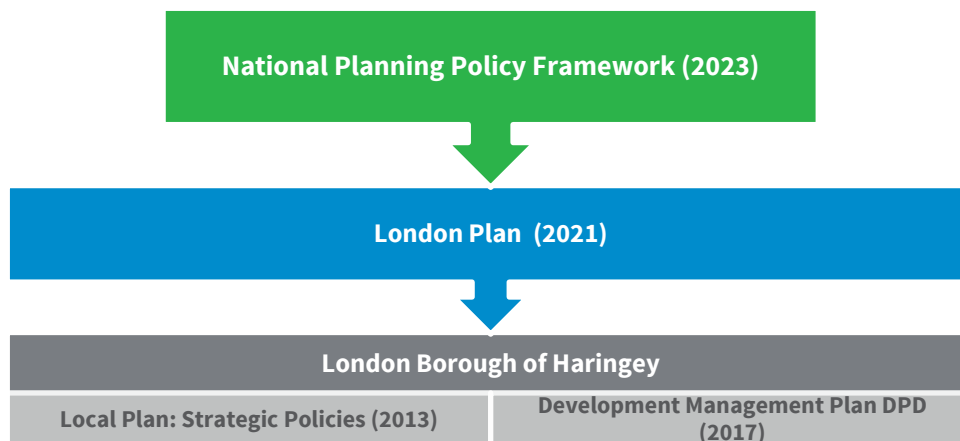


Figure 3: Relevant Planning Policy Documents

National Policy: NPPF

- 3.2** The revised National Planning Policy Framework (NPPF) was published on the 20th December 2023 and sets out the Government's planning policies for England.
- 3.3** The NPPF provides a framework for achieving sustainable development, which has been summarised as "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*" (Resolution 42/187 of the United Nations General Assembly).

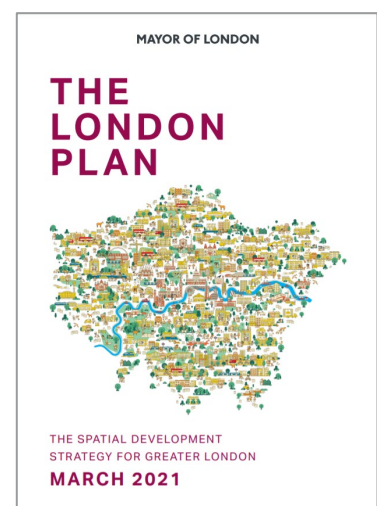
These address social progress, economic well-being and environmental protection. At the heart of the framework is a **presumption in favour of sustainable development**.

- 3.4** The document states that the planning system has three overarching objectives which are interdependent and need to be pursued in mutually supportive ways:
- a) An economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
 - b) A social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and
 - c) An environmental objective** – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Regional Policy: The London Plan

The London Plan (2021)

- 3.5** The London Plan sets out an integrated economic, environmental, transport and social framework for the development of London. The following policies are considered relevant to the proposed development and this Statement:
- 3.6 Policy G5 Urban Greening** states that urban greening should be included as a fundamental element of site and building design by incorporating measures such as landscaping, green roofs, green walls and nature-based sustainable drainage. Boroughs should develop an Urban Greening Factor and in the interim, the Mayor recommends a target score of 0.4 for residential development 0.3 for commercial development.
- 3.7 Policy SI1 Improving Air Quality** states that development should seek opportunities to identify and deliver further improvements to air quality. Where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site.



- 3.8 Policy SI2 Minimising Greenhouse Gas Emissions** states that major development should be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand.
- 3.9 Policy SI3 Energy Infrastructure** states that energy masterplans should be developed for large-scale development locations which establish the most effective energy supply options.
- 3.10 Policy SI4 Managing Heat Risk** states that major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the cooling hierarchy.
- 3.11 Policy SI5 Water Infrastructure** states that in order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner. Development proposals should minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development) achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption). Commercial development should achieve at least the BREEAM excellent standard for the 'Wat 01' category.
- 3.12 Policy SI7 Reducing Waste and Supporting the Circular Economy** states that referable applications should promote circular economy outcomes and aim to be net zero-waste.
- 3.13 Policy T2 Healthy Streets** states that development should deliver patterns of land that facilitate residents making shorter, regular trips by walking or cycling. Development Plans should demonstrate the application of the Mayors Healthy Streets Approach.

Local Policy: London Borough of Haringey Local Plan

- 3.14** The London Borough of Haringey's Local Plan was adopted in 2013. The following policies are considered relevant to this Statement:
- 3.15 Policy SP4 Working Towards a Low Carbon Haringey** indicates that the following measures will be promoted to reduce carbon emissions from new and existing buildings.
- > All new residential development will achieve a minimum 25% reduction in total (regulated) CO₂ emissions. All new residential development shall be zero carbon from 2016 onwards;
 - > From 2011 onwards all new non-residential development shall be built to at least BREEAM "Very Good" standard and should aim to achieve BREEAM "Excellent" or the current nationally agreed standard. All new non-residential development shall be zero carbon from 2019;
 - > All developments should identify and implement, where viable, site-wide and area-wide decentralised energy facilities including the potential to link into a wider network;

- > Establish local networks of decentralised heat and energy facilities by requiring developers to prioritise connection to existing or planned networks where feasible;
- > All new developments are required, where viable, to achieve a reduction in predicted carbon dioxide emissions of 20% from on-site renewable energy regeneration, which can include connections to local sources of decentralised renewable energy.

3.16 Policy SP5 Water Management and Flooding states that all developments must be water-efficient during construction and operation and reduce all forms of flood risk. Developments should implement Sustainable Drainage Systems.

3.17 SP6 Waste and Recycling indicates that the following should be adhered to:

- > Site Waste Management Plans must identify volume and types of demolition and construction waste and to demonstrate how waste will be minimised and managed during construction and occupation;
- > Development should include integrated, well-designed recycling facilities to be incorporated into all new developments;

3.18 Policy SP7 Transport requires adoption of maximum car parking standards and car free housing wherever possible. In addition, car sharing and car clubs are promoted. Measures to influence behavioural change such as promoting low carbon vehicles are supported.

3.19 Policy SP11 Design requires development to:

- > Ensure impacts on health, climate change, natural resources and biodiversity are minimised by adopting and improving sustainable design and construction techniques;
- > Incorporate solutions to reduce crime and the fear of crime and apply the principles set out in 'Secured by Design' and Safer Places;
- > Promote high quality landscaping on and off site, seek the highest standards of access in all buildings and places, and be designed to be adaptable;
- > Ensure buildings are designed to be flexible and adaptable – and able to integrate services and functions.

3.20 Policy SP13 Open space and biodiversity states that development should contribute to wildlife and ecological habitats and, where possible, include green and brown roofs, rainwater harvesting, green walls, bird and bat nesting/roosting opportunities.

Local Policy: Development Management DPD

- 3.21** This document gives effect to Haringey's spatial strategy and the key objectives of the Strategic Policies Local Plan by supporting proposals that contribute to the delivery of sustainable development in accordance with the strategy. The following are the relevant policies:
- 3.22** **Policy DM1 Delivering High Quality Design** indicates that all new development and changes of use must achieve a high standard of design. Development proposals shall demonstrate how the landscaping and planting are integrated into the development as a whole. Native species should be prioritised over invasive species for planting. Proposals should also:
- > Provide appropriate sunlight, daylight and open aspects (including private amenity space where required) to all parts of the development and adjacent buildings and land;
 - > Address issues of vibration, noise, fumes, odour, light pollution and microclimatic conditions likely to arise from the use and activities of the development.
- 3.23** **Policy DM2 Accessible and Safe Environments** indicates that new developments must be able to be used safely, easily and with dignity by all; protect, improve and create, where appropriate, safe and accessible pedestrian and cycling routes; and have regard to the principles set out in 'Secured by Design'.
- 3.24** **Policy DM4 Provision and Design of Waste Management Facilities** states that proposals should consider how to sustainably manage waste arising from the development during the design, construction and occupation phases; and make on-site provision for general waste, the separation of recyclable materials and organic material for composting. In addition, proposals for new multi-storey flatted residential development should provide adequate temporary storage space within each flat, allowing for separate storage of recyclable materials; adequate communal storage for waste; and storage and collection systems at each floor.
- 3.25** **Policy DM9 Management of the Historic Environment** requires development to consider the sensitive redevelopment of sites such that they are compatible with and/or complement the special characteristics and significance of the area. The architectural style, scale, proportions, materials and details of heritage buildings or those in conservation areas should not appear overbearing or intrusive.
- 3.26** **Policy DM12 Housing Design and Quality** requires development proposals to include enhanced provision of green infrastructure, including the quantity and quality of landscaped areas and tree provision.
- 3.27** **Policy DM21 Sustainable Design, Layout and Construction** states that all new development will be expected to consider and implement sustainable design, layout and construction techniques. Proposal should apply the energy and cooling hierarchies to minimize energy use; maximise opportunities to enhance biodiversity on-site including via SuDS, living roofs and green walls; use

building materials with high environmental performance ratings; and seek opportunities for locally sourced labour. Consideration will be given to the use of carbon offset payments.

3.28 Policy DM22 Decentralised Energy states that subject to other policy requirements, proposals that contribute to the provision and use of Decentralised Energy network infrastructure will be supported.

3.29 Policy DM23 Environmental Protection

- > Air quality: Development should consider air quality and be designed to improve or mitigate impact on air quality in the Borough and in the development. Air quality assessments will be needed for development proposals where appropriate and adequate mitigation must be provided.
- > Noise and vibration: Proposals for potentially noisy development must suitably demonstrate that measures will be implemented to mitigate its impact. A noise assessment will be required to be submitted if the proposed development is a noise-sensitive development.

3.30 Policy DM24 Managing and Reducing Flood Risk states that all proposals for new development should avoid and reduce the risk of flooding to future occupants and not increase the risk of flooding.

3.31 Policy DM25 Sustainable Drainage System states that Sustainable Drainage Systems (SuDS) must be sensitively incorporated into new development by way of site layout and design.

3.32 Policy DM32 Parking indicates that car and cycle parking should be provided in accordance with the London Plan. The Council will strongly encourage contributions to car club schemes or the provision of car club bays as an alternative to on-site car parking. Parking should be provided for disabled people.

Sustainable Design and Construction SPD

3.33 Adopted in February 2013, the Sustainable Design and Construction Supplementary Planning Document (SPD) supports the Local Plan Strategic Policies. This compliments the Local Plan and brings together policy requirements and guidance from national, regional, and local planning framework that promote sustainable buildings.

3.34 The SPD includes detailed guidance on Energy and Carbon, Changing Climate, Flood Risk, Water, Pollution, Waste, Construction, Biodiversity and Transport.

New Local Plan

3.35 The council has begun the process of preparing a New Local Plan which will replace the existing Local Plan documents adopted in July 2017. However, this plan is still in the early stages of consultation and a structured framework of guidance policies is yet to be developed.

- 3.36 The New Local plan will be structured around the Borough Plan priorities of Housing, People, Place and Economy.

4. BREEAM SUMMARY

- 4.1 In accordance with Policy SP4 of the Local Plan, the development will be assessed under the BREEAM New Construction Assessment with a target of achieving the required 'Very Good' rating.



- 4.2 A full BREEAM Pre-Assessment has been presented in **Appendix A** and provides an illustrative route to achieving the 'Very Good' rating. The predicted score at this stage is 63.88%, where a 'Very Good' score is $\geq 55\%$ and an 'Excellent' score is $\geq 70\%$. This represents a high level of sustainable design and construction.

- 4.3 The principles and requirements of many of the individual credits feature throughout this Sustainability Statement, where appropriate, however the mandatory credits for BREEAM 'Very Good' are listed as follows:

- > **Man 03: Responsible Construction Practices** – A minimum of one credit is to be achieved, requiring a Considerate Constructors Scheme score of between 25 and 34.
- > **Man 04: Commissioning and Handover** – Prepare a schedule of commissioning and testing of all complex and non-complex building services and control systems. Prior to handover, develop two building user guides (technical and non-technical).
- > **Ene 02: Energy Monitoring** – High energy demands should be identified and reduced where possible by accurate measurement of the energy consumption of the building by end use. The credit on 'Sub-metering of end-use categories' should be achieved.
- > **Wat 01: Water Consumption** – A minimum 12.5% improvement over baseline building water consumption.
- > **Wat 02: Water Monitoring** – A water meter is to be provided on the mains water supply which should have a pulsed output connected to a Building Management System (BMS).
- > **Mat 03: Responsible Sourcing** – All timber used on the project must be sourced in accordance with the UK Government's Timber Procurement Policy.

- 4.4 Whilst this has been determined as the most appropriate route to certification, the actual route to certification may vary as the detailed design progresses.

5. ENERGY AND CO₂ REDUCTION

Energy Strategy

- 5.1** An Energy Statement has been prepared by Hodkinson Consultancy (June 2024) and is submitted as part of this planning application. A summary of this statement has been outlined as follows however this document should be referred to for greater detail.
- 5.2** The energy strategy has been formulated following the current London Plan Energy Hierarchy: **Be Lean, Be Clean, Be Green** and **Be Seen**. The overriding objective in the formulation of the strategy is to maximise the reductions in Regulated CO₂ emissions through the application of this Hierarchy with a cost-effective, viable and technically appropriate approach.
- 5.3** The proposed development will incorporate a range of energy efficiency measures, including a communal heating system consisting of air source heat pumps and solar photovoltaics. Table 1 below shows the reduction in regulated CO₂ emissions after each stage of the Energy Hierarchy, showing that energy policy requirements have been exceeded.

Table 1: Site Wide Carbon Dioxide Emissions and Savings after each stage of the Energy Hierarchy

	Regulated CO ₂ Emissions (tCO ₂)Yr)	Unregulated CO ₂ Emissions (tCO ₂)Yr)	Savings Regulated CO ₂ Emissions (tCO ₂)Yr)	Reduction in Regulated CO ₂ Emissions Achieved (%)
Baseline	29.4	26.7	-	-
After Be Lean Measures	24.1	26.7	5.3	18.0%
After Be Clean Measures	21.9	26.7	2.2	7.5%
After Be Green Measures	15.5	26.7	6.4	21.8%
Cumulative On-Site	-	-	13.9	47.3%

Lighting

- 5.4** All external lighting, and any security lighting, will be energy efficient and adequately controlled using PIR sensors, daylight cut-off sensors or time switches where possible. This will ensure the conservation of energy when the lighting is not in use.

Appliances

- 5.5** Where provided, energy efficient white goods will be provided. The purchasing of energy efficient white goods will also be promoted through the provision of information on the EU Labelling Scheme contained within the Home Information Manual.
- 5.6** In addition, the proposed development will be installed with energy efficient equipment to ensure optimum performance and energy savings during operation. For example, small power plug-in equipment will have an Energy Star rating or will be procured in accordance with the Government Buying Standards. In addition, the kitchen appliances will be procured in accordance with the CIBSE Guide TM50 'Energy Efficiency in Commercial Kitchens' criteria (Sections 8, 9, 11-15). This document provides industry-specific guidance and advice on sustainability and how to reduce energy consumption.

Energy Efficient Lifts

- 5.7** All lifts will be designed to have the following energy efficient features:
- > A stand-by function during off-peak periods;
 - > Lighting with an average lamp efficacy of >55 lamp lumens/circuit Watt which will switch off once lift left idle; and
 - > A drive controller capable of variable speed, voltage and frequency.

Energy Monitoring

- 5.8** Energy display devices, which can monitor electricity and primary heating fuel consumption, will be provided to each of the dwellings. This can empower the occupants to be more aware of their usage and therefore make energy and cost savings, where possible.



- 5.9** An appropriate energy monitoring and management system (BMS) or separate accessible sub-metering strategy will be put in place to facilitate the monitoring of energy consumption from the major energy-consuming systems and plant. This will cover the supply for all relevant function areas within the buildings.

6. WATER REDUCTION

Internal Water Efficiency

- 6.1** Increased frequency of drought across Europe lines up with climate change projections and water companies in the UK capture much less rain for our use than people assume.
- 6.2** The Environment Agency updated their determination of areas of water stress in 2021¹. The water stress method takes a long-term view of the availability and the demand for public water supply, rather than a snapshot of shorter or peak periods. It accounts for future population growth, climate change, environmental needs and increased resilience. As of 2021, 15 out of the 23 water companies operating in areas of England were classified as being under ‘serious’ stress, including Thames Water where the site is located. This indicates the need to reduce internal water use where possible and specify water efficient fixtures and fittings in new development.
- 6.3** Reducing water consumption will not only help to preserve our water sources but will also save energy. Approximately 15% of a typical gas-heated household’s heating bill is from heating water for showers, baths and taps and the energy used to heat water for devices and appliances emits an average of 875 kg of CO₂ per household per year (Energy Saving Trust, 2013). As such, internal water consumption will be significantly reduced through the use of practical and hygienic water saving measures.



Water Use

- 6.4** The internal water consumption will be significantly reduced through the use of water efficient fixtures and fittings in line with the Wat 01 requirements of the BREEAM assessment. Table 1 below provides an indication of the types of sanitaryware and appliances that could be installed to meet the required performance level.

¹ <https://www.gov.uk/government/publications/water-stressed-areas-2021-classification>

Table 2: Sanitaryware

Installation Type	Water Capacity/Flow Rate
WC	4 litres effective flush volume
Basin tap	4.5 litres/minute flow rate
Shower	6 litres/minute flow rate
Urinals (2 or more)	1.5 litres/bowl/hour
Urinal (1 only)	2 litres/bowl/hour
Kitchen tap	5 litres/minute flow rate
Dishwasher (domestic size)	12 litres/cycle
Washing machine (domestic size)	40 litres/use
Dishwasher (commercial size)	5 litres/rack
Washing machine (commercial size)	7.5 litres/kg

Leak Detection and Prevention

- 6.5** Another method of reducing water consumption is to ensure that water leaks do not go undetected. In accordance with the BREEAM Assessment, a leak detection system may be installed which will be capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter.

Water Metering

- 6.6** In accordance with the BREEAM Assessment, a water meter with a pulsed output will also be installed on the mains supply. This will allow the water consumption of the development to be monitored and managed and therefore encourage reductions.

External Water Efficiency

- 6.7** Rainwater harvesting tanks will be installed to reduce the demand on potable water and promote effective use of our water supplies. These will be appropriately sized and capable of harvesting rainwater for external irrigation across the development.

Active Rainwater Management

- 6.8** The Applicant's commitment to sustainability has led them to consider enhanced measures such as Active Rainwater Management. As outlined in the Surface Water and Foul Drainage Statement (Ardent, May 2024), the most viable Sustainable Drainage System (SuDS) options are a combination of lined permeable paving and geo-cellular attenuation tanks.
- 6.9** This involves the attenuation of rainwater which is held in a tank by an actively controlled throttle which can vary the flow rate of water being discharged into the sewer system.
- 6.10** This attenuated water will then be used for irrigating large areas of landscaping and to top up surface level water features with simple pumps. The system works on the basis that water is a valuable commodity and resource, and it makes little sense to allow it to drain away once attenuated. The system can also help to avoid blockages typically encountered with standard passive systems.
- 6.11** Should the full capacity of the attenuation tank be required for an impending rain event, a remote weather monitoring system will automatically open the throttle on the tank, thereby allowing the water to drain away in advance of the storm and providing full attenuation capacity.

7. WASTE MANAGEMENT

- 7.1 Waste reduction and recycling is another key challenge of sustainable development and something which is strongly encouraged in the London Plan (Policy SI7). The waste hierarchy, illustrated in Figure 4 below, prioritises those waste management options which are best for the environment.

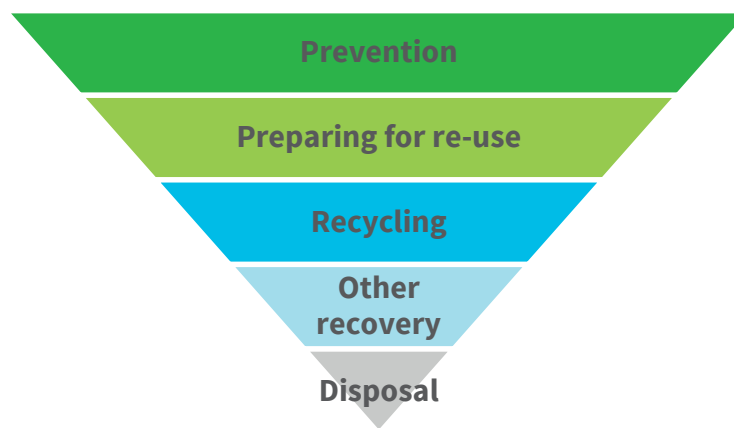


Figure 4: Waste Hierarchy

- 7.2 The waste hierarchy establishes waste management options according to what is best for the environment. It places great importance on preventing waste in the first place. When waste is created it prioritises preparing it for re-use, then recycling, recovery and lastly disposal (e.g. landfill).

Construction Waste

- 7.3 The reduction of construction waste not only minimises environmental impacts through ensuring the responsible use of resources and waste disposal but can also significantly reduce construction costs for the developer.
- 7.4 Prior to demolition, the Applicant will undertake a pre-demolition audit as part of the BREEAM assessment to determine if refurbishment or reuse is feasible and, if not, to maximise the recovery of material from demolition.
- 7.5 Prior to construction, the Applicant will develop a Site Waste Management Plan which will establish ways of minimising waste at source, assess the use, reuse and recycling of materials on and off-site and prevent illegal waste activities. This plan will then be disseminated to all relevant personnel on and off-site.
- 7.6 The following waste minimisation actions will be considered:
- > Consider opportunities for zero cut and fill to avoid waste from excavation or groundworks;

- > Design for standardisation of components and the use of fewer materials;
- > Design for off-site or modular build;
- > Return packaging for reuse;
- > Consider community reuse of surplus materials or offcuts; and
- > Engage with supply chains and include waste minimisation initiatives and targets in tenders and contracts.

7.7 As part of their commitment to divert construction waste from landfill, the Applicant will regularly monitor and record the site's waste reduction performance. This will be compared against a target benchmark where at least 95% (by volume) of non-hazardous waste is to be diverted from landfill.

Waste

7.8 The Applicant is committed to following the above waste hierarchy and reducing waste sent to landfill. As such, adequate storage is to be provided in communal stores, where both recyclable and non-recyclable waste can be stored in accordance with Haringey's waste collection service.

7.9 As shown in Figure 5 overleaf, the red boxes highlight the dedicated waste storage rooms will be provided on the ground floor across the development for the final storage and removal of waste from site.





Figure 5: Proposed Site Plan – RM Design Group, January 2024

- 7.10** In addition, space will be provided for segregated recycling waste bins within the kitchen areas. This will involve the installation of recycling bins, where waste can be segregated into paper, glass, cans, plastic and cardboard, if necessary.
- 7.11** Adequate space for the segregation and storage of commercial waste and recycling will be provided in designated communal stores. This space will meet the following BREEAM requirements:
- > Bins will be clearly labelled to assist with waste segregation, storage and collection;
 - > The stores will be accessible to building occupants and facilities operators; and
 - > The storage will be of a capacity that is appropriate to the building's type, size and predicted volumes of waste.
 - > Three internal storage containers will be provided for each dwelling or bedsit with:
 - > A minimum total capacity of 30 litres;
 - > No individual container smaller than 7 litres;
 - > All containers will be in a dedicated non-obstructive position;

- > Storage containers for recycling in addition to non-recyclable waste storage.
- > Home composting facilities and a home composting information leaflet within the kitchen area or communal space for each self-contained dwelling or bedsit will be provided.
- > Within the communal facilities, the following will be provided:
 - > Recyclable storage will be located in a dedicated, unobstructive position;
 - > Home composting facilities and a home composting information leaflet will be provided within the kitchen area or communal space;
 - > A minimum of 10 litres of internal storage for compostable waste.

8. CIRCULAR ECONOMY

- 8.1** Current and future trends point toward the need for a fundamental shift in the way resources are consumed. A shift to a circular economy will provide considerable economic opportunities as a result.
- 8.2** In contrast to a linear economy (take, make, dispose), a circular economy keeps products and materials circulating through the system at their highest value for as long as possible, through re-use, recycling, refurbishment and remanufacturing. As 60% of total UK waste is generated from construction, demolition and excavation (Defra and Government Statistical Service, 2019) this transition from linear to circular is essential.

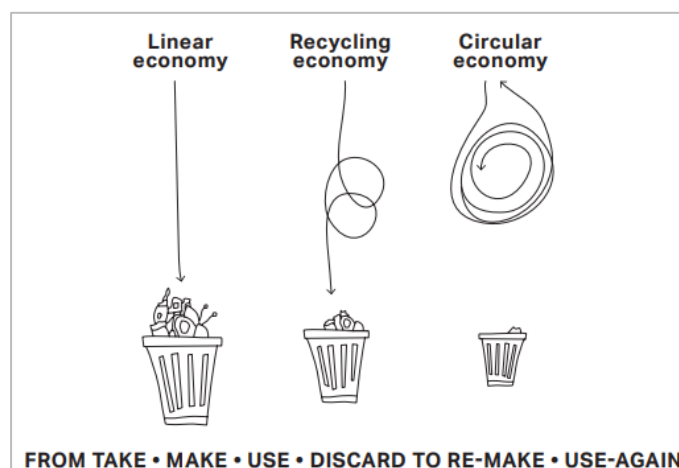


Figure 6: Linear, Recycling and Circular Economies (GLA, 2019)

- 8.3** The circular economy refers to a state whereby resources are kept in a continuous cycle of use so that:

- > Virgin resources are no longer extracted;
- > Existing products, once used, are reused or recycled to make new products without loss of value; and
- > No resources are disposed of and no value is lost.

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

8.5 Applying circular economy thinking to the built environment is complex, with many overlapping issues and trade-offs to consider. However, there are some core guiding principles that promote a regenerative and restorative whole system approach that should be applied on every project. These are as follows:

- > Building in layers – ensuring that different parts of the building are accessible and can be maintained and replaced where necessary.
- > Designing out waste – ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build, and reuse of secondary products and materials.
- > Designing for longevity.
- > Designing for adaptability or flexibility.
- > Designing for disassembly.
- > Using systems, elements or materials that can be reused and recycled.

8.6 The Applicant will adopt these six core principles in order to significantly reduce the amount of raw and new materials required for the development. Alongside this, a reduction in vehicle movements, air pollution, noise and greenhouse gas emissions will also be beneficial.

8.7 Please refer to the full Circular Economy Statement (Hodkinson Consultancy, May 2024) submitted alongside this application for further detail.

9. MATERIALS

Environmental Impact

- 9.1 New building materials will be selected, where possible, to ensure that they minimise environmental impact and have low embodied energy – from manufacture, transportation and operational stages, through to eventual demolition and disposal.
- 9.2 All insulation materials will have an Ozone Depleting Potential (ODP) of zero and a Global Warming Potential (GWP) of less than 5. In addition, all decorative paints and varnishes will meet the relevant standards in order to reduce the emission levels of volatile organic compounds (VOCs).

Local and Responsible Sourcing

- 9.3 Preference will be given to the use of locally sourced materials and local suppliers, where viable. This will benefit the local economy as well as having environmental benefits through reduced transportation.
- 9.4 The main building materials will be responsibly and legally sourced from manufacturers with environmental management systems and/or responsible sourcing credentials, such as BES 6001.
- 9.5 Timber used on site, including timber used in the construction phase, such as hoarding, fencing and scaffolding, will be sourced from sustainable forestry sources (e.g. PEFC and FSC) where possible.



Recycled Materials

- 9.6 Where feasible, The Applicant will commit to using materials that have been recycled. The use of recycled materials (e.g. crushed concrete from waste, used for hard-standing) has less embodied energy impact, other than that expended in their processing or transport.

Life Cycle Impacts

- 9.7 As part of the BREEAM Assessment, it is expected that a full life cycle assessment will be used to assess the main building elements for the areas associated with the commercial units. This involves options appraisals of two to four different super/substructure designs to identify options to reduce overall environmental impact.

- 9.8** Whole Life Cycle Carbon Emissions (WLCCE) are the carbon emissions resulting from the construction and the use of a building over its entire life, through four stages described as life-cycle modules;
- > Module A1 – A5 (product sourcing and construction);
 - > Module B1 – B7 (use);
 - > Module C1 – C4 (end of life);
 - > Module D (benefits and loads beyond the system boundary).
- 9.9** A full Whole Life Cycle Carbon Assessment has been undertaken for the planning application, please refer to the report by Hodkinson Consultancy (May 2024).

Designing for Durability and Resilience

- 9.10** Appropriate durability and protection measures will be incorporated in vulnerable parts of the internal and external building so as to minimise the frequency of replacing materials and therefore optimising material use. These measures are likely to include:
- > Bollards and barriers to delivery areas;
 - > Hard-wearing floor finishes;
 - > Protection rails to corridor walls; and
 - > Kick plates on doors.

10.POLLUTION

Noise Pollution

- 10.1** The Applicant is committed to reducing noise disturbance to internal and external areas of dwellings to improve the health and wellbeing of the occupants and to help protect community cohesion.
- 10.2** The Noise Assessment by Sound Advice Acoustics LTD (June 2024) notes the site is located within Noise Risk Category 2 which suggests a medium level of risk for daytime and a Noise Risk Category 3 which suggests a high level of risk for night time levels. Therefore, further mitigation levels will be required at Stage 2.
- 10.3** The Noise Assessment by Sound Advice Acoustics LTD (June 2024) concludes the resulting emissions from the site running on a worst-case scenario show no conflict with ‘low impact’ criteria and give a

strong indication that complaint and impact on the local amenity is unlikely, provided the recommended maximum noise levels plant criteria is achieved as detailed within the report. Please see the full report for further detail.

Reduction of Night Time Light Pollution

- 10.4** The external lighting strategy will be designed in accordance with the ILP Guidance notes for the reduction of obtrusive light (2011). All external lighting, except from security lighting, will be automatically switched off between the hours of 23:00 and 07:00. This will aim to ensure that lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Air Quality

- 10.5** Poor air quality is the greatest environmental risk to public health in the UK and is known to exacerbate the impact of pre-existing health conditions. It is not only a major risk to human health, but it also has significant damaging impacts on both plants and animals. The Applicant is committed to reducing the proposed development's negative impact on air quality during construction and operation.
- 10.6** An Air Quality Assessment was undertaken by Air Quality Consultants (June 2024). The proposed development will not generate a significant number of additional vehicle movements on the local road network and will utilise an all-electric energy strategy. As such, the effect of the proposed development on local air quality will be 'not significant.'
- 10.7** Overall, the construction and operational air quality effects of the proposed development are judged to be 'not significant' and is expected to be 'air quality neutral.' Please refer to the full assessment for further detail.
- 10.8** In accordance with the requirements of the BREEAM assessment, it is anticipated that an Indoor Air Quality Plan will be produced which will consider the following:
- > Removal of contaminant sources;
 - > Dilution and control of contaminant sources;
 - > Procedures for pre-occupancy flush out;
 - > Third party testing and analysis; and
 - > Maintaining indoor air quality in-use.

Air Tightness and Ventilation

- 10.9** Air leakage is to be minimised and an air permeability of $5 \text{ m}^3/\text{hr}/\text{m}^2$ will be targeted.
- 10.10** It is proposed to install Mechanical Ventilation with Heat Recovery (MVHR) in the dwellings. MVHR provides a constant supply of fresh air to dwellings which has been filtered to remove external pollutants. It operates regardless of external conditions and provides the additional benefit of incorporating boost modes for use during hot weather or when internal humidity levels increase beyond acceptable levels.

Impact of Refrigerants

- 10.11** Where air-conditioning or refrigeration systems are to be installed, the refrigerants will have a Global Warming Potential (GWP) of ≤ 10 . GWP is defined as the potential for global warming that a chemical has, relative to one unit of CO_2 (the primary greenhouse gas).

11. FLOOD RISK & SURFACE WATER RUN-OFF

Flood Risk

- 11.1** Developments in low flood risk areas are promoted to not only protect homes and local communities and reduce the cost implications if flooding occurs, but to protect the environment from the transfer of pollutants during flooding events.
- 11.2** According to the Surface Water and Foul Drainage Statement by Ardent (May 2024) and the Environment Agency's Flood Map shown in Figure 7 below, the proposed development lies in a low risk flood zone (Flood Zone 1).

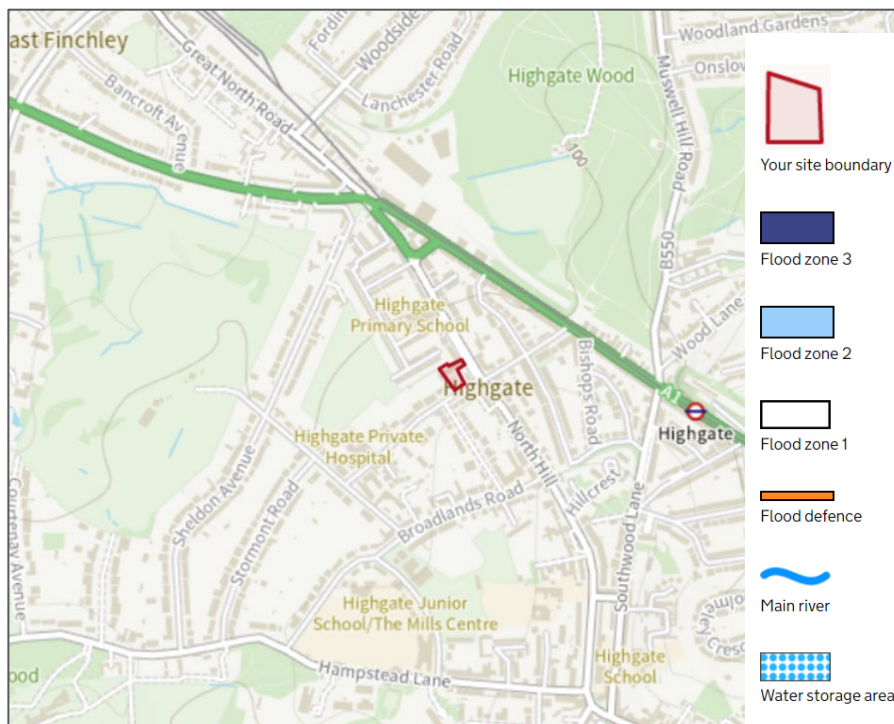


Figure 7: Environment Agency Flood Map – <https://flood-map-for-planning.service.gov.uk>

Sustainable Drainage Systems

- 11.3** Sustainable drainage systems (SuDS) can deliver multiple benefits which broadly fit into four categories: water quantity, water quality, amenity and biodiversity, shown in Figure 8 below. The overarching principle of SuDS design is that surface water runoff should be managed for maximum benefit.
- 11.4** Long term environmental and social factors must be included in decisions regarding sustainable drainage. Sustainable drainage takes account of the quantity and quality of runoff, and the amenity and aesthetic value of surface water in the urban environment.

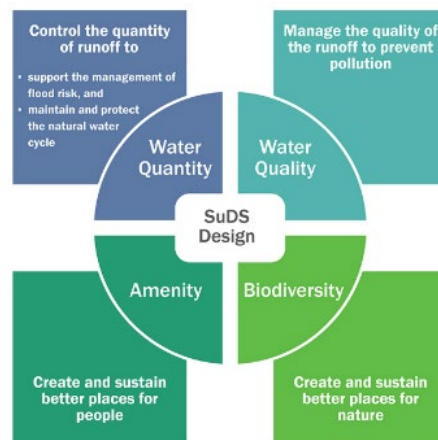


Figure 8: The four 'pillars' of SuDS – CIRIA SuDS Manual (2015)

- 11.5** The following listed SuDS are proposed. These will not only help to attenuate surface water but will provide the necessary water treatment.
- > **Living roofs** will help to intercept and retain precipitation, reducing the volume of runoff and attenuating peak flows.
 - > **Geo-cellular storage** will be used to control and retain excess surface water run-off until it can infiltrate into the ground naturally.
 - > **Permeable paving** will allow rainwater to infiltrate downwards and be temporarily stored before infiltration to the ground, reused or directed towards the cellular attenuation tanks.
- 11.6** The proposed surface water drainage strategy will reduce flood risk by restricting flows in accordance with restricting surface water flows in accordance with the London Plan and the London Borough of Haringey requirements. It is therefore proposed that a combination of landscaping and amenities, lined permeable paving (68.2m³) and a geo-cellular attenuation tank (169.5m³) will provide sufficient storage volume for the 1 in 100-year storm event including a 40% allowance for

climate change. In addition, living roofs (142m²) are also proposed across the buildings. Please see the full Surface Water and Foul Drainage Statement (Ardent, May 2024) for further detail.

12.BUILDING QUALITY

Security

- 12.1** The Applicant is committed to ensuring the development is safe and secure for the occupants; reduce the risks and costs associated with crime; and improve occupiers' quality of life by reducing the fear of crime.
- 12.2** As such, the proposed development will be aiming to incorporate the principles of Secured by Design where appropriate. This may involve consultation with a Security Consultant during the detailed design stage.



Safe Access

- 12.3** The Applicant is committed to ensuring that the development is safe and secure for its users. As such, footpaths will provide direct access from the site's entrance to the main doors of the building. All paths will consider dedicated pedestrian crossings and will be appropriately lit and signposted.
- 12.4** Cars will access the site from the View Road, where there will be 10 dedicated parking bays (including 2 disabled parking bays). Service vehicles, including those for refuse and skips, will have a different means of accessing the site to allow for manoeuvring. Dedicated spaces for the storage of refuse skips and pallets will be kept away from manoeuvring areas and car parking.
- 12.5** As outlined in the Transport Assessment (Markides Associates, April 2024) all access to the commercial uses will be taken from View Road on a one-way in and out arrangement. A total of 10 parking spaces will be provided at surface level for the care home and its users, of which 2 will be allocated for disabled parking from the outset. A delivery/ambulance stopping place near to the site and staff entrances will also be provided.
- 12.6** A segregated pedestrian gate and footway is also provided, leading from the footway on View Road to the building main entrance and staff access. This is sufficient to accommodate the staff parking demand as well as operational turnover.
- 12.7** Vehicle parking proposed is enclosed within the site boundary and on North Hill, is a 1-to-1 re-provision of existing parking.

Sound Insulation

- 12.8** In order to reduce the likelihood of noise complaints and to ensure a high quality development is created, the development will be aiming to achieve airborne sound insulation values that will improve upon the performance standards outlined within the Building Regulations for England and Wales, Approved Document E.
- 12.9** The building will meet the appropriate acoustic performance standards and testing requirements for sound insulation, indoor ambient noise level and reverberation times in order to achieve the Hea 05 credit of the BREEAM assessment. A full Noise Impact Assessment will be required during the design stage to assess the impact of noise on sensitive areas and buildings within an 800m radius of the proposed development. This will suggest noise attenuation measures which will need to be implemented to achieve the Pol 05 credit.

Inclusive Design

- 12.10** The Applicant's commitment to inclusivity will ensure that the proposed development is scaled appropriately so as to respond to the needs of all its users. The Applicant will endeavour to incorporate the requirements of the Equality Act (2010) into their design, making reasonable adjustments to enable disabled access, regularly reviewing whether the buildings are accessible and effective, and providing necessary design adjustments where it is practical to do so.

Visual Comfort

- 12.11** Glare will aim to be minimised using a glare control strategy, either through building form and layout and/or building design measures. This will avoid increasing energy consumption from lighting and maximising daylight levels.
- 12.12** The building will be designed to provide an adequate view out through either a window or permanent opening.
- 12.13** All external lighting will be designed in accordance with BS5489-1:2013 'Code of practice for the design of road lighting' and will provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately.

Overheating

- 12.14** Minimising the risk of summer overheating and high uncontrollable temperatures is important so as to ensure that homes are comfortable for their occupants and remain comfortable in the future. The Applicant commits to ensuring that all dwellings will not have a high risk of summer overheating and will adopt appropriate measures to ensure this is delivered.

- 12.15** In the Overheating Assessment by Harniss Consulting Ltd (June 2024) all occupied non-living areas were assessed against the overheating criteria of TM52, with all care home bedrooms and apartments having been assessed against the TM59 criteria.
- 12.16** The report identifies parts of the care home building passed the assessment against the 2020 weather file without any additional provisions needed, however, with the utilisation of passive measures in the form of mechanical ventilation and improved performance glazing, the whole of the care home building was able to pass both the TM52 and TM59 assessments.
- 12.17** Furthermore, all of the apartment spaces failed the assessment against the 2020 London City Airport weather file without any additional provisions needed. However, with the utilisation of passive measures in the form of improved performing G-Values to the glazing of 0.32, mechanical supply and extract ventilation to the spaces without openable windows as well as cooling via highly efficient VRF outdoor units and an indoor fan coil unit to each Bedroom and Living/Kitchen area, all the apartments passed the TM59 assessment. Please see the full report for further information.

Indoor Air Quality

- 12.18** In accordance with the requirements of BREEAM Hea 02 'Indoor Air Quality', it is anticipated that an Indoor Air Quality Plan will be produced to encourage a healthy internal environment which will consider the following:
- > Removal of contaminant sources;
 - > Dilution and control of contaminant sources;
 - > Procedures for pre-occupancy flush out;
 - > Third party testing and analysis; and
 - > Maintaining indoor air quality in-use.
- 12.19** A suitable ventilation strategy will be adopted in order to minimise the concentration and recirculation of pollutants in the building.
- 12.20** In addition, all of the following products will be specified to meet the recognised international standards for Volatile Organic Compounds (VOCs):
- > Paints and varnishes;
 - > Wood panels (including particle board, fibreboard, OSB, cement bonded particle board, plywood and acoustic board);
 - > Timber structures;

- > Wood flooring;
 - > Resilient textiles and laminated flooring;
 - > Suspended ceiling tiles;
 - > Flooring adhesives; and
 - > Wall coverings.
-

13. TRANSPORT AND LOCAL AMENITIES

Sustainable Transport

- 13.1** Sustainable transport links are central to the sustainability debate. They provide a positive contribution to environmental, societal and economic sustainability of the places they serve.
- 13.2** The provision of alternative sustainable transport options and associated facilities reduces dependency on traditionally fuelled cars and has the following benefits:
- > Encourages active travel and helps improve people's health and wellbeing;
 - > Reduces congestion and encourages clean travel which helps to improve the air quality of the local area; and
 - > Provides cost savings compared with maintaining and running traditionally fuelled cars.
- 13.3** A Transport Statement has been produced by Markides Associates (April 2024). Trip generation demonstrates that the proposed development would generate a total of 18 two-way movements in each highway peak in the worst case, which is not considered significant. The site will be managed to limit peak hour trips and limit trips at 15:00-16:00 where feasible. Please refer to the full report for further detail.

Local Amenities

- 13.4** The proposed development has access to the following key amenities in the local area which will help to reduce dependency on private transport:
- > **Administrative services**
 - > Post Office: 7 minute walk located 0.4km from the site.
 - > Banks and cash points: Sainsbury's ATM 13 minute walk located 0.9km from the site.

> **Health services**

- > Health Practice: Highgate Group Practice 2 minute walk located 0.09km from the site.
- > Pharmacy: Hayward Pharmacy 7 minute walk located 0.4km from the site.

> **Small/large scale retail services**

- > Highgate Wholefoods: 15 minute walk located 0.9km from the site.
- > Sainsbury's Supermarket: 33 minute public transport commute using bus 263 Highbury Barn to Archway Station, changing to bus 41 Tottenham Hale to Tottenham Lane followed by a short 4 minute walk to the supermarket.

Public Transport

13.5 The site is well located within close proximity to a number of transport links, such as:

- > **Highgate Station** which is served by London Underground Northern Line services on the Mill Hill East/High Barnet branch line, providing connections to Euston, Leicester Square, Old Street, Waterloo, London Bridge, Clapham, and south London, with branch line connections to Edgware.
- > **Local Bus Services** within the immediate vicinity of the site, providing frequent trips in all directions. These are serviced by bus numbers 143, 603, 263, N20, 43, and 134.



13.6 The Transport for London Public Transport Accessibility Level (PTAL) map for the site is presented in Figure 9 below. The site's PTAL rating of 3 represents a moderate level of transport accessibility.

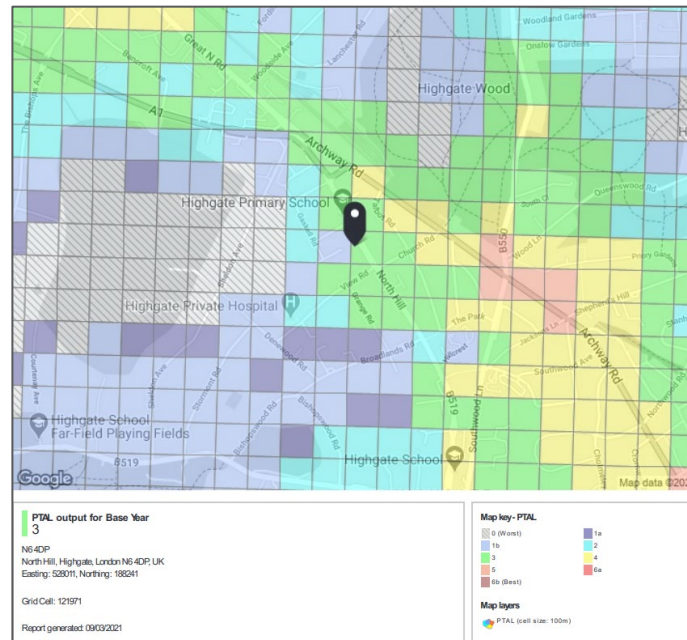


Figure 9: PTAL Map – www.tfl.gov.uk

Cycle Parking

- 13.7** Encouraging cycling not only makes a positive contribution to health and well-being, but also reduces pressure on existing transport systems in accordance with Policy T5 of the London Plan.
- 13.8** A total of 8 cycle parking spaces will be provided for the care home, within a dedicated store accessed at ground floor level from View Road, adjacent to the staff access. This will also be made available to visitors as necessary and consist entirely of Sheffield Stands.



- 13.9** Residential cycle parking will be provided within the rear garden of the block, accessible via the shared lobby, which will be equipped with fob and electric door access to facilitate conveyance of cycles through the building. A total of 8 Sheffield stands will be provided within a secure shelter, comprising 16 cycle parking spaces.
- 13.10** The Strategic Cycle Network is located within 1km of the site and is accessible via local, mainly residential roads. Public cycle parking is available at Highgate Station and key junctions between 34 the site and railway station are supported by cycle crossing infrastructure and advanced stopping lines.

Car Parking

- 13.11** A total of 10 car parking spaces are to be provided across the development. Of these, 2 spaces are to be for disabled use.

Electric Car Charging

- 13.12** Electric vehicles have the benefit of eliminating emissions, including carbon dioxide, oxides of nitrogen, carbon monoxide and particulates that normal cars emit. With road transport accounting for 66% of particulate emissions and 42% of NO_x emissions in London, measures such as electric vehicle charging points are strongly encouraged.

- 13.13** Therefore, the proposed development will allow for the provision of 20% active and 80% passive electric vehicle charging points.



14.BIODIVERSITY AND ECOLOGY

Brownfield Site

- 14.1** The site has been previously used for development which is predominantly covered in hard standing and is therefore considered 'brownfield'. Redeveloping and revitalising vacant and under-used sites is supported by the NPPF.

Protection of Ecological Value

- 14.2** To protect existing biodiversity, a series of measures will be implemented to reduce any impact on local wildlife. These include the following:
- > All site operatives to be made aware of current legislation, including the protection of certain species;
 - > Site clearance works to be timed to avoid the main bird nesting season. If this is not possible, a check should be carried out prior to the works to determine the presence of any active nests;
 - > Suitable fencing should be erected to reduce the possibility of any damage to established vegetation; and
 - > Native species, or species of known wildlife value, should be used for the proposed new planting.

Enhancement of Ecological Value

14.3 Enhancing a site's ecological value not only helps to reduce a development's environmental impact but improves the health and wellbeing of the occupants through their interaction with the natural environment.

14.4 The proposed landscaping strategy includes enhancements through the provision of landscaped areas, bio-solar roofs and additional tree and shrub planting across the site.



14.5 The strategy for the new planting will include medium native and native cultivar trees, ornamental trees, ornamental planting beds with shrubs, grasses and herbaceous perennials and biodiverse roofs including shade tolerant plants under solar panels. This diverse planting strategy will attract local insects and pollinators to the site, thus enhancing the biodiversity and contributing to the Urban Greening Factor – currently at 0.32 (Guarda Landscape, Urban Greening Factor Plan, April 2024).

Green Roofs

14.6 129.4m² of green roof is to be provided in order to meet Policy G5 of the London Plan. Green roofs have demonstrable sustainability benefits, including:

- > Reduction in urban heat island effect (localised cooling through increased evaporation);
- > Provision of ecological habitats for fauna and flora, particularly where these roofs can replicate pre-existing ecological conditions; and
- > Reduction in surface water run-off.

15.SUSTAINABLE CONSTRUCTION

15.1 Sustainable construction involves the prudent use of existing and new resources and the efficient management of the construction process. This includes the following measures:

- > Reducing waste during construction and demolition and sorting waste on site where practical;
- > Reducing the risk of statutory nuisance to neighbouring properties as much as possible through effective site management;
- > Controlling dust and emissions from demolition and construction; and

- > Complying with protected species legislation.

Considerate Constructors Scheme

15.2 The development site will be registered with the Considerate Constructors Scheme. This is designed to encourage environmentally and socially considerate ways of working, to reduce any adverse impacts arising from the construction process. As commonly known, the Considerate Constructors Scheme aims are as follows:

- > Respecting the community (includes appearance)
- > Care for the environment;
- > Value their workforce (includes site safety).



15.3 The site will target a Very Good score of at least 33 out of 45, with all three sections scoring at least eleven points.

Monitoring Construction Site Impacts

15.4 During the construction processes, control procedures will be put in place to minimise noise and dust pollution and roads will be kept clean. The management systems will generally comprise procedures and working methods that are approved by the development team together with commercial arrangements to ensure compliance.

15.5 Further to the above, additional measures will be adopted to minimise the impact on the local area during construction. This will include the limiting of air and water pollution in accordance with best practice principles, as well as the recording, monitoring and displaying of energy and water use from site activities during construction.

15.6 In terms of construction traffic, this will be minimised by restricting deliveries and arrival times in order to manage potential impacts on existing and future occupants. Work will be limited to appropriate hours to be agreed with the Council, and suppressors will be used to reduce noise from machinery.



16. HANDOVER AND AFTERCARE

Commissioning and Handover

- 16.1** A schedule of commissioning will be developed to include a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services, control systems and building fabric. This will be carried out in accordance with current Building Regulations, BSRIA and CIBSE guidelines, where applicable.
- 16.2** A specialist Commissioning Manager will be appointed during the design stage with responsibility for the following activities:
- > Undertaking design reviews and giving advice on suitability for ease of commissioning;
 - > Providing commissioning management input to the construction programme and during installation stages; and
 - > Management of commissioning, performance testing and handover/post hand-over stages.
- 16.3** Prior to handover, a Building User Guide will be provided to the staff and management of the units. The guide will provide advice and information on how to operate the building efficiently and in a manner that is in keeping with the original design intent.
- 16.4** The Guide will likely include the following information:
- > An overview of the energy, water and waste efficiency strategy;
 - > The building's services and access to controls;
 - > Pre-arrival information for visitors (e.g. access and security procedures);
 - > Details on the shared facilities and how to access them;
 - > Safety and emergency instructions;
 - > Building related operational procedures and maintenance arrangements;
 - > Incident reporting and feedback arrangements;
 - > Building related training information;
 - > Access to transport facilities; and
 - > Provision and access to local amenities.

Aftercare

- 16.5** Prior to initial occupation, a meeting will take place with the aftercare team and the building occupiers and management in order to provide aftercare support. Onsite facilities management training will be provided, including a walkabout of the building and an introduction to the building systems and their controls.
- 16.6** Once the building has been substantially occupied, a series of seasonal commissioning activities will be completed over a 12 month period. This will include the testing of all building services (i.e. heating equipment and cooling/ventilation systems), interviews with building occupants to identify problems or concerns and re-commissioning of the systems if required.

Post Occupancy Evaluation

- 16.7** Following a year of occupation, the Applicant is committed to carrying out Post Occupancy Evaluation, which will aim to gain in-use performance feedback from building users to inform operational processes and maintain/improve comfort, health, safety and productivity.

17.CONCLUSION

- 17.1** The issue of sustainable development has been considered throughout the design of the proposed development at Former Mary Fielding Care Home by Highgate Care Ltd in the London Borough of Haringey. In particular, the incorporation of sustainable design and construction methods, energy and water saving measures, waste reduction techniques as well as measures to enhance the ecological value of the site, a good quality and sustainable development is proposed.
- 17.2** The key sustainability features outlined in this Sustainability Statement are listed below:
- > **REEAM:** All non-residential/commercial units will be designed and built to achieve a BREEAM 'Very Good' rating under the New Construction 2018 scheme.
 - > **Energy efficiency:** The proposed development will achieve a 47.3% reduction over the Building Regulations Part L 2021 baseline through a range of energy efficiency measures, including a communal heating system consisting of air source heat pumps and solar photovoltaics.
 - > **Overheating:** The scheme has been designed to ensure overheating risk is reduced to acceptable levels in accordance with CIBSE TM59:2017 requirements.
 - > **Water efficiency:** Flow control devices and water efficient fixtures and fittings will be installed in all dwellings to target a maximum internal daily water consumption of 105 litres/person/day. Rainwater harvesting tanks will be installed to reduce the demand on potable water and promote effective use of water supplies.
 - > **Waste and recycling:** Adequate facilities will be provided for domestic and construction related waste, including segregated bins for refuse and recycling.
 - > **Circular Economy:** The principles of a circular economy shall be incorporated into the development, where possible.
 - > **Materials:** Where practical, new building materials will be sourced locally to reduce transportation pollution and support the local economy. New materials will be selected based on their environmental impact and responsible suppliers will be used where possible.
 - > **Pollution:** The proposed development will be considered 'air quality neutral'. Regarding noise, the proposed development is located within Noise Risk Category 2 which suggests a medium level of risk for daytime and a Noise Risk Category 3 which suggests a high level of risk for night time levels. Therefore, further mitigation levels will be required at Stage 2.
 - > **Flood Risk and SUDs:** The proposed development site lies in a low flood risk zone and will benefit from SUDs such as living roofs, geo-cellular storage and permeable paving.

- > **Security:** Consultation with a Security Specialist will take place to ensure the development is safe and secure for its residents.
- > **Sound insulation:** The dwellings are to target an improvement on Building Regulations Part E through party walls and floors.
- > **Inclusive access:** 90% of the new dwellings will be designed to meet Building Regulations Approved Document M4(2) and 10% will meet Part M4(3).
- > **Sustainable transport:** The site will benefit from a good existing public transport network and sustainable modes will be encouraged through the provision of 13no. cycle storage spaces and electric vehicle charging points.
- > **Biodiversity and ecology:** Enhancements will be implemented through the provision of landscaped areas, bio-solar roofs and additional tree and shrub planting across the site.
- > **Sustainable construction:** The site will aim to achieve a Very Good score with the Considerate Constructors Scheme and will closely monitor construction site impacts.

APPENDICES

Appendix A

BREEAM New Construction Care Home ‘Very Good’
Pre-Assessment

Appendix B

Water Efficiency Calculator

Appendix A

BREEAM New Construction Care Home 'Very Good' Pre-Assessment



BREEAM 2021 TRACKER

North Hill Highgate

Project name & number	North Hill Highgate	BREEAM assessor	Zoe Lowther
Client	Highgate Care Ltd	Project manager	Nimco Ali
Local authority & postcode	Haringey, N6 4DP	Rating required	Very Good
Reason for BREEAM	Planning requirement	Building type	Care Home
Status of project	Pre Assessment	Assessment scope	Fully fitted
Development description	50-bed rehabilitation clinic (Class C2 - Residential Institutions), together with a separate residential building fronting North Hill accommodating 9 Class C3 flats (5 x 1 bed and 4 x 2 bed) and associated works.		

BREEAM assessment details		Target score	Awarded score	BREEAM rating benchmarks	
Reference number	TBC	63.88%	0.00%	Pass	≥ 30
Scheme	New Construction			Good	≥ 45
Version	6.0	Very Good		Very Good	≥ 55
GIFA (m ²)	TBC			Excellent	≥ 70
Part L	2021			Outstanding	≥ 85

Meeting log			BREEAM credits					
Date	Location	Key actions from DTM	Section	Available credits	Target credits	Section weighting	% credits targeted	Category score
			Management	21	14	11.00%	66.67%	7.33%
			Health & Wellbeing	18	14	14.00%	77.78%	10.88%
			Energy	22	11	16.00%	50.00%	8.00%
			Transport	12	6	10.00%	50.00%	5.00%
			Water	9	7	7.00%	77.78%	5.44%
			Materials	14	4	15.00%	28.57%	4.28%
			Waste	10	6	6.00%	60.00%	3.60%
			Land Use & Ecology	13	11	13.00%	84.62%	11.00%
			Pollution	12	11	8.00%	91.67%	7.33%
			Innovation	10	1	10.00%	10.00%	1.00%
			Rating	Very Good				

Revision	Date	Revision details	Author	QA	PM sign off
v1	22.03.24	Pre-assessment for planning	RD	ZC	NA

Producing BREEAM Evidence:

- All pieces of information need to have a clear source for the audit trail i.e. company branding, name of author and date;
- The BRE require calculator tools to be completed for specific issues. These will be completed by the assessor once all information required for the calculation is provided;
- Drawings produced for BREEAM should be annotated to show how each criterion is met. Notes can be added directly to the drawing, or annotated by hand.

Hodkinson Consultancy can provide you with a wide range of templates to help demonstrate compliance. Your assessor will discuss these with you.

For best results please print this document in A3 format.

Management	Issue			Credits				
	Issue		Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards
	Man 01	Project brief and design	Project delivery planning	RIBA 2	The project delivery stakeholders will meet to identify and define roles, responsibilities and contributions for each key phase of project delivery. The project team will demonstrate how the project delivery stakeholders' contributions and the consultation process outcomes influence the Initial Project Brief, Project Execution Plan, Communication Strategy and Concept Design.	1	0	
			Stakeholder consultation	RIBA 2	All interested parties will be consulted and the design team will demonstrate how the consultation exercise influences the Project Brief and Concept Design. Prior to completion of the detailed design all interested parties give and receive consultation feedback.	1	1	
			Pre-requisite - BREEAM Advisory Professional	RIBA 1	The project team, including the client, formally agree strategic performance targets early in the design process.	-	-	
			BREEAM Advisory Professional - Concept Design	RIBA 2	A BREEAM AP will work with the project team to maximise the project's overall performance against BREEAM. They will monitor progress against the performance targets and identify risks and opportunities related to the achievement of the rating.	1	0	
			BREEAM Advisory Professional (AP) - Detailed Design	RIBA 3	A BREEAM AP will continue to work with the project team to maximise the project's overall performance against BREEAM. Feedback will be provided to support them in taking corrective actions and achieving their agreed rating.	1	0	
	Man 02	Life cycle cost and service life planning	Elemental Life Cycle Cost (LCC)	RIBA 2	An entire asset LCC Plan will be produced with design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008. This will include an indication of future replacement costs over a period of analysis and will include service life, maintenance and operation cost estimates.	2	0	
			Component level life options appraisal	RIBA 4	A component level LCC options appraisal will be produced in line with PD 156865: 2008 and will include details on the building envelope, building services, finishes and external spaces. Appropriate examples provided by the design team will be used to demonstrate how this appraisal has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value.	1	0	
			Capital cost reporting		Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/ m²).	1	1	
	Man 03	Responsible construction	Pre-requisite - Legally harvested and traded timber		All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber'.	-	-	
			Environmental management		The principal contractor will operate an Environmental Management System covering their main operations (e.g. ISO 14001). All parties who manage the construction site will also implement best practice pollution prevention policies and procedures on site.	1	1	
			Pre-requisite - BREEAM Advisory Professional		The client and the contractor formally agree performance targets.	-	-	
			BREEAM Advisory Professional - Site		The BREEAM AP will also monitor construction progress throughout all stages where decisions critically impact BREEAM performance and will proactively identify risks and opportunities related to the procurement and construction process.	1	0	
			Responsible construction management		The principal contractor evaluates the risks (on site and off site), plans and implements actions to minimise the identified risks. Compliance with Considerate Constructors is required for 1 credit.	1	1	1 credit - Excellent 2 credits - Outstanding
					Compliance with Considerate Constructors is required whilst also undertaking additional responsible construction practices.	1	1	
			Monitoring of construction site impacts - Utility		Assign responsibility to an individual for monitoring, recording and reporting energy use and water consumption from all on-site construction processes throughout the build programme.	1	1	
			Monitoring of construction site impacts - Transport		Assign responsibility to an individual for monitoring, recording and reporting transportation data resulting from all on-site construction processes throughout the build programme.	1	1	
	Man 04	Commissioning and handover	Commissioning - testing schedule and responsibilities		A schedule of commissioning and testing will be produced. The schedule will comply with current building regulations, BSRIA and CIBSE guidelines and will be undertaken by an appropriate team member (pre-commissioning, commissioning and testing). Additional commissioning requirements apply where a building management system (BMS) is specified.	1	1	Very Good Excellent Outstanding
			Commissioning - design and preparation		During the design stage an appropriate project team member will be appointed with responsibility for: - Undertaking design reviews and giving advice on suitability for ease of commissioning, providing commissioning management input to construction programming and during installation stages and management of commissioning, performance testing and handover or post-handover stages. This role will be carried out by a specialist commissioning manager where complex building services are installed.	1	1	
			Testing and inspecting building fabric		Post-construction testing and inspection will be undertaken by a suitably qualified professional who will undertake the survey and testing in accordance with the appropriate standard. Any defects identified during post-construction testing and inspection will be rectified prior to building handover and close out.	1	1	
			Handover		Prior to handover two building user guides and training schedules will be produced; one technical guide for facilities management and one non-technical guide for building users.	1	1	Very Good Excellent Outstanding

	Issue			Credits				
	Issue		Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards
	Man 05	Aftercare	Aftercare support		Aftercare support will be provided through operational infrastructure and resources. This will take place in the first month of building occupation to support building users and management. Longer term aftercare support for at least the first 12 months from occupation will also be arranged. Energy and water consumption data will be recorded for a minimum of 12 months, once the building is substantially occupied.	1	1	
			Commissioning - implementation		The following commissioning activities will be undertaken over a 12-month period, once the building becomes occupied: All simple systems (naturally ventilated) will: - Review thermal comfort, ventilation, and lighting (at three, six and nine month intervals) after initial occupation, identify deficiencies and areas in need of improvement and re-commission systems and incorporate any revisions in operating procedures into O&M manuals. All complex systems (in addition to those noted above) will: - Identify changes made by the owner or operator, test all building services under full load conditions, carry out testing during periods of extreme (high or low) occupancy, interview building occupants to identify problems or concerns regarding the systems and produce monthly reports comparing sub-metered energy performance to those predicted.	1	1	Excellent Outstanding
			Post-Occupancy Evaluation (POE)		The client or building occupier commits to carrying out a POE one year after the building is occupied. This is carried out by an independent party and covers a review of the design intent and construction process and provides feedback from a wide range of building users. The client or building occupier will commit funds to pay for the POE in advance.	1	1	
			Total for management					21
Health and wellbeing	Hea 01	Visual comfort	View Out		95% of the floor area in 95% of spaces for each relevant building area will be within 8m of an external wall. The external wall must have a window or permanent opening that provides an adequate view out. The window or opening must be ≥ 20% of the surrounding wall area.	1	1	
			Glare control		Areas at risk of glare will be assessed using a glare control assessment. This will allow for potential glare in all relevant building areas to be designed out where risk has been identified. The prevention of glare will be achieved through building form and layout or building design measures and the strategy must not increase the energy consumption used for lighting.	1	1	
			Daylighting		At least 80% of floor area in occupied spaces (or 35% in retail sale areas) is adequately day lit with an average daylight factor of 2% or more.	2	1	
			Internal lighting		Internal lighting in all relevant areas of the building will be designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7.	1	1	
			External lighting		All external lighting located within the construction zone will be specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting. Lighting of roads and public amenity areas and BS EN 12464-2:20145 Light and lighting - Lighting of work places - Part 2: Outdoor work places.			
			Zoning and controls		Internal lighting will be zoned to allow for occupant control.			
	Hea 02	Indoor air quality	Pre-requisite - Indoor air quality plan		A site-specific indoor air quality plan will be produced and implemented.	-	-	
			Ventilation		The building will be designed to minimise the indoor concentration and recirculation of pollutants. For naturally ventilated or mixed mode buildings, the design demonstrates that the ventilation strategy provides adequate cross flow of air to maintain the required thermal comfort conditions and ventilation rates in accordance with CIBSE AM10.	1	1	
			Emissions from construction products		All of the product installed will meet the emission limits and testing requirements.	2	2	
			Post-construction indoor air quality measurement		The formaldehyde concentration in indoor air is measured post construction but pre-occupancy and does not exceed 100 µg/ m³ averaged over 30 minutes. Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.	1	0	
	Hea 04	Thermal comfort	Thermal modelling		Thermal modelling will be carried out using software in accordance with CIBSE AM11. For air-conditioned buildings, summer and winter operative temperature ranges in occupied spaces will be in accordance with the criteria set out in CIBSE Guide A Environmental design. The PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices are reported. For naturally ventilated buildings winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design and the building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52.	1	1	
			Design for future thermal comfort		The thermal modelling demonstrates that the relevant requirements for air conditioned and naturally ventilated buildings will be achieved for a projected climate change environment.	1	0	
			Thermal zoning and controls		The thermal modelling analysis will need to inform the temperature control strategy for the building and its users and the strategy for proposed heating or cooling systems.	1	1	

	Issue			Credits				
	Issue		Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards
	Hea 05	Acoustic performance			Demonstrate that all spaces in the building achieve, and for the relevant areas exceed, the performance standards required by BS for sound insulation, indoor ambient noise levels and reverberation times.	3	3	
	Hea 06	Security		RIBA 2	A Suitably Qualified Security Specialist (SQSS) will conduct an evidence-based Security Needs Assessment (SNA). This SNA will be used to identify attributes of the site and surroundings which may influence the approach to security for the development. The SQSS will develop a set of security controls and recommendations and these will be incorporated in the design.	1	0	
	Hea 07	Safe and healthy surroundings			Dedicated and safe cycle paths will be provided from the site entrance to any cycle storage, and connect to off-site cycle paths where applicable. Also, dedicated and safe footpaths are provided on and around the site providing suitable links. Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths and it will ensured that any delivery areas are not accessed through general parking areas and do not cross or share pedestrian and cyclist paths. There will be dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. Also, parking and turning areas will be designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.	1	1	
			Outdoor space		There will be outside space providing building users with an external amenity area.	1	1	
Total for health and wellbeing						18	14	
Energy	Ene 01	Reduction of energy use and carbon emissions			An Energy Performance Ratio for New Construction (EPR _{NC}) will be calculated. The EPR _{NC} achieved will be compared with the benchmarks below in order to award the corresponding number of BREEAM credits.	9	3	4 credits - Excellent 6 credits - Outstanding
			Pre-requisite	RIBA 2	All relevant members of the design team will hold a preliminary design workshop focusing on operational energy performance.	-	-	
					Additional energy modelling will be undertaken during the design and post-construction stage to generate predicted operational energy consumption figures. Predicted energy consumption targets will be reported by end use, design assumptions and input data (with justifications). A risk assessment will also be carried out to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.	4	0	4 credits - Outstanding
	Ene 02	Energy monitoring	Sub-metering of end-use categories		Energy metering systems that enable at least 90% of the estimated annual energy consumption of each fuel will be installed. Floor area requirements: > 1,000 m ² , by end-use category with an appropriate energy monitoring and management system. < 1,000 m ² , use either an energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs.	1	1	Very Good Excellent Outstanding
	Ene 03	External lighting	External lighting		No external lighting will be installed (which includes lighting on the building, at entrances and signs) OR External light fittings within the construction zone will have an average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt, automatic control to prevent operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.	1	1	
	Ene 04	Low carbon design		RIBA 2	Note - To achieve this the first credit under Hea 04 Thermal Modelling must be achieved. The project team will analyse the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures. Passive design measures will be implemented to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings and the reduced total energy demand and carbon dioxide (CO ₂) emissions resulting from the passive design measures will be calculated.	1	1	
			Free cooling		Note - To achieve this credit the passive design analysis credit must be awarded. A free cooling analysis will be included in the passive design analysis and it will identify opportunities for the implementation of free cooling solutions. The building will be naturally ventilated or will use a combination of the free cooling strategies.	1	0	
			Low and zero carbon technologies	RIBA 2	An energy specialist will completes a feasibility study by the end of Concept Design, this will establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy sources for the building or development. The LZC technologies for the building will be specified in line with the feasibility study recommendations. The reduced regulated carbon dioxide (CO ₂) emissions resulting from the feasibility study will be quantified.	1	1	

	Issue			Credits			
	Issue	Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards
	Ene 06	Energy efficient transportation	Energy consumption	For specified lifts, escalators or moving walks the following will be done: - Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks; - Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2 or Part 3 for at least two types of system for each transportation type required OR an arrangement of systems - Consider the use of regenerative drives, subject to the requirements in Regenerative drives; - Specify the transportation system with the lowest energy consumption.	1	1	
			Energy efficient features	Specify the following three energy efficient features for each lift: - A standby condition for off-peak periods; - The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of > 70 luminaire lumens per circuit Watt - Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.	1	1	
	Ene 08	Energy efficient equipment	Energy efficient equipment	The building's unregulated energy consuming loads will be estimated alongside their contribution to the total annual unregulated energy consumption. The systems or processes that use a significant proportion of the total annual unregulated energy consumption of the building are identified and a meaningful reduction in the total annual unregulated energy consumption of the building will be demonstrated.	2	2	
			Total for energy		22	11	
Transport	Tra 01	Transport assessment and travel plan	Travel plan	RIBA 1 A travel plan is developed based on a site-specific travel assessment or statement. This statement should include: - Existing travel patterns and opinions of existing building or site users towards cycling and walking; - Travel patterns and transport impact of future building users; - Current local environment for walkers and cyclists; - Reporting of the number and type of existing accessible amenities within 500m of the site; - Disabled access; - Calculation of the existing public transport Accessibility Index (AI); - Current facilities for cyclists.	2	2	
	Tra 02	Sustainable transport	Transport options implementation	Note - At least one credit must be achieved for Tra 01 for any credits to be awarded in this issue. Credits will be awarded based on the Accessible Index (AI) of the project, and the number of transport measures implemented.	10	4	
			Total for transport		12	6	
Water	Wat 01	Water consumption	Water consumption	The standard Wat 01 methodology will be used to compare the water consumption (litres/person/day) for the assessed building against a baseline performance. Credits will be awarded as follows: - 12.5% improvement on baseline > 1 credit - 25% improvement on baseline > 2 credits - 40% improvement on baseline > 3 credits - 50% improvement on baseline > 4 credits - 55% improvement on baseline > 5 credits	5	3	1 credit - Good, Very Good, Excellent 2 credits - Outstanding
	Wat 02	Water meter	Water meter	A pulsed water meter is installed on the mains water supply to each building. This includes instances where water is supplied via a borehole or other private source. For water-consuming plant or building areas consuming 10% or more of the building's total water demand sub meters should be used or water monitoring equipment should be used. The water meter should connect to a BMS or utility monitoring system or should be capable of connecting to one.	1	1	Good Very Good Excellent Outstanding
	Wat 03	Water leak detection	Flow control devices	Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.	1	1	
			Leak detection system	A leak detection system capable of detecting a major water leak on the utilities water supply within the building will be installed AND A leak detection will be installed between the buildings and the utilities water supply. This leak detection will be a permanent automated water leak detection system that alerts the building occupants to the leak and is activated when the flow of water passing through the water meter.	1	1	
	Wat 04	Water efficient equipment	Water efficient equipment	Identify all water demands from uses that could be realistically mitigated or reduced and establish a demonstrable reduction in the total water demand of the building.	1	1	
Total for water					9	7	



	Issue			Credits			Minimum standards
	Issue	Issue sub-title	RIBA Stage	Credit description	Available	Targeted	
Materials	Mat 01	Environmental impacts - LCA		During the Concept Design and Technical Design, demonstrate the environmental performance of the building as follows: - Carry out a building LCA on of the superstructure design using either the BREEAM Simplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).	7	0	
	Mat 02	Environmental impacts - EPD		Construction products with an EPD that achieve a total EPD points score of at least 20 will be undertaken.	1	1	
	Mat 03	Responsible sourcing of construction products		Pre-requisite All timber and timber-based products used on the project will be legally harvested and traded as per the UK Government's Timber Procurement Policy (TPP)	-	-	All ratings
			RIBA 2	A sustainable procurement plan will be used to guide the specification towards sustainable construction products. This plan will include sustainability aims, objectives and strategic targets to guide procurement activities and will also include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. Details of the checking and verifying the effectiveness of the procurement plan will also be included. In addition, if the plan is applied to several sites or adopted at an organisational level it will identify the risks and opportunities of procurement against the process set out in BS ISO 20400:2017.	1	1	
				Measuring responsible sourcing Superstructure, internal finishes, substructure and hard landscaping are responsibly sourced in accordance with the below targets: 3 credits > 30% of points achieved 2 credits > 20% of points achieved 1 credit > 10% of points achieved	3	1	
	Mat 05	Designing for durability and resilience		Protecting vulnerable parts of the building from damage Protection measures will be incorporated into the building's design and construction to reduce damage to the building's fabric or materials.	1	1	
				Protecting exposed parts of the building from material degradation Provide a detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors and provide convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design will be implemented and the design the roof and façade to prevent water damage, ingress and detrimental ponding will also be undertaken.			
	Mat 06	Material efficiency	RIBA 1	Targets will be set and opportunities and methods to optimise the use of materials will be reported for all RIBA stages. The implementation of material efficiency will be reported on during developed design through to construction.	1	0	
				Total for materials	14	4	

	Issue			Credits					
	Issue		Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards	
Waste	Wst 01	Construction waste management	Pre demolition audit	RIBA 2	A pre-demolition audit of any existing buildings, structures or hard surfaces will be carried out This will be used to determine whether refurbishment or reuse is feasible and to maximise the recovery of material for subsequent high grade or value applications.	1	0	1 credit - Outstanding	
			Construction resource efficiency		A compliant Resource Management Plan (RMP) covering non-hazardous waste materials, demolition and excavation waste will be produced. The site will meet or improve on the benchmarks as shown below: - One credit - <11.1 tonnes per 100m ² - Two credits - <6.5 tonnes per 100m ² - Three credits - <3.2 tonnes per 100m ²	3	1		
			Diversion of resources from landfill		Waste materials will be sorted into separate key waste groups either on-site or through a licensed contractor for recovery. The diversion from landfill benchmarks for non-hazardous construction waste and demolition and excavation waste generated will meet the following: - Non Demolition - 80% (tonnage) - Demolition - 90% (tonnage)	1	1		
	Wst 02	Recycled aggregates	Pre-requisite	RIBA 2	To encourage the reuse of site material, a pre demolition audit of any existing buildings, structures or hard surfaces will be undertaken.	-	-		
			Project Sustainable Aggregate Points		Aggregate uses, types and quantities will be identified for each identified use and aggregate type. The region in which the aggregates are sourced will be calculated (km).	1	0		
	Wst 03	Operational waste			Provide a dedicated space for the segregation and storage of operational recyclable waste generated. This will be appropriately labelled, accessible to building users and waste management contractors and be of a sufficient size. If large amounts of waste are expected, waste compactors or balers will be provided and if appropriate, organic waste facilities (with a water outlet).	1	1	Excellent Outstanding	
	Wst 05	Adaptation to climate change	Resilience of structure, fabric, building services and renewables installation	RIBA 2	A climate change adaptation strategy appraisal will be undertaken using a systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment will include the following: - Hazard identification - Hazard assessment - Risk estimation - Risk evaluation - Risk management Following this study develop recommendations or solutions based on the climate change adaptation strategy appraisal that aim to mitigate the identified impact.	1	1		
				RIBA 4	An update will be provided during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective.				
	Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability - recommendations	RIBA 2	A study to explore the ease of disassembly and the functional adaptation potential of different design scenarios will be carried out. Following this recommendations or solutions will be developed, based on the study that aim to enable and facilitate disassembly and functional adaptation.	1	1		
			Disassembly and functional adaptability – implementation	RIBA 4	The team will provide an update on how the recommendations or solutions have been implemented where practical and cost effective. Omissions will also justified in writing to the assessor. Any changes to the recommendations and solutions during the development of the Technical Design should also be recorded. A building adaptability and disassembly guide will be produced to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	1	1		
					Total for waste		10	6	

	Issue			Credits			Minimum standards
	Issue	Issue sub-title	RIBA Stage	Credit description	Available	Targeted	
Land Use and Ecology	Le 01	Site selection		Previously occupied land	1	1	
				Contaminated land	1	0	
	Le 02	Risks and opportunities		Pre-requisite - Assessment route selection	-	-	
			RIBA 1	Survey and evaluation	1	1	
				Determining the ecological outcomes for the site	1	1	
	Le 03	Managing negative impacts on ecology		Pre-requisite - Identification and understanding the risks and opportunities	-	-	
			RIBA 2	Planning, liaison, implementation and data	1	1	
				Managing negative impacts of the project	2	2	
	Le 04	Change and enhancement of ecological value		Pre-requisite - Identifying and understanding the risks and opportunities	-	-	
				Liaison, implementation and data collation	1	1	
				Enhancement of ecology	3	2	

	Issue			Credits				
	Issue		Issue sub-title	RIBA Stage	Credit description	Available	Targeted	Minimum standards
	Le 05	Long term ecology management and maintenance	Pre-requisite - Roles and responsibilities, implementation, statutory obligations		The client or contractor will confirm that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.	-	-	
			Planning, liaison, data, monitoring and review management and maintenance		The project team will liaise and collaborate with representative stakeholders to: - Monitor and review implementation and the effectiveness; - Develop and review management and maintenance solutions, actions or measures. The monitoring and reporting of on the ecological outcomes/successes for site implemented at the design and construction stage and the arrangements of ongoing management of the new landscape and habitats will be reviewed. Also, he ecological value of the site and its relationship to its zone of influence and any linked sustainable activities will be maintained. As part of the tenant or building owner information supplied a section on Ecology and Biodiversity to inform the owner or occupant of local ecological features will be included.	1	1	
			Landscape and ecology management plan		A landscape and ecology management plan will be developed in accordance with BS 42020:20131 covering the first five years. The landscape and management plan will be updated as appropriate to support maintenance of the ecological value of the site.	1	1	
				Total for land use and ecology			13	11
Pollution	Pol 01	Impact of refrigerants	Pre-requisite		All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.	-	-	
			Impact of refrigerant		Two credits - The direct effect life cycle CO ₂ equivalent emissions (DEL _C) of ≤ 100 CO ₂ -eq/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation One credit - Systems using refrigerants have a DEL _C of ≤ 1000 kgCO ₂ -eq/kW cooling and heating capacity.	2	2	
			Leak detection		All systems are hermetically sealed or use environmentally benign refrigerants OR where the systems are not hermetically sealed the systems have a permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks.	1	1	
	Pol 02	Local air quality	Local air quality		All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity OR Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set.	2	2	
	Pol 03	Flood and surface water management	Pre-requisite		An appropriate consultant is appointed to carry out the following requirements; an appropriate consultant is one who has qualifications and experience relevant to designing SuDS and flood prevention measures and completing peak rate of run-off calculations.	-	-	
			Flood resilience		A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration.	2	2	
			Pre-requisite - Surface water run-off		Surface water run-off design solutions must be bespoke.	-	-	
			Surface water run-off - volume		Drainage measures will be specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events. Relevant maintenance agreements for the ownership, long term operation and will also be in place and all calculations will include an allowance for climate change.	1	1	
			Surface water run-off - volume		Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND Drainage design measures will be specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change. Any additional predicted volume of run-off for this event will be prevented from leaving the site by using infiltration or other SuDS techniques.	1	1	
			Minimising watercourse pollution		Drainage strategy confirms that there is no discharge from the developed site for rainfall up to 5 mm and that areas with a low risk source of watercourse pollution will have an appropriate level of pollution prevention treatment provided. Areas with a high risk of contamination or spillage of substances have separators installed in surface water drainage systems. All water pollution prevention systems will be designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS will also be in place.	1	0	



	Issue			Credits			Minimum standards
	Issue	Issue sub-title	RIBA Stage	Credit description	Available	Targeted	
	Pol 04	Reduction of night time light pollution		External lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect the safety and security of the site and its users OR The external lighting strategy has been designed in compliance with Table 2 (ILP) Guidance notes for the reduction of obtrusive light, 2011. Also All external lighting will have the capabilities to be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this will comply with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes. Illuminated advertisements will be designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.	1	1	
	Pol 05	Noise attenuation		Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within an 800 m radius a noise impact assessment will be undertaken by a suitably qualified acoustician (this will be compliant with BS 4142:20141). Noise levels will be measured/determined for: - Existing background noise levels; - Noise rating level from the assessed building. The noise level as measured in the locality of the nearest or most exposed noise-sensitive development will be at least 5dB lower than the background noise throughout the day and night. If not, measures will be installed to attenuate the noise at its source to a level where it will comply with the criterion.	1	1	
				Total for pollution	12	11	
Innovation	Man 03	Responsible construction		The principal contractor evaluates the risks (on site and off site), plans and implements actions to minimise the identified risks, covering the items included in the Responsible Construction Management Template. All criteria must be met to achieve this credit.	1	1	
	Hea 01	Visual comfort		At least 80% of floor area in occupied spaces (or 50% in retail sale areas) is adequately day lit with an average daylight factor of 3% or more.	1	0	
	Hea 02	Indoor air quality		Three of the product types noted below will meet the emission limits, testing requirements and any additional requirements as listed in the HEA02 table: - Paints and varnishes; - Wood based products; - Flooring materials; - Ceiling, wall, acoustic, thermal insulation materials; - Interior adhesives and sealants.	1	0	
	Hea 06	Security		A compliant risk based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment and verification.	1	0	
	Ene 01	Reduction of energy use		The building will achieve an EPR NC ≥ 0.9 and zero net regulated CO ₂ emissions. Energy generation from on-site and near-site LZC sources will be sufficient to offset carbon emissions from regulated energy use plus a percentage of emissions from unregulated energy use. The exemplary credits will be awarded as follows: 1 credit - 10% 2 credits - 50% 3 credits - 100% (carbon negative)	3	0	
	Wat 01	Water consumption		The standard Wat 01 methodology will be used to compare the water consumption (litres/person/day) for the assessed building against a baseline performance. Exemplary credits will be awarded where a 65% improvement on the baseline has been achieved.	1	0	
	Mat 01	Environmental impacts		A suitably qualified third party will carry out the building LCAs OR produces a report verifying the building LCAs accurately represent the designs under consideration during Concept Design and Technical Design. For each LCA option, the findings of the verification checks made by the suitably qualified third party will be itemised in the report including. The suitably qualified third party's relevant skills and experience will be provided and a declaration of their third party independence from the project client and design team will be included in their report.	1	0	
	Mat 03	Responsible Sourcing		Superstructure, internal finishes, substructure and hard landscaping and core services are responsibly sourced in accordance with the below targets: 3 credits plus 1 exemplary credit > 50% of points achieved.	1	0	

	Issue			Credits			Minimum standards
	Issue	Issue sub-title	RIBA Stage	Credit description	Available	Targeted	
	Wst 01	Construction waste management		Prepare a compliant Resource Management Plan (RMP) covering non-hazardous waste materials, demolition and excavation waste and less than <1.9 tonnes of waste per 100m ² will be generated. Sort waste materials into separate key waste groups either on-site or through a licensed contractor for recovery. Meet the diversion from landfill benchmarks for non-hazardous construction waste and demolition and excavation waste generated: Non Demolition - 95% (tonnage) Demolition - 85% (tonnage)	1	0	
	Wst 02	Recycled and sustainable aggregate points		Identify all aggregate uses and types on the project and determine the quantity in tonnes for each identified use and aggregate type. Identify the region in which the aggregate source is located and calculate the distance in kilometres travelled by all aggregates by transport type.	1	0	
	Wst 05	Adaptation to climate change		In addition to the Wst 05 criteria the following credits will also need to be achieved: - Hea 04 thermal comfort; - Ene 01 reduction of energy use and carbon emissions; - Ene 04 low carbon design; - Wat 01 water consumption; - Mat 05 designing for durability and resilience; - Pol 03 Flood and surface water management.	1	0	
	Le 02	Risks and opportunities		When determining the optimal ecological outcome for the site the wider site sustainability-related activities and the potential for ecosystem service related benefits will be considered. This will include opportunities for integrating ecology with wider site sustainability-related activities and ecosystem service related benefits, including as a minimum: - Landscape; - Health and wellbeing; - Resilience; - Infrastructure; - Community and end user involvement.	1	0	
				Total for Innovation	10	1	



Appendix B

Water Efficiency Calculator

Water Efficiency Calculator Former Mary Fielding Care Home				
Internal Water Consumption				
Installation Type	Unit of Measure	Capacity / Flow Rate	Litres/person/day	Notes
WC	Full Flush Volume (Litres)	6	8.76	Low flush WCs will be installed to reduce the volume of water consumed during flushing. All WCs will have dual flush cisterns which will provide both part (4L) and full (6L) flushes.
	Part Flush Volume (Litres)	4	11.84	
Basin Tap	Flow Rate (Litres/minute)	4	7.90	All taps (excluding kitchen taps) will be reduced to 4 litres/minute using flow restrictors. Where multiple taps are to be provided the average flow rate will be used.
Bath	Capacity (Litres to overflow)	160	17.60	All baths will have reduced capacities of 160 litres (excluding displacement). The bath taps are not included in this calculation as they are already incorporated into the use factor for the baths.
Shower	Flow Rate (Litres/minute)	8	34.96	Shower flow rates will be reduced to a maximum of 8 litres/minute using flow restrictors fixed to the shower heads. These contain precision-made holes or filters to restrict water flow and reduce the outlet flow and pressure.
Kitchen Tap	Flow Rate (Litres/minute)	5	12.56	Kitchen taps will be reduced to 5 litres/minute using flow restrictors which will be fitted within the console of the tap or in the pipework.
Washing Machine	Water Consumption (Litres/kg)	8.17	17.16	Water efficient washing machines or washer-dryers will be specified. The make and model numbers of the appliances are unknown at this stage therefore a default figure of 8.17 litres/kg has been assumed.
Dishwasher	Water Consumption (Litres/place setting)	1.25	4.50	All dishwashers will be water efficient. The make and models numbers are unknown therefore a default figure of 1.25 litres/place setting has been assumed at this stage.
Net Internal Water Consumption (Litres/person/day)			115.3	
Normalisation Factor			0.91	
Total Internal Water Consumption (Litres/person/day)			104.9	The total <i>internal</i> water consumption target of ≤105 litres/person/day will be achieved in accordance with Regulation 36 para (2)b optional requirement Approved Document G.
Allowance for External Water Consumption (Litres/person/day)			5	
Total Water Consumption (Litres/person/day)			109.9	The <i>total</i> water consumption target of ≤110 litres/person/day will be achieved in accordance with Regulation 36 para (2)b optional requirement of Approved Document G.