

Design Specification

Starwood House, Avenue One



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Document information

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In order to optimise the BREEAM “OUTSTANDING” rating for the client the design progression must adhere to the following requirements.

Please include the statements below in the Contractor’s tender documents/specifications to ensure compliance with the relevant BREEAM credits and requirements.

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Management

Man 02 Life cycle cost and service life planning

The design team shall utilize the elemental Life Cycle Cost (LCC) plan to guide building and systems design and specification, aiming to minimize life cycle costs while maximizing critical value.

Health and wellbeing

Hea 01 Visual Comfort

View Out:

95% of the floor area in 95% of spaces for each relevant building area provides an adequate view out. Adequate view out is where relevant building areas are within 8m of an external wall which has a window or permanent opening, and the window or opening is $\geq 20\%$ of the surrounding wall area. Where the room depth is greater than 8m, the percentage of window or opening must instead be the same as, or greater than, the values in Table 1.0 BS8206: Part 2.

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 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. External lighting will provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night.

Hea 05 Acoustic performance

The building meets the appropriate acoustic performance standard - Section 7 of BS 8233:2014 - and following testing requirements: A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the acoustic testing and measurement procedures outlined in BREEAM Methodology.

Or alternatively: A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for the indoor ambient noise level for all function areas in the building.

Hea 07 Safe and healthy surroundings

Outside space

The final design will include an outside space providing building users with an external amenity area.

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Energy

Ene 01 Reduction of carbon emissions

The buildings energy performance design will be developed to achieve 9/9 credits under the BREEAM NC V6 Ene 01 methodology.

Ene 02 Energy sub-metering

Sub-metering of major energy consuming systems

Energy metering systems will be installed to enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. These include where present:

- space heating
- domestic hot water heating
- humidification
- cooling, ventilation, i.e. fans (major)
- pumps
- lighting
- small power
- renewable or low carbon systems (separately)
- controls, and other major energy consuming systems (e.g. lifts) or plant.

An Automatic Meter Reading system will be installed to allow future tenants to identify end energy consuming uses through data outputs.

Sub-metering of high energy load and separate tenancy areas

An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs to enable future connection to an energy monitoring and management system will be provided, covering a significant majority of the energy supply to high energy use areas and departments within the building.

Ene 03 External Lighting

The average initial luminous efficacy of the external light fittings for the building will not be less than 70 luminaire lumens per circuit Watt.

All external light fittings will be automatically controlled for prevention of operation during daylight hours and have presence detection in areas of intermittent pedestrian traffic.

Ene 04 Low carbon design

Passive design measures shall be implemented to reduce total heating, cooling, mechanical ventilation, lighting loads, and energy consumption, in accordance with the findings of the passive design analysis

Locally sourced Low or Zero Carbon (LZC) technologies shall be specified for the building in line with the recommendations of the feasibility study.

Ene 06 Energy Efficient Transport

The specified lift will have the following energy efficient features specified:

1. The lifts operate in a standby condition during off-peak periods.
2. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 70 lamp lumens/circuit Watt.
3. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.
4. Where the use of regenerative drives is demonstrated to save energy, they are specified.

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Transport

Tra 01 Travel Plan

A travel plan has been developed which will be implemented and supported by the building's management in operation.

Tra 02 Sustainable Transport Measures

Electric Vehicle Charging Points

The design will include electric recharging stations of a minimum of 7kW - for at least 10% of the total car parking capacity for the development.

Car Share Spaces

A minimum of 5% of car parking spaces will be designated as car share spaces. These spaces will be located closest to the development's entrance.

Accessible Amenities

One new accessible amenity will be provided.

Cycle Parking

Cycle parking spaces will be provided for a minimum of 1 space for every 10 predicted building users.

Cycle parking spaces will meet the following standards:

- Cycles can be secured within spaces in racks with overhead covering. The cycle racks will be set in or fixed to a permanent structure (building or hardstanding) or alternatively, may be located in a locked structure fixed to, or part of, a permanent structure with appropriate surveillance.
- The distance between each cycle rack, and the cycle racks and other obstructions, e.g. a wall, will allow appropriate access to the cycle storage space for easy storage and access to bikes.
- The storage facility or entrance to the facility will be in a prominent site location visible to potential users from either an occupied building or a main access to a building.
- The cycle storage facility will have adequate lighting as per credit Hea 01.
- The lighting will be controlled to avoid out-of-hours use and operation during daylight hours, where there is sufficient daylight in or around the facility.

Cyclist Facilities

Due to the shell and core nature of the development, areas within the unit(s) will be allocated for lockers, changing facilities and drying spaces. It is the responsibility of the tenant to fit these out. Where these are identified, they will allow for fit out to the following requirements:

Compliant changing facilities are defined as those that meet the following:

- Appropriately sized for the likely or required number of users.
- Account for privacy to allow cyclists of either gender to change in private.
- Changing areas must include adequate space and facilities to hang or store clothing and equipment while changing or showering, e.g. bench seat or hooks.
- Toilet or shower cubicles cannot be counted as compliant changing facilities.

A compliant drying space is defined as a space that is specifically designed and designated for this purpose. It should be provided with suitable finishes, adequate heating and ventilation and the facility to hang wet clothes with sufficient air movement around them to dry effectively.

Compliant lockers are defined as those meeting the following:

- The number of lockers is at least equal to the number of cycle spaces required.
- Lockers are in or adjacent to compliant changing rooms.
- The lockers are sized appropriately for the storage of a cyclists' equipment.

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Water

Wat 01 Water Consumption

The design will meet the specification below to ensure that there is a min. 40% improvement in water consumption against the BREEAM baseline through low water use sanitary ware.

Please note that these figures will be reassessed once floor areas are known.

Fitting	Maximum Water Use
WCs	3.75 litres effective flush volume
Urinals	1.50 litres/bowl/hour
Taps in sanitary areas	5 litres/min
Showers	6 litres/min
Taps in kitchenette areas	6 litres/min

The following are not specified:

- Dishwasher
- Washing machines

Wat 02 Water Meter

A pulsed water meter will be fitted on the mains supply to the building. Water-consuming plant or building areas consuming 10% or more of the building's total water demand are not present.

Each meter will have a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system for the monitoring of water consumption.

Wat 03 Water Leak Detection and Prevention

A leak detection system capable of detecting a major water leak will be installed in line with the following:

- On the utilities water supply within the buildings, to detect any major leaks within the buildings AND
- Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment.

The leak detection system will be:

- A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks.
- Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system.
- Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns.
- Programmable to suit the owner's or occupier's water consumption criteria.
- Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.

Flow control devices will be installed 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.

Wat 04 Water Efficient Equipment

There is no water demand from uses other than domestic-scale, sanitary use components in the building.

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Materials

Mat 01 Building life cycle assessment

The design team shall use the building Life Cycle Assessment (LCA) to inform the design and specification of the building and its systems, with the aim of minimizing the carbon footprint.

Mat 05 Designing for durability and resilience

Protecting vulnerable parts of the building from damage:

Vulnerable areas of the development have been identified internally and externally, and the contractor will ensure that they have suitable design features installed to protect them. In areas of higher risk, suitable durability and protection measures to vulnerable parts of the building can include:

- Bollards, barriers or raised kerbs to delivery and vehicle drop-off areas
- Robust external wall construction, up to 2m high
- Corridor walls specified to Severe Duty (SD) as per BS 5234-2(173)
- Protection rails to walls of corridors
- Kick plates or impact protection (e.g., trolleys) on doors
- Hard-wearing and easily washable floor finishes in heavily used circulation areas (i.e., main entrance, corridors, public areas etc.)
- Door stoppers to prevent door handles damaging walls

Protecting exposed parts of the building from material degradation:

The contractor will be required to protect exposed parts of the building from material degradation. The relevant building elements must incorporate appropriate design and specification measures to limit material degradation due to environmental factors such as solar radiation, temperature variation, water/moisture, wind, precipitation, extreme weather conditions, biological agents and pollutants.

Material degradation examples include corrosion, swelling or shrinkage, fading/discolouration, rotting, leaching, blistering, melting, salt crystallisation, or abrasion.

Please refer to BS 7543:2015 for more information.

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Waste

Wst 03 Operational Waste

Dedicated space will be provided for the segregation and storage of operational recyclable waste volumes generated by the assessed unit(s), its occupant(s) and activities. This space will be:

- Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams
- Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors
- Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.

Where consistent and large amounts of operations waste are generated, the following will be provided:

- Static waste compactors or balers; situated in a service area or dedicated waste management space
- A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site

Wst 05 Adaptation to climate change

A technical design update report will be issued by the end of technical design demonstrating how the recommendations or solutions within the climate change adaptation strategy have been implemented.

Wst 06 Design for Disassembly and Adaptability

The proposed recommendations on design for disassembly and functional adaptability should be implemented where practical and cost effective.

A design for disassembly and adaptability guide will be produced to communicate the characteristics allowing functional adaptability and disassembly, which will be supplied for prospective tenants.

Land Use and Ecology

LE 05: Long Term Ecology Management and Maintenance

Landscape and ecology management plan

A landscape and management plan will be developed, which will be updated to support maintenance of the ecological value of the site.

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Pollution

Pol 01 Impact of Refrigerants

All systems with electric compressors will comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia will comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.

Impact of refrigerants

Systems using refrigerants will have a DELC of $\leq 1000\text{kgCO}_2\text{-eq/kW}$ cooling and heating capacity. The BREEAM assessor can provide the Pol 01 calculator tool to help with the calculation.

Pol 02 Local Air Quality

All heating and hot water is supplied by non-combustion systems, only powered by electricity.

Pol 03 Flood and Surface Water Management

Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) will be in place upon project handover.

A comprehensive and up to date drainage plan of the site will be made available for the building or site occupiers.

All external storage and delivery areas will be designed and detailed in accordance with the current best practice planning guidance.

Pol 04 Reduction of Light Pollution

The external lighting design will comply with the following:

- The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011.
- All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.
- The safety or security lighting used between 23:00 and 07:00 will comply with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes.
- Illuminated advertisements, where specified, will be designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.

Pol 05 Noise Attenuation

The noise levels from the assessed building must comply with the findings of the noise impact assessment.