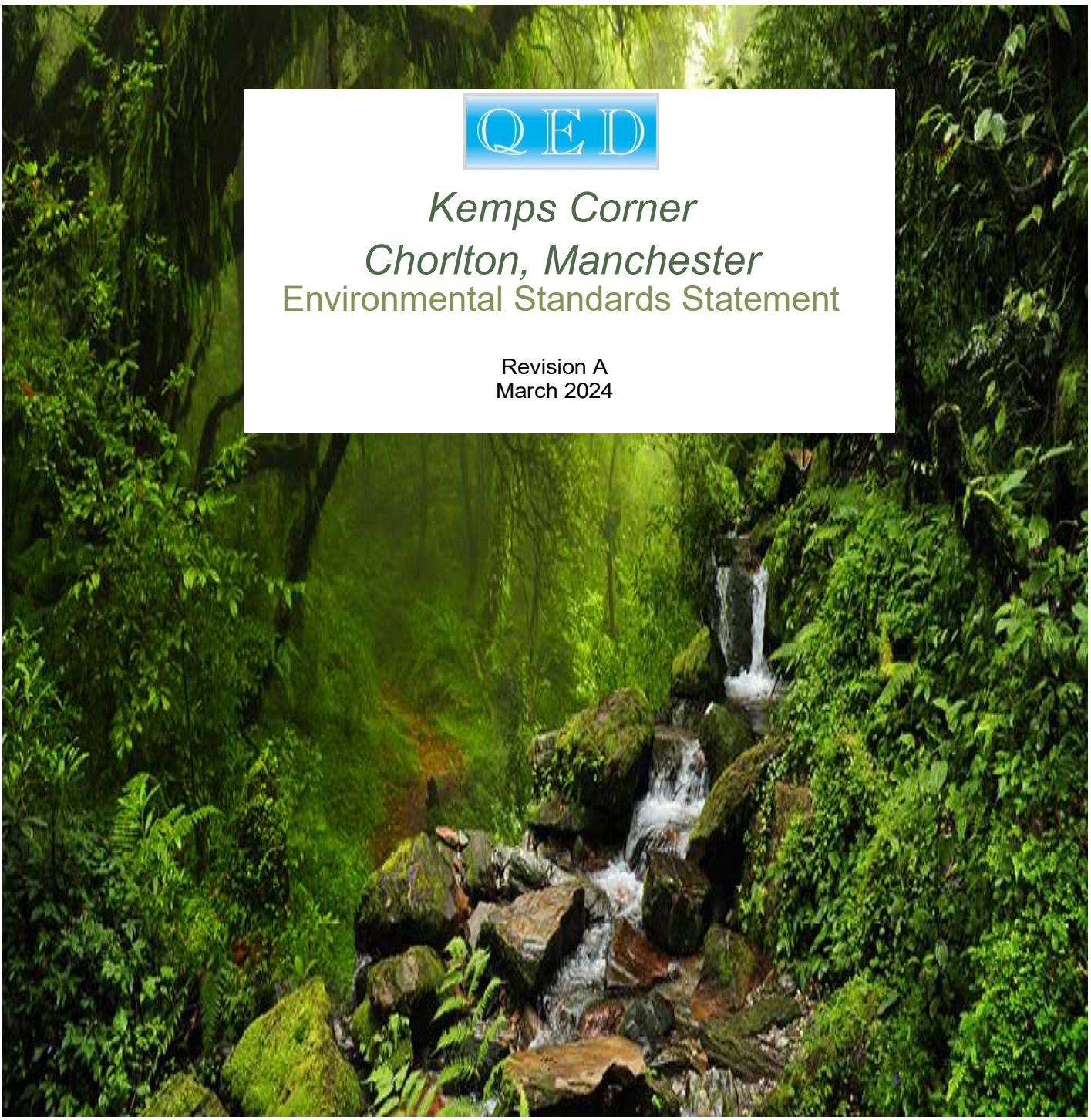


Kemps Corner
Chorlton, Manchester
Environmental Standards Statement

Revision A
March 2024

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Introduction

This Environmental Standards Statement (ESS) has been prepared by Quality Engineering Design Limited on behalf of Veda Property Limited to support an application for planning permission for the development of 6 No. apartments with 2 No. retail units, (the "proposed development").

The following key facts comprise the principal parameters of the proposed development:

- The building will be over 4 storeys (this includes Basement Level, Ground Floor, Levels 1 – 2);
- A cycle store will also be provided.
- Pedestrian entrance to commercial units to be located on Wilbraham Road.
- Pedestrian entrance to apartments to be located on Barlow Moor Road.

The purpose of the ESS is to demonstrate how the proposed development can comply with local policy requirements pertaining to sustainable development, especially those contained in the Manchester Core Strategy adopted in July 2012 and the Guide to Development in Manchester (Supplementary Planning Document) adopted in April 2007. At this stage, the approaches to energy performance, and wider environmental credentials set out in this ESS are intended as strategies which will be further tested and refined as the detailed design of the proposed development progresses.

The ESS is structured around the key, relevant policy themes set out in the Guide to Development SPD, namely:

- Energy Efficiency
- Renewable Energy
- Water Management & Weather Resilience
- Waste Management
- Construction Management
- Biodiversity

Policies relating to waterways, which are identified in the Guide to Development SPD within the scope of an ESS, are excluded from this application due to the absence of waterways on or in the environs of the site. The nearest waterway, the River Mersey, is some 500m south-west of the proposed development site. There are no canals within 500m of the site.

Headline Attributes

The proposed development comprises the following key environmental attributes:

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT
Energy Efficiency	
Developments are expected to follow the principles of the Energy Hierarchy. High standards of energy efficiency are encouraged, with passive design measures and efficient forms of heat and power provision incorporated with the aim of reducing CO2 emissions. The Core Strategy and the Guide to Development SPD differ in their expectations of carbon reduction with the former requiring an improvement of 15% over Part L of the Building Regulations 2010 and the latter by 25% against Part L, 2006. The ESS should demonstrate how this has been considered. Policy EN 6 does not require an Energy Statement due to the development being less than 10 dwellings, however the requirement to achieve the energy targets is maintained.	• Target of 17.5% improvement over Building Regulations 2010, exceeding local policy aspirations. • Incorporation of efficient Air Source Heat Pumps sized to meet hot water requirement. • Energy modelling in SAP to support operational energy management.
Renewable Energy	
The Manchester Guide to Developments SPD seeks to encourage developers to optimise renewable and LZC energy generation that it is integrated into developments, aiming for a minimum of 20% of final energy demand to be delivered by on-site renewable energy technologies. However, approaches to CO2 reduction contained in the more recently adopted Core Strategy provide greater flexibility in how targets are met and contains no specific renewable energy targets for developments.	• Full appraisal of renewable energy options undertaken, identifying scope for potential incorporation of roof-top solar PV array and heat pump hot water to contribute to the overall carbon reduction strategy, depending on the final Building Emissions Rating realised through the detailed design process.
Water Management & Weather Resilience	
In order to reduce the risk of water pollution and damage and disruption from flood events, whilst also conserving water resources through their efficient uses, developments should not be located in areas of significant flood risk unless it can be demonstrated through a flood risk assessment that any risk can be appropriately managed and/or mitigated. Developments are also required to incorporate sustainable drainage measures and water incorporation of green infrastructure.	• Development on an existing urban site with very low levels of flood risk. • No increase in surface water run-off rates. • Water efficient devices to be specified achieving 25% improvement over BRE baseline benchmark. • Passive design achieved through compliance with TM59.

Construction Management	
Developers are required to manage environmental resources and impacts during the construction process, with a particular emphasis on minimising waste through the re-use of existing structures and materials. Site Waste Management Plans are therefore encouraged, and the application of the Considerate Constructors scheme is recommended. The use of environmentally low-impact materials in construction is also encouraged.	• A site waste management plan will be developed, targeting a minimum 80% of construction being diverted from landfill. • Appropriate pre-development intrusive ground contamination surveys to be undertaken with construction practices tailored accordingly.
Biodiversity	
The Core Strategy encourages green roofs, green walls, tree planting and other forms of green infrastructure as part of development proposals. Developers are expected to avoid adverse biodiversity impact and to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to their developments. Developments should result in no net loss in overall biodiversity value and maximise opportunities to achieve a 10% net increase in tree cover. Landscaping and new planting should include species appropriate for the proposed development that will encourage wildlife. Construction materials which have a negative biodiversity impact are to be avoided.	• The loss of any biodiversity value will be negligible due to the impoverished nature of the current site. • Planting boxes to be installed to retail unit elevations.

1. Energy Efficiency

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
Developments are expected to follow the principles of the Energy Hierarchy. High standards of energy efficiency are encouraged, with passive design measures and efficient forms of heat and power provision incorporated with the aim of reducing CO2 emissions. The Core Strategy and the Guide to Development SPD differ in their expectations of carbon reduction with the former requiring an improvement of 15% over Part L of the Building Regulations 2010 and the latter by 25% against Part L, 2006. The ESS should demonstrate how this has been considered.	17.5% improvement over Building Regulations 2021 through Be Lean & Be Clean measures, exceeding local policy aspirations. Incorporation of efficient air source heat pumps sized to meet building domestic hot water requirement. Energy modelling in SAP to support operational energy management.

Response of the proposed development

Through a combination of efficient systems and a 'fabric first' approach to the design of the proposed development, a significant betterment of the national Building Regulations set out in Part L2A 2021 has been achieved, and which also exceeds the policy aspirations for carbon reduction of new development set out in both Policy EN 6 of the Manchester Core Strategy, and the Guide to Development SPD.

Initial SAP reports have been produced for each proposed apartment as evidence of the carbon reduction. Typically they indicate a TER of 10.45 and a DER of 8.62 achieving a 17.5% reduction.

Policy EN 6 of the Manchester Core Strategy also states that an Energy Statement is not expected to be submitted for residential developments comprising less than 10 units.

A holistic approach to energy and carbon reduction has been taken to the proposed development, driven by a combination of the client brief, affordability considerations and within the constraints of a challenging, compact, urban site. This is entirely consistent with the "energy hierarchy" set out in the National Planning Policy Framework, and reflected in the Manchester Core Strategy.

Measures have been incorporated into the design of the building form to minimise the need for active energy and environmental control systems. Where such systems cannot be designed out completely, measures have been considered to make these systems as energy efficient as possible. Finally, consideration has been given to on-site renewable energy generation and other low and zero carbon (LZC) systems.

This overall Energy Hierarchy approach, which is central to the energy strategy for the proposed development, is often paraphrased as:

- ***Be Lean*** – make the building work passively to reduce the need for energy
- ***Be Clean*** – specify energy efficient systems & controls
- ***Be Green*** – generate energy from renewable sources

This section of the ESS focuses on the ***Be Lean*** and ***Be Clean*** aspects of the hierarchy, with ***Be Green*** measures set out in Section 2, Renewable Energy.

Be Lean

- Fenestration responding to building orientation, thereby reduce solar gains;
- Substantial reveals on windows to provide an element of solar shading;
- High performance envelope, exceeding minimum Part L 2021 requirements and notional building performance across all principal elements such as roof, floors, external walls and glazing;
- Air permeability of 5.0m3/hour/m2 @ 50Pa targeted; and
- Comprehensive commissioning to be undertaken to ensure that M&E systems are calibrated accurately.

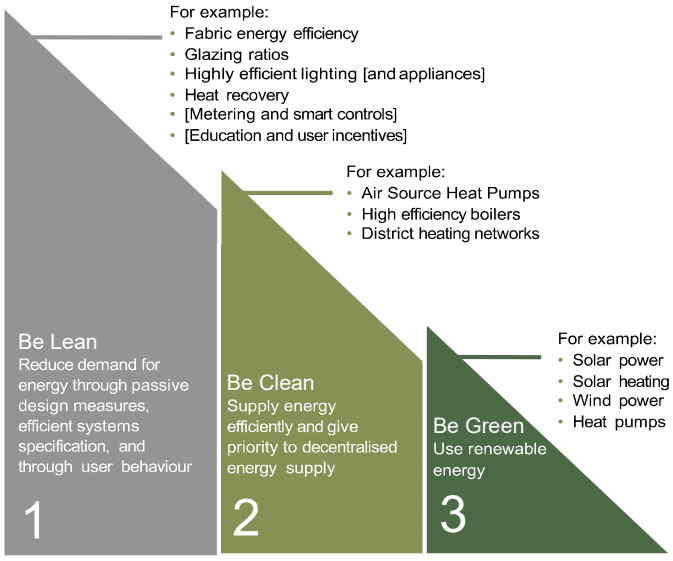


Figure A2.1 Energy Hierarchy

Be Clean

- Air Source Heat Pumps will likely be incorporated to meet the domestic hot water demand, with detailed load profiles to be developed at the detailed design stage. Heat recovery shall be provided from the ventilation systems to provide hot water during summer periods.
- Ventilation shall be MVHR with local units which recycle heat and provide free cooling.
- LED lighting throughout, with a total design wattage of around 8W/m^2;
- Intelligent control system & energy metering;

Be Green

- PV systems shall be provided for each apartment and located at roof level.

The combination of the above measures is anticipated to deliver a significant improvement over the current Building Regulations Approved Document L2A 2021 which is significantly more onerous than the previous 2010 Part L standard, over which the Manchester Core Strategy seeks a betterment of 10%. It is therefore evident, without even taking account of the additional renewable energy measures set out in the following section, that the proposed development makes a significant contribution to Manchester's carbon reduction targets, and exceeds local, as well as national policy requirements.

2. Renewable Energy

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
The Manchester Guide to Developments SPD seeks to encourage developers to optimise renewable energy generation that it is integrated into developments, aiming for a minimum of 20% of final energy demand to be delivered by on-site renewable energy technologies. However, approaches to CO2 reduction contained in the more recently adopted Core Strategy provide greater flexibility in how targets are met and contains no specific renewable energy targets for developments.	Full appraisal of renewable energy options undertaken, identifying scope for potential incorporation of roof-top solar PV array, depending on the final Building Emissions Rating realised through the detailed design process.

Response of the proposed development

The proposal has focused on providing a highly efficient fabric and services design that betters the energy performance requirements of Part L, reducing the amount of energy required to operate the building. This could be further supplemented by renewable technology installations, subject to financial viability at the time of construction.

The options for considerable energy generation through the use of renewable technologies are limited within the constraints of a compact city centre plot, therefore the design of the building has concentrated on exceeding the energy efficiency targets through low energy design.

The 20% benchmark set by the Guide to Developments SPD is not practical within the constraints of the site; however, the proposals exceed Part L targets which demonstrates a commitment to sustainable development within the spirit of the policy.

An assessment of low and zero carbon technologies has been undertaken and the most appropriate technologies for this development would be an Air Source Heat Pump system sized to cater for the buildings domestic hot water requirement, complemented by a Photovoltaic Array, as explained in the table below.

The combination of all energy and carbon reduction measures – both efficiency and renewables – is anticipated to yield a 17.5% reduction over the Building Regulations Approved Document L2A 2021.

Technology	Appraisal Comments
Photovoltaic (PV) panels	**Considered suitable** A circa 20 kWp system would require approximately 84m2 of flat roof space to allow PV panels to be mounted on an A-Frame. Sun cast modelling is required to take into consideration surrounding structures as PV is affected by shade.
Solar heat	**Considered not suitable** Whilst technically feasible in a limited capacity, the potential maximum application of the technology is unlikely to provide significant carbon dioxide reductions for the development. The high capital costs compared to anticipated savings render this option financially unviable
Wind (roof or independently mounted turbine)	**Considered not suitable** Wind speed is below the British Wind Energy Association (BWEA) suggested minimum economic speed of 7m/s at hub height for larger systems. Smaller generation systems can operate at speeds of <3m/s but the impact of these on the BER is small and the low wind speed affects the payback and therefore economic case.
Biomass	**Considered not suitable** A biomass system is unlikely to be technically, environmentally or economically feasible (introducing additional health and safety requirements, plus a storage facility for biomass, and sufficient access for the delivery of biomass). It has a poor turndown ratio and would need to be supported by fossil fuel boilers. By its own admission, DECC is questioning its calculations around the environmental benefits of using biomass where it is not a waste product
Cogeneration (combined heat and power)	**Considered not suitable** A CHP does not have the heat requirements across the year to be a viable option. In addition, it does not integrate well with an Air Source Heat Pump system.
District or block heating or cooling, particularly where it is based entirely or partially on energy from renewable sources	**Considered not suitable** We have been advised that a district heating scheme is not within the immediate locality
Air source heat pumps	**Considered suitable** An air-to-air heat pump system is technically and economically feasible helping to deliver a lower BER than the TER. This is the preferred hot water solution for the proposed dwellings
Ground source heat pumps	**Considered not suitable** Not considered to be either technically or economically feasible. The cost of installation of a ground source heat pump system is higher than an air source heat pump system. There is no external space for horizontal pipes. This means deep boreholes will need to be dug and/or pile foundations (as the pipes can be run alongside the piles) However there is concern over the area available for the energy transfer requirements.

3. Water Management & Weather Resilience

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
In order to reduce the risk of water pollution and damage and disruption from flood events, whilst also conserving water resources through their efficient uses, developments should not be located in areas of significant flood risk unless it can be demonstrated through a flood risk assessment that any risk can be appropriately managed and/or mitigated. Developments are also required to incorporate sustainable drainage measures and water efficient devices. The Core Strategy requires developments to improve water quality, both biological and ecological, where possible whilst also adapting to climate change through passive design to avoid over-heating and the incorporation of green infrastructure.	Development on an existing urban site with very low levels of flood risk. No increase in surface water run-off rates. Water efficient devices to be specified achieving 25% improvement over BRE baseline benchmark. Compliance with TM59 overheating modelling.

Response of the proposed development

Flood risk and drainage

The site of the proposed development is located in an area of low groundwater and fluvial flood risk (EA Flood Zone 1 indicating that the risk of flooding from rivers or seas is less than 0.1%). The site is also at very low risk of surface water flooding, and from flooding from reservoirs, according to Environment Agency surface water and reservoir flood risk maps.

Similarly, the Manchester Strategic Flood Risk Assessment confirms that the proposed development site is ***outside of any risk areas in relation to fluvial, tidal, reservoir, canal, groundwater, public sewer, highway or surface water flooding***.

However, flood risk can never be ruled out altogether, and the following tasks will be undertaken.

- A drainage survey has been undertaken prior to detailed design, in order that the location of existing drainage infrastructure and connections has been accurately determined.
- A Topographical Survey has also been carried out to ensure accurate measurement of levels.
- Groundwater levels have been monitored and assessed indicating that the water table is at least 6m below ground level and the conclusion is that it is unlikely for ground water flooding to occur.
- The proposed surface water drainage network shall be designed to *accommodate run-off from a 1 in 30-year storm event and a 1 in 100-year flood events*, taking account of the latest Environment Agency guidance for *climate change allowances*. Detailed hardscape design, specifically to levels surrounding the building, will ensure that falls are away from the building.
- Taking account of geological strata, which make it unlikely that the use of infiltration drainage will be suitable, it is proposed the surface water drainage outfall by way of gravity into the existing surrounding combined public sewer network with adequate capacities.

Water efficiency

Water efficient fittings shall be specified with a view to delivering a 25% improvement against the BRE baseline for residential developments:

- Dual flush toilets of 6.0/3.0 litres per flush.
- maximum shower head flow of 8 litres per minute at minimum delivered water pressure of 30 PSI.
- Low flow aerator fittings to all basin taps with indicative flow rates of 3 litres per minute.

The proposed development shall incorporate leak detection systems.

4. Waste Management

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
Developers are required to prepare waste management plans which accord with the principles of the waste hierarchy and which addresses both the construction and occupational phases of developments. There is a particular emphasis on reducing and recycling waste at source.	Waste Management Plan prepared in accordance with MCC guidance. Clearly marked and dedicated storage and loading areas for waste collection. Segregation of key recyclable materials from general waste. Design and material selection support material efficiency objectives.

Response of the proposed development

A ***Waste Management Strategy*** has been prepared for the proposed development, with full consideration given to Manchester City Council's document GD 04 'Waste Storage and Collection Guidance for New Development'. A ***Site Waste Management Plan*** will also been prepared to address waste associated with the construction process; this is summarised in Section 6 of this ESS.

Waste Management Strategy

Manchester City Council has developed the Waste Storage and Collection Guidance for New Developments document in order to set out the required provisions which are to be met. The development proposals within this application have been considered against this guide to develop a compliant waste strategy.

Key features of the strategy, more detail on which is addressed in the Design & Access Statement, include:

- The building will house dedicated bin stores on the ground floor for the residents and for each retail unit respectively, accessible from the circulation core and directly from the restaurant/retail space.
- A dedicated, clearly marked collection point will be provided for waste collection.
- In accordance with MCC requirements all appropriate containers will be presented at the designated location on the relevant collection day by the management company.

Commercial Waste Calculation Evidence

Recommended total waste storage capacities for:

- Residential 0.25m² per dwelling

The development will require the collection of a range of recycling materials, including plastics, cans, glass, paper and textiles. .

The size of the bin store has been designed to accommodate 6 Eurobins as a minimum plus additional recycling bins.

Material efficiency

The use of existing structure as the main façade treatment has the added advantage of being a very efficient material (and is accordingly A-rated in the BRE Green Guide). It is also a highly durable material, both over time and in the context of extreme weather events, the frequency and severity of which is anticipated to increase as a result of climate change.

The elevation of the building has been designed to have a repetitive bay detail that is the same to all elevations; the limited variance in window and frame size ensure that the elevation treatment is efficient.

Construction Management

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
Developers are required to manage environmental resources and impacts during the construction process, with a particular emphasis on minimising waste through the re-use of existing structures and materials. Site Waste Management Plans are therefore encouraged, and the application of the Considerate Constructors scheme is recommended. The use of environmentally low-impact materials in construction is also encouraged.	A site waste management plan will be developed, targeting a minimum 80% of construction being diverted from landfill. Appropriate pre-development intrusive ground contamination surveys to be undertaken with construction practices tailored accordingly.

Response of the proposed development

Contractor procurement

The procurement of a contractor at the construction phase will include in the specification requirements that:

- the contractor will register the proposed development with the ***Considerate Constructors*** scheme and will comply with its essential requirements.
- the contractor will operate an ***Environmental Management System*** and will employ best practice pollution prevention measures on the site.
- the contractor will ***monitor and report data*** on energy & water consumption relating to construction plant, equipment, and site accommodation on site, as well as on the transport of construction materials and waste.

In addition to these requirements, the specification will require full ***commissioning, testing and handover*** tasks to be undertaken, thereby helping to ***mitigate the risk of any performance gap*** arising between the design expectation and the completed, occupied building. This is particularly pertinent given the attention paid to the design-stage modelling and testing of different building envelope and shell and core configurations with respect to daylighting, mitigation of solar gain, and thermal performance.

Site waste management plan

Prior to construction commencing, a Site Waste Management Plan (SWMP) will be prepared which will require monitoring of waste generated on-site, the setting of targets to increase resource efficiency, and establishment of procedures and commitments for minimising waste and/or commitments to sort, reuse and recycle construction waste.

During construction, any ***excavated and/or demolished materials will be re-used***, if possible.

Pre-cut and prefabricated materials and systems will be employed wherever possible to ***reduce site waste*** and construction time on site.

Mitigation measures to reduce contamination risks

Given some of the historic uses associated with the site of the proposed development, it is worth noting that the following construction management measures are envisaged to ***guard against contamination and pollution risks***:

- Construction workers will adopt appropriate health and safety measures during construction works.
- Surface water control measures will be put in place during construction to limit runoff and infiltration through exposed made ground horizons and to limit siltation of the surface drainage system.
- Dust suppression measures will be adopted during all earthworks activities.
- It is acknowledged that, in the event of asbestos debris and contamination being identified in any part of the building, including the basements, this material may need to be removed. Validation testing will be undertaken as a precautionary approach as works progress. Suitable measures for managing the removal and disposal of such material will be addressed in the Site Waste Management Plan.
- Disused surface water runoff drainage connections will be located and sealed during construction works to remediate potential contamination pathways.
- Environmental soli samples will also be undertaken for chemical analysis to determine if any contamination of shallow soils and natural ground is present, whilst at the same time undertaking geotechnical analysis in support of foundation design.

5. Biodiversity

SUMMARY OF POLICY	SUMMARY OF DEVELOPMENT RESPONSE
The Core Strategy encourages green roofs, green walls, tree planting and other forms of green infrastructure as part of development proposals. Developers are expected to avoid adverse biodiversity impact and to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to their developments. Developments should result in no net loss in overall biodiversity value and maximise opportunities to achieve a 10% net increase in tree cover. Landscaping and new planting should include species appropriate for the proposed development that will encourage wildlife. Construction materials which have a negative biodiversity impact are to be avoided.	The loss of any biodiversity value will be negligible due to the impoverished nature of the current site.

Response of the proposed development

There is ***no protected species or habitat legislation relevant to the site***, and no internationally or nationally designated sites within 1km of the site. Furthermore, there are no locally-designated areas within 500m of the proposed development site.

The ***nature conservation value of the site is deemed to be negligible***; the site is predominantly hard standing. Furthermore, the surrounding highway network acts as a barrier to wildlife connectivity.

The proposed development occupies the entire site area; as such, there is no external landscaping which would provide ecological benefit. However, there will be ***negligible loss of biodiversity*** as a result of the proposed development.