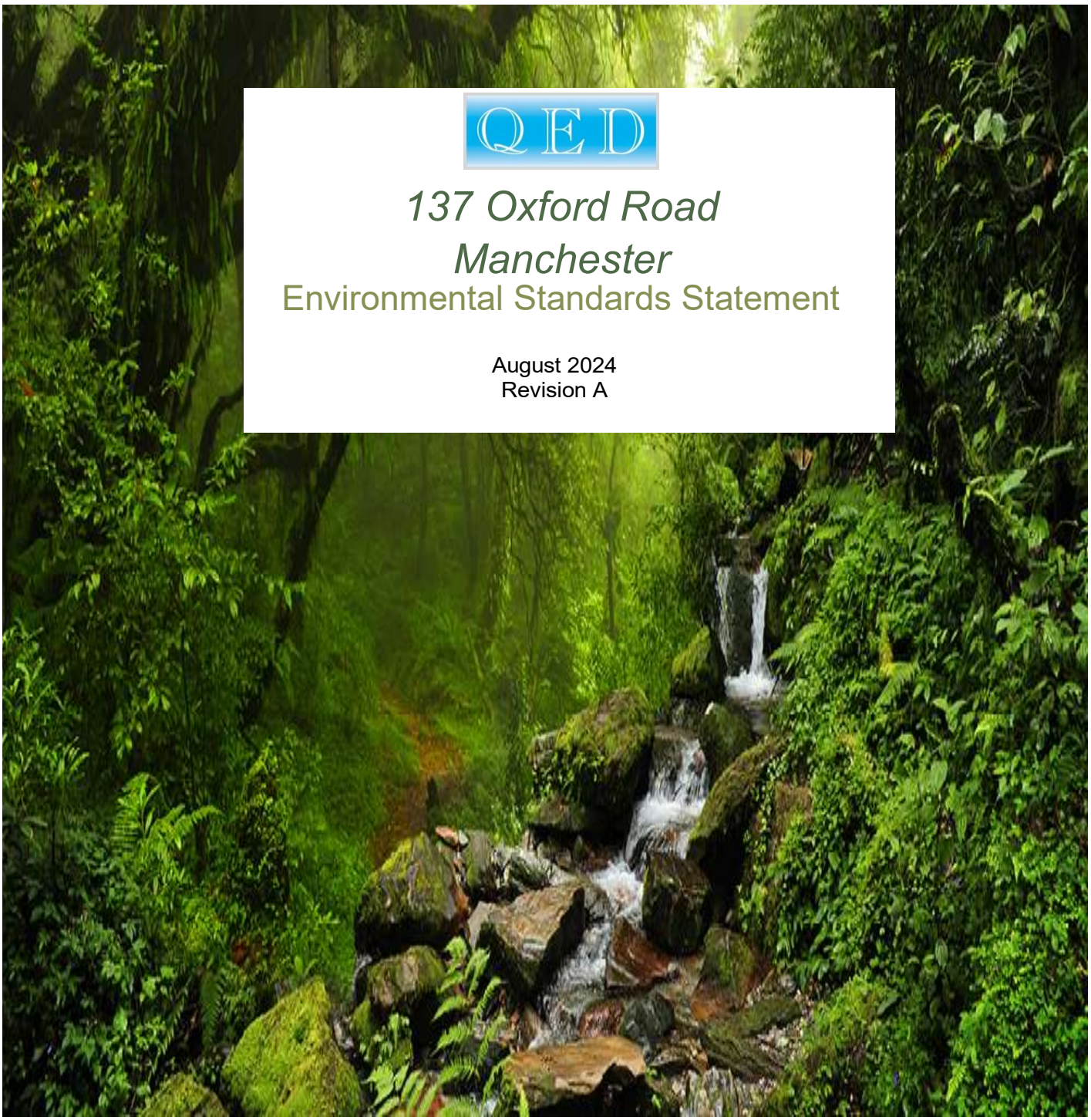


137 Oxford Road
Manchester
Environmental Standards Statement

August 2024
Revision A

Contents

Introduction	1
Headline Attributes	2
1. Energy Efficiency	4
2. Renewable Energy	6
3. Water Management & Weather Resilience	8
4. Waste Management	10
5. Biodiversity	13

Introduction

This Environmental Standards Statement (ESS) has been prepared by Quality Engineering Design Limited on behalf of Soller Eight Limited to support an application for planning permission for the development of a student accommodation scheme comprising 20 No. studios with 1 No. retail unit, (the “proposed development”).

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

- The building will be over 6 storeys (this includes Lower Ground Floor, Ground Floor, Levels 1 – 4);
- A cycle store will also be provided.
- Pedestrian entrance to the commercial unit to be located on Oxford Road.
- Pedestrian entrance to apartments to be located on Grosvenor Street.

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 Medlock, is some 300m north of the proposed development 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 ESS should demonstrate how this has been considered. Policy EN 6 does not require an Energy Statement due to the development being less than 1000 square metres, however the requirement to achieve the energy targets is maintained.	• Improvement to the limiting U-values of the building fabric set out in Building Regulations Part L 2021. • Energy modelling to support operational energy management. • Existing building conversion and change of use. Gas removed and primary fuel is electric.
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 heat pump to the commercial unit and roof-top solar PV array to contribute to the overall carbon reduction strategy, subject to financial viability and depending on the final Building Emissions Rating realised through the detailed design process. • Heat recovery ventilation solutions adopted.
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. 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. • 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. • Re-use of existing building leading to minimal new materials.

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. • The existing building footprint does not offer opportunity for increased planting.

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 ESS should demonstrate how this has been considered.	Improvement to the minimum building fabric U-values set out in Building Regulations Part L 2021 on all new componants. Incorporation of efficient air source heat pumps to the commercial unit, subject to financial viability. Energy modelling to support operational energy management. Conversion from gas to electric as a primary fuel.

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 existing build has been achieved.

A BRUKL report has been produced for the development as evidence of the performance of the carbon emissions and the building fabric, the latter of which improves on the limiting U-values set out in Building Regulations Part L 2021.

An initial design stage Energy Performance Certificate (EPC) has also been produced. The building is anticipated to achieve an **energy rating of A**.

It should be noted from this report that the building is an existing structure and modelled for conversion and change of use, and therefore does not fully comply with Building Regulations 2021. The designers have chosen to improve the new elements to exceed Building Regulations elemental standards.

Policy EN 6 of the Manchester Core Strategy also states that an Energy Statement is not expected to be submitted for developments of less than 1,000 square metres.

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. Conversion from gas to electric as a primary energy has been adopted to reduce carbon emissions.

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.

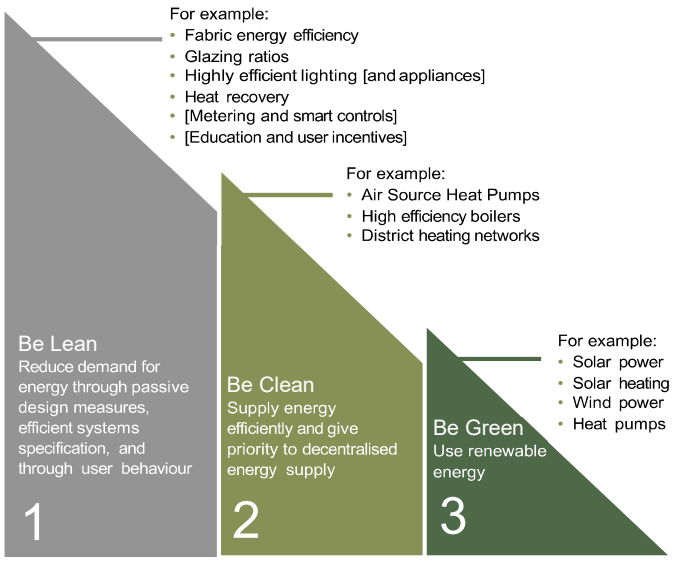


Figure A2.1 Energy Hierarchy

Be Clean

- 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;

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 is integrated into developments, aiming for a minimum of 20% of final energy demand to be delivered by on-site renewable energy. 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 heat pump to the commercial unit and roof-top solar PV array to contribute to the overall carbon reduction strategy, subject to financial viability and depending on the final Building Emissions Rating realised through the detailed design process. Heat recovery ventilation solutions adopted.

Response of the proposed development

The proposal has focused on providing a highly efficient fabric and services design, 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.

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 heating and collings loads of the commercial unit.

MVHR units are also considered for the accommodation areas.

Technology	Appraisal Comments
Photovoltaic (PV) panels	**Considered suitable** Technically feasible in a supplementary capacity if required and subject to financial viability. Some flat roof space is potentially available 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.
Mechanical Ventilation Heat Recovery (MVHR)	**Considered suitable** Mechanical Ventilation Heat Recovery (MVHR) units to each accommodation space are technically and economically feasible and offer the most energy efficient means of ventilation.
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	**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 for the commercial space helping to deliver a lower BER than the TER.
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 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 the development:

- 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.	A 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 be 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 a refuse area in a dedicated bin store to the rear of the property.
- 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.

The size of the bin store has been designed to accommodate 4 Eurobins as a minimum.

Material efficiency

The use of a steel frame structure for the extension has the added advantage of being a very efficient material, with all opening sizes, recesses and wall pillars having been manufactured offsite to avoid wastage. The outer skin will be metal cladding, which is 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.

The re-use of the existing building structure limits the need for new materials to be imported.

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. The re-use of the existing structure has been adopted.

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.

The re-use of the existing structure shall limit the need for new materials leading to reduced wastage.

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 soil 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.

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

137 Oxford Road SBEM

As built

Date: Fri Jul 26 08:40:47 2024

Administrative information

Building Details

Address: Floors 1-4, 137 Oxford Road SBEM, MANCHESTER, M

Certifier details

Name: James Leggat

Telephone number: 08005668001

Address: Office Suite 6, 485 Oldham Road, Manchester, M35 9AB

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: G-ISBEM

Interface to calculation engine version: v25.3

BRUKL compliance module version: v6.1.e.1

Foundation area [m^2]: 149.81

The CO_2 emission and primary energy rates of the building must not exceed the targets

The building does not comply with England Building Regulations Part L 2021

Target CO_2 emission rate (TER), $kgCO_2/m^2$.annum	28.9	
Building CO_2 emission rate (BER), $kgCO_2/m^2$.annum	31.35	
Target primary energy rate (TPER), kWh_{PE}/m^2.annum	311.47	
Building primary energy rate (BPER), kWh_{PE}/m^2.annum	338.14	
Do the building's emission and primary energy rates exceed the targets?	BER > TER	BPER > TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.23	0.3	z2/03/circ/n
Floors	0.18	-	-	No heat loss floors
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.15	0.15	z4/03/circ/c
Windows** and roof windows	1.6	1.2	1.2	z2/03/circ/n/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [$W/(m^2K)$]

$U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [$W/(m^2K)$]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [$W/(m^2K)$]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m^2K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
$m^3/(h.m^2)$ at 50 Pa	8	5

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- electric panel

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	1	-	-	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

1- cylinder

	Water heating efficiency	**Storage loss factor [kWh/litre per day]**
This building	1	0.019
Standard value	1	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	**System type in the Approved Documents**
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	**SFP [W/(l/s)]**									**HR efficiency**	
ID of system type	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	**Zone**	**Standard**
z2/05/bedroom suites_A	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z3/05/bedroom suites_A	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z4/05/bedroom suites_A	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z1/05/bedroom suites_A	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z2/05/bedroom suites_B	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z3/05/bedroom suites_B	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z4/05/bedroom suites_B	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z1/05/bedroom suites_B	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z2/05/bedroom suites_C	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z3/05/bedroom suites_C	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z4/05/bedroom suites_C	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z1/05/bedroom suites_C	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z2/05/bedroom suites_D	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z3/05/bedroom suites_D	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z4/05/bedroom suites_D	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z1/05/bedroom suites_D	-	-	-	-	0.6	-	-	-	-	0.9	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
z2/05/bedroom suites_E	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z3/05/bedroom suites_E	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z4/05/bedroom suites_E	-	-	-	-	0.6	-	-	-	-	0.9	N/A
z1/05/bedroom suites_E	-	-	-	-	0.6	-	-	-	-	0.9	N/A

General lighting and display lighting	General luminaire	Display light source	
Zone name	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value	95	80	0.3
z2/02/riser	95	-	-
z3/02/riser	95	-	-
z4/02/riser	95	-	-
z1/02/riser	95	-	-
z2/03/circ	95	-	-
z3/03/circ	95	-	-
z4/03/circ	95	-	-
z1/03/circ	95	-	-
z2/04/corridor	95	-	-
z3/04/corridor	95	-	-
z4/04/corridor	95	-	-
z1/04/corridor	95	-	-
z2/01/laundry	95	-	-
z3/01/laundry	95	-	-
z4/01/laundry	95	-	-
z1/01/laundry	95	-	-
z2/05/bedroom suites_A	95	-	-
z3/05/bedroom suites_A	95	-	-
z4/05/bedroom suites_A	95	-	-
z1/05/bedroom suites_A	95	-	-
z2/05/bedroom suites_B	95	-	-
z3/05/bedroom suites_B	95	-	-
z4/05/bedroom suites_B	95	-	-
z1/05/bedroom suites_B	95	-	-
z2/05/bedroom suites_C	95	-	-
z3/05/bedroom suites_C	95	-	-
z4/05/bedroom suites_C	95	-	-
z1/05/bedroom suites_C	95	-	-
z2/05/bedroom suites_D	95	-	-
z3/05/bedroom suites_D	95	-	-
z4/05/bedroom suites_D	95	-	-
z1/05/bedroom suites_D	95	-	-
z2/05/bedroom suites_E	95	-	-
z3/05/bedroom suites_E	95	-	-
z4/05/bedroom suites_E	95	-	-

General lighting and display lighting	General luminaire	Display light source	
Zone name	**Efficacy [lm/W]**	**Efficacy [lm/W]**	**Power density [W/m²]**
Standard value	95	80	0.3
z1/05/bedroom suites_E	95	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
z2/05/bedroom suites_A	NO (-68.3%)	YES
z3/05/bedroom suites_A	NO (-68.3%)	YES
z4/05/bedroom suites_A	NO (-68.3%)	YES
z1/05/bedroom suites_A	NO (-68.3%)	YES
z2/05/bedroom suites_B	NO (-68%)	YES
z3/05/bedroom suites_B	NO (-68%)	YES
z4/05/bedroom suites_B	NO (-68%)	YES
z1/05/bedroom suites_B	NO (-68%)	YES
z2/05/bedroom suites_C	NO (-68.4%)	YES
z3/05/bedroom suites_C	NO (-68.4%)	YES
z4/05/bedroom suites_C	NO (-68.4%)	YES
z1/05/bedroom suites_C	NO (-68.4%)	YES
z2/05/bedroom suites_D	NO (-61.1%)	YES
z3/05/bedroom suites_D	NO (-61.1%)	YES
z4/05/bedroom suites_D	NO (-61.1%)	YES
z1/05/bedroom suites_D	NO (-61.1%)	YES
z2/05/bedroom suites_E	NO (-67.4%)	YES
z3/05/bedroom suites_E	NO (-67.4%)	YES
z4/05/bedroom suites_E	NO (-67.4%)	YES
z1/05/bedroom suites_E	NO (-67.4%)	YES

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m^2]	615.2	615.2
External area [m^2]	749.1	749.1
Weather	MAN	MAN
Infiltration [m^3/hm^2@ 50Pa]	5	3
Average conductance [W/K]	231.99	389.23
Average U-value [W/m^2K]	0.31	0.52
Alpha value* [%]	19.35	22.53

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
58	**Hotels**
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
42	**Residential Institutions: Universities and Colleges**
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m^2]

	Actual	Notional
Heating	30.64	29.71
Cooling	0	0
Auxiliary	3.01	3.42
Lighting	6.71	5.39
Hot water	181.86	179.27
Equipment*	13.54	13.54
TOTAL**	**222.22**	**217.8**

* Energy used by equipment does not count towards the total for consumption or calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m^2]

	Actual	Notional
Photovoltaic systems	0	7.76
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*0*	*7.76*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m^2]	126.79	213.24
Primary energy [kWh_{PE}/m^2]	338.14	311.47
Total emissions [kg/m^2]	31.35	28.9

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] No Heating or Cooling										
	Actual	103.5	3.8	0	0	0	0	0	0	0
	Notional	76.4	7.5	0	0	0	0	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	90.6	36.7	31.5	0	3.1	0.8	0	1	0
	Notional	147.2	69.5	30.5	0	3.5	1.34	0	----	----

Key to terms

Heat dem [MJ/m2] = Heating energy demand
Cool dem [MJ/m2] = Cooling energy demand
Heat con [kWh/m2] = Heating energy consumption
Cool con [kWh/m2] = Cooling energy consumption
Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER = Cooling system seasonal energy efficiency ratio
Heat gen SSEFF = Heating generator seasonal efficiency
Cool gen SSEER = Cooling generator seasonal energy efficiency ratio
ST = System type
HS = Heat source
HFT = Heating fuel type
CFT = Cooling fuel type

Energy Performance Certificate

Non-Domestic Building

HM Government

Floors 1-4
137 Oxford Road SBEM
MANCHESTER
M

Certificate Reference Number:
9572-9281-3913-7739-1767

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient

A+

Net zero CO_2 emissions

A 0-25

B 26-50

C 51-75

D 76-100

E 101-125

F 126-150

G Over 150

18 This is how energy efficient the building is.

Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Heating and Natural Ventilation
Total useful floor area (m^2):	615.2
Building complexity:	Level 3
Building emission rate ($kgCO_2/m^2$ per year):	31.35
Primary energy use (kWh_{PE}/m^2 per year):	338.14

Benchmarks

Buildings similar to this one could have ratings as follows:

16 If newly built

65 If typical of the existing stock

ONLY FOR ILLUSTRATION

Administrative information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software:	G-ISBEM v25.3 using calculation engine SBEM v6.1.e.0
Property Reference:	UPRN-000000000000
Assessor Name:	James Leggat
Assessor Number:	EES/019180
Accreditation Scheme:	Elmhurst Energy Systems
Assessor Qualifications:	NOS4
Employer/Trading Name:	Just EPC
Employer/Trading Address:	Office Suite 6, 485 Oldham Road
Issue Date:	26 Jul 2024
Valid Until:	25 Jul 2034 (unless superseded by a later certificate)
Related Party Disclosure:	Not related to the owner

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report: 1832-0610-5177-9863-8534

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by Elmhurst Energy Systems. You can obtain contact details of the Accreditation Scheme at www.elmhurstenergy.co.uk.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. For further information about how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document and advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property - whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

ONLY FOR ILLUSTRATION