

ENERGY AND SUSTAINABILITY STATEMENT AND CARBON REDUCTION STRATEGY

Job Number: LKM 18 1011

Date: 27th July 2020

Site: Monckton Coke and Chemical Works



INCREASING LAND VALUE

LK
GROUP

Site Address	Former Monckton Coke and Chemical Works, Lund Hill Lane, Royston, S71 4BD		
Job Title	Former Monckton Coke and Chemical Works		
Document Title	Energy and Sustainability Statement and Carbon Reduction Strategy		
Job Number	LKM 19 1022	Document Ref.	LKM 19 1022 E&SS
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Prepared By	Michael Waddicor	Signature	
Reviewed By	Conor Leyden	Signature	

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Contents

Introduction	3
1 Scheme Description	4
2 Scheme Design.....	5
3 Methodology and Structure.....	6
3.1 Relevant Policy - National	6
4 Reducing Energy Demand – Fabric First Approach	7
4.2 Fabric First Approach; Local and National Policy	8
4.3 Fabric First Approach Proposals	8
4.4 Renewable Technologies Feasibility	9
4.5 Feasibility of Renewable Technologies	9
4.6 Recommendations for Renewables.....	11
5 Conclusion	12

Appendix 1: Sample Design Stage SAPs

Introduction

LK Management has been appointed by Monckton Developments Limited to compile an Energy and Sustainability Statement to accompany a planning application submitted to Barnsley Metropolitan Borough Council (BMBC) in relation to the proposed site remediation and development of up to 500 residential dwellings and approximately 400m² of Commercial development, at the former Monckton Coke and Chemical Works, Lund Hill Lane, Royston, S71 4BD.

The proposed development site is approximately 16 hectares in extent and comprises the former Monckton Coke and Chemical works. A plan showing the location of the site is illustrated in Figure 1 of Appendix 1.1. The centre of the site has an approximate grid reference of 437450,411950.

Within BMBC Adopted Core Strategy and particularly *CSP 2 Sustainable Construction*, reference is made on how developments are to minimise resource and energy consumption. The following points within this report will address this and show how our client intends to comply with this policy.

Furthermore, CSP 5 makes reference to low and zero carbon technologies. While it is not the intention of our client to include renewable technologies at this stage, it may be a consideration if the Fabric First approach is deemed to be un-viable in achieving the necessary savings.

The following report will explore what options are available to achieve and better Building Regulations Part L1A 2016 Target Emission Rates (TER) and ultimately show how this development achieve and complies with BMBC's Adopted Core Strategy.

1 Scheme Description

The proposed site is located on the outskirts of Barnsley and close to an established residential area of Royston, with good connections to Yorkshire and the surrounding motorway network which provide access to a vast range of amenities.

The planned development area is a residential development of approximately 500 No. dwellings with approximately 400m² of Commercial space constructed to a very high standard which will meet a well-established and accepted need for housing space within the area and constructed on a brownfield site.

The following plan shows the proposed site layout;



Extract from Pegasus Design drawing no. P19-1805_010D

2 Scheme Design

This introduction outlines the development proposals and our methodology for assessing and guiding sustainability issues within the scheme. Outlined below are the key sustainability achievements of this development. A residential development of 57 dwellings, this will meet a well-established and accepted need for housing in the area.

- » Using a 'fabric first' as being the most sustainable approach to energy saving, which will reduce overall energy demand and limit reliance on renewable technology.
- » Improving energy demand and lower overall consumption through the use modern construction techniques to achieve industry excellent standards for fabric heat loss figures (U values) for all elements of the external construction, along with very air tight units.
- » Meeting and exceeding Approved Document part L1A (2016) of the Building Regulations.
- » Peripheral areas of highly landscaped buffers providing ecological interest as well as increase impermeable surfaces and will help to reduce the developments carbon footprint.
- » 100% energy efficient lights throughout the development.
- » Internal water use within all dwellings to be reduced to a targeted figure of less than 120 litres per person per day through the provision of water efficient fittings, thus preserving water supplies.
- » The use of materials with low embodied energy which are locally sourced where available.
- » Reducing the site impact using considerate construction techniques and utilising local labour where applicable.
- » Surface water design that avoids, reduces and delays the discharge of rainfall run-off to watercourses and public sewers using infiltration and attenuation techniques where applicable and viable.
- » Ecology of the Application Site will be examined by a qualified Ecologist and any key ecological recommendations are expected to be adopted and key features protected during the development aimed at enhancing the existing ecology in the area.
- » Sustainable transport promoted with all dwellings within close proximity of a bus stop and providing all new residents with comprehensive information on the public transport provision.
- » Waste minimisation principles adopted both during construction and in the lifespan of the development through promotion of recycling/composting measures.
- » Initiatives developed to ensure a high-quality place to live, including measures to minimise crime, improve security, provide outside spaces and achieve acceptable noise levels.
- » Recycling provision within the units and site wide implementation of services via L.A. Collection Schemes.

Initial energy calculations (SAP) based upon a sample set of dwellings has been completed on Industry approved software by a licenced assessor. A thorough assessment of the sustainability-related planning policies for the Application Site has been carried out, to ensure that the development is actively responding to them.

Following these assessments and if the design and construction phase follows these principals it is our view that a sustainable development will be created and delivered, with good sustainability standards being met while exceeding Building Regulations Part L1A 2016 Target Emission Rates (TER).

3 Methodology and Structure

The policies analysed have been at local, regional and national levels, all of which are pertinent to this scheme.

The Local and National Policies relating to sustainability of this scheme are:

- Approved Document L1A: Conservation of fuel and power (New Dwellings), [December 2010, HM Government]
- Water Efficiency Calculator for New Dwellings [September 2009, HM Government]
- BMBC Adopted Core Strategy
 - CSP 2 Sustainable Construction
 - CSP 5 Including Renewable Energy in Developments

3.1 Relevant Policy - National

The Government published the National Planning Policy Framework (NPPF) and related documents on the 27th March 2012. The NPPF states that “The purpose of the planning system is to contribute to the achievement of sustainable development”, and that “to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously”.

It is proposed that the dwellings on this site will be designed and built with a fabric first approach principle and this will be the basis of the sustainability extent on this site.

4 Reducing Energy Demand – Fabric First Approach

Part L requires that all dwellings are calculated to produce less CO₂ than a theatrical target. This Target Emission Rate (TER) is often known as the *notional building*. The calculated Dwelling Emission Rate (DER or TER) must be a percentage improvement over the TER.

In order to calculate the TER the following elements are taken into consideration within the SAP calculation;

Long Term Elements;

- Floor space, Orientation, Exposure and Location in the UK, number and size of openings for doors and windows.
- U Values (heat loss) of Walls, Floors, Roofs, Windows and Doors.
- Details of junctions between elements and thermal breaks.
- Air Permeability of the building (a home can be well insulated, but if there are gaps in the construction; warmed air will escape)

Shorter Term Elements;

- Space Heating System
- Hot Water Heating System
- Control of Heating System
- Ventilation
- Lighting
- Renewable Energy Technologies.

All the elements play a role in the calculated DER/TER and the regulations allow the developer to choose which elements they wish to focus on in order to be the most cost effective way to achieve the required CO₂ target.

Part L1A does have limiting backstops for the Longer Term Elements (the Fabric of the building), but otherwise they are tradable. Specifying renewable energy technologies means that to achieve the DER/TER, the fabric can be worse than without and a Building Regulation pass still achieved with renewable technology offsetting fabric improvements. Equally because the regulations are based upon Carbon, not Energy demand this means the actual energy demand for the design dwellings with renewables is likely to be significantly higher.

As part of considering the applicability of enhanced insulation standards, the Developer will examine further measures within the detailed design of all dwellings to reduce the energy load and provide cost-saving benefits to the end user.

From our example model SAP calculations (Appendix 3) completed with the specifications highlighted below we have indicated the developers preferred way to achieve and exceed the requisite Building Regulations Part L1A 2015 Target Emission Rates (TER), we expect the minimum following spec;

- Cavity walls, built with Accredited Construction Details to U-Values better than 0.30 W/m².K
- A roof with a minimum U-Value better than 0.20 W/m².K.
- Floors with a minimum U-Value better than 0.25 W/m².K.
- Windows with a minimum U-Value better than 1.8 W/m².K.
- Air Permeability better than 5.00 m³/(h.m²)@ 50 Pa.
- The use of highly energy efficient gas condensing combi boilers
- Intelligent boiler controls
- The use of programmers, room stats and radiator TRVs to efficiently regulate energy usage
- 100% Low Energy Light fittings.

Additionally, the developer will include the following features to improve energy efficiency;

- Using low energy external lighting with daylight cut-off devices
- Locating fridges and freezers away from cookers
- Efficient positioning of radiators
- Providing comprehensive advice to new occupants on energy efficiency via a Home User Guide.
- High quality build practices to limit heat loss from thermal bridging at key building junctions

Proposed specification showing an average site DER/TER reduction against 2016 Building Regulations L1A.

4.2 Fabric First Approach; Local and National Policy

This Fabric First Approach is set out in a number of relevant policies. Initially in the 2008 Zero Carbon Definition the “Energy Hierarchy” was initially created with the emphasis put on Energy Efficiency before Carbon Compliance. Literally Energy Efficiency is the fabric of the building, while Carbon Compliance is renewable technologies.

This same principle is followed within – BMBC Adopted Core Strategy, New Development developers will initially be expected to secure high levels of energy efficiency and low energy demand.

4.3 Fabric First Approach Proposals

It is proposed that the dwellings are built to Fabric First standards because this will reduce the energy demand from non-renewable sources the most. This in turn will save a greater amount of CO₂ and keep residents bills to a minimum.

Not only will following the fabric first approach be technically superior, it will also allow home owners to fit renewable solutions should they deem fit. This ensures the most flexibility and long-term sustainability of the dwellings, also enabling them to take full advantage of financial rewards such as the feed in tariff.

4.4 Renewable Technologies Feasibility

Within the BMBC Adopted Core Strategy CSP 5 reference is made to all developments over 10 or more dwellings will be expected to incorporate decentralised, renewable or low carbon energy sources to reduce carbon dioxide emissions by 20%. In order for the development to meet this requirement, various LZC technologies will be considered and their technical feasibility and financial viability reviewed.

There are a number of different renewable technologies that could be used to reduce CO₂ emissions across the development site and in turn reduce the overall energy consumption of the total site. However, most are not suitable or feasible for the site in question. The Table 3 below details the feasibility of potential renewable technologies;

4.5 Feasibility of Renewable Technologies

Technology	Technical Feasibility	Carbon Savings	Estimated Costs	Financial Viability
Solar photovoltaics	The east to west through south facing roof aspects could support solar technologies.	A 4kwp system could save around 1,670 kg of CO ₂ / year per dwelling	Average cost for such a system is around £5K per dwelling.	Current potential income generation is around £230 minimum per annum per dwelling with a fuel cost saving of around £60 / year per dwelling.
Wind	Average wind speeds on the site according to the <u>NOABLE</u> Wind Speed Database are 4.9 metres/second	To be technically feasible local wind speeds need to be a minimum of 5m/s therefore this site is not feasible for wind.	N/A	N/A
Micro Hydro	There is capacity for micro hydro on this site since there are local water courses available.	This is not technically feasible however due to the local water course which is a small brook.	N/A	N/A
District Heating	District Heating Systems require a substantial upfront capital investment to install, along with further costs to	N/A	N/A	N/A

Technology	Technical Feasibility	Carbon Savings	Estimated Costs	Financial Viability
	administer and manage the system for the whole life of the system and an accounting system needs to be created to charge tenants and collect substantial fees which require further cost. The building would require cooling systems in place which would emit CO2 and heat generated during the summer months is likely to go to waste. Installing a District Heating System is deemed not feasible due to the size of this development and the high cost of installing the system in this area.			
Solar Hot Water	The south facing roof aspects from east to west could support solar technologies.	Around 270 kg of CO2 / year per dwelling.	£3-5K per dwelling	Income generation from RHI in a 4 person household would be in the region of £340 / year (per dwelling) with a fuel saving of around £65 / year per dwelling
Heat Pumps	GSHP: at 4600m2 the site has insufficient area* to lay horizontal coils for heating or cooling. ASHP: potential connection to intended wet system but efficiency would be low	ASHP: 1,700 to 2,700 kg CO2 / year per dwelling.	ASHP: £7-11K / dwelling	ASHP: £920 minimum annual RHI income generation per dwelling with fuel saving of £335 / year minimum per dwelling
Biomass	A Smoke Control Zone appropriate biomass pellet boiler could be installed to service a traditional wet heating system. However there is no space for fuel	Minimum carbon saving 3,400 kg CO2 / year per dwelling	Pellet stove @ £4,300 per dwelling – Log stove less than half this.	RHI minimum income per dwelling currently £785 / year with fuel cost savings of

Technology	Technical Feasibility	Carbon Savings	Estimated Costs	Financial Viability
	storage but there is access for delivery.		Pellet boiler with auto feed between £9-21K per dwelling	between £205 to £225 / year

4.6 Recommendations for Renewables

The feasibility of the different renewable technologies has been reviewed and their appropriateness for this housing development explored. At this stage it is recommended that within the detailed design stage to focus on a Fabric First approach, in an attempt to achieve the same energy benefits and required CO₂ reductions using this approach. If this is not feasible to achieve, then the use of PV's or other renewable technology will be considered.

5 Conclusion

This Sustainability Report sets out the approach to the creation of a sustainable development at the Former Monckton Coke and Chemical Works by utilising the fabric first approach.

As a result, we consider that the design is a sustainable development, which sensitively addresses the Application Site's constraints and optimise its opportunities at the same time as meeting a known development need.

This sustainable development has been created through the implementation of many measures, including the following key points:

- Using a 'fabric first' as being the most sustainable approach to energy saving, which will reduce overall energy demand and limit reliance on renewable technology.
- Improving energy demand and lower overall consumption through the use modern construction techniques to achieve industry excellent standards for fabric heat loss figures (U values) for all elements of the external construction, along with very air tight units.
- Meeting and exceeding Approved Document part L1A (2016) of the Building Regulations.
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- 100% energy efficient lights throughout the development.
- Internal water use within all dwellings to be reduced to a targeted figure of less than 120 litres per person per day through the provision of water efficient fittings, thus preserving water supplies.
- The use of materials with low embodied energy which are locally sourced where available.
- Reducing the site impact using considerate construction techniques and utilising local labour where applicable.
- A surface water design that avoids, reduces and delays the discharge of rainfall run-off to watercourses and public sewers using infiltration and attenuation techniques where applicable and viable.
- Ecology of the Application Site will be examined by a qualified Ecologist and any key ecological recommendations are expected to be adopted and key features protected during the development aimed at enhancing the existing ecology in the area.
- Sustainable transport promoted with all dwellings within close proximity of a bus stop and providing all new residents with comprehensive information on the public transport provision.
- Waste minimisation principles adopted both during construction and in the lifespan of the development through promotion of recycling/composting measures.
- Initiatives developed to ensure a high quality place to live, including measures to minimise crime, improve security, provide outside spaces and achieve acceptable noise levels.
- Recycling provision within the units and site wide implementation of services via L.A. Collection Schemes.

In relation to the renewable technologies as discussed above, it may not be feasible to install PV's due to the size of the roofs. Due to this fact, the detailed design will attempt to achieve the same energy benefits through the Fabric First approach, if it is not feasible to achieve this then the use of PV's or other renewable technology will be considered and implemented.

Based on the above information we consider that this development will meet and exceed Approved Document part L1A (2016) of the Building Regulations and will also comply with the BMBC Adopted Core Strategy.

Appendix 1 - Sample Design Stage SAP

Data Input Report

Design - Draft



This design submission has been carried out using Approved SAP software. It has been prepared from plans and specifications and may not reflect the property as constructed.

Assessor name	Mr Laurie Wills	Assessor number	3906
Client		Last modified	01/06/2017
Address	1 Foxtail semi detached , Manchester , M1		

Dwelling

Development:	N/A	House type:	
Property type:	House		
Built form:	Semi-detached	Year built:	2016
Tariff:	Standard	Assess summer overheating:	Yes
Thermal mass:	Medium	Thermal mass parameter:	250.00
Separated heated conservatory:	No	Degree day region:	W Pennines (Eng)
Sheltered sides:	2	Terrain:	Low Rise U/S

Storeys:

Name	Area (m ²)	Height (m)
Lowest occupied	39.10	2.40
+1	36.70	2.70

Floors

Ref - Name	Type	Construction	Storey Location	Living Area (m ²)	Area (m ²)	U-value (W/m ² K)
Floor 1 - Floor 1	Ground	Suspended not timber	Lowest occupied	14.70	39.10	0.15
Living area that has no heat loss:	0.00					

Walls

Ref - Name	Type	Construction	Gross Area (m ²)	U-value (W/m ² K)
Wall 2 - party	Party	Fully filled cavity with sealed edges	39.20	0.00
Wall 1 - Wall 1	External	Cavity	92.20	0.24

Roofs

Ref - Name	Construction	Gross Area (m ²)	U-value (W/m ² K)
Roof 1 - Roof 1	Pitched (joists)	39.10	0.10

Openings

Opening Ref: 1 Window, Double glazed (low-E), 'win', master: Yes, linked to: 0

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North West
Overshading:	None / Very little	Width (m):	0.70	Height (m):	1.00
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m ² K):	1.20

Opening Ref: 2 Window, Double glazed (low-E), 'win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North West
Overshading:	None / Very little	Width (m):	1.80	Height (m):	1.20
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m ² K):	1.20

Opening Ref: 3 Window, Double glazed (low-E), 'win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North West
Overshading:	None / Very little	Width (m):	0.70	Height (m):	1.20
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m ² K):	1.20

Opening Ref: 4 Window, Double glazed (low-E), 'win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	North West
Overshading:	None / Very little	Width (m):	1.30	Height (m):	1.20
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m²K):	1.20

Opening Ref: 5 Solid door, N/A, ' front door ', master: Yes, linked to: 0

Location:	Wall 1	Source:	From Manufacturer	Orientation:	N/A
Overshading:	N/A	Width (m):	0.90	Height (m):	2.10
Frame:	u-PVC	Transmittance factor:	N/A	U-value (W/m²K):	1.00

Opening Ref: 6 Window, Double glazed (low-E), ' rear win ', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South East
Overshading:	None / Very little	Width (m):	1.30	Height (m):	1.20
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m²K):	1.20

Opening Ref: 7 Window, Double glazed (low-E), ' rear win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South East
Overshading:	None / Very little	Width (m):	0.70	Height (m):	1.20
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m²K):	1.20

Opening Ref: 8 Window, Double glazed (low-E), ' rear win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South East
Overshading:	None / Very little	Width (m):	1.30	Height (m):	1.10
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m²K):	1.20

Opening Ref: 9 Window, Double glazed (low-E), ' rear win', master: No, linked to: 1

Location:	Wall 1	Source:	From Manufacturer	Orientation:	South East
Overshading:	None / Very little	Width (m):	1.60	Height (m):	2.10
Frame:	u-PVC	Transmittance factor:	0.72	U-value (W/m²K):	1.20

Thermal Bridging					
Ref	Description	Length (m)	Source	ψ (W/m·K)	Result
E1	Steel lintel with perforated steel	0	Default Value	N/A	0
E2	Other lintels (including other steel)	10.3	Approved	0.3	3.09
E3	Sill	9.4	Approved	0.04	0.376
E4	Jamb	24.6	Approved	0.05	1.23
E5	Ground floor (normal)	19.1	Approved	0.16	3.056
E19	Ground floor (inverted)	N/A	Default Value	N/A	0
E20	Exposed floor (normal)	N/A	Default Value	N/A	0
E21	Exposed floor (inverted)	N/A	Default Value	N/A	0
E22	Basement floor	N/A	Default Value	N/A	0
E6	Intermediate floor within a dwelling	17.2	Approved	0.07	1.204
E7	Party floor between dwellings (in building)	N/A	Default Value	N/A	0
E8	Balcony within a dwelling, wall insulation	N/A	Default Value	N/A	0
E9	Balcony between dwellings, wall insulation	N/A	Default Value	N/A	0
E23	Balcony within or between dwellings	N/A	Default Value	N/A	0
E10	Eaves (insulation at ceiling level)	11.4	Approved	0.06	0.684
E24	Eaves (insulation at ceiling level)	N/A	Default Value	N/A	0
E11	Eaves (insulation at rafter level)	N/A	Default Value	N/A	0
E12	Gable (insulation at ceiling level)	7.7	Approved	0.24	1.848
E13	Gable (insulation at rafter level)	N/A	Default Value	N/A	0
E14	Flat roof	N/A	Default Value	N/A	0
E15	Flat roof with parapet	N/A	Default Value	N/A	0
E16	Corner (normal)	12.6	Approved	0.09	1.134
E17	Corner (inverted - internal area ground)	2.4	Approved	-0.09	-0.216
E18	Party wall between dwellings	10.2	Approved	0.06	0.612

E25 Staggered party wall between dwelli	N/A	Default Value	N/A	0
P1 Ground floor	7.7	Default Value	0.16	1.232
P6 Ground floor (inverted)	N/A	Default Value	N/A	0
P2 Intermediate floor within a dwellin	7.7	Default Value	0	0
P3 Intermediate floor between dwelling	N/A	Default Value	N/A	0
P7 Exposed floor (normal)	N/A	Default Value	N/A	0
P8 Exposed floor (inverted)	N/A	Default Value	N/A	0
P4 Roof (insulation at ceiling level)	7.7	Default Value	0.24	1.848
P5 Roof (insulation at rafter level)	N/A	Default Value	N/A	0
R1 Head	0	Default Value	N/A	0
R2 Sill	0	Default Value	N/A	0
R3 Jamb	0	Default Value	N/A	0
R4 Ridge (vaulted ceiling)	N/A	Default Value	N/A	0
R5 Ridge (inverted)	N/A	Default Value	N/A	0
R6 Flat ceiling	N/A	Default Value	N/A	0
R7 Flat ceiling (inverted)	N/A	Default Value	N/A	0
R8 Roof wall (rafter)	N/A	Default Value	N/A	0
R9 Roof wall (flat ceiling)	N/A	Default Value	N/A	0

Equivalent γ value: 0.094

Ventilation

Air permeability entered:	Yes	Seek exemption (<3 dwellings):			No
Design air permeability rate:	5.00				
Number of...	Open fireplaces	Open flues	Flueless gas fires	Extract fans	Passive vents
	0	0	0	3	0
Mechanical ventilation:	Not present (natural)				

Space heating

Main heating category:	Individual system/s	Number of systems:	1
Secondary heating:	No	Open flue or chimney:	No
Unconnected gas point:	N/A	Smoke control area:	No
Type:	Boiler	Efficiency source:	Product database
Product index:	016980		
Product details:	Johnson & Starley QuanTec HR28C		
Boiler type:	N/A	Fuel:	Mains gas
Condensing:	Yes	Flue type:	Balanced
Fan assisted flue:	Yes		
Combi type:	Instantaneous	Uses electricity:	N/A
Keep hot power rating:	N/A		
System:	Condensing combi with automatic ignition (1998 or later)		
Controls:	Time and temperature zone control - plumbing circuit		
Interlock:	Yes	Delayed start thermostat:	No
Compensation:	None	Burner control:	Modulating
Emitter:	Radiators	Pump in heated space:	No
Flow Temp:	> 45°C		
Installed 2013 or later:	Yes		
FGHRS:	N/A, N/A, N/A		
FGHRS index:	N/A		
FGHRS PV (kWp):	None		

Water heating

Type:	From main	Fuel:	Mains gas
Water separately timed:	N/A	Water use ≤ 125 litres/person/day:	Yes
Heat pump uses immersion:	N/A	Summer immersion:	N/A

Thermal store type: N/A

Store details:

Cylinder volume (litres): N/A

Thermostat: N/A

In heated space: N/A

Primary pipework insulated: N/A

WWHRS:

WWHRS: N/A

Renewables

No renewables present

Other

Internal lighting

Standard fittings: 0 Low energy fittings: 8 Total fittings: 8

Summer overheating

Thermal mass parameter (TMP): 250.00

User defined air change rate: No

Air change rate (ach): N/A

Cross ventilation on most floors: Yes

Window ventilation: Fully open half the time

Source of user defined values: N/A

Curtains closed in daylight hours: No

Fraction curtains closed: N/A

Blind/curtain type: N/A

Special features (Appendix Q)

No Appendix Q special features present

Cooling details

No space cooling present

Based across the UK with
offices in Manchester,
London, Liverpool and Glasgow.

Manchester (Head Office)

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- » Geotechnical
- » Contaminated Land
- » Flood Risk and Drainage
- » Asbestos
- » Invasive Species
- » Land Remediation
- » Project Management
- » Land Drilling