



cook brown.
energy

ENERGY & SUSTAINABILITY STATEMENT

Land Incorporating 1A Stanley Street, 3-5 Ogden
Lane and 1292 Ashton Old Rd M11 1JG

Thursday, October 13, 2022

Issue Register

Revision Number	Comments	Created By	Checked By	Approved By	Date
1	Issued to Client for comment	LH	CM		15/09/22

Notes;

1 – Initial draft issued to client for comment

2 – Draft issue with client's comments

3 – Final Draft issued to Planning

Alterations

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Executive Summary

This energy and Sustainability Statement has been carried out for Sterling Investment Projects Ltd. by Cook Brown Energy. The proposal is for the demolition of an existing single storey structure formerly housing a market on Stanley Street and a butcher on the corner of Stanley Street and Ogden Lane and the construction of a new five-storey building comprising 25 residential units and retail space covering the ground floor. The residential units will comprise 12 one-bedroom units, 12 two-bedroom units and 1 three-bedroom unit with parking and bike storage underneath. The purpose of this Statement is to demonstrate that climate change mitigation measures comply with their respective policies, including the energy hierarchy. It also ensures energy remains an integral part of the developments design and evolution as documented in the revision table. The Statement sets out the Proposed Developments baseline energy consumption under the new 2021 Approved Document Part L of the Building Regulations, it then outlines in detail the steps required to meet relevant planning requirements.

This Statement will also set out how the proposed development intends to address relevant planning policy requirements regarding wider sustainability considerations. A set structure has been established to address multiple policy requirements under the same topic with specific detail on key strategies as and where necessary. We have chosen Air Source Heat Pump systems supplying the heating. Low energy lights will be fitted throughout, and the development will use Electrical point of use water supply. Mechanical Ventilation Heat Recovery extract fans. By assessing the proposed development with air source heat pumps a saving of 86137.28KWh/year of energy compared to the current targets as stated in the Approved Document L for Domestic and Commercial buildings was achieved equating to a 40.43% saving on energy consumption and a 58% decrease in CO₂ from the specified building. This proposal meets the minimum 15% reduction from the baseline in carbon emissions and allows for future reduction in carbon emissions. It is worth noting the above figures have been achieved using SAP 10 Carbon Factors due to the current SAP2012/SAP2010 being outdated.

1. Development Policies & Regulations

International and national bodies have set out broad principles of sustainable development. Resolution 42/187 of the United Nations General Assembly defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The UK Sustainable Development Strategy Securing the Future set out five 'guiding principles' of sustainable development:

1. Living within the planet's environmental limits;
2. Ensuring a strong, healthy and just society;
3. Achieving a sustainable economy;
4. Promoting good governance; and
5. Using sound science responsibly.²

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):²

- an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; ²
- a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and²
- an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy. ²

²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

2.1. Local Development Strategy

The Proposed Development is required to meet Policy EN 6 from Manchester Core Strategy (Target Framework for CO2 reductions from low or zero carbon energy supplies).

2.1.C Statutory Requirements

The proposed development will be required to comply with the statutory requirements of the applicable Building Regulations. This statement will address those regulations associated with Part L of the Building Regulations, specifically:

- Part L 2021 – Conservation of fuel and power in new dwellings

Building Regulations Part L defines the energy efficiency standards required for buildings. This regulation controls insulation values of thermal elements, areas of glazing, doors and other openings in the façade, efficiency, insulation and controls of heating appliances and systems as well as lighting and hot water storage efficiencies.

2. The Development

3.1. Existing Site

The current site is land associated with 1292 Ashton Old Road M11 1JJ. This aerial photo shows the site in an overgrown and dilapidated state.

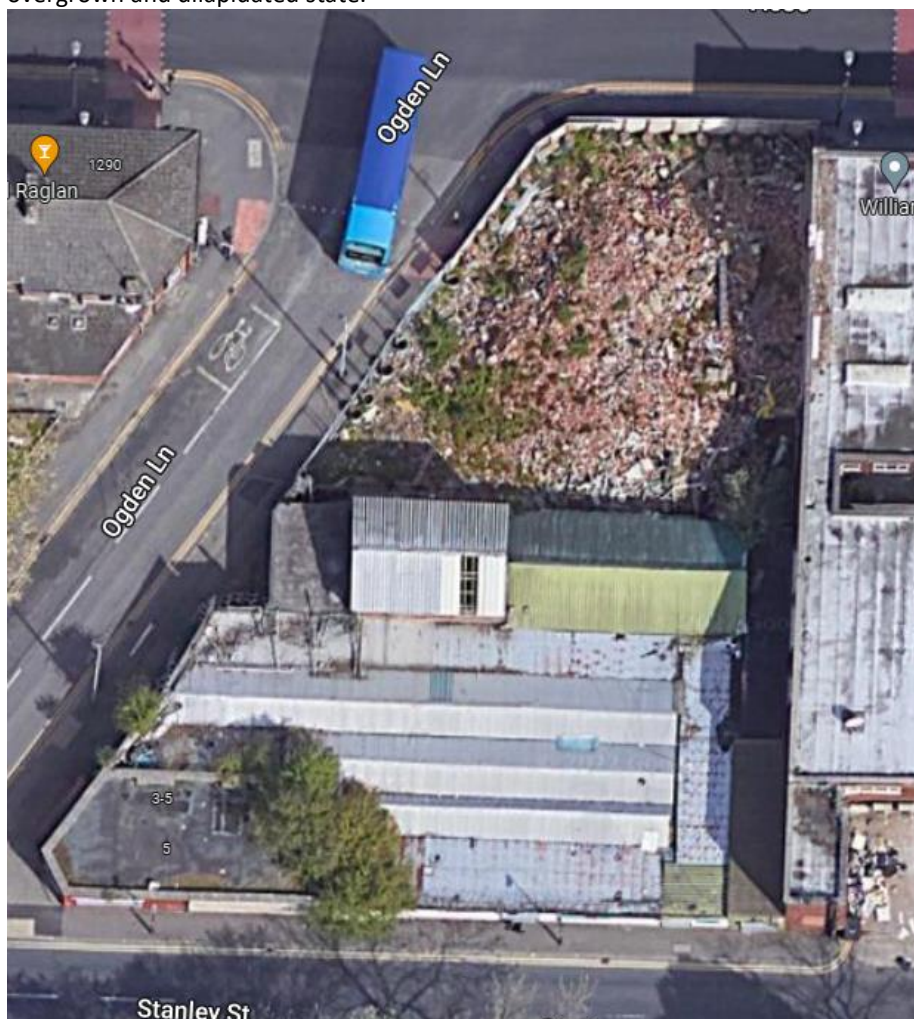


Figure 1: Site Location Plan

3.2. Proposed Development

The proposed development is for the construction of 25 residential units and retail space covering ground floor. Dwellings are ranging from 1 beds to 3 beds, occupied over the site designed to maximise the shape of the available space.

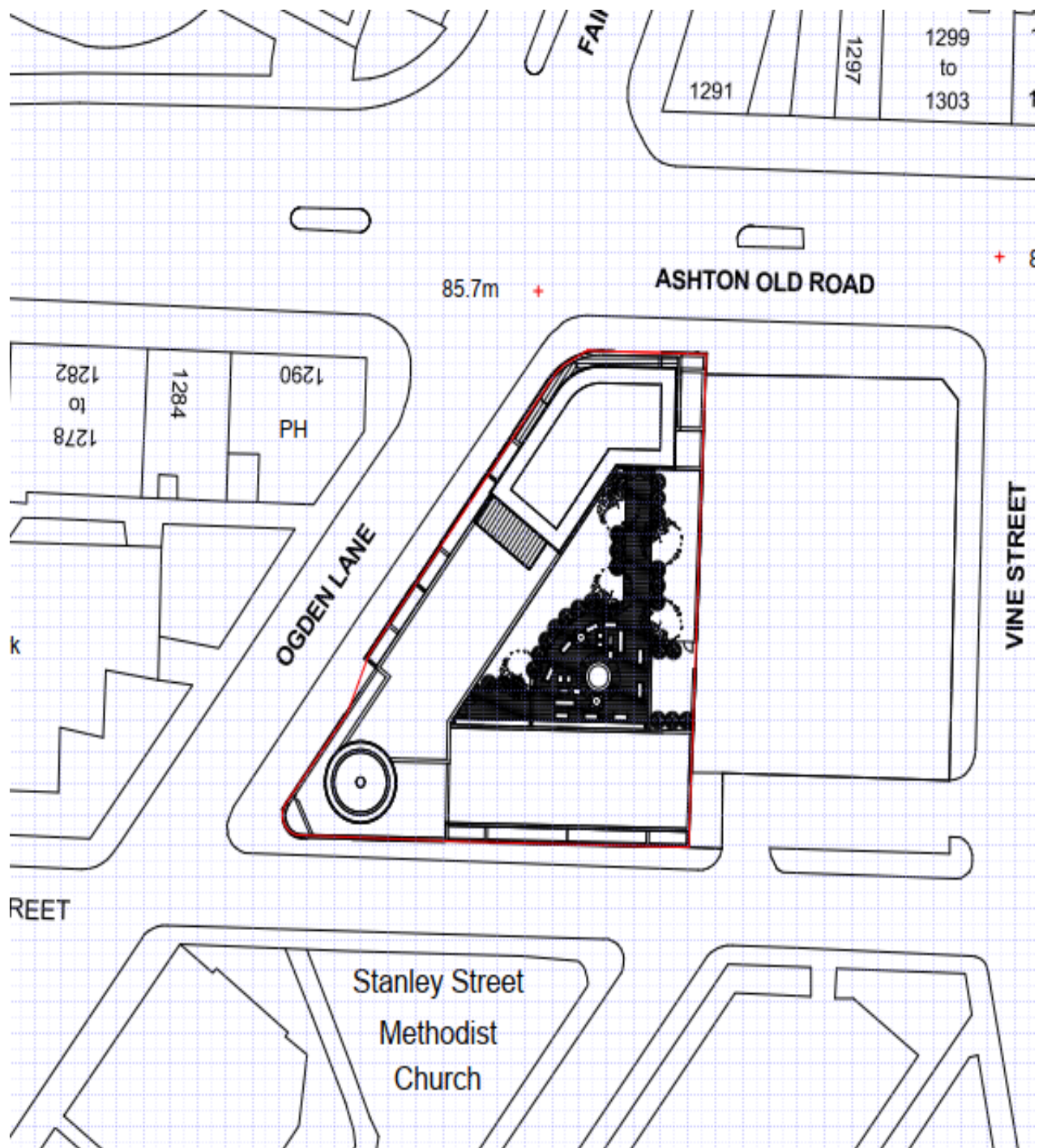


Figure 2: Proposed Development

3.2.A. Policy EN 6

Target Framework for CO₂ reductions from low or zero carbon energy supplies Applications for residential development of 10 or more units and all other development over 1,000 sq m will be expected as a minimum to meet the target shown in Tables 12.1 or 12.2, unless this can be shown not to be viable. This should be demonstrated through an energy statement, submitted as part of the Design and Access Statement. Such a statement will be expected to set out the projected regulated energy demand and associated CO₂ emissions for all phases of the development. Developments smaller than the above threshold but involving the erection of a building or substantial improvement to an existing building will also be expected to meet the minimum target, where viable, but will not be expected to submit an energy statement. The target framework relates to three broad development locations and their potential for low and zero carbon, decentralised energy. The areas are defined as follows.

- Target 1 Network development areas: Locations where the proximity of new and existing buildings, the mix of uses and density of development provide the right conditions to support district heating (and cooling).
- Target 2 Electricity intense areas: Locations where the predominant building type has an all electric fit-out such as retail units and leisure complexes.
- Target 3 Micro-generation areas: Locations where lower densities and a fragmented mix of uses tend to mean that only building scale solutions are practical.

Domestic CO₂ emissions reduction targets

Table 12.1

Target	% Minimum requirement
Target 1: Network development area	CHP/district heating anchor or connection or where not feasible a 15% increase on Part L 2010
Target 2: Electricity intense buildings	+15% increase on Part L 2010
Target 3: Micro generation area	+15% increase on Part L 2010

Non-domestic CO₂ emissions reduction targets

Table 12.2

Target	% Minimum requirement
Target 1: Network development area	CHP/district heating anchor or connection or where not feasible, a 15% increase on Part L 2010
Target 2: Electricity intense buildings (Applies to commercial uses with a high proportion of emissions from electricity use (>45 kg CO ₂ /m ²))	+10% increase on Part L 2010
Target 3: Micro generation area	+15% increase on Part L 2010

Where the CO2 emissions reduction required under any future revision to Part L of the building regulations becomes greater than the '% Minimum requirement', the reduction required under building regulations would apply.

Where the Council identifies an 'allowable solution', for example within an energy proposal plan, that would produce higher carbon reductions at no extra cost than that of achieving the '% Minimum requirement' (or required under building regulations if greater) the higher percentage reduction will be required. The cost comparison is based on the cost of incorporating the 'allowable solution' at design stage.

The energy statement will be required to be submitted at the outset of any proposed development (outline application or before). Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO2 mitigation, subject to the energy statement incorporating evidence such as modelling to demonstrate compliance.

Guidance on what the energy statement should contain and how to decide which target applies to a development proposal is given in Appendix A.

12.38 National policy guidance and the Planning and Energy Act (2008) advise that Local Planning Authorities may set higher targets where the local potential and circumstances warrant this. Any local targets, however, are to be framed with reference to existing national targets such as the Code for Sustainable Homes or Building Regulations. (See Table 12.3)

12.39 The Association of Greater Manchester Authorities (AGMA) Study demonstrated through the detailed case studies that where opportunities to plan for low/zero carbon infrastructure exist, greater carbon emissions reductions can be achieved at a lower cost and that it is therefore possible to justify higher targets than the current national and regional minimums. The case studies were undertaken in the context of achieving the carbon reductions required by the phased increase in building regulations over Part L 2010. The costs used included the increase that the rising building regulations requirements would involve.

12.40 Through the case studies the three target areas set out in Policy EN6 above were identified as being appropriate to the types of development coming forward across the City Region. Each target reflects the location of the development and the nature of the potential for decentralised or zero carbon energy.

12.41 The proposed target framework in EN6 is expressed in terms of CO2 reduction rather than a requirement for renewable energy, providing flexibility to the developer in terms of how the target is met. The target is framed with reference to building regulations, so compliance is easy to measure using the Standard Assessment Procedure (SAP) and the National Calculation Methodology.

12.42 Using the evidence from the AGMA Study and based on the carbon reductions achievable from the least cost on-site technology, the minimum CO2 emissions reduction target has been set at between 10-15% over and above Part L Building Regulations 2010, which is between Levels 3 and 4 of the Code for Sustainable Homes. The range reflects the varying potential that different uses and areas have for carbon reductions. An increase from the minimum target will only be required if solutions are identified at no greater cost than the minimum target.

Figure 12.3 The Government's preferred energy hierarchy 12.43 In line with the draft definition of zero carbon an energy hierarchy has been created (see Figure 12.3 below). Under Policy EN4 developers will initially be expected to secure high levels of energy efficiency and low energy demand. This is followed by the incorporation of on site measures where these exist, such as zero carbon energy technologies and directly connected heat (not necessarily on-site). However, in order to achieve the highest level of carbon reductions for the least cost it is intended that developers will be able to contribute to or co-ordinate investment in near or off-site infrastructure. This could include, for example, the connection

of existing buildings to district heating networks and investment in low or zero carbon technologies on buildings owned by the City or by public and community institutions. Further guidance on these 'allowable solutions', possibly in the form of a Supplementary Planning Document (SPD), will be given following further national guidance on this matter expected from the Government. Provisional timetable for Building Regulation CO2 reduction targets over 2006 compliant building.

Figure 12.3 The Government's preferred energy hierarchy

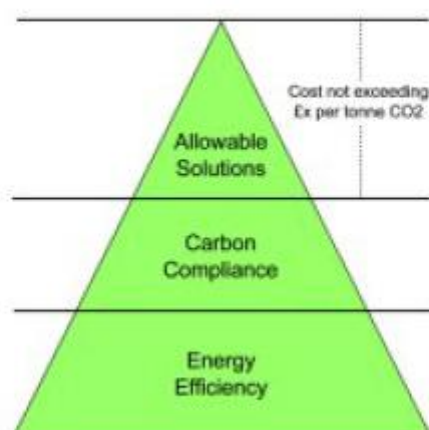


Table 12.3

Year	CO ₂ reduction target over 2006 compliant building			
	Residential (subsidised)	Residential (private)	Non-domestic (subsidised)	Non-domestic (private)
2006	25% (3)*	0%	0%	0%
2010	44% (4)*	25% (3)*	25%	25%
2013	Zero carbon(5)*	44% (4)*	44%	44%
2016		Zero carbon (5)*	100%	100%
2018			Zero carbon	100%
2019				Zero carbon

*Figures in brackets demonstrate the Code for Sustainable Homes Level that equates with this level of carbon reduction. In order to gain Code accreditation, however, a development would also need to have fulfilled other sustainable criteria as required by the code.

2.1.B Policy EN 7

Energy Infrastructure opportunities

There will be a general presumption in favour of low and zero carbon decentralised energy schemes, subject to the following considerations:

That any new generating plant capable of producing heat and cooling as well as electricity should be located in a way that facilitates future connection to a local distributed energy system.

That any energy centre, including generating plant, standby/boiler plant and substations, shall be located and designed to a high quality so as to integrate with and contribute to the townscape.

Biofuels should be obtained from sustainable sources and processes and in a way that minimises transport impacts, following a sequential approach in order to minimise CO2 emissions – firstly prioritising local and regional sources, followed by national, European and international.

Consideration should be given to biofuel delivery by rail and waterways where possible. Where large-scale fuel or feedstock delivery is required by road the energy centre must be located in or adjacent to light industrial, industrial or leisure uses with any impact on local residential amenity minimised.

The cumulative impact of energy schemes will be taken into account when considering applications, to include modelled impacts on air quality and landscape character, with reference to Policy EN16. Flood risk, through the Manchester-Salford-Trafford Strategic Flood Risk Assessment. In determining proposals for development, consideration will be given to the need to safeguard strategic energy sites and network routes, both proposed or existing, where these have been identified as having strategic significance for the delivery of low or zero carbon energy infrastructure or, would be required in order to achieve the successful regeneration of an area in line with targets for reducing carbon emissions.

12.44 The AGMA Energy Study suggests that there is less scope for standalone energy schemes within Manchester than other Districts, with the greatest capacity for low and zero carbon decentralised energy capacity likely but not exclusively to come from a combination of:

- .Biomass and gas fired Combined Heat and Power supplying district heating,
- .Biogas (from waste) powered Combined Heat and Power supplying district heating,
- .Biomass heat-only boilers supplying district heating and individual buildings,
- .Deep, shallow and mine water geothermal technology,
- .Single large turbine wind sites,
- .Micro-generation technology (e.g. solar hot water, photovoltaics, ground source heat pumps).

12.45 It is intended that opportunities to develop this capacity will be supported through the preparation of energy proposals plans as described by Policy EN5. The City still needs, however, to be able to consider potential schemes involving new technology. Any proposal will therefore also be expected to follow national guidance currently set out in PPS 22 and any future national guidance that emerges. The Council is also considering the use of Local Development Orders to facilitate the development of district heating within Manchester.

12.46 In addition the AGMA study highlighted specific environmental issues in relation to biofuel supply chains and wind turbine siting. It is important, for example, that the benefits of using biofuels to generate power are not outweighed by the emissions created by transporting or producing the biofuels, taking full account of full life-cycle emissions. It is intended that Policy EN16 will address issues relating to air quality. Where necessary the City will seek to work with other Districts to further develop the sub-regional evidence base and planning criteria for these, and other energy schemes.

Delivery Strategy

Core Strategy Policy	Project/ Programme	Responsible Agencies	Source of Funding	Timescale
EN4, EN5, EN6, EN7	Manchester: A Certain Future Manchester City Council Delivery Plan	MCC	MCC other public sector private sector	2010-2020
EN4, EN5	City Centre Heat Network	MCC other public sector private sector	MCC	Approx 2016 - 2021
	Smart Grid pilot – improvements to electricity distribution network.	Electricity North West MCC other public sector private sector	Ofgem Low Carbon Networks Fund ENW	Approx 2016 - 2021
EN4, EN5, EN6	Development of energy proposals plans in priority areas including pilot	MCC, developers, private sector	MCC, developers	Up to approx 2021
EN4, EN5, EN6, EN7	Planning Development Management	Developers	Developers	Ongoing
EN4	Domestic retrofit projects	MCC Registered Providers	MCC Community Energy Saving Programme	Up to 2016

Core Strategy Policy	Project/ Programme	Responsible Agencies	Source of Funding	Timescale
			Registered Providers, ERDF, Warm Homes, Energy Suppliers, Green Deal, Evergreen	

Policy	Indicator	Target
EN4 - EN7	Reduction in CO ₂ emissions	41% reduction from 2005 levels by 2020 (this is a City-wide target that the Council supports and which will be kept under review)
	Days on which air pollution reaches moderate or higher levels	Zero days

EN8	Number of planning permissions granted contrary to the advice of the Environment Agency on either flood defence grounds or water	0
	New developments incorporating Sustainable Urban Drainage systems	Year-on-year increase

Green Infrastructure and Environmental Protection

Green Infrastructure

12.49 The green infrastructure of Greater Manchester is part of the City Region's life support system. The network of multi-functional open spaces and corridors together with the links between them provide multiple benefits for residents, workers, investors and visitors to the City.

12.50 A Green Infrastructure Framework is currently being prepared by AGMA for Greater Manchester. The following definition draws largely on this work:

Open spaces - parks, woodlands, informal open spaces (including amenity grass areas, allotments), nature reserves, lakes and reservoirs, historic sites and natural elements of built conservation areas, civic spaces and accessible countryside, outdoor sports facilities (with natural surfaces)

Linkages - river valleys and canals, pathways, cycle routes, tram routes and railway lines – both used and disused

Networks of "urban green" - the collective resource of private gardens, pocket parks, street trees, verges, green roofs and green walls

12.51 The City's green infrastructure is critical for sustainable economic prosperity by contributing to the conditions for growth and economic security. The attractiveness of the environment is in part what determines where firms choose to locate, and where the workforce choose to live; workers with access to green infrastructure also tend to be healthier and more productive. Green infrastructure provides accessible areas for relaxation, recreation, exercise and sport and alternative sustainable transport routes. It reduces air pollution, improving the health and well-being of our local communities in general.

12.52 Green infrastructure is defined by its multi-functionality. It helps to mitigate the effects of climate change and reduce flood risk by, for example, reducing the urban heat island effect and providing areas of natural drainage. The green infrastructure corridors provide connections between important wildlife sites within and beyond the City, thus enriching the City and the City Region's biodiversity. It can enhance an area's appearance and character, often through its intrinsic historic landscape value, for example in Heaton Park and the green spaces within conservation areas. By making areas more attractive, green infrastructure is vital to tourism, a key Northwest employment sector. In some instances green infrastructure can also allow for local food production.

12.53 Guided by the Green Infrastructure Framework for Greater Manchester, the Council is planning to develop a district level green infrastructure strategy. Planning for green infrastructure requires a strategic approach to ensure that an area's environmental assets are recognised as an integral part of an area's overall infrastructure. This enables the growth and development of an area to be managed within the context of infrastructure planning in its widest sense, ensuring the most efficient and appropriate use of limited resources. It also enables the management of the City's green infrastructure assets in a way which complements and addresses their multi-functionality.

Policy EN 9

Green Infrastructure

New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing

element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.

Key features of Manchester's green infrastructure will include:

The continued development of a network of green spaces, water bodies, canals, paths and cycleways, with priority given to those parts of the City where there is an identified existing lack of open space. The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.

The continued maintenance and management of the Rivers Mersey and Irwell and their tributaries, for example the River Irk, River Medlock, Chorlton Platt Gore, Gatley Brook, Moston Brook and adjoining land, with regard to their multiple functions including recreation, flood management, and biodiversity.

The provision of new, and improvements to the quality and accessibility of existing green infrastructure assets, to mitigate for any loss of green infrastructure as a result of development such as the Metrolink extension programme.

12 Objective 6 Environment

Manchester City Council | Manchester Core Strategy 2012 to 2027

The encouragement of green roofs, green walls, tree planting and other forms of green infrastructure to allow for the adaption to climate change in heavily urbanised areas.

New green infrastructure provision should be an exemplar of best practice and innovation in terms of both its design and management.

12.54 Green infrastructure forms part of Manchester's landscape character. Existing strategic green infrastructure assets include the Mersey Valley, River Irwell, Medlock Valley, Chorlton Water Park, the Ashton, Rochdale and Bridgewater canal corridors, Alexandra Park, Heaton Park, Phillips Park and Wythenshawe Park. The multi-functionality of these key open spaces and linkages, including biodiversity, recreation and walking/cycling routes, will be supported and enhanced and connections between them reinforced.

12.55 The Citywide Open Space, Sport and Recreation Study audited and mapped the City's accessible open spaces. However, in Manchester, it is the more finely grained urban green infrastructure that helps give areas and neighbourhoods their distinctive character and also provides many of the linkages in the Green Infrastructure network. There can be significant variations across Manchester, with some areas such as Wythenshawe recognised for their 'garden feel' with private gardens, prominent grass verges and street tree planting, whilst other parts, for example Moss Side and Rusholme, are characterised as having much more limited access to private gardens and a far less green street environment.

12.56 The City Centre in particular has lower levels of open space and tree cover than other parts of the City, but here canals, towpaths and walkways provide an invaluable network of green/blue corridors. This network ensures that residents are able to access open spaces outside of the City Centre through the use of these linkages. It is recognised that the provision of new green infrastructure in the form of open space will be challenging in some parts of the City Centre. In all parts of the City which have a more heavily urbanised environment, a key priority will be to deliver new urban features such as green roofs and living walls and other innovative solutions, together with more street trees, to increase and enhance green infrastructure, encouraging urban cooling, mitigating and adapting to climate change.

12.57 The Council, working with local communities, developers and partners will develop and enhance Manchester's green infrastructure, to create an integrated network of high quality and multi functional green infrastructure within the urban environment of Manchester, linking to neighbouring authorities' green infrastructure networks.

Delivery Strategy				
Core Strategy Policy	Project/Programme	Responsible Agency	Source of Funding	Timescale
EN9	Planning Development Management	MCC Developers	Developers	To 2027
	The development of a Green Infrastructure Strategy for Manchester	MCC with partners (EA, UU, Natural England, Red Rose Forest)	MCC	2010-2015
	Indicator	Target		
EN9	Increased levels of Green Infrastructure	In line with emerging Greater Manchester Green Infrastructure Strategy		

3.3.A. Waste

Policy EN 19

Waste

The Council will

- Work with other Districts through the Greater Manchester Joint Waste Development Plan Document (GMJWDPD) to safeguard existing sites for waste management and identify and safeguard new sites in existing areas of employment where appropriate.
- Require all developers, including those of new waste management facilities within the District, to demonstrate the proposal's consistency with the principles of the waste

hierarchy (prevention, reduction, re-use, recycling/composting, energy recovery, final disposal)

- Require all developers of new waste management facilities within the District to plan for and, where appropriate, use sustainable modes for waste transport, including use of modes such as rail and the Manchester Ship Canal.
- Require all developers to submit a waste management plan to demonstrate how both construction and demolition waste will be minimised and recycled on site wherever possible and how the sustainable waste management needs of the end user will be met.
- Have full regard to the economic and environmental benefits that well designed and run, waste management facilities can bring to the District, subject to any conditions required to protect the amenity of existing adjacent users.
- Promote the development of innovation and technological advancement within the sustainable waste management industry, aiming to achieve a closed-loop waste management system.
- Require waste management practices to have full regard to the environmental, social and economic impacts of such development and encourage long-term benefits in improving the environment, the regeneration of areas in need of investment and co-location with other employment uses where appropriate.
- Encourage communities to take responsibility for the waste they create through the provision of accessible facilities.

In a district such as Manchester with a significant existing population and a vision for a growing economy and population a key issue is that of ensuring that this does not automatically lead to a proportionate increase in waste arisings. National planning guidance (PPS10) requires each community to take responsibility for their own waste and to adopt the principles of the waste hierarchy – prevent, reduce, reuse, recycle. Given that Manchester does not have any landfill capacity it is even more important that priority is given to preventing, reducing, reusing and recycling waste within the district to limit the volume of waste needing to be transported elsewhere for treatment. Manchester will require a sufficient number of waste treatment centres to cater for its needs. Where this involves newer methods of waste treatment, this can often take place in completely enclosed, controlled environments and does not produce the same level of neighbour nuisance as older facilities. Existing waste treatment facilities, however, have often been located in older industrial areas. As these areas are regenerated the existing uses may not be considered compatible with the new. In this context and in order to ensure Manchester's waste treatment needs are met, existing waste treatment facilities will either need to be improved where necessary and safeguarded or if truly considered to be unacceptable need to be relocated.

12.92 Manchester recognises the importance of sustainable waste management both locally and in co-operation with other districts in Greater Manchester to ensure that all the waste management needs of the conurbation are met. Manchester will encourage the development of closed-loop waste management systems where the waste or by-product of one process becomes used in the production of another.

12.93 A Joint Waste Development Plan Document has been prepared for the whole of Greater Manchester, which sets out the overall strategy for waste and provides some of the detail of site identification for waste facilities, development of waste technologies, the need for safeguarding areas for waste management development, and generic development control policies. The Joint Waste Development Plan Document has been found to be sound by a Planning Inspector following an examination in public, and was adopted by all ten Greater Manchester districts on 1st April 2012

3.3.B. Materials A.

All new materials will generally be from sustainable sources such as FSC timber and will, for the majority, be Class A Green Guide rated or above. Emphasis will be put on the building contractor to source materials with low embodied carbon where appropriate and those materials from recycled or sustainable sources.

3.3.C. Flexibility And Adaptability

The development will be compliant with Part M of the Building Regulations and has been designed considering future flexibility and adaptability. Internal walls can be reconfigured to form new spaces and the proposed M&E system allows for incorporation of future technologies and follows the principals set out in the Future Homes Standard Consultation.

3.3.D. Biodiversity and Geodiversity

Manchester as a City recognises the importance placed on biodiversity and its role in delivering urban renaissance. The conservation and enhancement of our natural resources is a key factor in the building and delivery of safe and sustainable communities. Manchester seeks to protect, enhance and manage existing identified biodiversity resources. PPS9 and the accompanying Good Practice Guide set out national policy in relation to planning for Biodiversity and Geodiversity.

Policy EN 15

Biodiversity and Geological Conservation

The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City. Particular consideration will be given to:

- sites with international or national designations for their biodiversity value. Manchester contains one Site of Special Scientific Interest (SSSI) (Cotteril Clough); there is a Special Area of Conservation (SAC) and an SSSI just over the border in Oldham (both on the Rochdale Canal within Oldham);
- other sites of biodiversity value, including Sites of Biological Importance (SBIs) and Local Nature Reserves (LNRs); Manchester currently has 35 SBIs (including the Rochdale and Ashton Canals) and 7 LNRs; priority habitats found within Manchester, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP);
- protected and priority species, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP);
- sites that are recognised for their geological importance;
- the Council's objective to protect and conserve the City's existing trees and woodlands and the aim for a net increase in trees across the City.

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate, with reference to:

- the Manchester Biodiversity Strategy, which provides further details of priority habitats within Manchester and opportunities for biodiversity enhancement including corridors such as the Mersey, Medlock and Irk river valleys, the canals and disused railway lines and areas of managed greenspace particularly in parks;
- the Green Infrastructure Framework for Greater Manchester, which encompasses an ecological framework that seeks to guide and inform habitat creation and repair,

including identifying large 'biodiversity opportunity areas' including the Moston Brook Corridor and Nutsford Vale;

- the Open Space, Sport & Recreation Study, which identifies areas where there is a deficit of natural and semi-natural greenspace, opportunities for green corridors and other linkages;
- Manchester's Climate Change Action Plan;
- the Strategic Flood Risk Assessment (SFRA) for Manchester;
- the Habitats Regulations Assessment (HRA) for Manchester, which gives detailed consideration to Special Areas of Conservation (SACs), including the Rochdale Canal SAC just outside the district boundary;
- the River Basin Management Plan for the North West;
- the Manchester Tree Strategy.

Any adverse impacts on biodiversity will need to be justified against the wider benefits of the proposal, assessed against other LDF policies. Where adverse impacts are unavoidable, developers will be required to provide appropriate mitigation and/or compensation.

Development should wherever possible seek to maintain, enhance or restore existing geology.

Developers will need to demonstrate how they have assessed and taken full account of the potential effect of their proposed development on biodiversity or geodiversity. When considering the potential impact of a development, the construction phase should be included in this consideration. It is important to recognise that brownfield sites often contain diverse and valuable biodiversity.

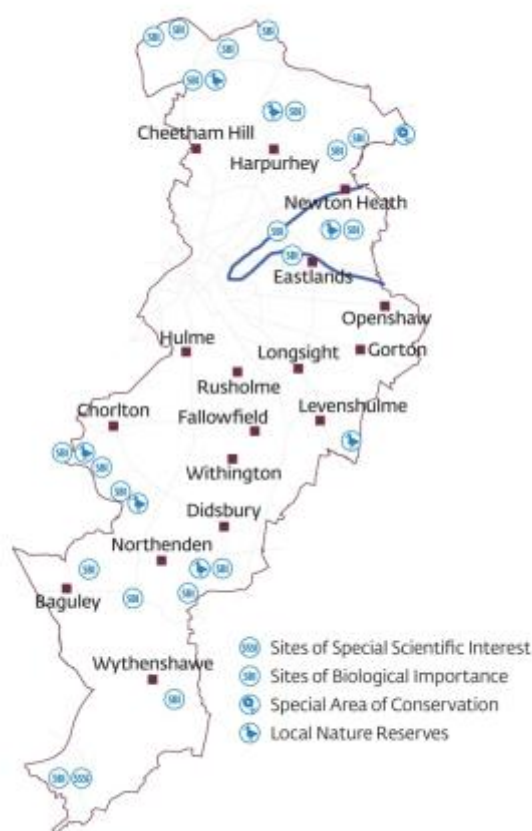
12.75 Priority habitats found within Manchester, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP), include various types of grassland, ancient/species-rich hedgerows, woodlands, lowland heath, managed greenspace, reedbeds, rivers, canals and ponds.

12.76 In addition to the priority species protected through European or national legislation, local priority species are identified by the Greater Manchester Biodiversity Action Plan (GM BAP); the Manchester Biodiversity Strategy lists those that occur in the City of Manchester, including the great crested newt, water vole, brown hare, pipistrelle bats, 8 protected bird species,

floating water plantain, grass-wrack pondweed, and the black poplar.

12.77 Cotteril Clough Site of Special Scientific Interest (SSSI) consists of 10.5 ha of lowland broadleaved, mixed and yew woodland, with associated stream habitat and neutral grassland on an embankment within the site; it supports a diverse bird and invertebrate fauna. The site, which is in the south of the City, near the airport, is divided by a busy road; the smallest section (3.4 ha) to the east of the road is in an 'unfavourable condition' due to forestry and poor woodland management; the larger section (7.1 ha) to the west is in a favourable condition. The Rochdale Canal SAC and SSSI are just over the border in Oldham (Manchester's section of the Rochdale Canal is an SBI); the Rochdale Canal supports a significant and unusually dense population of floating water-plantain (*Luronium natans*); the conservation objective for the SAC is to maintain in favourable condition the habitats for the population of this plant. These designations, together with Manchester's 35 SBIs and 7 LNRs, are shown on Figure 12.4 (map indicates approximate location of SBIs; some symbols present more than one site)

Figure 12.4 Designated sites of biological value



Sites of biodiversity value, and linkages between them, also form part of the multi-functional Green Infrastructure network. In Manchester, the river valleys and canal corridors form an important element of the 'ecological framework' within the emerging Green Infrastructure Framework, and contain both sites and linkages. They also present opportunities for further landscape and habitat enhancement and creation including the restoration of sections of channelised river, the opening up of culverted sections and 'hidden rivers', and the creation of new fish passes at existing large weirs. The main river valleys are the Mersey, the Medlock, and the Irk; the canals which run through Manchester are the Bridgewater, the Rochdale and

the Ashton canals. Informal open space such as country parks and commons (such as Ashenhurst, Tweedle, Blackley and Nutbank commons in North Manchester), and managed green space in parks, present further significant opportunities for enhancement of their biodiversity value; there are an increasing number of parks in Manchester (33 in 2010) that have been awarded Green Flag status due to a management regime which takes account of best ecological practice. Other identified biodiversity opportunity areas include the Moston Brook Corridor and Harpurhey Reservoirs in North Manchester, and Nutsford Vale in East Manchester.

12.79 Schemes to enhance biodiversity should take into account climate change, flood risk and the need for flood storage; habitats such as flood meadow reedbed and marsh/fen should be considered along appropriate stretches of river. All new, enhanced and restored biodiversity provision should seek to be an exemplar of best practice and innovation in its design and on-going management. The Council will also promote consideration of potential tensions between biodiversity enhancement and recreational access, to ensure that appropriate regard is given to these objectives.

Delivery Strategy

Core Strategy Policy	Project/Programme	Responsible Agencies	Source of Funding	Timescale
EN15	Manchester Biodiversity Strategy	MCC and partners (EA, UU, Natural England, Red Rose Forest)	MCC	2010-2015
	Manchester Biodiversity Action Plan			
	Planning Development Management	MCC Developers	Developers	To 2027

Policy	Indicator	Targets
EN15	SBIs in active conservation management 'Improved Local Biodiversity'	Increase of 1-5% per annum
	Total area of Local Nature Reserves	480 ha total by 2014
	BAP priority habitats and species	Increase
	Changes in designated areas of biodiversity importance (SBIs)	<5% decrease in area
	Changes in the condition of SSSIs	No deterioration

3.3.E. Flood Risk And Water Management

Flood risk has become a key issue at the national policy level, as the number and severity of recent floods seems to be on the increase. Flooding can lead to serious problems in social, economic and environmental terms, depending on the location of the flood. Some land uses are more vulnerable than others, but flood risk must be considered in all cases. PPS25 (Development and Flood Risk) sets out the approach Local Authorities and Developers should follow in considering flood risk, including a hierarchy of flood risk assessment documents. PPS25 requires local authorities to identify flood risk in their area through an appropriately-detailed Strategic Flood Risk Assessment (SFRA) which covers all sources of flood-risk; for Manchester this is flooding from rivers (fluvial), canals and reservoirs, groundwater, surface-water and sewers, and the implications of climate change. The Council (working with the neighbouring authorities of Salford and Trafford in recognition of the cross-boundary nature

of flood risk) has produced an SFRA to inform future development which consists of a Level 1 and a Level 2 report and a mapping volume. The SFRA informs policies in the Core Strategy and provides a context for developers' site-specific Flood Risk Assessments (FRA).

Policy EN 14

Flood Risk

- In line with the risk-based sequential approach contained within PPS25, development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).
- In addition to the requirements for site-specific Flood Risk Assessments (FRAs) set out in PPS25, an appropriate FRA will also be required for all development proposals, including changes of use, on sites greater than 0.5ha within Critical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.
- All new development should minimise surface water run-off, including through Sustainable Drainage Systems (SUDS) and the appropriate use of Green Infrastructure. Developers should have regard to the surface water run-off rates in the SFRA User Guide. In CDAs, evidence to justify the surface water run-off approach / rates will be required.
- The City of Manchester contains many sections of rivers which are culverted or 'hidden'; where these are indicated in the SFRA beneath the proposed development site, further investigation will be required and the development proposal should take this into account; where feasible and appropriate development should seek to open up culverted/hidden rivers to reduce the associated flood risk and danger of collapse, taking advantage of opportunities to enhance biodiversity and Green Infrastructure.

12.69 Manchester, along with Salford and Trafford, effectively drains much of Greater Manchester via the River Irwell and River Mersey, both of which flow into the Manchester Ship Canal. Flood risk in Manchester is a significant and complex issue, arising from this and a number of other potential sources which often span local authority boundaries and can interact with each other, particularly during extreme weather events. Flood risk is combination of both the probability of an event occurring, and its likely consequences, and a precautionary approach should be followed which takes both into account.

12.70 Whilst development should be planned following the sequential approach and the risk/vulnerability matrix set out in PPS25, in Manchester, the scale and focus of development within the Regional Centre and Inner Areas in particular means that it will not always be possible to direct development to sites with the lowest probability of flooding. PPS25 does note that flood risk should be considered not in isolation but alongside other spatial planning issues. Where flood risk needs to be addressed, including that likely to arise from climate change, development should seek firstly to minimise the risk to the site, then to make the development resistant to any residual risk, and lastly to make the development flood-resilient; provision for emergency access and escape must also be included.

12.71 PPS25 sets out when FRAs are required in terms of fluvial flood risk, and with reference to the SFRA, a similar approach has been developed for canal and surface water flooding. Critical Drainage Areas are identified in the SFRA, which designates them as High Flood Risk Areas. Canal Hazard Zones, also identified in the SFRA, are areas at risk from potential breaches or overtopping of canals. Where an FRA is required, it should accord with PPS25, and the level of detail should be commensurate with the scale and type of development proposed, and the degree of risk that exists. With reference to the SFRA and the PPS25 Practice Guide, some developments may only require a Level 1 Screening FRA or a Level 2 Scoping FRA, while others will require a Level 3 Detailed FRA. Discussions with the Local Planning Authority can help inform what will be required.

12.72 New development should minimise the risk of flooding to people, property and the environment within the site, without increasing risk elsewhere; where possible it should also seek to reduce flood risk elsewhere. Development can help to mitigate and manage flood risk by creating storage areas and reducing surface water run-off, and developments should be designed in a way that can contribute to these objectives, incorporating SUDS and GI where possible. Minimising surface water run-off rates from new developments, including through the use of SUDS, is an important part of managing the risk from surface water flooding both in the vicinity of the development site and over a wider area. The cumulative effect of a number of developments could be significant in managing flood risk, particularly in Critical Drainage Areas where this is a more significant issue. There may be opportunities to deliver SUDS through integrated solutions for collections of strategic sites. Developers should consider how their site could support wider flood risk management, including through partnership working with local authorities as Lead Local Flood Authorities (LLFAs), the Environment Agency, United Utilities and other stakeholders.

Delivery Strategy

Core Strategy Policy	Project/ Programme	Responsible Agencies	Source of Funding	Timescale
EN14	Planning Development Management	MCC Developers	Developers	Up to 2027
	Surface Water Management Plan	MCC + partners (EA, UU and others)	Central Government	Up to 2027
	Preliminary Flood Risk Assessment (PFRA) report and associated works under 2010 Flood and Water Management Act	MCC and partners	Central Government MCC + partners (EA, UU and others)	Up to 2027
	Environment Agency (EA) Capital Investment Works (Flood Defence Programme)	EA	EA	Up to 2027
	United Utilities (UU) Investment in assets	UU	UU	Up to 2027

Policy	Indicator	Target
EN14	No. of new dwellings in high probability flood areas	<5% over plan period
	E1: Number of planning permissions granted contrary to the advice of the Environment Agency on flood defence grounds	0

3.3.F. Cycle And Refuse Storage

Refuse and bike storage will be provided for each dwelling, with a communal bin and bike store for the flats to accommodate containers with at least the minimum volume recommended by British Standard 5906 (British Standards, 2005) based on a maximum collection frequency of once per week.

4. Assessment Methodology

All assessments have been conducted using DCLG approved software. For the Domestic element of this proposal the assessments were conducted using Standard Assessment Procedure (SAP).

The Carbon Dioxide Emissions expressed under 'Regulated' within this report reflect those emission targets set out by Part L and are made up of the total emissions for; Heating, Hot Water, Cooling, Controls, Fans, Pumps and Lighting. These have been calculated using DCLG approved software.

5. Energy Review

This section of the statement aims to address those policies concerned with the energy conservation / efficiency of the proposed scheme along with the considerations for using alternate and renewable technologies to achieve a 58 % reduction in Carbon Emissions.

5.1. Low Zero Carbon Feasability Study

A low zero carbon (LZC) feasibility study has been conducted to assess and determine the appropriateness of different technologies being intergrated into the design of the proposed development. The list is not exhaustive but aims to highlight the most common and commercially viable solutions to alternate and renewable energy.

Technology	Pros	Cons	Comments	Technically Feasible
Air Source Heat Pump (ASHP)	Can provide a significant proportion of heating and cooling for most building types Can generate heat and chilled water with good efficiency ratios	Can only produce heat up to 45°C thus delivered hot water temperatures can be low and result in an increase in electric immersion heating, increasing dependency on energy use from the national grid. Efficiencies in cold weather can be very low External condenser units can be unsightly and cause some noise issues	External units can be noisy and unsightly Limited space to locate unit	Yes
Biomass Boiler	Can provide very low carbon heating and hot water Can be fitted in small and large scale opportunities, giving flexibility to use either a localised or district heating system Can form part or all of a Combined Heat And Power (CHP) System	Large plant room required to house boiler and fuel store Potentially more maintenance requirement, dependant on boiler type used Negative impact on local air quality from the emissions of the system	Could be challenging to source local fuel to maintain carbon neutral status Negative impact on local air quality Storage units would be required for automatic pellet fed systems	No
Combined Heat & Power (CHP)	Can provide both heat and power Can be an effective contributor to overall carbon emissions reduction	Requires a significant and consistent load to be efficient Only generates power when generating heat Plant room design is more complex	Domestic scale systems can be difficult to have serviced due to limited number of trained service engineers	No
Ground Source Heat Pump (GSHP)	Can provide a significant proportion of heating and cooling for most building types Can generate heat and chilled water with good efficiency ratios	Can only produce heat up to 45°C thus delivered hot water temperatures can be low and result in an increase in electric immersion heating, increasing dependency on energy use from the national grid. Expensive to install via a borehole method Requires a large amount of land for shallow depth loop systems	Not feasible for inner city given space requirements	No
Photovoltaics	High carbon emissions offset Relatively maintenance free and low cost installation Expected panel life in excess of 25 years Multiple mounting and orientation options available Can be combined with a battery storage system to fully utilise free electricity generation	Shading impacts generation of the system Inverter lifespan only expected to be 10 years	Will provide a considerable amount of regulated energy along with the unregulated energy demands of the proposed scheme Limited on available space and sub optimal siting	Yes
Solar Thermal Hot Water	Can provide a significant proportion of hot water demand Relatively low maintenance and installation cost	Does not produce enough heat during winter months to bring the cylinder up to temperature Restricted on mounting and orientation options	Maintenance and longevity issues make this technology ultimately more expensive	No
Wind Power	High carbon emissions offset Can be combined with a battery storage system to fully utilise free electricity	Produces noise and shadow flicker Need to be installed where they are free from turbulence caused by obstructions System is reliant on a consistent wind speed to generate electricity Planning permission can be difficult to obtain	Site is not suitable due to surrounding area being residential	No
Hydroelectric	High carbon emissions offset Can produce electricity consistently Uses a naturally renewable source	Suitable locations can be difficult to find Restrictions from the Environment Agency and Fisheries can make the scheme unviable to install High installation and maintenance cost	No on site water source	No
Community or District Heating	Allows a mix use of fuel sources to be utilised Reduces space required in individual units for boilers and cylinders	Requires significant space for a local community network Internal heat gains can cause overheating in communal areas District connections require considerable planning to ensure ease of connection	The proposed development is not big enough to justify creating a new network and no existing network is in the local area.	No

Table 2: Low Zero Carbon Feasability Study

Following the results of the study and considering the opportunities on site the proposed energy strategy will include; Air Source Heat pumps and Solar photovoltaics

5.2. Use Less Energy

The client has chosen to specify materials for all thermal elements that exceed the requirement of buildings regulations resulting in the following U-Values;

	New Build Fabric		
	Specified	Part L1 target	Part L2 target
Floors	0.07	0.13	0.18
Walls	0.18	0.18	0.26
Roofs	0.11	0.11	0.18
Windows	0.9	1.2	1.6
Doors	0.9	1.0	1.6
Air Tightness	3	5	5

Table 3: Building Fabric Standards

We have chosen Air Source Heat Pump systems supplying the heating. Low energy lights will be fitted throughout, and the development will use Electrical point of use water supply. Mechanical Ventilation Heat Recovery extract fans.

On this basis the showin table 5 figures were achieved.

	Predicted Energy Use (KWh/Yr)	Energy Savings (%)	Regulated CO ₂ Emissions (Kg/Yr)	CO ₂ Emissions Saving (%)
Baseline: Part L 2021 (TER)	144588.3		24363.59	
Energy Efficiency	86137.28	40.43	10231.7	58
Total Cumulative Savings				

Table 5: Predicted Energy Consumption After Renewable Energy

As you can see from the table above, by assessing the proposed development with air source heat pumps a saving of 86137.28KWh/year was achieved equating to a 40.43% saving on energy consumption and a 58% decrease in CO₂ from the specified building. This proposal meets the minimum 15% reduction from the baseline in carbon emissions and allows for future reduction in carbon emissions.

It is worth noting the above figures have been achieved using SAP 10 Carbon Factors due to the current SAP2012 being outdated.

6. Public Transport

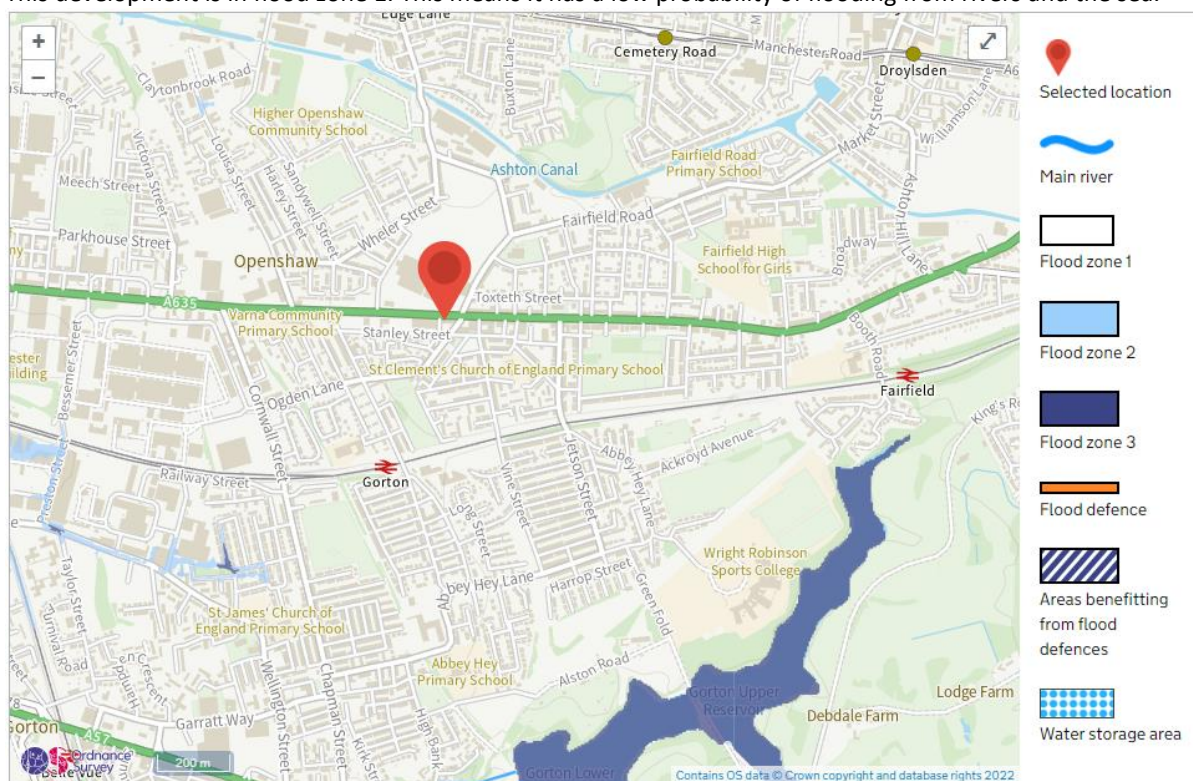
Looking for the nearest stop or station to M11 1jg? Check out this list of stops closest to your destination: Edge Lane (Manchester Metrolink); Fairfield Road (Stop A); Ashton Old Road; Gransmoor Road; Ashton Old Road (Stop D); Lees Street.

There are Bus, Train or Light rail, nearby. These are the lines and routes that have stops nearby Bus: 171, 216, 7, 7A Train: NORTHERN Light rail: BLUE LINE

Part S compliance: to future proof this development we will be including electric vehicle charging points to every associated parking space. 2021 regulations require one per dwelling and 20% of commercial spaces to have electric vehicle charge points, however as we are expecting new part S regulations in 2024, it is appropriate to over specify in this case, as the construction of materials will be the most expensive aspect.

7. Flood risk assessment

This development is in flood zone 1. This means it has a low probability of flooding from rivers and the sea.



This development only needs to have a flood risk assessment if the development has any of the following categories:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

As this development does not fall into any of these categories, this flood map for planning is sufficient.

8. Water efficiency

This site will comply with Approved Document Part G2 regulation 36, set at 110litres per person per day. A full G-calc certificate will be provided for each dwelling in accordance with building regulations requirements.

9. Operational Handover Management

All new tenants will have access to a life time homes evaluation and home user handbook that will outline the energy-efficient features of new residential and commercial structures. How to use the services and equipment, as well as crucial details about the rest of the site and the development. A dedicated person will train the new occupants on how everything works on a yearly basis to included refreshers for a period no shorter than five years. This will be a specialist who understands fully the operational og HVAC systems and energy efficiency.

CIBSE TM54 Operational energy assessments are available upon request as an additional service.

CIBSE TM31 Logbooks are recognised as appropriate to the above and will be commissioned and can be provided by Cook Brown Energy.

10. Household Waste

All dwellings will be provided with external space for household waste, compliant with British Standard BS5906, i.e: 100ltrs volume for a single bedroom dwelling, with a further 70ltrs for each additional bedroom. Additional space for green recycling bins, blue bags, and food waste bins, will also be provided in accordance with the local recycling initiatives.

11. Air Quality

During the construction phase the contractor will be responsible for taking the appropriate steps to minimise the production of dust by following best practice guidance such as the control of emissions hierarchy, Prevention, Suppression, Containment.

12. Pollution

All insulation used in the building fabric and services must have a Global Warming Potential (GWP) of less than five in order to limit the quantity of greenhouse gas emissions linked to the development. The development is assisting in reducing the consequences of climate change in the future by choosing appropriate insulating products. The planned Ideal Logic Code Combi boilers are gas-fired and have a NOx rating of less than 38 mg/kWh.

13. Safety And Security

Nowadays, safety and security are key considerations while building a new home. The development has been planned to ensure that appropriate security measures have been taken into account. This includes security lighting with PIR (Photo Infra Red) sensors, Secure by Design certification on all doors, appropriate locks on all windows, and the bike store is equipped with appropriate security measures. Additionally, all ground-floor windows of apartments must be able to be fully opened while still being secured by window bars or other security measures.

14. Construction Considerations

By registering with thoughtful contractors, this site will gain access to the strictest health and safety laws. The implementation of all precautions will be overseen by a health and safety manager who has earned NEBOSH accreditation. Including minimising noise and dust pollution while work is underway, allotting suitable parking, and managing traffic for the construction crews and all large equipment ensuring that the HSE is followed in the design and coordination of sufficient temporary works.

15. Lighting and Natural Light

All interior and exterior lighting will be provided by energy-efficient fixtures with LED bulbs that have luminous efficiencies of at least 45 lumens per circuit watt and, for non-domestic units, at least 60 lumens per circuit watt.

The homes have been planned to let in as much natural light as possible, which will help them reach the necessary average daylight factors (ADFs) and provide a view of the sky.

16. Materials B.

Every year, 3 billion tonnes of raw materials are used in building and construction operations worldwide, which is almost 50% of total global consumption. The conservation of finite non-renewable resources is promoted by the use of green/sustainable building materials and products. The extraction, transportation, processing, fabrication, installation, reuse, recycling, and disposal of these source materials have an influence on the environment, which can be lessened by using sustainable building materials in construction projects.

Through the specification of sustainable materials and components, the planned development will attempt to minimise its overall environmental impact.

The proposed project will use materials with a low overall environmental impact, aiming for A/A+ ratings from the BRE's "Green Guide to Specification" whenever practical. The Green Guide evaluates.

17.Heat Networks

Any large development ideas should choose energy systems in accordance with the hierarchy below as part of planning: -A site-wide combined heat and power (CHP) network, connections to existing heating and cooling networks, and Heating and conditioning for communal use.

There is no district heating (DH) network in the area, according to the heat map. The heat map also indicates whether any planned or potential DH networks are close by. There is a possible DH network about 3km away. Due to the following factors, neither a new district heating system nor a connection to an existing one will be considered for this development



Manchester Heat Map

18.Conclusion

In conclusion we consider the proposals to meet the requirements of the National Policy guidelines along with meeting the specific requirements of the Manchester Core Strategy. This has been demonstrated by modelling the proposed dwelling in SAP 10 and providing calculated figures for the predicted energy demand, and CO₂ emissions reduction.

