ELEMENT SUSTAINABILITY

CRINGLE ROAD MANCHESTER

ENVIRONMENTAL STANDARDS STATEMENT

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ELEMENT SUSTAINABILITY – ISSUE NOTES

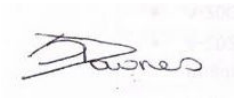
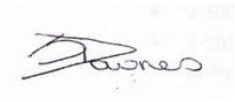
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Author		Stacey Downes Sustainability Consultant	22nd May 2017
Reviewed by		Stacey Downes Sustainability Consultant	22nd May 2017
Approved by		Laurie Wills Director	22nd May 2017

phone: 01829 733 444

email: hello@elementsustainability.co.uk

www: www.elementsustanability.co.uk

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1. INTRODUCTION

Element Sustainability has been commissioned by Towerhouse Systems Limited to prepare an Environmental Standards Statement to support the outline planning application for the new residential development at Cringle Road, Manchester.

The purpose of this Statement is to summarise the relevant policy background and requirements of Manchester City Council and demonstrate the ways in which Towerhouse Systems Limited will address these aims through their outline proposals, ensuring all practicable measures have been taken in order to deliver a sustainable development at this site.

Details of the design attributes, specifications and characteristics of the scheme are appraised in order to demonstrate how the outline proposals contribute to sustainable development in Manchester and seek to mitigate the environmental impacts of the scheme.

2. POLICY REVIEW

This section reviews the planning policy requirements and sustainability targets that are relevant to this scheme.

Local Planning Policy

Manchester Core Strategy -

Manchester's Core Strategy (CS) was adopted on 11th July 2012 and is the key Development Plan Document in the Local Development Framework (LDF).

CS Policy DM 1 - Development Management requires all development to have regard to a number of development principles, including the following which relate to Code for Sustainable Homes and BREEAM ratings:

Subject to scheme viability, developers will be required to demonstrate that new residential development incorporates sustainable construction techniques and will meet Code for Sustainable Homes Level 4[1] from 2013 or where applicable will achieve BREEAM 'Very Good'.

CS Policy EN 4 - Reducing CO_2 Emissions by Enabling Low and Zero Carbon Development requires all development to follow the principle of the Energy Hierarchy, being designed:

1. To reduce the need for energy through design features that provide passive heating, natural lighting and cooling;

2. To reduce the need for energy through energy efficient features such as improved insulation and glazing; and,

3. To meet residual energy requirements through the use of low or zero carbon energy generating technologies.

CS Policy EN 6 - Target Framework for CO_2 Reductions from Low or Zero Carbon Energy Supplies requires applications for residential development of 10 or more units and all other development over 1,000m^2 to meet, as a minimum, the targets shown in the tables below, unless unviable.

[1] On the 25th March 2015 the government issued a Written Ministerial Statement setting out the conclusion of the Housing Standards Review. The statement set out a new policy on the application of technical housing standards that applied immediately to all local planning authorities and qualifying bodies. This had a direct effect on the application of existing Code for Sustainable Homes (Code) policies, and the setting of new Code policies. The Government elected to remove the Code and incorporate new additional optional Building Regulations on water and access, and a new national space standard.

Table 2.1 – Policy EN 6 CO_2 Emissions Reduction Targets; Domestic

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

The proposed scheme is located within a Target 3: Micro Generation Area. The 15% emission reductions targeted within Policy EN 6 relate to Building Regulation Part L 2010. As a consequence of the reduction in dwelling emission rates sought by current building regulations (Part L 2013), the revised Policy EN 6 target CO_2 emission reductions are deemed by Manchester City Council to be a 9% improvement over the current Building Regulation Part L1A (2013) compliance standard. Further details of the building regulation requirements are provided in the section below.

Guide to Development in Manchester, Supplementary Planning Document -

The Core Strategy requires that all new residential developments should accord with the design guidance set out in the Supplementary Planning Documents (SPD). The Guide to Development in Manchester SPD was adopted on 11th April 2007 and supports and enhances the ongoing shaping of the City by providing a set of reasoned principles which will guide developers, designers and residents. These principles include a number of environmental standards, including:

- High standards of energy efficiency and renewable energy provision;
- Domestic developments should achieve a Code for Sustainable Homes rating of at least level 3;
- Water management and weather resilience;
- Waste management;
- Construction management; and,
- Biodiversity.

The Guide requires developers to submit a statement on how their proposal will achieve these environmental standards.

National Planning Policy

In addition to the local planning policies, the National Planning Policy Framework (NPPF) 2012 is a material consideration. Published on 27th March 2012, it replaces all previous PPSs and PPGs.

The NPPF states that the planning system should play an active role in guiding development to sustainable solutions. There are three dimensions to sustainable development, as stated within the NPPF: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

- An economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;

- A social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

- An environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These roles should not be undertaken in isolation, because they are mutually dependent. Economic growth can secure higher social and environmental standards, and well-designed buildings and places can improve the lives of people and communities. Therefore, to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system.

Pursuing sustainable development requires careful attention to viability and costs in plan-making and decision-taking. To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, enable the development to be deliverable.

At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development - for decision-taking this means approving development proposals that accord with the development plan without delay.

Regulatory Framework

Building Regulations, Part L - Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings. Guidance on how to meet the requirements of this regulation is provided within a number of approved documents that relate to new build dwellings, as follows:

Approved Document L1A addresses the conservation of fuel and power in new dwellings. The proposed development is to be registered against Building Regulations, Part L (2013) which requires all newly constructed dwellings need to comply with 5 criteria set out in Approved Document L1A unless exempted through the transitional provisions:

I. The predicted rate of carbon dioxide emissions from the dwelling (the Dwellings Emission Rate DER) is not greater than the Target Emissions Rate (TER). Additionally, the Dwelling Fabric Energy Efficiency (DFEE) is not greater than the Target Fabric Energy Efficiency (TFEE);

II. The performance of the building fabric and fixed building services should be no worse than the design limits set out in Table 2 of the Approved Document;

III. The dwelling has appropriate passive control measures to limit the effect of solar gains on indoor temperatures in summer;

IV. The performance of the dwelling as built, is consistent with the DER, including site checking that the air permeability is within reasonable limits; and

V. The necessary provisions for energy efficient operation of the dwelling are put in place including operating and maintenance instructions aimed at achieving economy in the use of fuel and power in a way that householders can understand.

The 2013 revision to Part L of the Building Regulations was a key milestone towards the government's (now delayed) target for zero-carbon buildings. Following a long consultation period, new (carbon dioxide) emission rate targets were published in November 2013. A 6% improvement on the 2010 Part L targets for housing *on aggregate* which means there is flexibility across different types of homes. Domestic buildings are therefore achieving a 6% emission reduction over Part L 2010 emission rate criteria by virtue of simply complying with the current regulatory standards.

This regulatory compliance standard relates to all dwellings proposed for the development at this site.

3. DEVELOPMENT PROPOSALS

The proposed development plot is currently occupied by agricultural fields and farm buildings at Shores Fold Farm (see Figure 3.1), situated within a predominately residential area of Manchester. The site is bound by Cringle Road to the south, North Highfield Park to the north, Nelstrop Road North to the east and fields to the west of the site.

Figure 3.1 – Pre-Development Site



The outline development proposals for this site will comprise the construction of fifty seven units including three and four bedroom dwellings. The proposed site layout is presented in Figure 3.2.

Figure 3.2 – Proposed Site Layout



4. SUSTAINABILITY PERFORMANCE

This section provides an appraisal of the development outline proposals and details a potential approach, along with design features and specifications which may contribute to reducing the environmental impact of this scheme. The format responds directly to that of the Council's current policies and examines the following performance categories:

- Energy efficiency;
- Renewable energy;
- Environmental design;
- Water management and weather resilience;
- Waste management;
- Construction management;
- Biodiversity; and,
- Waterways.

At this early stage in the development cycle full details of the design are still to be confirmed. This appraisal serves to demonstrate the developer's commitment to delivering a scheme which accords with Manchester City Council's development criteria and providing a sustainable development.

Energy Demand and Carbon Dioxide Emission Reductions

Energy Strategy General Principles -

- The new build dwellings will improve upon the prevailing (stringent) building regulations criteria in terms of Dwelling Emission Rate and Fabric Energy Efficiency;
- The energy efficiency of the new build dwellings will target an 9% carbon dioxide emissions reduction through the application of an enhanced material specification, exceeding the Approved Document ADL1A criteria. This is aligned with the Target 3 Policy EN 6 emissions criteria.
- The proposed approach to emissions reduction for the new build dwellings will target a fabric led energy strategy, in accordance with the principles of the energy hierarchy;
- The heating system at this stage is assumed to be gas fired. The heating strategy for the new build dwellings may be provided by high efficiency condensing gas fired combination boilers; and,
- The new build dwellings could be specified with very good levels of fabric energy efficiency.

Energy Demand and Carbon Dioxide Emission Reduction –

- This scheme will target a 9% improvement beyond the prevailing building regulations, Building Regulation Part L (2013) in accordance with Manchester City Council's revised Policy EN 6 target CO_2 emission reductions;
- The scheme should include minimum fabric energy efficiency standards, thus ensuring that the proposed dwellings will have energy efficiency 'built in';

- These factors combine to enhance the energy efficiency of the dwellings and guarantee low energy demand throughout their occupation;

Energy Efficient Material Specification –

- The material specification and build methods which may be incorporated within this development provide the following benefits:
    - Good levels of thermal insulation to reduce heat loss though external build elements;
    - Efficient double glazing units and external doors;
    - Detailing to limit heat losses through thermal bridging; and
    - Detailing to limit heat losses through air permeability.

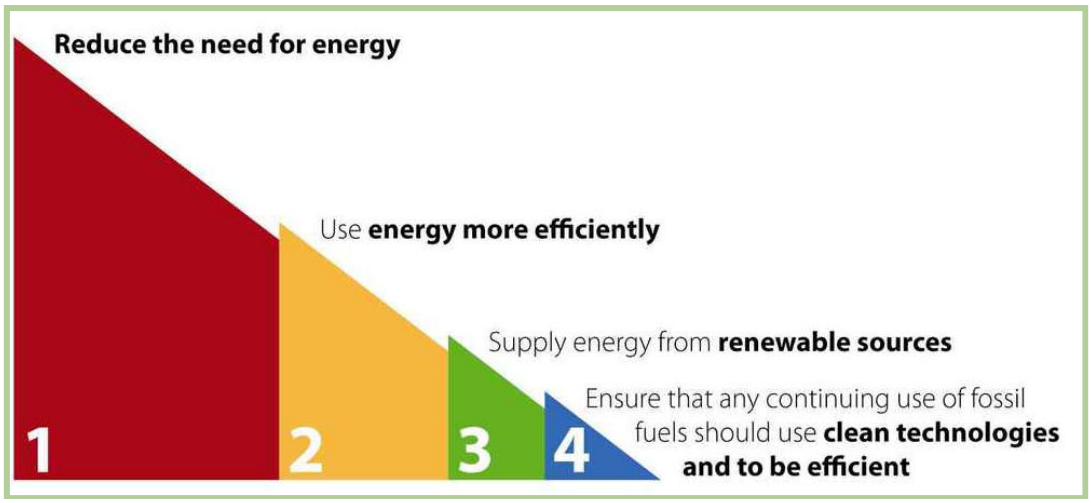
Efficient Servicing –

- High efficiency, low NOx emission, condensing gas fired boilers may be installed within the dwellings;
- Highly efficient control systems;
- Sophisticated controls would improve the efficiency of operation and optimise the occupants' comfort;
- Low energy lighting may be installed throughout the scheme;
- Good levels of fabric energy efficiency through an enhanced 'fabric led' material specification (to exceed the regulatory compliance standard); and,
- Provision of A and A+ rated white goods (where provided) and utilise the European Union (EU) energy efficiency labelling scheme details to assist in purchasing of energy efficient white goods;

Energy Hierarchy –

- The Energy Hierarchy provides a framework to guide energy policy and decision making to achieve practical and cost effective carbon emission reductions;
- The approach to energy demand reduction and limiting carbon dioxide emission from this site should be aligned with the hierarchy which prioritises demand-side activities to reduce wastage and improve efficiency (see Figure 4.2).

Figure 4.2 – Energy Hierarchy



In order to limit energy demand and carbon dioxide (CO_2) emissions from the operation of the dwelling, the following design features may be integrated within the scheme. These should enable the occupants to lead a low-impact lifestyle:

- Provision of A and A+ rated white goods (where provided) and utilise the European Union (EU) energy efficiency labelling scheme details to assist in purchasing of energy efficient white goods;
- 100% low energy and/or LED internal lighting;
- All external space lighting to be provided by dedicated energy efficient fittings and controls; and,
- The outline proposals may include a cycle storage provision to encourage sustainable modes of transport.

Resource Management and Pollution

Environmental Impact of Materials -

This development should contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This may be demonstrated by the selection of:

- Materials with a low environmental impact throughout their life cycle should be selected;
- Suppliers and manufacturers who operate Environmental Management Systems will be prioritised;
- Responsible sourcing of materials should be managed by the contractor. All timber used within the development should be responsibly sourced, verified by the FSC or PEFC standard; and,
- Consideration should be given to local sourcing of construction materials where feasible.

Pollution Control -

- Pollution Prevention Guidance should be adhered to in respects of air (dust) and water (ground and surface) pollution during the demolition and construction phase;

- The heating system at this stage is assumed to be gas fired. The heating and hot water may therefore have, under normal operating conditions, low dry Nitrogen Oxide (NOx) levels. The proposed system should target a maximum of 40mg/kWh; and,

- Sound Insulation should be specified in accordance with Building Regulations Part E to limit the internal noise pollution of the development; and,

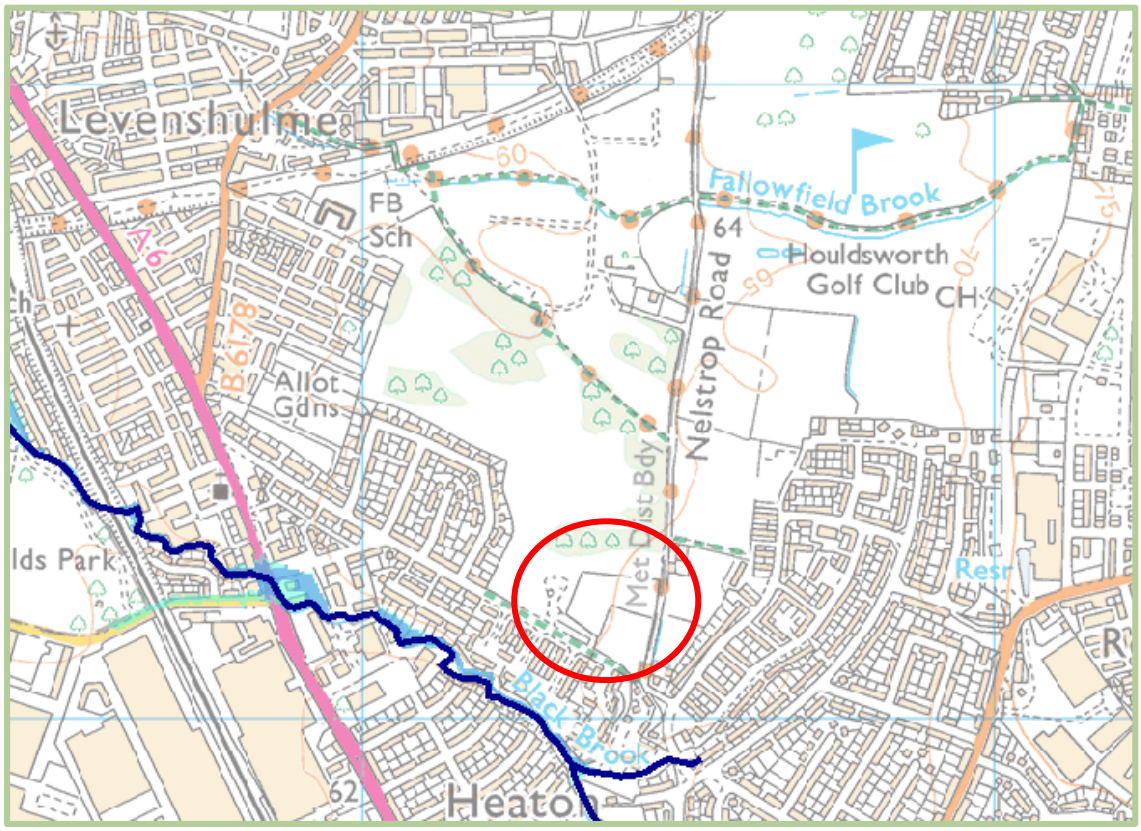
- Insulating materials that have a global warming potential of less than 5 may be specified throughout the development to reduce the construction phase impact of this scheme upon climate change.

Surface Water Management

Flood Risk -

- The development site is located within Flood Zone 1 and therefore has a low probability of flooding (1 in 1,000 annual probability of flooding) this is based upon current Environment Agency flood maps, as shown in Figure 4.1.

Figure 4.1 – Flood Risk Map, Cringle Road, Manchester Development Site Location



Site Surface Water Management -

- The volume of surface water run-off will be limited such that the development will not result in an increased discharge from the site. The development will be designed to ensure that run off from a 1 in 100 year flood event level (plus an allowance for climate change) is managed so as to not damage property;

- As a result of the outline proposals there will be an increase of the impermeable surfacing. The increase would require the surface water runoff to be managed, by a sustainable urban drainage (SuDs) and/or on site attenuation, either solution ensuring the peak rate and volume of surface water run-off will be no greater post development than the pre-development; and,

- The introduction of landscaped areas and newly planted trees may serve to increase the short term water storage within the site itself and attenuate the rate and volume of surface water movements off site, thereby relieving potential for flash flood risk and pollution within the water catchment.

Site Ecology

The pre-developed site comprises of open fields and farm buildings. The proposals include for the introduction of landscaped areas and the following measures will seek to enhance the appearance and crucially the ecological value of the site:

- An ecologist has been appointed to carry out an ecological survey and provide site specific recommendations for ecological enhancement;

- The post development landscape planting should be specified in order to maximise the site's potential biodiversity. All planting should be selected to improve and strengthen the ecological value of the site, such as native species; and,

- Native planting including trees and shrubs of local progeny that support blossoms and fruit to support invertebrates could be selected. This will also encourage foraging birds and bats.

Construction Management

In order to minimise the impact of the development during construction and operation whilst providing a safe place to live, the outline proposals should include for the following provision:

- Construction site impacts may be minimised and best practice policies adopted in respect of air and water pollution.

    - Monitor, report & set targets for CO_2 or energy arising from site activities;

    - Monitor, report & set targets for water consumption arising from site activities; and,

    - Adopt best practice policies in respect of air and water pollution.

Waste Management

Construction Waste -

Best practice techniques to prevent and minimise waste arising during the design and construction phases of the development may be adopted, as follows:

- A target of 90% of waste to be diverted away from landfill may be established for the construction phase of the development; and,
- This scheme may promote the minimisation of waste in site development and seek to maximise the use of recycled materials in construction.

Domestic Waste -

The dwellings would provide infrastructure and facilities that meet the need of the residents for segregated waste storage, thereby optimising the ability to recycle waste:

- External bin storage provision would enable residents to make full use of Local Authority recycling services; and,
- A waste management strategy should be developed, ensuring that adequate sized bin storage areas for each residential dwelling, access for collection personnel and vehicles will be established and other aspects of waste management should be designed into the development at an early stage of the design. The strategy may allow for storage of general waste, recyclable materials and food waste in order to optimise the recycling rates achieved by Manchester City Council.

Water Demand Management

A water efficiency strategy to reduce the potable water demand through the provision of efficient sanitary fittings would be necessary to reduce mains/potable water consumption. The following design features should be integrated within the scheme:

- 'A' rated appliances (where provided);
- The specification of efficient water fixtures throughout the scheme (low flow taps and showers, dual flush WCs and low volume baths) would ensure that a calculated daily consumption of <125litres/person/day in line with the regulatory standard could be achieved;
- The landscaped areas of the development irrigated solely by precipitation; and,
- Water meter(s) on the main water supply would encourage water consumption management and monitoring to reduce the impacts of inefficiencies and leakage.
- The landscaped areas of the development will be irrigated solely by precipitation.

Health and Wellbeing

To enable the future occupants of this development to lead lower impact lifestyles and enhance their quality of life, the following measures could be delivered at the proposed development:

- This scheme may incorporate the recommendations provided by the Architectural Liaison Officer and the scheme will comply with Secure by Design criteria;

- Good levels of natural day lighting will be targeted. Good daylighting levels provide a good quality of life for the occupants and reduce the need for energy to light the dwellings; and,

- The National Space Standards will be targeted, to ensure that all dwellings are of a sufficient size and provide more flexibility and comfort for the future occupants; and,

- The outline proposals include the provision of outdoor space the form of private gardens.

Transport and Access

General Site Information -

- The proposed development is located approximately four miles south-east of Manchester city centre, which is one of the most sustainable locations in the north west, particularly in relation to key pedestrian, rail and bus transport routes.

- The proposed layout and proposed parking space provision should acknowledge the sustainable location of the site and also current car ownership levels of residents in the Manchester area; and,

Pedestrians -

- The proposed development site is in a well-connected location with basic facilities all within easy walking distance of the site; and,

- The site is well located in relation to Levenshulme and Gorton district/town centres with leisure, retail and employment facilities falling within easy walking distance. Therefore, enabling future residents to access many local destinations on foot.

Cyclists -

- The surrounding streets are suitable for cycle use;

- An appropriate level of cycle parking is proposed. Secure cycles storage provision for residents may be provided; and,

- The area accessible by bike is extensive and offers a wide range of facilities with particularly strong links to employment opportunities, as well as access to the Salford and Manchester city centres.

Public Transport Access -

- This site location benefits from excellent proximity to bus and tram nodes.

    - Bus -The nearest bus stops to the site are less than 550m from the site on Cringle Road. These stops are served by frequent services during the core daytime period, providing access to key local destinations to the Greater Manchester area. Stockport Road (A6) is located to the west of the site Stockport Road in to Manchester City Centre and accommodates a high frequency of bus services throughout the day and night.

- Rail - The nearest railway station, Reddish South is approximately 1.8km from the site and Levenshulme railway station is approximately 2.9km from the site, providing services to regional locations and destination within the north and west.

Local Amenity Access -

- Residents would be able to walk to local amenities and shops; and,

- The site benefits from very good links to local amenity space and recreational facilities such as Cringle Park, Highfield Country Park and other recreational outdoor spaces surrounding the development site.

Disability Access -

- Disabled access provision within the scheme itself will be in accordance with Building Regulation, Part M criteria as far as possible.

5. CONCLUSION

This Statement has reviewed the environmental performance of the proposed development at Cringle Road, Manchester against national and local policies. The potential material specification and servicing strategy for the scheme has also been reviewed and a solution has been provided which accords with Manchester City Council's (MCC's) Planning Policy requirements.

At this early stage in the development cycle full details of the design are still to be confirmed. This appraisal serves to demonstrate the developer's commitment to delivering a scheme which accords with MCC'S development criteria and providing a sustainable development.

- The proposed energy strategy would incorporate an enhanced 'fabric led' material specification, along with high quality design and construction standards to improve the energy efficiency of the buildings and comply with regulatory standards.

- These proposals would deliver a scheme that is inherently efficient and cost effective during occupation. The dwellings will exceed Building Regulation Part L (2013). In accordance with Policy EN 6.

- The development would be designed and specified in accordance with the principles of the Energy Hierarchy as required by adopted Core Strategy Policy EN 4.

- The key issues of Manchester City Council's Supplementary Planning Document (Environmental Standards) in accordance with the Core Strategy Policy DM 1 would be addressed by the proposals. These are as follows:

    - Water management for the development will align with the regulatory standard specified to achieve a calculated daily consumption of <125litres/person/day through the specification of efficient water fixtures.

    - The development site is within Flood Zone 1 (low probability of flooding). The site drainage strategy will be designed to manage the surface water runoff to ensure that the peak rate and volume of surface water run-off will be no greater post-development than pre-development.

    - Waste arising during construction and occupation/operation will be minimised. A site waste management plan will be adopted during construction. The dwellings will be provided with waste facilities and a comprehensive waste management plan for the site will accord with the local authority recycling scheme.

    - Construction site management procedures will minimise adverse impacts on the environment and control pollution generated during the construction phase. These include a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling of materials. A commitment will be made to minimise waste and pollution.

    - The planting provision will be designed to provide an enhancement to the aesthetic value of the site and also strengthen the ecological value of the site.

    - Materials are proposed to be responsibly sourced, and these materials with low environmental impact will be selected and local suppliers prioritised. This procurement strategy will minimise

and conserve energy associated with transportation and waste generation. Where required, responsibly sourced new materials will be specified.

Furthermore, the proposals accord with the aims of the National Planning Policy Framework, as follows:

- The proposals include the redevelopment of a previously developed site and represents an efficient use of land and resources;

- Construction practices that minimise adverse impacts on the environment will be adhered to including a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling, a commitment will be made to minimise waste and pollution; and

- Aligning with the regulatory compliance criteria the residential scheme will assist in mitigating the impact of climate change.

In conclusion, the outline proposals reviewed within this statement for the residential scheme at Cringle Road, Manchester would provide a quality development that responds positively to the guidance provided within the Manchester City Councils adopted policies.