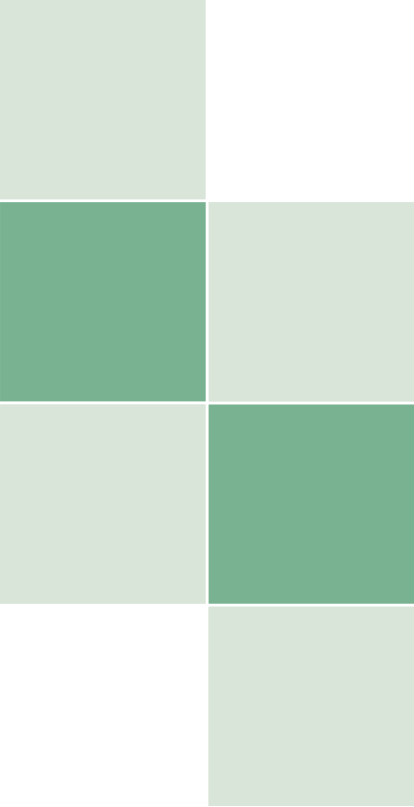


A decorative graphic on the left side of the page, consisting of a grid of squares. The grid is 3 squares wide and 4 squares high. The squares are colored in two shades of green: a medium green and a light green. The colors are arranged in a pattern: the top row has one medium green square; the second row has two medium green squares; the third row has one medium green square; and the fourth row has one light green square.

**Heyrod Street, Manchester**

**Planning Report**

**Energy & Environmental Standards  
Statement**



## Revision Record

| Date      | Reference | Revision | Prepared By | Checked By |
|-----------|-----------|----------|-------------|------------|
| 25/6/2020 | PRR 001   | P1       | CW          | DW         |
|           |           |          |             |            |
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## **1.0 Introduction**

The following statement outlines the energy and climate change strategy for the proposed development on Heyrod St, Manchester City Centre.

The development is a BTR scheme with circa. 352 dwellings with amenity and retail accommodation.

The purpose of this Statement is to summarise the relevant policy, requirements of Manchester City Council (hereafter referred to as the council) and the National Planning Policy Framework in order to demonstrate the ways in which Packaged Living Ltd have addressed these aims through their proposals, ensuring all practicable measures have been taken in order to deliver a sustainable development at this site.

This Statement reviews the sustainable design features and appraises the energy strategy of the Proposed Development.

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

## 2.0 Development Proposals

Positioned at the eastern edge of the city centre district and within the inner ring road, the site is positioned in a strategically beneficial location.

It sits on the cusp of emerging districts including New Islington, Holt Town to the North East of Piccadilly train station.

The proposed development site is currently occupied by an existing industrial unit which will be demolished as part of the proposed scheme. The site boundaries are formed by Longacre Street, to the north west, Longacre Street to the North West and Heyrod Street to the South East.



*Site Location: Aerial View from the south*

### Development Proposals

The scheme will deliver 352 units consisting of a mix of:

| Number            | Apartment Type   | Percentage of total |
|-------------------|------------------|---------------------|
| 39                | Studio units     | 11 %                |
| 77                | 1 bedroom units  | 22 %                |
| 227               | 2 bedroom units  | 64.5 %              |
| 9                 | 3 bedroom units  | 2.5 %               |
| 495m <sup>2</sup> | Commercial space |                     |

All the residential units will be private sector rented and accessed from a central circulation. Entrances from both Heyrod Street and Longacre Street sit either side of the central concierge point. Tenant management and support facilities. These facilities are located on the ground floor and act as the heart and hub of the development. Three further internal and external shared amenity spaces at 1st and 21st floors will help create a community for residents.

In addition, the scheme will deliver:

- A new public square

- Landscaping to Heyrod Street and Longacre Street

- 20 car parking spaces including 3 accessible spaces

- 352 cycle spaces

The proposal is between 7 and 25 storeys

Further details of the architectural plans, elevations and landscape proposals are set out in Callison RTKL (Architecture) and Reform's (Landscape Architecture) documentation.

### 3.0 Legislative Policy and Good Practice

The current legislative framework sets out the requirement to comply with Part L1A of the English Building Regulations 2013 and the Manchester City Council Climate Change Action Plan, which sets a commitment to reduce CO<sub>2</sub> emissions by at least 50% by 2025, via a 13% year on year reduction from buildings.

#### **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. Subject to scheme viability, developers will be required to demonstrate that new non-domestic development achieve a BREEAM Rating of 'Very Good' or for domestic development to achieve the Code for Sustainable Homes (CfSH) standard. It should be noted that the CfSH is no longer accepted as an assessment methodology for domestic properties and has been withdrawn.

#### **CS Policy EN 4**

Reducing CO<sub>2</sub> Emissions by Enabling Low and Zero Carbon Development requires all development to follow the principle of the Energy Hierarchy, being designed:

- To reduce the need for energy through design features that provide passive heating, natural lighting and cooling;
- To reduce the need for energy through energy efficient features such as improved insulation and glazing; and,
- To meet residual energy requirements through the use of low or zero carbon energy generating technologies.

#### **CS Policy EN 6**

Target Framework for CO<sub>2</sub> 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<sup>2</sup> to meet, as a minimum, the targets shown in the tables below, unless unviable.

| Target                                    | % Minimum Requirements                                                                        |
|-------------------------------------------|-----------------------------------------------------------------------------------------------|
| Target One: Network development area      | CHP/District heating anchor or connection or where not feasible a 15% increase on Part L 2010 |
| Target Two: Electricity intense buildings | +15% increase on Part L 2010                                                                  |
| Target Three: Micro generation area       | +15% increase on Part L 2010                                                                  |

The emission reductions targeted within policy EN6 relate to Building Regulation Part L 2010. As a consequence of the reduction in emission rates required by current building regulations (Part L 2013) relative to Part L 2010, the revised equivalent target CO<sub>2</sub>

emission reductions for the residential and non-domestic elements of this scheme are presented below:

- Residential - 9% dwelling emission rate reduction over Part L 2013; and,
- Non-domestic - 6% dwelling emission rate reduction over Part L 2013.

### ***Climate Emergency***

A Climate Emergency was declared by Manchester City Council on the 10th July 2019 in response to the findings of the Intergovernmental Panel on Climate Change (IPCC) report. The City Council believe that there is serious risk to Manchester's people of climate change affecting economic, social and environmental well-being, supply chains – including food security, financial systems and local weather, among many others. Therefore, the target for becoming a zero-carbon city has been accelerated by 12 years, setting 2038 as the new target for the city. The council has agreed the following:

- To deliver the 2038 target and determine if an earlier target can be possible.
- Encourage involvement in all wards by April 2020 through meetings as part of the Our Manchester strategy.
- Review all policies, processes and procedures to ensure the council can become carbon neutral. Present an action plan by March 2020 detailing how the city can stay within its carbon budget.
- Make climate breakdown and the environment, an integral part of activity throughout the council, including all decision making, ensuring key decisions take into account the impact on achieving the zero-carbon target.
- Investigate measures to ensure future procurement is carbon neutral. Increase the percentage of social value with an additional environmental element.
- Work with suppliers to green their supply chains and support local production.
- Investigate and introduce measures to help reach domestic zero carbon levels including addressing fuel poverty and retrofitting existing homes.
- Investigate ways to ensure that future local plans place a mandatory requirement for all new development to be net zero carbon by the earliest possible date.

### **Manchester Climate change Framework 2020 – 25**

This document is Manchester's high-level strategy for meeting their commitment on climate change that builds on the Draft Manchester Zero Carbon Framework 2020-38, which was published in February 2019 and Manchester City Council's (MCC) declaration of a climate emergency in July 2019.

This was endorsed by MCC at the Executive meeting in March 2020 and will develop over the next five years, in line with changes in policy, climate science, rate of progress and other factors. The framework has set out four objectives to facilitate this:

**Objective 1 – Staying within our carbon budgets :** This requires taking action in the following relevant areas:

- Direct CO<sub>2</sub> emissions: staying within our 15 million tonne carbon budget for 2018-2100, including reducing the CO<sub>2</sub> emitted from our homes, workplaces and ground transport by at least 50% during 2020-25.
- Indirect CO<sub>2</sub> emissions: understanding and taking action on the things that we consume and which generate greenhouse gases through their production, transportation and disposal.

**Objective 2 – Climate adaptation and resilience :** will require the adaption of the city's buildings, infrastructure and natural environment to the changing climate and increasing the climate resilience of our residents and organisations. This includes:

- Increase the amount of urban green infrastructure cover, aiming for a 10% increase by 2038 from 2018 levels, in line with the Greater Manchester aim.
- Respond to these risks by incorporating adaptation and resilience within our plans and strategies, and acting to make necessary changes to our buildings, infrastructure and our natural environment.

**Objective 3 – Health and wellbeing :** aims to improve the health and wellbeing of everyone in Manchester through actions that also contribute to our objectives for CO<sub>2</sub> reduction and adaption and resilience:

- Adapt the city's built and natural environment and prepare our residents to become more resilient to these changes. Increasing the amount and quality of green space to enable residents to benefit from the improved physical and mental health that will come as a result.
- Improving the energy efficiency of the city's homes and providing access to affordable, secure supplies of renewable energy are essential help get 38,000 Manchester households out of fuel poverty.

**Objective 4 – Inclusive, zero carbon and climate resilient :** economy looks to ensure that Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit from playing an active role in decarbonising and adapting the city to the changing climate.

### **Priority Areas**

Six priority areas have been established in order to help meet the above objectives and include:

1. Buildings (existing and new)
2. Renewable energy
3. Transport and flying
4. Food
5. The things we buy and throw away
6. Green infrastructure and nature-based solutions

**Urgent Actions Identified to Help Meet the Commitments:**

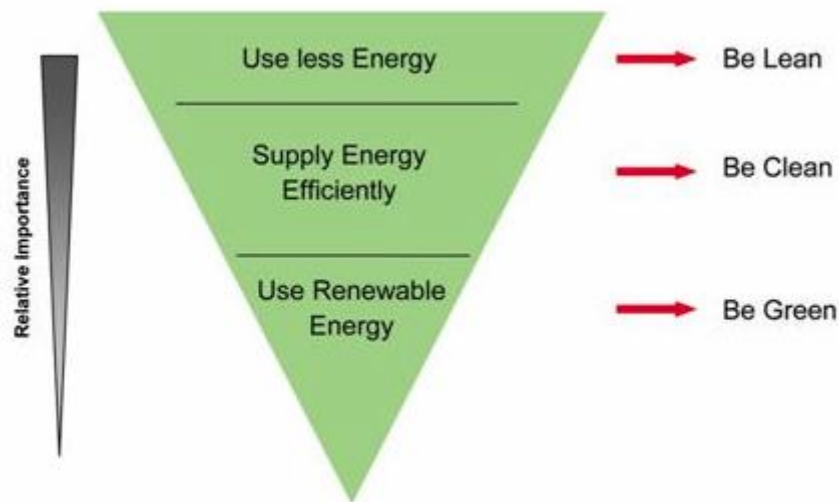
- New Buildings – To ensure that new developments in the city do not eat into the limited carbon budgets and add to the already significant retrofit challenge. Developments need to be built and operated to zero carbon standards as soon as possible.
  - The ideal way to do this is through UK Government establishing a national zero carbon definition and methodology for its implementation, and for Manchester City Council to implement this standard as quickly as possible through the local planning system.
  - This should include applying zero carbon standards to all developments where the Council has additional influence, with a view to all new development needing to be zero carbon from 2023 at the latest.
- Renewable Energy – The National Grid has been decarbonising in recent years; we need this to continue but at an accelerated rate, with a view to being fully decarbonised as soon as possible.
  - At least 50% of all homes should have the equivalent of 16m<sup>2</sup> of solar PV panels by 2024.
- Gas – The following actions are needed to help reduce the reliance on natural gas:
  - Improve the energy efficiency of our buildings as far as possible to reduce our demand for gas.
  - Replace our natural gas-based heating systems with renewable energy-based heating technologies as soon as possible
  - Work with Government to ensure that moving to electricity-based heating systems is affordable and does not push even more people into fuel poverty

## 4.0 Energy Hierarchy

The development of the design will adopt a hierarchy approach to the design by looking at passive design methods to reduce energy and provide a high level of energy efficiency.

The Energy Hierarchy states that, in order to design an energy efficient development, the development must first be designed to use less energy through passive measures, such as improved fabric and glazing, low energy lighting and being more air tight. The second stage is to use 'Clean' energy, such as a CHP, Air Source Heat Pumps etc... The third and final stage is to assess whether other Low and Zero Carbon (LZC) technologies can be incorporated, such as Photovoltaic panels, solar thermal heating or wind turbines.

This design process will be followed throughout the design development.



### 4.1 Passive Design - Thermal Elements

To facilitate the development, the following elements have been considered through the design process from both an energy efficiency and thermal comfort perspective:

- Fabric insulation levels – balancing thermal performance and internal temperatures
- Building air permeability – this is a constraint due to the nature of the building
- Thermal mass – exploiting the properties of the constructions to benefit the internal environment
- Glazing strategy – optimising the use of the sun as a natural resource
- Ventilation strategy – optimising the use of heat recovery ventilation systems

## **4.2 Passive Design- Glazing, Daylighting and Solar Gain**

There are three key criteria when considering the glazing strategy for the development. These are energy efficiency, natural daylighting factors and summertime internal temperatures. They are intrinsically linked and should be considered holistically to determine the optimum strategy to achieve a comfortable, productive and healthy environment in all weather conditions, whilst making best use of the sun as a natural heating source.

The main factors in optimising the above are the size, orientation and specification of the glazing in relation to the occupancy and usage patterns of the buildings.

Through the modelling exercise the effect of high external temperatures will be assessed and measures taken to minimise the heat gain and temperature rise within the building. Solar control finish applied to the glazing, secondary glazing, ventilation and free cooling, thermal massing strategies (e.g. leaving existing thermal mass exposed to exploit its properties) shall be considered to minimise the need for cooling, particularly within the Student Residential studios.

This strategy also has the benefit that the insulation will keep vital heat in during the colder winter months which will minimise the heat input required.

## Baseline (Iteration 1)

Below is the summary of the parameters which were inputted during the initial baseline energy assessments.

This baseline design serves to show how an 'average' construction would not be feasible within this development.

The following iterations work upon this baseline, using the 'Be Lean, Be Clean, Be Green' methodology until compliance with both the Building Regulations and Manchester Core Strategy has been achieved.

The baseline study considered the impact on the proposed development of utilising the electric space and hot water heating, with the initial emphasis on the building fabric performance to reduce energy usage to work through a baseline energy consumption

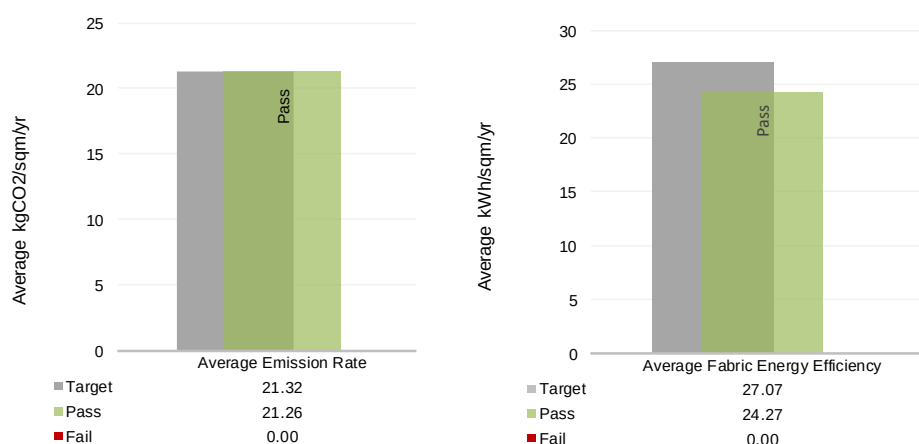
### Fabric Parameters

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| <i>Thermal mass parameter</i> | 'Low' 250 kJ/m <sup>2</sup> K                       |
| <i>Terrain</i>                | Dense urban                                         |
| <i>Floors</i>                 | 0.14 W/m <sup>2</sup> K                             |
| <i>Walls</i>                  | 0.16 W/m <sup>2</sup> K (including spandrel panels) |
| <i>Roofs</i>                  | 0.14 W/m <sup>2</sup> K                             |
| <i>Windows</i>                | 1.40 W/m <sup>2</sup> K (frame included)            |
|                               | 0.40 g value                                        |
|                               | Double glazed with hard low-E coating               |
|                               | Argon filled 16mm+ gap                              |
| <i>Doors</i>                  | Metal frame, draught proofing, non-perforated base  |
|                               | 1.8 W/m <sup>2</sup> K                              |
|                               | Solid wooden door                                   |
| <i>Thermal bridging</i>       | Calculated (Accredited Construction Details)        |
| <i>Air permeability</i>       | 3 m <sup>3</sup> /h.m <sup>2</sup> @50Pa            |

### System Parameters

|                                  |                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------|
| <i>Mechanical ventilation</i>    | Mechanical Extract Ventilation                                                          |
| <i>SFP</i>                       | 0.6 W/l/s                                                                               |
| <i>Heat exchanger efficiency</i> | N/A                                                                                     |
| <i>Ductwork</i>                  | Insulated                                                                               |
| <i>Space heating</i>             | Electric Panel Heaters                                                                  |
| <i>Heat distribution system</i>  | Pre-insulated low temp variable flow (post 1991)                                        |
| <i>Controls</i>                  | Integrated Programmer and thermostat                                                    |
| <i>Emitter</i>                   | Electric Panel Heaters                                                                  |
| <i>Water heating</i>             | Air Source Heat Pump (ASHP) upto level 9<br>Direct Electric Water Heaters above level 9 |
| <i>Plate heat exchanger</i>      | No                                                                                      |
| <i>WWHRS</i>                     | No                                                                                      |

|            |                         |
|------------|-------------------------|
| Water use  | < 125 litres/person/day |
| Renewables | None                    |
| Lighting   | Low energy throughout   |



| Average Emission Rate  |                      |              |            | Average Fabric Energy Efficiency  |                                 |              |            |
|------------------------|----------------------|--------------|------------|-----------------------------------|---------------------------------|--------------|------------|
| Area Weighted Averages |                      |              |            | Area Weighted Averages            |                                 |              |            |
| Dwelling Energy Rating | Target Energy Rating | % Difference | Pass/ Fail | Dwelling Fabric Energy Efficiency | Target Fabric Energy Efficiency | % Difference | Pass/ Fail |
| 21.26                  | 21.32                | 0.3%         | Pass       | 24.27                             | 27.07                           | 10.3%        | Pass       |

This solution gives a total dwelling electrical energy consumption of approx. 918,133 kWh/yr, which equates to an average energy consumption of 45.9 kWh/annum/apartment of electrical energy.

There is no gas proposed in this solution to the apartments.

## Iteration 2

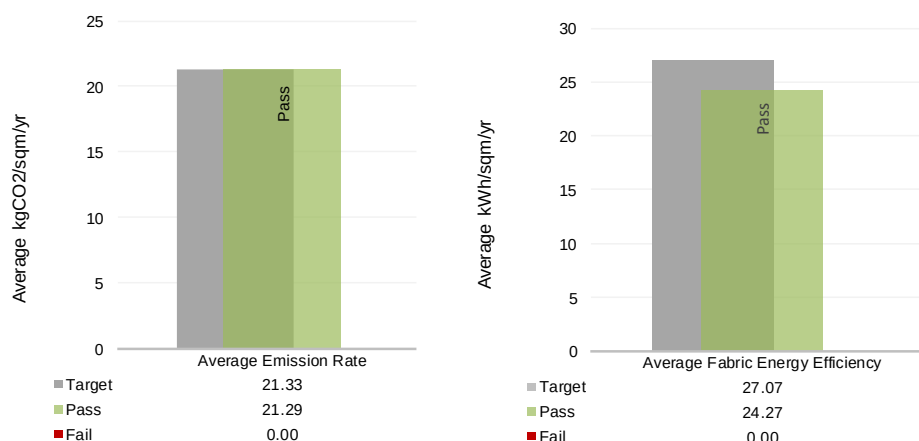
This iteration of the energy assessment keeps with the 'fabric first' approach and considers the impact of the introduction of renewable technologies such as Photovoltaic (PV) panels to the available and suitable roof areas.

### Fabric Parameters

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| <i>Thermal mass parameter</i> | 'Low' 250 kJ/m <sup>2</sup> K                       |
| <i>Terrain</i>                | Dense urban                                         |
| <i>Floors</i>                 | 0.14 W/m <sup>2</sup> K                             |
| <i>Walls</i>                  | 0.16 W/m <sup>2</sup> K (including spandrel panels) |
| <i>Roofs</i>                  | 0.14 W/m <sup>2</sup> K                             |
| <i>Windows</i>                | 1.40 W/m <sup>2</sup> K (frame included)            |
|                               | 0.40 g value                                        |
|                               | Double glazed with hard low-E coating               |
|                               | Argon filled 16mm+ gap                              |
| <i>Doors</i>                  | Metal frame, draught proofing, non-perforated base  |
|                               | 1.8 W/m <sup>2</sup> K                              |
|                               | Solid wooden door                                   |
| <i>Thermal bridging</i>       | Calculated (Accredited Construction Details)        |
| <i>Air permeability</i>       | 3 m <sup>3</sup> /h.m <sup>2</sup> @50Pa            |

### System Parameters

|                                  |                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------|
| <i>Mechanical ventilation</i>    | Mechanical Extract Ventilation                                                          |
| <i>SFP</i>                       | 0.6 W/l/s                                                                               |
| <i>Heat exchanger efficiency</i> | N/A                                                                                     |
| <i>Ductwork</i>                  | Insulated                                                                               |
| <i>Space heating</i>             | Electric Panel Heaters                                                                  |
| <i>Heat distribution system</i>  | Pre-insulated low temp variable flow (post 1991)                                        |
| <i>Controls</i>                  | Integrated Programmer and thermostat                                                    |
| <i>Emitter</i>                   | Electric Panel Heaters                                                                  |
| <i>Water heating</i>             | Air Source Heat Pump (ASHP) upto level 7<br>Direct Electric Water Heaters above level 7 |
| <i>Plate heat exchanger</i>      | No                                                                                      |
| <i>WWHRS</i>                     | No                                                                                      |
| <i>Water use</i>                 | < 125 litres/person/day                                                                 |
| <i>Renewables</i>                | PV: total 35 kWp (c. 240 m <sup>2</sup> )                                               |
| <i>Lighting</i>                  | Low energy throughout                                                                   |



| Average Emission Rate  |                      |              |            | Average Fabric Energy Efficiency  |                                 |              |            |
|------------------------|----------------------|--------------|------------|-----------------------------------|---------------------------------|--------------|------------|
| Area Weighted Averages |                      |              |            | Area Weighted Averages            |                                 |              |            |
| Dwelling Energy Rating | Target Energy Rating | % Difference | Pass/ Fail | Dwelling Fabric Energy Efficiency | Target Fabric Energy Efficiency | % Difference | Pass/ Fail |
| 21.29                  | 21.33                | 0.2%         | Pass       | 24.27                             | 27.07                           | 10.3%        | Pass       |

This solution gives a total dwelling electrical energy consumption of approx. 877,400 kWh/yr, which equates to an average energy consumption of 43.8 kWh/annum/apartment of electrical energy.

Again, there is no gas proposed in this solution to the apartments.

### Iteration 3

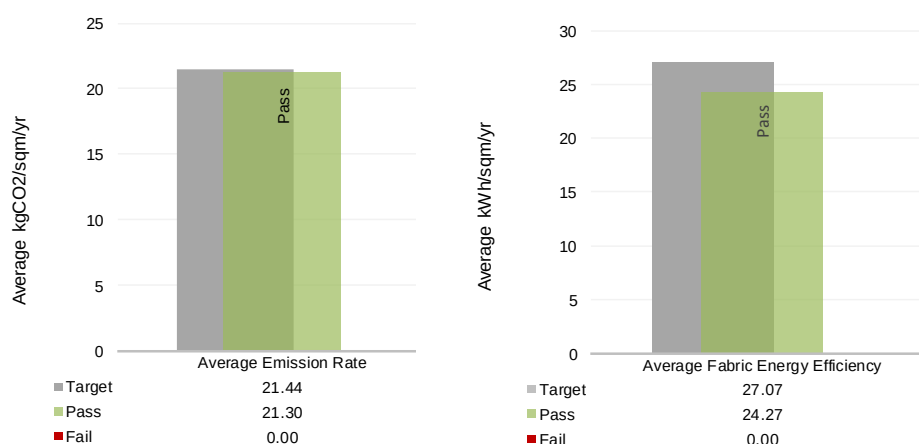
The third and final iteration of the energy assessment keeps with the 'fabric first' approach, however, takes an alternative approach with minimising reliance upon Low and Zero Carbon technologies and improving the efficiency and operation of the heating, ventilation and hot water systems.

#### Fabric Parameters

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| <i>Thermal mass parameter</i> | 'Low' 250 kJ/m <sup>2</sup> K                       |
| <i>Terrain</i>                | Dense urban                                         |
| <i>Floors</i>                 | 0.14 W/m <sup>2</sup> K                             |
| <i>Walls</i>                  | 0.16 W/m <sup>2</sup> K (including spandrel panels) |
| <i>Roofs</i>                  | 0.14 W/m <sup>2</sup> K                             |
| <i>Windows</i>                | 1.40 W/m <sup>2</sup> K (frame included)            |
|                               | 0.40 g value                                        |
|                               | Double glazed with hard low-E coating               |
|                               | Argon filled 16mm+ gap                              |
| <i>Doors</i>                  | Metal frame, draught proofing, non-perforated base  |
|                               | 1.8 W/m <sup>2</sup> K                              |
|                               | Solid wooden door                                   |
| <i>Thermal bridging</i>       | Calculated (Accredited Construction Details)        |
| <i>Air permeability</i>       | 3 m <sup>3</sup> /h.m <sup>2</sup> @50Pa            |

#### System Parameters

|                                  |                                                  |
|----------------------------------|--------------------------------------------------|
| <i>Mechanical ventilation</i>    | Mechanical Heat Recovery Ventilation (MVHR)      |
| <i>SFP</i>                       | c. 0.6 W/l/s                                     |
| <i>Heat exchanger efficiency</i> | min. 80%                                         |
| <i>Ductwork</i>                  | Insulated                                        |
| <i>Space heating</i>             | Electric Panel Heaters                           |
| <i>Heat distribution system</i>  | Pre-insulated low temp variable flow (post 1991) |
| <i>Controls</i>                  | Integrated Programmer and thermostat             |
| <i>Emitter</i>                   | Electric Panel Heaters                           |
| <i>Water heating</i>             | Direct Electric Water Heaters                    |
| <i>Plate heat exchanger</i>      | No                                               |
| <i>WWHRS</i>                     | No                                               |
| <i>Water use</i>                 | < 125 litres/person/day                          |
| <i>Renewables</i>                | None                                             |
| <i>Lighting</i>                  | Low energy throughout                            |



| Average Emission Rate  |                      |              |            | Average Fabric Energy Efficiency  |                                 |              |            |
|------------------------|----------------------|--------------|------------|-----------------------------------|---------------------------------|--------------|------------|
| Area Weighted Averages |                      |              |            | Area Weighted Averages            |                                 |              |            |
| Dwelling Energy Rating | Target Energy Rating | % Difference | Pass/ Fail | Dwelling Fabric Energy Efficiency | Target Fabric Energy Efficiency | % Difference | Pass/ Fail |
| 21.30                  | 21.44                | 0.7%         | Pass       | 24.27                             | 27.07                           | 10.3%        | Pass       |

This solution gives a total dwelling electrical energy consumption of approx. 717,390 kWh/yr, which equates to an average energy consumption of 35.8 kWh/annum/apartment of electrical energy.

Again, there is no gas proposed in this solution to the apartments.

In terms of actual total energy consumption it can be seen that an electric heating, electric hot water and mechanical heat recovery ventilation solution, with the above fabric first approach overs nearly a 22% in electrical energy demand compared to an air source heat pump solution.

## 5.0 Environmental Performance

### 5.1 Existing Baseline Conditions (2020)

**Building Regulations, Approved Document Part L:** Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings.

Approved Document L1A addresses the conservation of fuel and power in new dwellings. The proposed development is 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.

Approved Document L2A addresses the conservation of fuel and power in new non-domestic buildings. The proposed development will also be registered against Building Regulations, Part L (2013) which requires all newly constructed buildings to comply with the 5 criteria set out in Approved Document L2A:

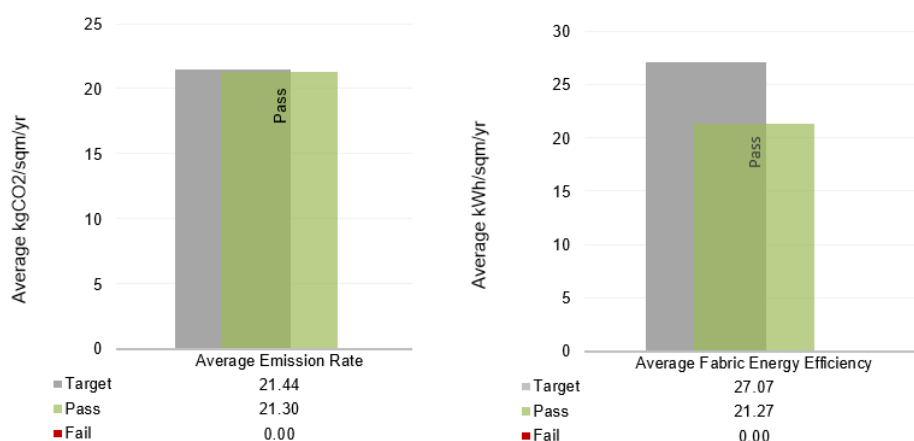
- i. Achievement of an acceptable Building CO<sub>2</sub> Emission Rate. i.e. the BER is less than the TER (target emission rate for a notional building);
- ii. Limits on design flexibility – including U-values, air permeability, air handling plant efficiency, duct leakage, insulation, lighting system efficiency;
- iii. Limiting solar gains in summer;
- iv. Construction quality and commissioning - The BER must be recalculated as constructed; and

- v. Provision of information - Information must be provided to the building operator.

The Future Homes Standard seeks to introduce an uplift in standards for Part L of the Building Regulations for new buildings, anticipated in October 2020 with the intention of making new homes more energy efficient and to future-proof them in readiness for low carbon heating systems.

SAP 10 revised carbon factors for grid-mix electricity reflect the improved status of the UK grid that has significantly decarbonised since the last update of Part L in April 2014.

In July 2018 the Government published updated carbon emission factors (SAP 10) demonstrating this. These new emission factors will however not be incorporated into Part L of the Building Regulations until the Government has enacted the consulted on new Building Regulations.



| Average Emission Rate  |                      |              |            | Average Fabric Energy Efficiency  |                                 |              |            |
|------------------------|----------------------|--------------|------------|-----------------------------------|---------------------------------|--------------|------------|
| Area Weighted Averages |                      |              |            | Area Weighted Averages            |                                 |              |            |
| Dwelling Energy Rating | Target Energy Rating | % Difference | Pass/ Fail | Dwelling Fabric Energy Efficiency | Target Fabric Energy Efficiency | % Difference | Pass/ Fail |
| 21.30                  | 21.44                | 0.7%         | Pass       | 21.27                             | 27.07                           | 21.4%        | Pass       |

## 5.2 Predicted Future Baseline (2021 and 2023)

The UK government completed the Consultation phase of a revision to the SAP methodology, SAP 10, however, this has not been implemented or passed into legislation.

Part of the revision to the SAP methodology is to reduction in the CO<sub>2</sub> emissions of grid supplied electricity by approximately 45%. This is due to the current and projected electricity generation from wind (both onshore and offshore), solar and nuclear and the reduction in the reliance upon natural gas and coal fired generation plant.

In addition to this the aspiration of Manchester City Council's Climate Change Action Plan would favour the electric air source heat pumps as this offers a significant improvement over Part L, using SAP 2012 methodologies and will take advantage of the reducing electricity grid CO<sub>2</sub> emissions intensity and will remove the combustion of fossil fuels in the city centre, thus reducing the localised carbon emissions resulting in improved air quality.

### ***Revised Carbon Factors***

The forthcoming changes and updates to Building Regulations, Approved Document Part L proposes to use SAP 10 as the mechanism to demonstrate compliance.

The carbon factors used in the current methodology, SAP 2012, for grid electricity generation are no longer representative of the current electricity grid decarbonisation. The proposed carbon factors are noted below for both grid electricity and natural gas.

| Fuel             | Assessment Methodology | Fuel Carbon Factor (kg.CO <sub>2</sub> /kWh) |
|------------------|------------------------|----------------------------------------------|
| Natural Gas      | SAP 2012 (current)     | 0.216                                        |
|                  | SAP 10 (proposed)      | 0.210                                        |
| Grid Electricity | SAP 2012 (current)     | 0.519                                        |
|                  | SAP 10 (proposed)      | 0.233                                        |

The revised fuel carbon factors for grid electricity applied in the forthcoming SAP 10 are c.45% lower than those currently applied in SAP 2012 for building regulations compliance

This reduction in SAP 10 grid electricity fuel carbon factors will result in a reduced block average Carbon Emissions rate of 9.56 kg.CO<sub>2</sub>/m<sup>2</sup> from 21.30 kg.CO<sub>2</sub>/m<sup>2</sup>. Which offers a significant progression towards meeting MCC's Climate Change Action Plan and carbon reduction in the city centre.

### **5.3 Water Efficiency**

The apartments will be designed to reduce water consumption and will include water efficient devices and equipment.

A water efficiency strategy will be determined for the development. This will include 'A' rated appliances, where provided by the developer.

Specification of efficient water fixtures throughout the scheme, low flow taps and showers, dual flush WCs and low volume baths etc...

In order to reduce the demand, the sanitary fixtures will be specified to achieve a calculated daily consumption of less than 125 litres/person/day.

### **5.4 Resource Management and Pollution**

#### **Efficient Use of Land**

The Heyrod Street proposals include for the redevelopment of a previously developed, brown field site as promoted by national and local planning policy, Core Strategy Policy H1.

The redevelopment represents an efficient use of land with a large accommodation density of three hundred and fifty-two units and retail space on approximately 0.404 hectare site.

#### **Pollution Control**

To reduce emissions of gases with high global warming potential (GWP) and nitrogen oxide (NOx) into the atmosphere, the new build dwellings will be specified with:

- Insulating materials that have a GWP of less than 5 will be specified throughout the development to reduce the construction phase impact of this scheme upon climate change
- Pollution Prevention Guidance will be adhered to in respects of air (dust) and water (ground and surface) pollution during the demolition and construction phase
- External light fittings will be controlled through a time switch, or daylight sensor, to prevent operation during daylight hours to limit the impact of artificial lighting for the developments residents and surrounding environment
- The impact of sound associated with the occupied development will be mitigated by the design and specification of the dwellings. Sound insulation will be specified to achieve Building Regulation Part E compliance standard (this will be verified by pre-completion testing). This will reduce the impact of sound pollution for the occupants within adjoining dwellings and the surrounding area.

If further information is required in relation to the issue of pollution control, the following documents which are submitted as part of the planning application for this site may be considered:

- Noise Planning Report
- Air Quality Assessment

### **Materials**

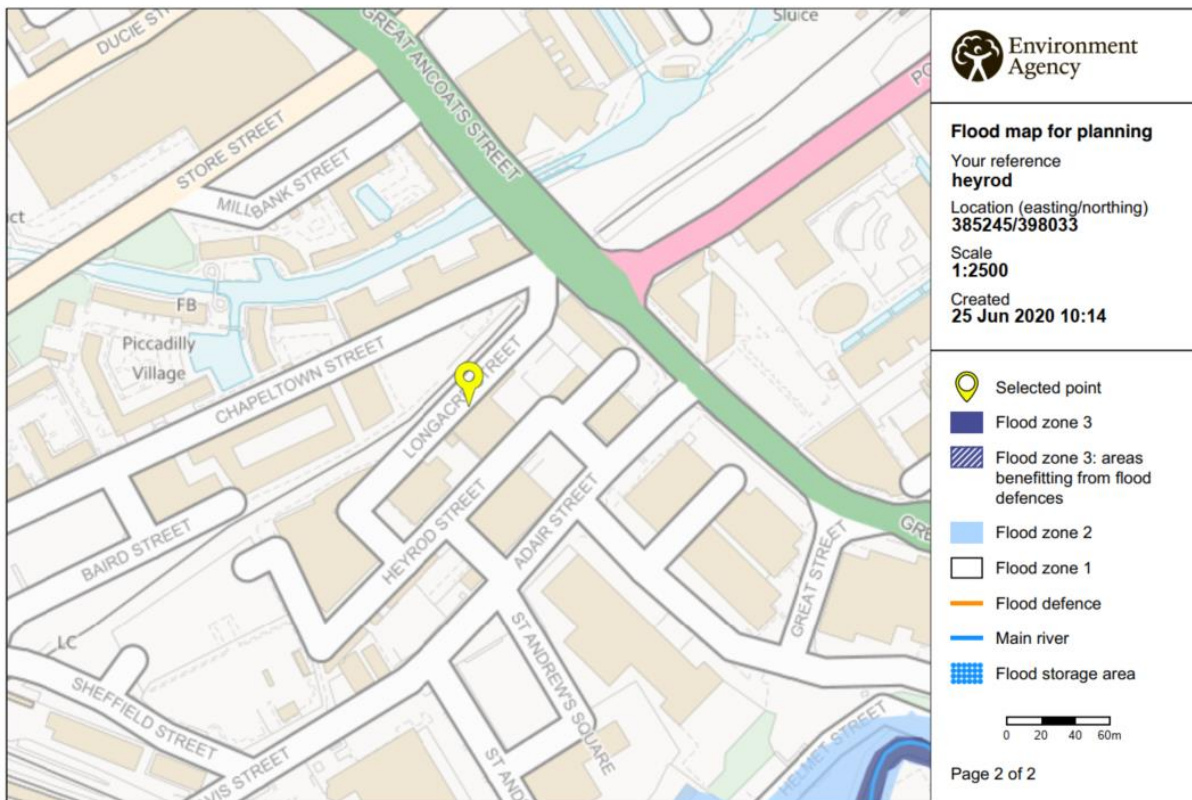
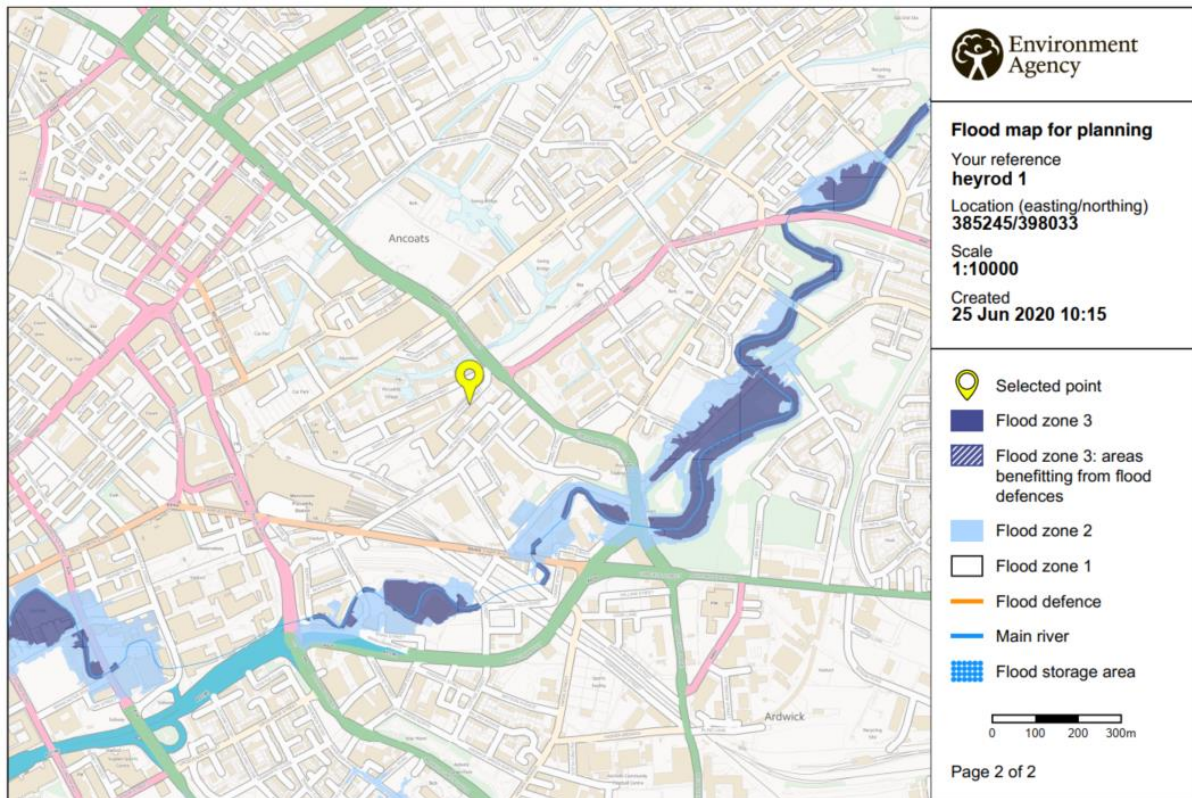
This development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This is demonstrated by the selection of:

- Noise Planning Report
- Air Quality Assessment
- Materials with low environmental impact throughout their lifecycle
- Materials responsibly sourced from suppliers operating an Environmental Management System or procuring timber from FSC and PEFC sources, for example will be prioritised
- Consideration will be given to local sourcing of construction materials where feasible
- Consideration will be given to local sourcing of construction materials where feasible, which will minimise the impact of carbon dioxide emissions associated with the transportation of materials

## **5.5 Surface Water Run-off**

### **Flood Risk**

The Proposed Development is located in a low flood risk zone. Data provided on the Environment Agency website confirms the development has a low probability of flooding and lies within Zone 1, see Maps below.



### **On Site Surface Water Management**

The pre-developed site comprises of an existing building and hard standing/car parking, as a consequence, the site has 100% impermeable surfacing.

The peak rate of discharge will be reduced through the provision of flow control techniques and surface water attenuation. The volume of surface water run-off will be no greater than existing conditions.

In line with national policy and the standing requirements of United Utilities, runoff will be managed.

## **5.6 Waste Management**

### **Construction Waste**

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

Prior to commencement of the above ground construction phase, a site waste management plan (SWMP) will be produced by the developer to limit the on and off site environmental impacts of construction.

The SWMP will detail:

- Recycled and secondary materials
- Waste reduction
- Waste segregation
- Waste recover
- Waste disposal

A site waste management plan will identify opportunities to minimise waste generation and divert at least 85% of construction waste from landfill.

This scheme will promote the minimisation of waste in site development and seek to maximise the use of recycled materials in construction.

### **Domestic Waste**

A waste management strategy has been developed, by Curtins, ensuring that adequately sized bin storage areas are provided, access for collection personnel and vehicles has been established and other aspects of waste management is designed into the development at an early stage of the design.

The dwellings will be provided with four bins. One for general waste, one for pulvable waste, one for co-mingled recyclables and one for food waste.

The residents will store waste internally within their apartments before taking it to the resident accessible bin store located at the ground floor level of the site, in the immediate vicinity of the building's core.

The management company would be in charge of monitoring the recycling rates and promote actively high recycling rates within the building. This could be achieved by giving information on the benefits of recycling and information on how to segregate.

The commercial units will store waste in its own demise, refer to Curtins drawing 75424-CUR-00-XX-DR-TP-06006, Waste Management Strategy. There are expected to be regular collections for these waste streams by a commercial waste operator.

## **5.7 Health & Wellbeing**

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

Good levels of natural day lighting will be achieved within the dwellings. This will provide a good quality of life for the occupants and reduce the need for energy to light the dwellings.

At first floor level there are two internal and two external amenity spaces which overlook the new public square and Longacre Street.

At 21st Floor there is an amenity space and terrace with views over Manchester City centre.

All dwellings will comply with the Manchester Residential Quality Guidance to ensure that all dwellings are of a sufficient size and provide more flexibility and comfort for the future occupants. If further information is required in relation to the issue of wellbeing, the following documents which are submitted as part of the planning application for this site may be considered:

- Daylight and Sunlight
- Design and Access Statement

## **5.8 Biodiversity**

Penny Anderson Associates Limited have carried out an Extended Phase 1 Habitat and Bat Survey of the Proposed Development in June 2020.

### **General Principles**

The Bat Survey concluded that no further survey or mitigation measures are required in relation to bats and their roosts.

The site is currently of low ecological value and the project presents an opportunity to increase biodiversity. Potential enhancement measures which could be considered comprise:

- Use of native or wildlife friendly tree, shrub and herbaceous species in any landscape planting, for example, inclusion of species which provide nectar for invertebrates or berries to provide a food source for birds.
- Inclusion of a range of bird boxes to accommodate typical urban bird species including starling (*Sturnus vulgaris*), house sparrow and swift (*Apus apus*); and
- Inclusion of integrated or external bat roost feature such as bat slates, tiles and bricks or bat boxes to increase opportunities for roosting bats, coupled with a suitable lighting strategy to avoid unnecessary lighting of roost features.

## 5.9 Transport

The proposals are for a residential development situated in a highly accessible location. There is good walking and cycling infrastructure adjacent to the site, and there are excellent links to public transport facilities including the multi-modal transport hub at Piccadilly Station which provides access to bus, light, commuter and heavy rail services.

As defined in Curtins Transport Statement, the development site is also located within walking distance of major employment and retail destinations across Manchester City centre as well as educational institutions such as the University of Manchester and Manchester Metropolitan University.

The Site is considered readily accessible by foot.

Within the 500m walk catchment access can be gained to parts of Manchester city centre including the key transport node of Piccadilly rail station and the Ancoats area.

Within this area access can be gained to many employment opportunities, retail and leisure facilities as well as bus stops and car parks. For example, along Great Ancoats Street there is the Urban Exchange, with retailers such as Aldi, Marks & Spencer, a gym, as well as other local retailers, restaurants and public houses.

Further afield but within 1,000m of the site, Manchester Piccadilly rail station can be accessed, along with its associated facilities and amenities such as the Metrolink station, restaurants, public houses, food stores, pharmacist, and hot food takeaways. Areas of Cotton Fields, New Islington, and the Northern Quarter are accessible, ensuring accessibility to a wide range of key complementary facilities, which are predominantly for leisure and entertainment purposes. These include the Cotton Field marina, restaurants, bars, upcoming residential developments, gyms, a bakery, live music venues, a comedy club, places of worship, rehearsal studios, a primary school, parks, and Piccadilly Trading Estate.

Most of Manchester City Centre can be accessed within a 2,000m walk from the site. This includes areas such as the Central Retail District (bordering Market Street, comprising the Manchester Arndale shopping complex, public squares and

green spaces, restaurants, bars, public houses, high street retail stores, banks, pharmacies, GP practices, theatre, residential apartments, offices, gyms) and Deansgate / Spinningfields (comprising Albert Square, Manchester Central Library, Manchester Town Hall, Bridgewater Hall, Manchester Central Convention Complex, cinemas, restaurants, bars, offices, gyms).

### ***Transport Links***

The site benefits from excellent sustainable access opportunities and is well connected by existing walking and cycling routes to key trip attractors. Bus, Metrolink and train can also be used to easily access the site.

*Cycle Routes* : On-road local cycle routes lead into Manchester city centre and the Northern Quarter to the northeast of the site along the A665 Great Ancoats Street.

They also lead towards Miles Platting and Oldham in the northeast along the Ashton Canal. This network of local cycle routes links to various National Cycle Routes (NCRs) and Regional Cycle Routes (RCRs) including NCR 6, NCR 55, NCR 60, NCR 66 and RCR 86. National Cycle Route 66 is the closest nationally designated route, located approximately 200m to the north of the site.

*Bus* : The nearest bus stops are located along Great Ancoats Street which are approximately 200m walk from the site. These provide regular services into the city centre and Ashton-Under-Lyne. There are more bus stops adjacent to Manchester Piccadilly rail station at an approximate 700m walk from the site.

*Rail* : The nearest railway station is Manchester Piccadilly which is approximately 700m to the south west of the development site. The station provides services to Blackpool North; Huddersfield, Leeds, Buxton, Liverpool Lime Street, Wigan North Western, Bolton, Wigan, Walkden, Newcastle, Southport and London Euston.

*Metrolink* : The nearest Metrolink station is the New Islington tram stop which is within walking distance from the site and is approximately 500m.

The proposed layout and proposed cycle storage provision acknowledge the sustainable location of the development and current trend in car ownership of residents in Manchester City centre.

Numerous measures are included to enhance cycle and pedestrian facilities and access to and from the site. The proposals include the provision of three hundred and fifty-two cycle storage spaces.

### ***Framework Travel Plan***

To further enhance the sustainable credentials of the proposal the Site is underpinned by a Framework Travel Plan.

This plan seeks to promote existing transport routes, complement the sustainable location of the Site and meet the needs of future residents and visitors.

Cycle storage will be provided in communal stores for the occupants. Cycle parking provision is in line with the Council's minimum standards.

### ***Local Amenity Access***

Residents are 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:

Recreational Space – The River Medlock is located to the east of the site (approximately 700m) and New Islington Fields are located 130m to the north of the site.

Education – Manchester Metropolitan University and Manchester University are located within 2km of the site.

Local Amenities – There are a range of retail and leisure facilities located within close proximity of the site and city centre attraction can be easily reached via public transport nodes and by foot.

### ***Disabled Access***

Disabled access provision within the scheme itself will be in accordance with Building Regulation, Part M criteria as far as possible with lift access provided to all apartment levels.

## **5.10 BREEAM**

Whilst the Manchester Core Strategy states that the non-domestic elements of any development should achieve a BREEAM Rating of 'Very Good'.

This is considered to be unviable due to the relatively small size the retail units all of which are under 500 m<sup>2</sup>, the costs of the development and any subsequent requirements to comply with BREEAM would preclude some potential tenants from occupying the retail spaces particularly the smaller independent retailers.

Therefore, it is the intention to not undertake a BREEAM assessment of the retail spaces.