



**LAYSTALL STREET,
MANCHESTER**

**VENTILATION
STATEMENT**

Client: McCauls

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DOCUMENT ORIGIN

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1. Executive Summary

The following document outlines the planning Ventilation strategy required for the proposed refurbishment of the grade II listed Showroom for office uses and the construction of a new build residential element at:

Laystall Street, Manchester, M1 2JZ

Site description

The site is in Manchester city centre between Urban Exchange and Presbar Dicastings building.

The site currently consists of a number of existing period buildings which are of the grade II listed former headquarters of John Armitage.

The adjacencies to the proposed development site are as follows:

North: Laystall Street
East: Brock Street
South: Ducie St
West: Pigeon Street

Development description

The project comprises:

It intended to construct a nine-storey residential apartment block to replace existing redundant buildings and current public parking and to refurbish the listed building in the northern area of the site for office use.

The project proposals have been reviewed and it is considered that the scheme can be constructed utilising sustainable design methods to ensure that the Manchester City Council aspirations for good quality building stock are met.

During the detail design period the proposals will be examined in further detail and will be the subject of more refined SAP and thermal model analysis. This detailed analysis will be based on the actual details intended for construction to confirm and / or modify the information below. The results can then be used to define the final EPC rating for the scheme.

2. Terms of Reference

This Ventilation Statement seeks to demonstrate that the design intent for the scheme as well as the commitment to aligning with Manchester City Council's aspirations and wishes to deliver sustainable developments. The ventilation strategy for the scheme has been developed using the following regulations and planning policies:

2.1 Building Regulations

The Building Regulations Approved Document Part L (Conservation of Fuel and Power) 2013 outlines the requirements for reductions in carbon emissions required for new developments.

The Building Regulations Approved Document Part F - Ventilation (2010 edition incorporating 2010 and 2013 amendments) outlines the requirements for Ventilation in dwellings

Air Quality Management - Manchester City Council, Air Quality Action Plan 2016-2020

2.2 Manchester City Council Core Strategy

The Manchester City Council, Manchester Core Strategy 2012 to 2027 document and planning policies have been utilised for assessment as follows. The following policies are extracted from the Manchester Core Strategy Document:

2.2.1 Policy EN 4 - Reducing CO2 Emissions by Enabling Low and Zero Carbon Development

The Council will seek to reduce fuel poverty and decouple growth in the economy, growth in CO2 emissions, and rising fossil fuel prices, through the following actions:

- All development must 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
 - to meet residual energy requirements using low or zero carbon energy generating technologies
- Wherever possible new development and retrofit projects, including energy generation plant, must be located, and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.
- Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.
- Where appropriate new development and retrofit projects will be required to connect to and/or make contributions to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes.
- The use of building materials with low embodied carbon in new development and refurbishment schemes.

2.2.2 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.

The Ventilation 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.

2.3 Policy DM 1 - Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document: -

- Appropriate siting, layout, scale, form, massing, materials, and detail.
- Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.
- Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.
- Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes.
- Community safety and crime prevention.
- Design for health.
- Adequacy of internal accommodation and external amenity space.
- Refuse storage and collection.
- Vehicular access and car parking.
- Effects relating to biodiversity, landscape, archaeological or built heritage.
- Green Infrastructure including open space, both public and private.
- The use of alternatives to peat-based products in landscaping/gardens within development schemes.
- Flood risk and drainage.
- Existing or proposed hazardous installations.
- Subject to scheme viability, developers will be required to demonstrate that new development incorporates sustainable construction techniques as follows (In terms of energy targets this policy should be read alongside policy EN6 and the higher target will apply):-

- a) For new residential development (note that the requirement to meet Code for Sustainable homes targets has been removed from planning policy)
- b) For new commercial developments to demonstrate best practice which will include the application of the BREEAM (Building Research Establishment Environmental Assessment Method) standards. By 2019 provisions like the Code for Sustainable Homes will also apply to all new non-domestic buildings.

Guide to Development in Manchester 2007 SPD

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.

Greater Manchester Spatial Framework Revised Draft 2019

Greater Manchester Spatial Framework Revised Draft 2020 supports the council's strategies which include underpinning the ambition to become a carbon neutral city 2038.

Objective 7 of the document ensures Greater Manchester is a more resilient and carbon neutral city region which will:

- Promote carbon neutrality of new development by 2028
- Promote sustainable patterns of development that minimise the need to travel and contribute to cleaner air
- Locate and design development to reduce car dependency
- Facilitate provision of infrastructure for cleaner vehicles
- Improve energy efficiency and the generation of renewable and low carbon energy.

Policy GM-S2 is a policy that supports objective 7 and has the aim of delivering a carbon neutral Greater Manchester no later than 2038. Part of this policy is to take a positive approach to renewable and low carbon energy schemes. Keeping fossil fuels in the ground. It also provides an energy hierarchy as follows:

- i. Minimise energy demand.
- ii. Maximise energy efficiency.
- iii. Utilise renewable energy.
- iv. Utilise low carbon energy; and
- v. Utilise other energy sources.

Manchester City Councils Climate Emergency Declaration 10th July 2019

The declaration looks to deliver the zero-carbon target by 2038 and determine if an earlier target can be possible. To become carbon neutral as soon as possible.

Manchester City Council Climate Change Framework

Manchester Climate Change Framework for 2020-2025, builds on the Draft Manchester Zero Carbon Framework 2020-38, which was published in February 2019 and Manchester City Council's declaration of a climate emergency in July 2019. This gives a target for the 2020-25 period to reduce direct CO₂ emissions by at least 50% to stay within carbon budget targets. This is to support Objective 1 of the document which includes staying within our 15 million tonne carbon budgets for 2018-2100.

The Framework recognises that the UK gas supply will take a long time for decarbonisation with biogas and / or hydrogen and that to stop using gas will promote decarbonisation because of the opportunity available for reducing carbon emissions associated with grid electricity. Therefore, moving buildings to electric heating, air source heat pumps and zero carbon district heating provide a more immediate carbon reduction benefit.

The Framework wants to ensure new developments in the city do not eat into our limited carbon budgets and add to the already significant retrofit challenge. This means that we need them to be built and operated to zero carbon standards as soon as possible.

3. Confirmation of Scope and Route to Compliance

3.1 Ventilation Strategy

3.1.1 Air Quality Management Area

Initial review suggests that the proposed development site is located within the Greater Manchester Air Quality Management Area (AQMA). As such measures will be required to mitigate pollution within the occupied areas of the building. The air quality measures are outlined in the relevant sections below.

3.1.2 Apartment Ventilation

Apartment ventilation will be provided via high efficiency Mechanical Ventilation Heat Recovery (MVHR) systems in line with Building Regulations Part F requirements (System 4). These systems will assist compliance with the Building Regulations Part L (Conservation of Fuel and Power) by reducing ventilation system energy consumption and carbon dioxide emissions.

Fresh air inlet and exhaust will be routed from the external façade via grilles / louvres and incorporated into the window / cladding system. The proposal for apartment ventilation is to utilise grilles located in the soffit of the window reveal. Fresh air inlet and exhaust ductwork will be insulated, and vapour sealed and will incorporate appropriate attenuation to meet acoustic requirements. Proprietary NO_x / Carbon filtration units will be provided in the fresh air inlet ductwork to absorb particulates and minimise the effects of pollution on the internal environment.

Extract air will be drawn from bathrooms kitchens and wet areas in line with the requirements of Building Regulations Part F with supply / makeup air delivered into living accommodation and bedrooms.

Recirculating cooker hoods will be provided above oven / hob positions complete with carbon filtration.

3.1.3 Refurbished Office Ventilation

Commercial units are proposed as being mechanically ventilated on the ground floor and naturally ventilated via openable windows.

3.1.4 Cleaner's Store Ventilation

Cleaner's stores will be provided with local extract which will run continuously.

3.1.5 Refuse Store Ventilation

The main refuse / bin store located within the ground floor will be provided with a dedicated extract system incorporating a ventilated lobby.

3.1.6 Smoke Ventilation

Natural or Mechanical smoke ventilation shafts will be provided in line with the fire engineer's requirements including Automatic Opening Vents (AOVs) and motorised smoke dampers as required.

Smoke extract fans will be located at the top of the shafts or at roof level.

3.1.7 Acoustic Treatment

The apartments will be designed to satisfy the trickle and boost ventilation requirements via mechanical ventilation heat recovery systems (MVHR). This allows the apartment to be ventilated efficiently during normal operation with heat recovery and summer bypass without the need to open the windows (except for purge ventilation).

Purge ventilation will be achieved via openable windows and / or louvres as required for abnormal ventilation requirements.

Ventilation systems will be selected at appropriate fan speeds to limit case radiated break out noise.

Atmospheric and room side attenuators will be provided within ductwork branches to minimise air borne noise transfer into the apartments.

External plant will be acoustically treated to minimise acoustic impacts:

- Air Handling Units: Attenuators on all ductwork connections as required to meet acoustic criteria
- General Fans: Attenuators on all ductwork connections as required to meet acoustic criteria
- Smoke Extract fans: Intermittent operation so not attenuated
- Condensers / Chillers for comms room and retail spaces: No treatment anticipated but acoustic packs or acoustic screens can be provided to meet required noise levels

4. Conclusion

The ventilation proposals as defined above will support compliance with the requirements of Building Regulations – Part F, Acoustic and AQM being met.

