CWC

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M1 Developments Ltd

Store Street | 73No. Apartments



Planning Report | Ventilation Statement

Date: 24.11.25
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Crookes Walker Consulting Limited is registered in England & Wales | 05011466 |
Registered Office: One Express | 1 George Leigh Street | Ancoats | Manchester | M4 5DL

Revision Record

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			Lee Carey	*Gareth Rowlands*	*Gareth Rowlands*
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			Connor Culleton	*Gareth Rowlands*	*Gareth Rowlands*

Glossary of Key Terms

Abbreviation	Details	Abbreviation	Details
CIBSE	Chartered Institute of Building Services Engineers	Continuous operation	Uninterrupted running of a mechanical ventilation device, such as continuous mechanical extract ventilation or mechanical ventilation with heat recovery. The air flow rate provided by mechanical ventilation need not be constant but may be varied, under either manual or automatic control, in response to the demand for the removal of pollutants or water vapour
HVAC	Heating Ventilation and Air Conditioning	Ventilation	The supply and removal of air (by natural and/or mechanical means) to and from a space or spaces in a building. It normally comprises a combination of purpose-provided ventilation and infiltration
Whole dwelling ventilation (general ventilation)	Nominally continuous ventilation of rooms or spaces at a relatively low rate to dilute and remove pollutants and water vapour not removed by extract ventilation, purge ventilation or infiltration, as well as to supply outdoor air into the dwelling.	Dwelling	A self-contained unit designed to accommodate a single household
Background ventilator	A small ventilation opening designed to provide controllable whole dwelling ventilation	Extract ventilation	The removal of air directly from an internal space or spaces to the outside. Extract ventilation may be by natural means or by mechanical means (e.g. by an extract fan or a central system).
C/MEV	Continuous Mechanical Extract Ventilation Mechanically driven ventilation that continuously extracts indoor air and discharges it to the outside.	Purge Ventilation	Manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants and/or disperse water vapour. Purge ventilation may be provided by natural means (e.g. an openable window) or mechanical means (e.g. a fan).
MVHR	Mechanical ventilation with heat recovery A mechanically driven ventilation system that both continuously supplies outdoor air to the inside of the dwelling and continuously extracts indoor air and discharges it to the outside.	Natural Ventilation	Ventilation provided by thermal, wind or diffusion effects through doors, windows or other intentional openings without the use of mechanically driven equipment. For the purposes of this approved document, natural ventilation refers to a ventilation strategy using background ventilators and intermittent extract ventilation

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1.0 Introduction

Crookes Walker Consulting have been appointed by M1 Developments Ltd to provide Building Services Consultancy advice and planning support with respect to the proposed new residential development referenced as Store Street, Manchester, M1 2WD

This report has been prepared to outline the proposed ventilation strategy and support the project planning application. The report aims to summarise the following key elements pertaining ventilation systems:

a) Areas of the building requiring ventilation
b) Proposed Ventilation systems design criteria
c) Proposed Ventilation strategies for each area of the building
d) Proposed Overheating Risk Mitigation strategies

The ventilation strategies outlined in this report will need to be developed as and when the scheme moves into the developed and detail design stages. To ensure optimum solutions are provided, the final designed solutions may differ from the outline proposals contained herein. However, the design criteria and basis for design will be maintained.

This Ventilation Statement has been prepared to illustrate the proposed ventilation designs. It addresses the building regulation requirements described within Approved Document Part F, 2010 for ventilation to the various facets of the proposed development.

The statement also highlights the need to provide complete, energy efficient, fully working and balanced ventilation systems that can: -

- Deliver sufficient outdoor fresh air to occupants.
- Deliver good indoor air quality.
- Ensure acceptable internal noise levels are not exceeded.
- Assist in the removal of heat gains.
- Remove odours, contaminants and moisture.
- Avoid cold draughts.
- Assist in avoidance of summertime overheating.
- Provide an easily controlled and maintainable system.
- To recover heat from the exhaust air stream for re-use in the fresh air supply.

2.0 Project Background

An overview of the project is summarised below. Full details of the development can be found within the main suite of documents issued as part of the planning submission.

2.1 The project

The proposed project development comprises the following buildings:

- Tower Block – 16-storey residential development with associated ancillary accommodation and amenity spaces. (Fifteen floors above ground comprising 73No. dwellings.

The development also includes small amount of external landscaping and facilities including bin store and external cycle store facility. There are no internal or external car parking facilities nor basement areas proposed on the site.

2.2 The Site

The site itself is a brownfield site situated off Store Street with apartment blocks and commercial premises in the vicinity plus the Ashton Canal running nearby.

The site itself is located in mixed use setting with adjacent to industrial warehouse units to the southwest. To the east-southeast lies domestic residential dwellings and townhouses along with Ashton Canal. Directly opposite the site to the north there are further residential dwellings apartments.



Figure 1: Site Location Plan (Source Google Maps)

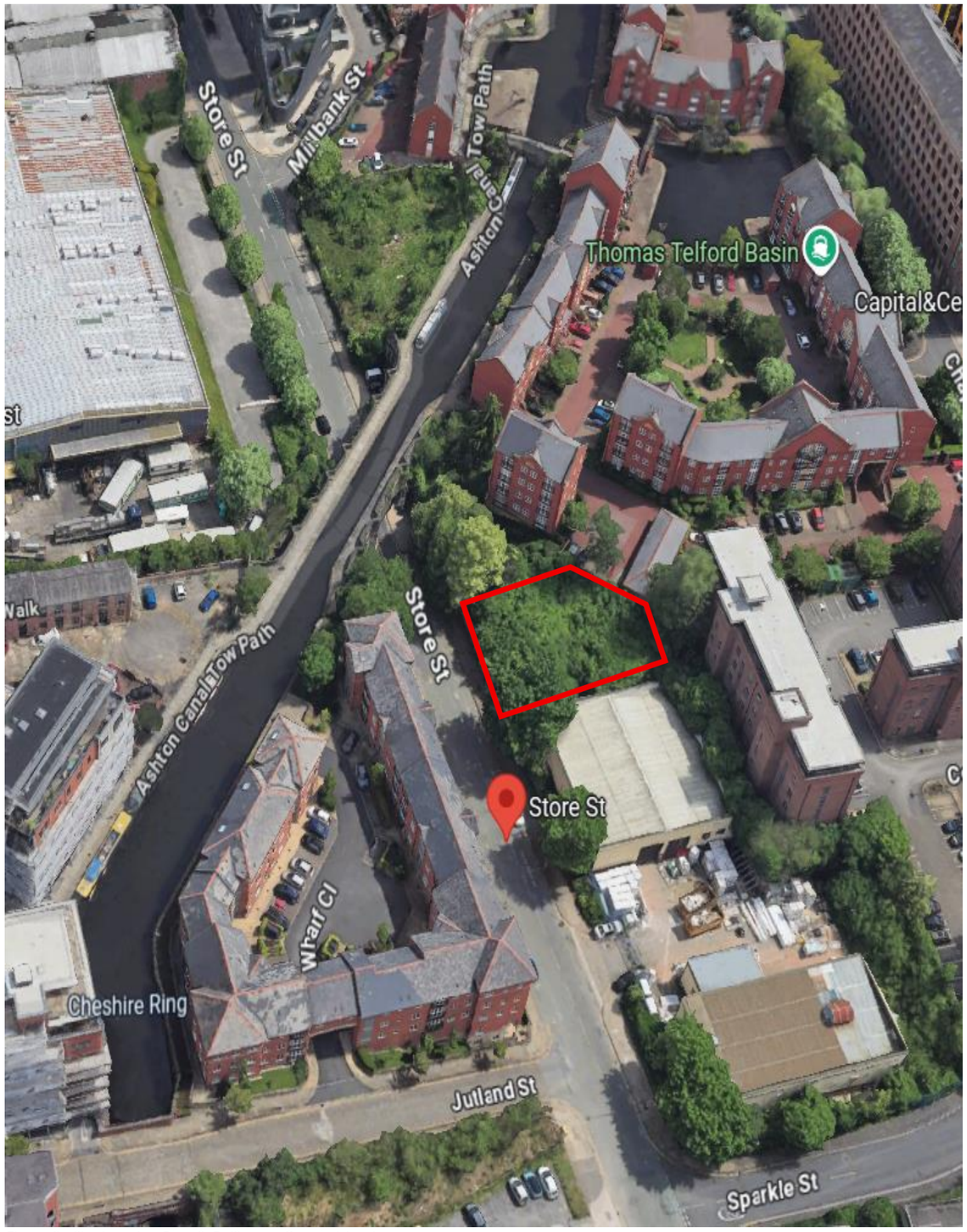


Figure 2:: Site Location Plan 3-D (Source Google Maps)

3.0 Proposed Ventilation Strategy

The proposals around ventilation provision within the buildings is outlined below:

3.1 General Approach

The general approach to the building services of each residential block is as follows:

- Low energy design and operation typically following the fabric first approach. The building services will be based primarily on all electrical services provision throughout with heating and hot water generated via electric means.
- Simple to use and maintain systems that offer innovation whilst overring value for money to the Client
- Meet all current relevant standards and regulations

3.2 Building Areas

The building is provided with the following key general space requiring ventilation:

- Residential Areas comprising
  - 1-, 2- & 3-bedroom apartments
  - Residential corridors and stairwells
- Residential amenity areas including:
  - Foyer/reception zone
  - Residents support zone
  - Staff WC's
  - Residential amenity spaces
- Residential ancillary areas including
  - Plant and equipment areas
  - Refuse chutes

3.3 Design Criteria and Compliance

The scheme will comply with the relevant statutory legislation and obligations as well as good practice where relevant. The following key elements will inform the ventilation services design:

- Building Regulations 2010 with the following Approved Documents (AD) employed:
  - Approved Document B (Fire Safety) volume 1: Dwellings, 2019 edition incorporating 2020 and 2022 amendments
  - Approved Document F (Ventilation) volume 1: Dwellings,
  - Approved Document F (Ventilation) volume 2: Buildings other than Dwellings,
  - Approved Document L (Conservation of fuel and power) volume 1: Dwellings, 2021 edition incorporating 2023 amendments
  - Approved Document K (Protection from falling, collision and impact)
  - Approved Document O (Overheating)
  - Approved Document Q (Security): Dwellings
- Other relevant documentation relied upon to develop the design will include:
  - The project Acoustic Consultant, Sanctuary Acoustics and their report referenced: 48 Store Street RIBA 4 Fire Strategy V1
  - The project Air Quality Consultant, Redmore Environmental and their report referenced: RP01-23244-R2
  - The project Fire Engineering Consultant SPL Fire Safety Ltd and their report referenced:

The general design criteria for the ventilation systems for each general areas in the buildings are summarised below:

Residential Areas	Design Bais	Outline Indicative Design Criteria
1-, 2- & 3-bedroom apartments	Ventilated in accordance with Part F (ADF) and Part O (ADO)	Part F requirements will be in accordance with section F(1). Part O requirements will be determined via the specific Part O calculations for the relevant example dwellings.
Residential corridors and stairwells	Ventilated in accordance with Part F (ADF) and Part O (ADO)	To meet TM59 ORA
Foyer/reception zone	Ventilated in accordance with Part F (ADF)	1 l/s/m2
Residents support zone	Ventilated in accordance with Part F (ADF)	10 l/s/person
Internal Cycle Store	Ventilated in accordance with Part F (ADF)	1 l/s/m2
Staff WC's	Ventilated in accordance with Part F (ADF)	6 l/s/WC extract c/w make-up air
Residential amenity spaces	Ventilated in accordance with Part F (ADF)	1 l/s/m2
Plant and equipment areas	To suit plant and equipment	Natural Ventilation
Refuse Bin stores	External area	N/A
Refuse chutes	None Provided	N/A

3.4 Ventilation Concept Proposals

The buildings will be provided with ventilation systems in order to provide adequate supplies of fresh (outdoor) air for the comfort of occupants in accordance with the Building Regulations. Generally, the system shall have the following features:

- Provide sufficient fresh air supply and air extract to meet the requirements of Building Regulations part F.
- In conjunction with the heating systems, maintain internal temperatures as indicated within the design parameters to occupied areas of the building.
- Maintain fire compartmentation strategies as required by the Fire Strategy as set out in the Fire Engineers report.
- Coordinate with other systems and services within the building so as to allow easy access for maintenance and cleaning
- Be energy efficient and look to utilise appropriate, suitable low energy fans with low specific fan powers and controls.
- Meet the internal and external noise criteria as outlined by the Acoustic Consultant.

3.5 Residential Apartments

Each individual apartment will be provided with an individual ventilation system to meet the requirements of Building Regulations in particular AD F, AD L and AD O.

At present the design basis for the apartments ventilation outline design proposals are as follows:

a) Continuous mechanical supply and extract ventilation with Heat recovery (MVHR) via individual units in each apartment
b) Opening windows to provide purge ventilation and as part of overheating risk limitation mitigation strategy.

The air quality assessment undertaken by the Air Quality Consultant has indicated that use of natural ventilation is permissible in terms of air quality levels without incorporation of any specific air quality mitigation measures. Similarly, the acoustic assessment by the Acoustic Consultant has also deemed use of opening windows for purge ventilation is acceptable. The acoustic consultant has advised that use of opening windows as part of the overheating risk limitation strategy is permissible in the lounge areas and during daytime use in bedrooms. Purge ventilation fans controlled to external and internal temperature with local override facility will be provided to enable bedroom windows to remain closed at night when internal noise conditions are deemed by the Acoustic Consultant to be potential exceeded.

The apartment MVHR ventilation systems will be designed to operate continuously at low speed air volumes created by energy efficient fans. This will allow the construction of a tightly sealed and correctly ventilated environment reducing thermal heat loss through reduced infiltration, whilst at the same time improving air quality and reducing the occurrence of moisture and mould. To provide fresh air into the apartments each dwelling will be provided with a whole dwelling mechanical ventilation heat recovery (MVHR) system. This system comprises of a continuous mechanical supply and extract ventilation unit located within a service cupboard within each apartment. The unit will be provided with a high level of heat recovery efficiency designed to aid part L compliance of the Building Regulations as detailed within the energy statement associated with this planning application. The air volumes will be determined to satisfy the requirements of the Approved Document Part F of the Building Regulations (see table opposite). The MVHR units will operate in trickle mode but be capable of boost facilities as follows:

- Automatic booster switches in the form of PIR detectors will be provided to each MVHR unit to enable boosted flows rates to be delivered to meet AD F during bathroom usage. (Humidistats may also be used for this purpose in lieu of PIR)
- Manual switch booster control facilities located in the kitchen will be provided to each MVHR unit to enable boosted flows rates to be delivered at the dictates of the occupier to meet AD F during cooking.
- Manual switch booster control facilities will be provided to each MVHR unit to enable enhanced flow rates to be delivered at the dictates of the occupier to meet AD O.

The ventilation unit will remove air from the bathrooms and kitchens and provide air to the habitable rooms; namely the bed and living spaces, this will be via a rigid flat ductwork system with supply and extract air grilles located in the ceilings.

MVHR systems will also provide background ventilation so trickle ventilators would be omitted where MVHR systems employed. Mechanical cooling is not expected to be utilised but may be considered where deemed appropriate, adds market value or is required to meet the Building Regulations. . Each unit will intake fresh air and discharge exhaust air through the façade. The intake and exhaust louvres will be located a suitable distance apart to prevent cross contamination. Mechanical ventilation terminals will be integrated into the façade via suitable weather louvres

The final design solution will be determined at the detailed design stages considering the principles set out in this document, Building Regulations, plant space as well as economic viability.

3.6 Residential corridors and stairwells

The residential corridor spaces will be provided with smoke extract ventilation as outlined within the Fire Engineers report. The smoke ventilation system will be utilised to provide temperature controlled day-to-day ventilation. Smoke ventilation fans are to be located at roof level and provided with suitable attenuation on room and atmosphere sides of the fans.

Stairwells will be provided with Automatic Opening Ventilators at roof level as part of the smoke ventilation strategy.

3.7 Foyer/reception zone

The Foyer and reception area will be provided with MVHR systems locally controlled in accordance with the Building Regulations. MVHR systems will be provided with room and atmosphere attenuators to meet the internal and external noise criteria. The MVHR system will connect to suitable sized louvre air intake/discharge points integrated into the local façade.

3.8 Residents support zone/Communal Lounge

The residents support zone will be provided with MVHR systems locally controlled in accordance with the Building Regulations. MVHR systems will be provided with room and atmosphere attenuators to meet the internal and external noise criteria. The MVHR system will connect to suitable sized louvre air intake/discharge points integrated into the local façade.

3.9 Staff WC's

Staff WC's will be provided with mechanical extract ventilation in accordance with the Building Regulations. Heat recovery techniques will be employed where deemed appropriate.

3.10 Residential amenity spaces

The residential amenity areas located at roof level will be provided with MVHR systems locally controlled in accordance with the Building Regulations. MVHR systems will be provided with room and atmosphere attenuators to meet the internal and external noise criteria. The MVHR system will connect to suitable sized louvre air intake/discharge points integrated into the local façade.

3.11 Plant and equipment areas

The dedicated plant and equipment areas located at ground floor level will be provided with ventilation via natural means using louvres on the façade/security doors.

3.12 Cycle stores

Cycling store areas will be provided with ventilation via natural means using louvres on the façade/security doors.

3.13 Refuse chutes

The refuse chutes will be provided with chute integrated extract ventilation system discharging to roof level.

3.14 Ventilation Summary

A summary overview of the proposed ventilation strategies is provided below:

Residential Areas	Overview	Mechanical Ventilation	Natural Ventilation Overheating risk Limitation	Purge Ventilation	Background Ventilation
1-, 2- & 3-bedroom apartments	Generally MEV, Opening Windows (Natural Ventilation)	✓ MVHR	✓ Opening Windows & Boosted MVHR (Bedrooms closed at night)	✓ Opening Windows	✓ MVR
Residential corridors and stairwells	Mechanical supply and extract	✓ Via smoke extract system	✓ Via smoke extract system	n/a	n/a
Foyer/reception zone	MVHR	✓ MVHR	n/a	n/a	n/a
Staff WC's	MVHR	✓ Extract / MVHR	n/a	n/a	n/a
Residential amenity spaces	MVHR	✓ MVHR	✓ Mechanical Cooling*	n/a	n/a
Plant and equipment areas	Natural ventilation for plant and equipment	n/a	✓ Via façade louvres/security doors	n/a	n/a
Refuse Bin stores	External bin stores	n/a	n/a	n/a	n/a
Cycle stores	Ventilation for odour control	n/a	✓	n/a	✓
Refuse chutes	None	n/a	n/a	n/a	n/a

*Mechanical cooling will only be provided if required by the Developer as part of the scheme fit-out and will depend on tenancy lease arrangements etc.

3.15 Ventilation terminals

Ventilation terminals will be sited in accordance with Building Regulations Part F and Part J and integrated into the façade design by the Architect.

The building does not propose to use any fossil fuels for general day to day use and therefore there will be no local flues from boiler plant etc. Where standy generators are provided to serve crtical life safety plant, these will likley be diesel type with flues terminating to atmopshere at roof level in accordance with Building Regulations Part J and any relevant local acts. Air intakes and discharge to/from the generator will be provided via louvres integrated into the façade.

3.16 Other Considerations

The project will take due consideration of other associated factors informing the design including ensuring window and door design and openings meets the wider requirements of Approved Document K (Protection from falling, collision and impact) and Approved Document Q (Security): Dwellings.