



DESIGN ENGINEER SUSTAIN

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Trinity Islands, Manchester Ventilation Statement

QA

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Section 1 - Introduction

This statement has been prepared in support of the planning amendment application for the development at Trinity Islands. The project is located in Manchester City Centre and bound by the River Irwell to the north and west, Regent Road to the south and Trinity Way to the east (referred to within Planning Submission as 'Site D'.)

In May 2022, Planning Permission was approved for the erection of four towers ranging from 39, 48, 55 and 60 storeys to form a mixed-use development (residential and commercial), complete with public realm improvements and highway works (Ref: 132429/FO/2021). This permission was superseded by a Section 73 Permission (Ref: 134039/JO/2022). The development is currently under construction."

There are a series of amendments, but the swimming pool (level 3) in particular is of relevance to ventilation systems.

This statement has been produced to detail the supply and extract ventilation strategy for the proposed amendments and describes how the ventilation requirements have been incorporated into the design of the building.

Futureserv have been appointed by Renaker to produce a Ventilation Statement in support of a planning amendment application for the development.

This Ventilation Statement has been prepared to illustrate the proposed ventilation designs. It addresses the building regulation requirements described within Approved Document Part F, 2021 for ventilation to the various facets of the proposed amendments.

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 summertime nighttime cooling of the building fabric when required
- Provide an easily controlled and maintainable system
- To prevent cross infection (by full fresh air and negative pressure regime)
- To recover heat from the exhaust air stream for re-use in the fresh air supply.

Futureserv Consulting Engineers have collaborated with the design team in order to provide a holistic solution for the building that will provide an efficient envelope and contain intelligent building services reducing the environmental impact of the proposed development whilst providing comfortable living and working accommodation.

Section 2 - Design

The ventilation design will comply with the following building regulation approved documents and standards:

Design Standards

The ventilation systems will be designed in accordance with recognised UK and industry best practice.

Design will be based on standards and guidelines, including:

- British and European Standards (BSI).
- Chartered Institution of Building Services Engineers (CIBSE).
- Building Services Research and Information Association (BSRIA).
- Building Research Establishment (BRE).
- Heating & Ventilating Contractors Association (HVCA).

Statutory Requirements

Ventilation systems design will also be based on the following Statutory Requirements:

- The Building Regulations.
- Clean Air Act
- The Control of Pollution Act and Amendment Acts.
- The Construction (Design and Management) Regulations.
- British Standards and Codes of Practice.
- City Council Planning Conditions & Requirements.

Section 3 – Ventilation Rates

Area/Room	Ventilation Criteria
Swimming Pool	To meet Part F & CIBSE Guidance in relation to maintaining the pool hall environmental conditions.
Pool plant room	To be provided with natural ventilation
Chemical store	To be provided with mechanical extract ventilation

Section 4 - Ventilation Strategy

4.1 - Basis of Design

The ventilation strategy has been designed to comply with the Building Regulations approved document Part F Means of Ventilation 2021, and the Non-Domestic Ventilation Compliance guides.

This document describes the basis of the design and outlines the scope of ventilation works for the of the proposed amendments under this application.

4.2 – Pool Ventilation Systems

The pool hall will be mechanically ventilated by means of a dedicated air handling unit. The unit will be located within the dedicated pool plant area located adjacent to the pool and will discharge to atmosphere utilising existing purge ventilation panels within the façade at level 3. Distribution ductwork will connect between the external panels and the plantroom AHU.

The unit will be of the heat recovery type and will generally comprise of the following sections: -

- Return air fan
- Air intake louver
- Motorised shut off dampers
- Fresh air filter
- Extract filter
- Counter flow heat exchanger (providing heat recovery)
- Supply fan
- Heating/cooling coils
- Humidity control
- Microprocessor based control panel c/w humidity sensor

The system will be controlled to supply a conditioned air volume to the pool hall during occupied hours to meet the environmental conditions of the space. minimum fresh air requirements and be provided with manufacturers controls package to ensure fresh air rates and temperatures are maintained at comfortable levels and allow connection to the central building management system.

The air handling unit will be mounted within the plantroom and will be routed via rigid and treated ductwork to supply and extract grilles located in the pool hall ceiling. Intake and exhaust ductwork will be insulated to prevent condensation.

Existing purge ventilation panels within the façade will be utilised for connecting the ventilation ductwork intake and discharge points to outside. Attenuators will be installed internally within the plantroom on the intake and exhaust ductwork to reduce any noise discharging to atmosphere. The attenuators will be designed to meet the external limiting acoustic criteria for the project.

4.3 – Pool Plant & Chemical Store Ventilation

The chemical stores rooms will be ventilated by means of mechanical extract systems with the fan units located locally to the space they are serving. Make up air will be provided naturally via one of the following methods: undercut doors, door transfer grilles, transfer ducts or make-up air drawn directly from

outside via the existing purge panels in the façade. Subject to the extent of air volumes required.

The local extract fans will be complete with the following.

- Time clock controller
- Electronic fan speed controller
- Fan auto changeover facility
- Duty/share facility which changes the lead fan every 12 hours
- AV mounts
- Back draught shutters
- Ductwork distribution system rising vertically through the building

The pool plant room will be naturally ventilated through the existing purge panels within the facade.

5.0 – Conclusion

The ventilation strategy improves on the fundamental principles of the Building Regulations and will contribute to reducing the annual CO₂ emissions of the proposed development. The proposed development will incorporate energy reduction measures in the ventilation systems to reduce the carbon footprint of the site using heat recovery devices and energy efficient fan selections.