

VENTILATION SUPPLY & EXTRACT STATEMENT

FOR:
PROJECT SWIFT MIDDLETON

A PROJECT FOR:
GXO

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PLANNING

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1.0 INTRODUCTION

1. This ventilation Supply & Extract statement has been prepared by MBA Consulting Engineers to support the full planning application.
2. The purpose of this report is to outline the scope of works for the ventilation systems to be installed as part of the proposed development.

2.0 THE DEVELOPMENT

1. The site name is located at the address: Stakehill Industrial Estate, Middleton, Manchester, M24 2SJ.

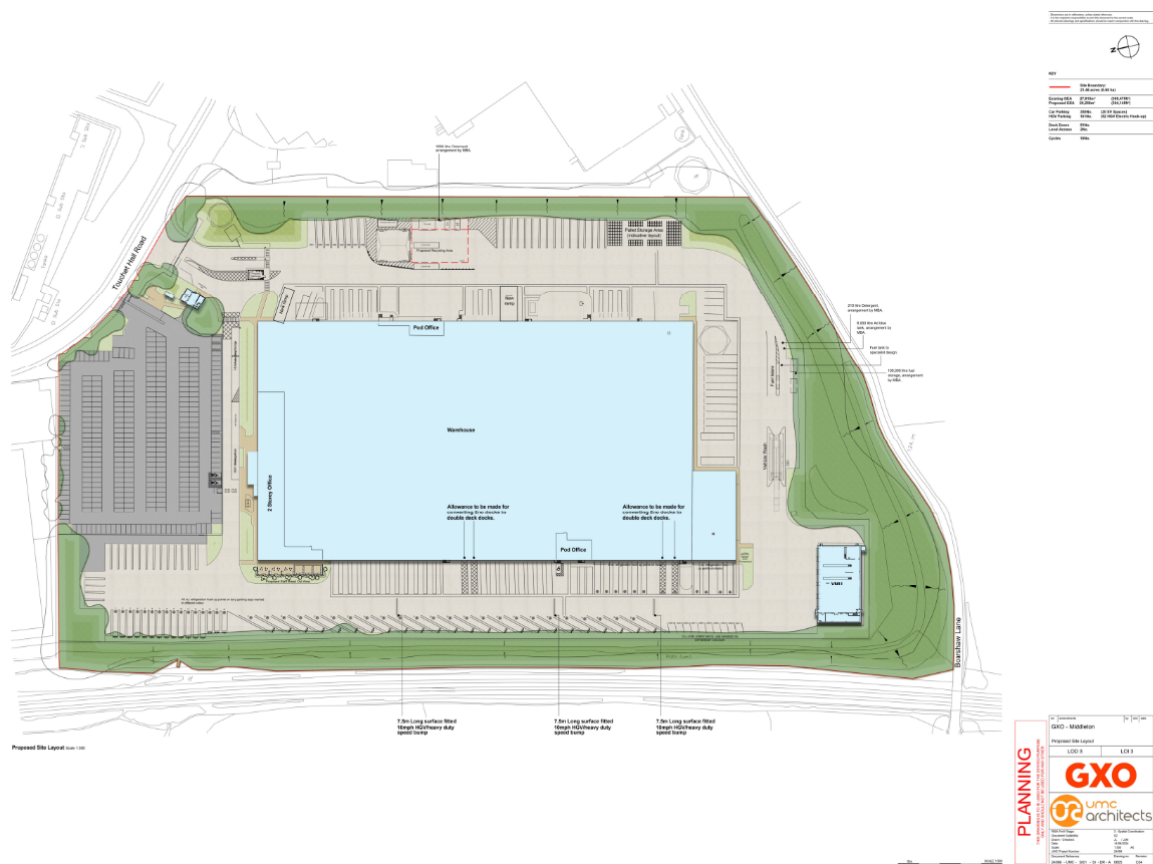


Figure 1 – Proposed site layout - 24099-UMC-SI01-SI-DR-A-0605(C04) Proposed Site Layout

2. The ventilation strategy will be developed in accordance with the Building Regulations, Building Standards, CIBSE guides and associated good practice guides.

3.0 MAIN OFFICE

1. The Main Office shall be mechanically via ventilated by 2No centralised internal Air Handling Units (AHU's) located on dedicated plant decks at either end of the office area. The plant decks are located on the first floor.
2. The AHU's is to provide fresh air and extract to the ground and first floor office areas.
3. The AHU's unit shall incorporate a heat recovery section to temper the air to achieve the design condition. Each AHU shall have its own dedicated Air Source Heat Pump (ASHP) that shall ensure that 22°C (±1.5°C) are maintained at all times during the year.
4. To reduce in-duct noise levels from the AHU supply and extract fans, duct mounted attenuators will be installed to the intake and exhaust ducts (both room and atmosphere) to ensure that noise levels are acceptable. Cross talk attenuators shall be provided here to avoid noise break out from noise sensitive rooms.
5. Intake and exhaust for the AHU's shall be connected to louvres to bring fresh air in and out of the building and shall be suitably distanced apart to avoid cross contamination. The louvres are to match the external façade cladding. 1 of the AHU's louvres shall be on the North façade, the other AHU louvres shall be on the West – both at high level.
6. A twin fan toilet extract system is to ensure adequate extract air is provided in accordance with the Building Regulations Part F to the toilet core areas to exhaust the foul air to atmosphere. The exhaust of the foul air shall extract through to the external façade cladding in the same manner as the AHU's – but distanced away from the intake louvre.
7. A Variable Refrigerant Flow (VRF) system shall be installed to provide heating and cooling to the office space. The system shall consist of internal ducted fan coil units that shall be located within service void above the accessible ceiling.
8. 2No DX systems shall be installed to serve an internal Comms room. The system shall consist of wall mounted air conditioning units with a N+1 redundancy strategy.
9. The external mechanical air conditioning condensing systems shall be installed at ground floor level within a designated plant location.

4.0 POD & TRANSPORT OFFICE(S)

1. The transport offices shall be mechanically ventilated via ceiling void mounted Mechanical Ventilation Heat Recovery (MVHR) units. The units shall provide Fresh Air and extract to the transport office ground and first floor areas.
2. The internal MVHR's will incorporate a plate heat exchanger, heat reclaim unit, together with supply and extract fans.
3. Both supply and extract louvres shall be connected to louvres to bring fresh air in and out of the building and shall be suitably distanced apart to avoid cross contamination. The louvres are to match the external façade cladding.
4. The MVHRs shall be complete with an electric heater battery. This is to ensure that the external air will be tempered to ensure that 18°C is maintained at all times.

5. To reduce in-duct noise levels from the MVHR supply and extract fans, duct mounted attenuators will be installed to the intake and exhaust ducts (both room and atmosphere) to ensure that noise levels are acceptable.
6. A toilet extract system, incorporating a toilet extract fan will be located within the service void above the accessible ceiling to exhaust air from all communal toilets cubicles located within the Pod & Transport office areas. This is to ensure adequate extract air is provided in accordance with the Building Regulations Part F.
7. The exhaust of the foul air shall extract through to the external façade cladding in the same manner as the MVHR's – but distanced away from the intake louvre. The extract louvre is to match the external façade cladding.
8. A Variable Refrigerant Flow (VRF) system shall be installed to provide heating and cooling to the Pod & Transport office space. The system shall consist of internal ducted fan coil units that shall be located within service void above the accessible ceiling.
9. The external mechanical air conditioning condensing systems shall be installed at ground floor level within a designated plant location.

5.0 WARM ROOM AREA

1. The Warm room area shall mechanically via ventilated by 1No centralised internal Air Handling Unit (AHU) located above the Warm Room.
2. The AHU's unit shall be complete with an electric heater battery. This is to ensure that the external air will be tempered to ensure that 22 °C (±1.5°C) is maintained at all times.
3. To reduce in-duct noise levels from the AHU supply and extract fans, duct mounted attenuators will be installed to the intake and exhaust ducts (both room and atmosphere) to ensure that noise levels are acceptable.
4. Intake and exhaust for the warm room AHU shall be connected to louvres to bring fresh air in and out of the building and shall be suitably distanced apart to avoid cross contamination. The louvres are to match the external façade cladding. The warm room AHU's louvres shall be on the South façade at high level.
5. A dedicated toilet extract system is to ensure adequate extract air is provided in accordance with the Building Regulations Part F to the toilet core areas to exhaust the foul air to atmosphere. The exhaust of the foul air shall extract through to the external façade cladding in the same manner as the AHU's – but distanced away from the intake louvre.

6.0 REFRIGERATION PLANT ROOM

1. The dedicated refrigeration plant room shall have a mixture of equipment including 2No internal condensers that has dedicated intake louvres.
2. The 2No internal condensers will have hard duct connections to the louvres at high level. The louvres are to match the external façade cladding.
3. The louvres serving the internal refrigeration plant deck shall be on the South façade at high level.
4. There shall be a supply air fan which shall provide fresh air to the internal refrigeration plant switch room.

7.0 CONCLUSION

1. The ventilation design is designed to be in compliance with CIBSE A & B2, UK Building Regulations Part F (Vol 2).
2. Equipment that requires maintenance shall be installed in easy access locations as well as comply with Construction Design and Management Regulations 2015 (CDM 2015).