
The Manchester College – City Centre Campus

Ventilation and Extract Planning Statement CC-BDP-PH2-XX-RP-MEP-0005

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1.0 Introduction

This report has been prepared on behalf of the LTE Group (The Applicant). LTE Group is a social enterprise and integrated education and skills group comprising 5 organisations including The Manchester College (further education) and UCEN Manchester (higher education). The City Centre Campus is part of an ambitious masterplan through which The Manchester College and UCEN Manchester plan to support Greater Manchester's long-term economic growth by meeting its educational and skills needs. The City Centre Campus will provide Centres of Excellence for the Digital and Creative Industries, and for Business and Professional Services.

This ventilation and extract statement supports the Full Planning Application for Phase 2 of the proposed Manchester City Centre Campus development.

The proposed development is located adjacent to the Manchester arena on the site of the old Boddingtons Brewery factory, connecting directly to the previous Phase 01 element. Currently the site is an area of hardstanding adjacent Phase 01.

The application seeks approval for a five storey educational facility including the following:

- Cafe facilities for use by occupants.
- Computing facilities;
- Staffroom facilities;
- General teaching areas;
- IT teaching areas;
- Science lab teaching spaces and Prep areas
- Student social spaces;
- Multiuse areas for exam and/or performances;
- Plant areas and ancillary storage spaces.

The ventilation strategies comply with the guidance in the building regulations Approved Document part F: - Means of Ventilation as well as the following standards and guidance:

- AD L2A Conservation of fuel and power in new buildings other than dwellings
- Non Domestic Building Services compliance guide
- BS EN 13053:2006+A1:2011 Ventilation for buildings. Air handling units. Ratings and performance for units, components and sections
- BS EN 5588-9:1999 Fire precautions in the design, construction and use of buildings. Code of practice for ventilation and air conditioning ductwork (AMD 14993) (No longer current but cited in Building Regulations guidance)
- BS 9999:2008
- CIBSE guide B
- CIBSE commissioning code A
- HSG 258 A guide to local extract ventilation
- DW 144
- DW172
- EU directive 2009/125/EC Regulation 1253/1254 Ecodesign requirements for ventilation units

2.0 Ventilation Systems

The ventilation systems shall be designed in accordance with buildings regulations part F and CIBSE guide B and shall provide an adequate means of ventilation for the buildings occupants whilst ensuring that air quality and occupant comfort is satisfactorily maintained.

The table below details typical ventilation and extraction rates:-

Zone	Environmental Treatment	Occupancy	Ventilation Rate
Administration / Offices	Full mechanical ventilation with heating and	As appended occupancy drawings	10 l/s/person
Atrium	Full mechanical ventilation with heating	As appended occupancy drawings	10 l/s/person
Circulation spaces	Mechanical and Natural ventilation depending on location		0.3 l/s/m ²
Cafe	Mechanical extract with make-up supply air	n/a	To suit catering layout when available
Public Toilets	Local heating & mechanical ventilation	N/A	6 ACH Extract 6 ACH Supply
General/ Teaching spaces and Computing Rooms	Full mechanical ventilation with heating (and comfort cooling where required)	As appended occupancy drawings	10 l/s/person
Science Labs	Full mechanical ventilation with heating (and comfort cooling where required)	As appended occupancy drawings	4ACH or 10 l/s/person whichever is greater (Recirculating Fume Cupboards)
Prep Rooms	Full mechanical ventilation with heating (and comfort cooling where required)		7.5ACH

Due to the variety of uses within the building, ranging from cafes to science labs and computing suites, the building has several ventilation requirements that have been detailed below and include:-

- Central mechanical supply and extract with heat recovery and air source heat pumps
- Centralised Toilet Extract systems
- Local Extract Ventilation systems
- Recirculating Fume Extract cupboards

Generally, care shall be taken to ensure that ventilation systems are exhausted at roof level and that exhausts are located in areas away from people and neighbouring buildings, ensuring that exhaust gases are directed away from such instances and also away from fresh air intakes.

Due to the nature of the buildings use, noise control shall be critical throughout the building, this is also true of the buildings ventilation systems, with acoustic control measures being adopted as required by the acoustic consultant to ensure that noise breakout from ventilation plant is controlled to satisfactory levels throughout. As required, flexible joints, couplings and fixings shall be employed as required for isolation purposes with acoustic attenuators being utilised between rooms and at equipment.

2.1 General Supply and Extract (Staff Areas and Teaching spaces)

The building has been split into three, with each served by a separate air handling unit, Riser and distribution system that will have filtered and tempered air supply and heat recovery on the extract. The air intake and discharge shall be separated to ensure no cross contamination.

Supply and extract shall be ducted from the central plant in three main cores and distribute to supply and extract grilles and bellmouths in all classrooms, offices and science labs.

2.3 Central Atrium Space Ventilation System

The central atrium space including social spaces and adjoining corridors that are open to the atrium shall be ventilated via a mixed mode solution with low level supply and high level mechanical extract to be employed generally with additional opening louvres at high level within the atrium to provide an additional boost of natural ventilation at peak summer periods.

The atrium shall also benefit from smoke extract ventilation with the specification of such systems being confirmed by the fire consultant as a result of computational fluid dynamics (CFD) analysis.

2.7 Local extract ventilation

There are several areas where local extract ventilation is being provided for activities these include:-

- WC's
- Acc WC's
- Storerooms
- Cleaners Stores
- Bin Store (Make up via louvred door)
- Bike Store (Make up via louvred door)

These systems shall generally be ducted to the roof and discharged away from air intakes. There are however some more local extract systems that will discharge via Louvres into the service yard of Phase 2.

3.0 Spatial Coordination

The ventilation and extract plant shall be located at roof level adjacent to each of the main cores. Units shall be arranged so that they can be maintained from the roof deck.

All air intake and discharge locations will be spaced sufficiently to minimise risk of short circuiting air flows.

4.0 Appendix A – Architectural Occupancy Mark ups