98 WILMSLOW ROAD,
MANCHESTER

MECHANICAL AND ELECTRICAL ENGINEERING SERVICES

VENTILATION PLANNING REPORT

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PG/3774
Revision B
27/10/17

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AMENDMENTS MADE

Revisionn	Date	Section	Description
A	19/10/2017	All	First issue.
B	27/10/2017	All	Occupancy corrected.

1.0 INTRODUCTION

This report has been produced for the purpose of demonstrating that a kitchen extract design compliant with Planning requirements will be provided for the proposed commercial fit-out of 98 Wilmslow Road Manchester.

The services design concept has been developed in conjunction with other members of the design team in particular the architect to ensure that engineering solutions balance functional, energy efficiency and sustainability issues.

The former vehicle maintenance depot is to be converted to a café space serving drinks and limited hot food. We understand that food preparation will be limited to a panini sandwich maker.

2.0 REFERENCE DOCUMENTATION & STANDARDS

The mechanical and electrical services design will comply with the following documentation and standards. (Please note this list is not intended to be exhaustive).

a. British Standards
b. British Codes of Practice
c. Building Regulations
d. Health and Safety at Work Act
e. Industrial Building Act
f. Local Fire Brigade requirements
g. Local Health and Environmental Services requirements
h. Local Supply Authority requirements
i. The Institution of Electrical Engineers Regulations for the Electrical Equipment of Buildings, current edition
j. The Chartered Institution of Building Services Engineers Design Guides
l. Disabled Discrimination Act
m. Construction (Design and Management) Regulations
n. Water Supply Regulations
o. HSE, Control of Legionellosis in Hot and Cold Water Systems
p. HVCA DW/171.

Mechanical and Electrical Services

All equipment and materials selected for use within the building shall be selected from good quality manufacturers and shall comply fully with the appropriate CE and British Standards.

Prior to final selection of equipment it is intended to liaise with the Client and maintenance staff to ensure that any standardisation and compatibility requirements are met.

Mechanical and electrical services will be designed in accordance with current versions of the Building Regulations Part L Approved Document L2B and the Non-Domestic Building Services Compliance Guide.

3.0 MECHANICAL SERVICES

3.1 Design Criteria

Details of all construction elements and their thermal performance to be provided by the Architect.

Design Conditions

i) External Design Conditions:

Summer	+ 26°C db, 20wb
Winter	- 4°C

ii) Internal Heating Design Conditions:-

Restaurant/Dining	21°C	db +/- 2°C
WCs	19°C	db +/- 2°C
Circulation	19°C	db +/- 2°C

iii) Fresh air Allowance:

Restaurant/Dining	-	10 litres per second per person
WCs	-	10 AC/Hr (extract only)
Kitchen	-	Extract to meet HVCA DW/171 requirements

iv) Noise Criteria

Generally NR25 - NR35

3.2 VENTILATION PROPOSALS

The ventilation system will comprise the following:

- 1No Helios GBW 560/4 fan providing supply air via high level ductwork and grilles along the length of the unit.
- 1No Helios GBW 560/4 fan providing extract air from the space, exhausting to atmosphere.

Based on 150No occupants (approximate maximum based on the seating plan provided) the fresh air demand for occupancy would be 1,500 litres/second.

Extract air from WCs equates to 50 litres per second and the extract ventilation rate for a panini maker (on accordance with DW172) is 40 litres/second.

Based on the above the total air volume required to serve the space is 1,590 litres per second, or 1.59 m^3/s.

The fans are capable of providing more than 2.0m^3/s of fresh air and extract to the space, which is more than sufficient to meet demand.

Dirty extract from WCs and food preparation equates to less than 10% of the overall extracted air volume. As such, any smells contained in the exhausted air would be imperceptible.

The DEFRA “Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems” has now been withdrawn and is no longer in use. However, as the catering provision is limited to a single panini maker this guidance would not be applicable.

The exhaust has been located at a suitable height of 3,400mm above the pavement to avoid nuisance discharge to the public highway. The air intake is clear of any potential sources of contamination or odour.

Specific Extract Flow Rate Calculation Sheet

Based on the THERMAL CONVECTION METHOD as recommended in HVCA Specification DW172 & Gas Safe Method

Site:	**98 Wilmslow Road**	**Job No:**	3774
For:	**Cafe**	**Drg No:**	NA
Floor Level & area	**GF**	**Date:**	19/10/2017
Canopy/Ceiling Ref:		**Assessed By:**	PG

IMPORTANT NOTE :

In order to comply with Gas Safe regulations dated 12th April 2012, flow rate calculations should now incorporate the higher values of gas fired appliances

Calculate both methods on this sheet , then use the higher of the totals calculated

Cooking Equipment	Power	Plan Size		DW172 SEFR Method			Gas Safe Method	
		X(m)	Y(m)	Area (m^2)	TCC ($m^3/s/m^2$)	Flow Rate (m^3/s)	Kw Load If gas	x Kw by 0.013(m^3/s)
Microwave Oven/Toaster, Electric	Electric	0.34	0.35	0.12	0.30	0.04	N/A	0.04
			Use the higher of these totals			0.04		0.04

Theoretical Flow Rate (m3/s) **0.04** m^3/s

Table 3.2: Initial Kitchen Ventilation Calculations