

Unit 5, The Guild, Wilton

Ventilation and Extraction Statement

2432-B20-MEP – Ventilation and Extraction Statement



BOX TWENTY

Contact

Inna Belozeroval
Graduate Engineer

[REDACTED]

[REDACTED]

2nd Floor, Mariner House
62 Prince Street, Bristol
BS1 4QD

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Prepared by	I. Belozeroval	I. Belozeroval
Checked by	P. Weston	P. Weston
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1. Introduction

This Ventilation and Extraction Statement has been prepared by Box Twenty on behalf of the applicant in support of an application for full planning permission for the redevelopment of Unit 5, The Guild ('The Site') within Wiltshire Council.

This document outlines the ventilation systems and constraints that should be considered for the Proposed Development, including mitigation of the impacts of air quality and noise, which are assessed as part of the wider planning application.

1.1 The Site

The Guild, Wiltshire (formerly Wilton Shopping Village) is a retail destination located on King St, Wilton, Salisbury SP2 0BH.

Figure 1 shows the site location.

The Guild (and application site) is situated within the Wilton conservation area. This covers the majority of the town and is bound at the north by the A36. A number of listed buildings are located within the Historic Courtyard which is situated to the West of the application site. There are no listed buildings within the application site.

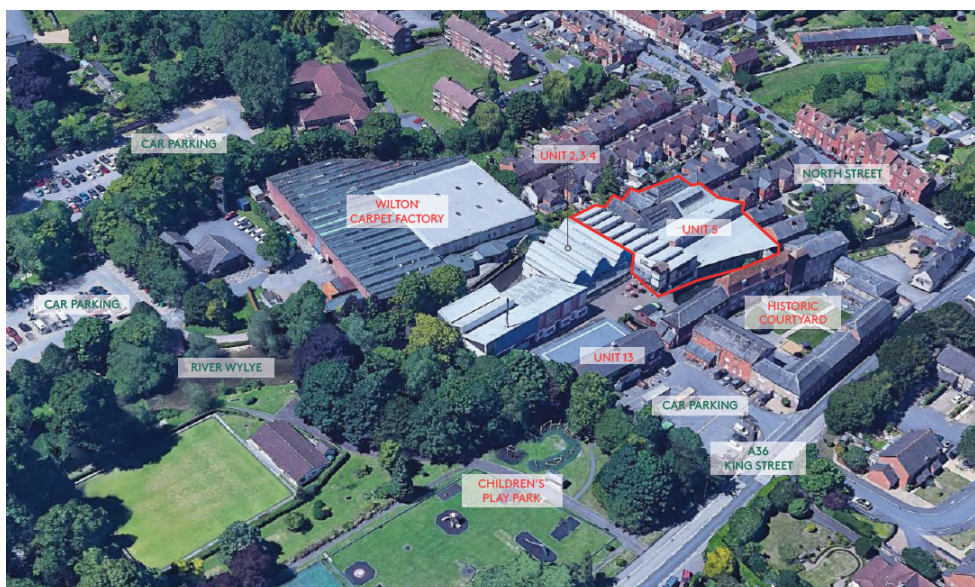


Figure 1 - Site Location (outlined in red)

1.2 Proposed Development

The proposal at Unit 5 fundamentally comprises of a 'U' shape of smaller retail units arranged around a larger space which is subdivided between an enclosed internal space and outdoor space fronting onto the river. A range of smaller retail spaces are orientated around a new atrium space and outdoor seating area fronting the river. A glazed curtain wall is proposed to enclose the internal atrium, offering further flexibility internally whilst enabling views from all retail units towards the river. A retail wing 'punches' through on the western boundary to frame the external space and create a vista and visual draw into the space.

As part of the retail offer of Unit 5, it is envisioned that food and beverage will play a key role. A restaurant is proposed split across two floors, benefiting from a first floor terrace. Seating is also created adjacent to the river edge through an enhanced landscape proposal which integrates soft landscaping into the development.

A Ventilation and Extraction Statement is required by Wiltshire Council to be submitted with the planning application.

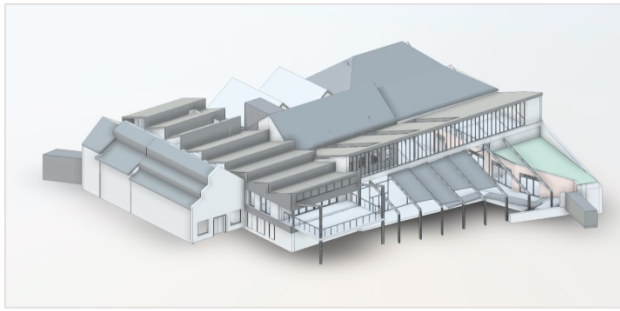


Figure 2 – 3D Model of the development (front)

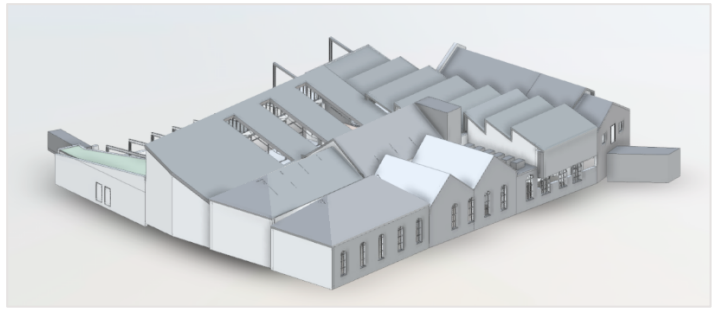


Figure 3 – 3D model of the development (rear)

2. Ventilation

2.1 General

As part of the ground floor and first floor is designated for kitchen and restaurant/cafe (Class A3) use respectively, there will be an extract ventilation requirement from the kitchen to remove cooking smells & odours with supply air also required to the restaurant.

This Ventilation & Extraction statement is primarily to identify the source of the cooking & the mitigation measures that are proposed at source & through the extract system terminating & discharging the air from the kitchen to atmosphere in a suitable manner.

2.2 Extract

2.2.1 Extract Fan

Extract fan – bifurcated axial extract fan to be mounted on AV mounts and separated from the ducting by using flexible connectors to eliminate transferring of vibrations through the structure. Fan unit will be mounted internally adjacent the kitchen to contain most of the noise to the kitchen itself.

2.2.2 Noise Control

Suitable attenuation shall generally be provided on the discharge side of the kitchen extract fan in order to reduce any noise reverberation within the ductwork and to mitigate the extent of any noise breakout to the local environment. Attenuation shall also generally be provided on the room side of all supply and extract fans in order to control noise levels of the mechanical ventilation systems within the internal environment.

Table 1 below sets out recommended noise levels in the kitchen and the restaurant.

Table 1 – Recommended noise levels (BS 8233)

	Good Standard (dBA)	Reasonable Standard (dBA)
Kitchen	50	55
Restaurant	40	55

2.2.3 Pollution Control

The exhaust air from commercial kitchen ventilation systems should be discharged at least 1 metre above ridge level.

On this development, the extract duct will penetrate the kitchen ceiling, run vertically up through the restaurant on the First Floor where it will be concealed in a boxing, and terminate 1m above ridge level as shown in Figure 4.

A high velocity terminal shall be designed to achieve an exhaust or efflux velocity of 12-15m/s or as required by the Local Authority to properly dissipate exhaust fumes.

Kitchen canopy hoods shall be installed local to the cooking equipment and shall be provided with integral filters and grease traps.

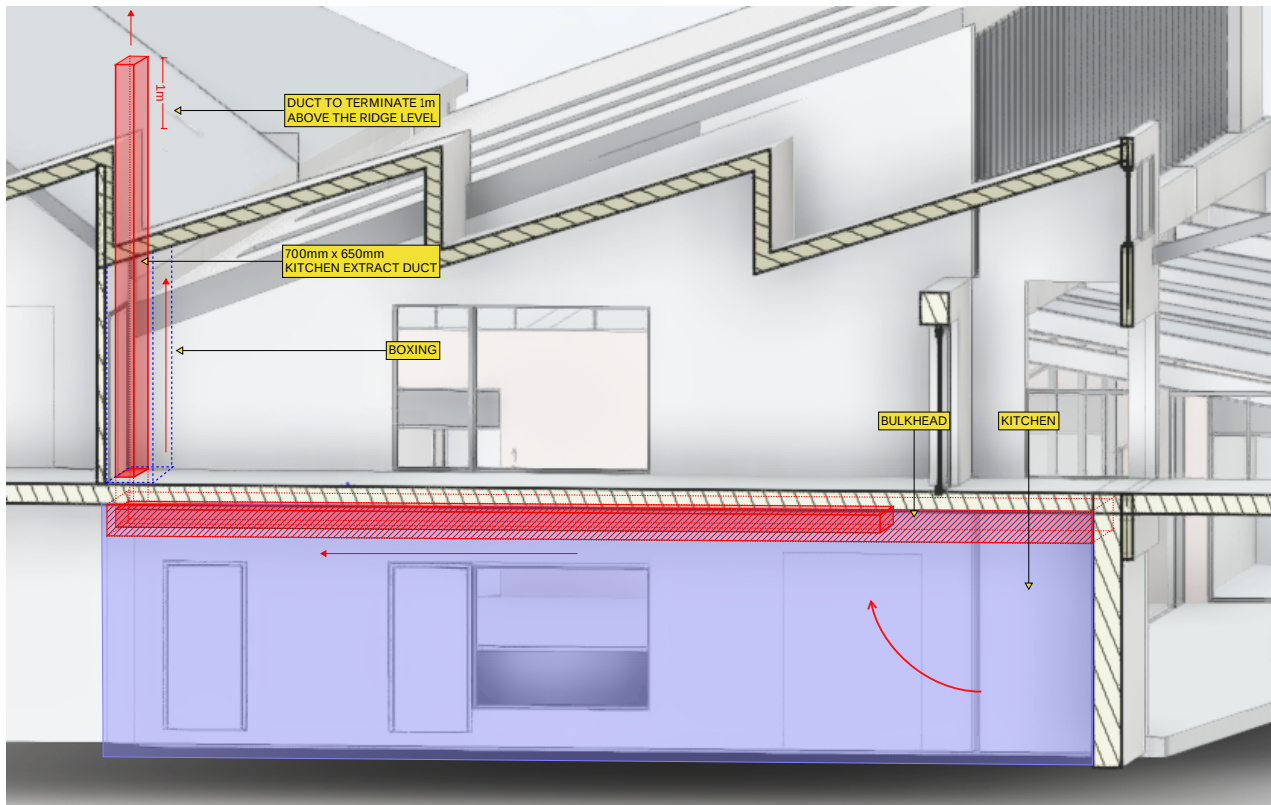


Figure 4 - Duct route to the top roof level outside the building

2.2.4 Ductwork Design

As Figure 5 and Figure 6 below, kitchen extract ductwork will run inside the bulkhead to the back of the kitchen and then rise vertically from the kitchen on the Ground Floor to discharge at roof level. On the First Floor, the duct will be concealed in a boxing for aesthetic and acoustic purposes as it will run through a restaurant. Due to proximity to other buildings, the ductwork may need to be fire-rated as no fire-dampers are permitted.

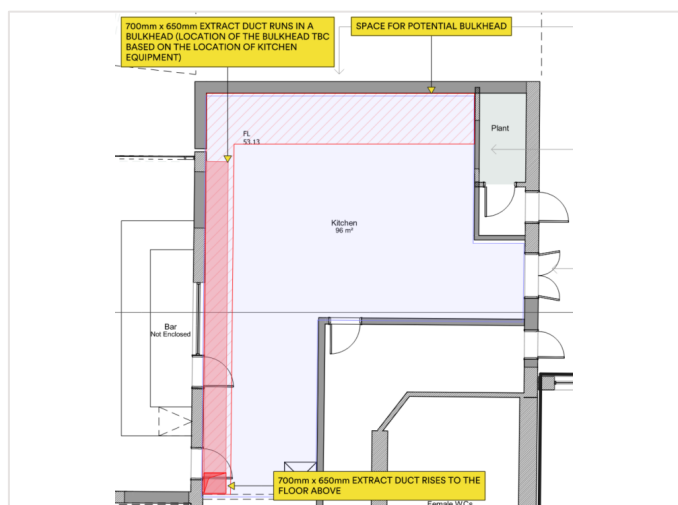


Figure 5 – Kitchen extract duct location on Ground Floor

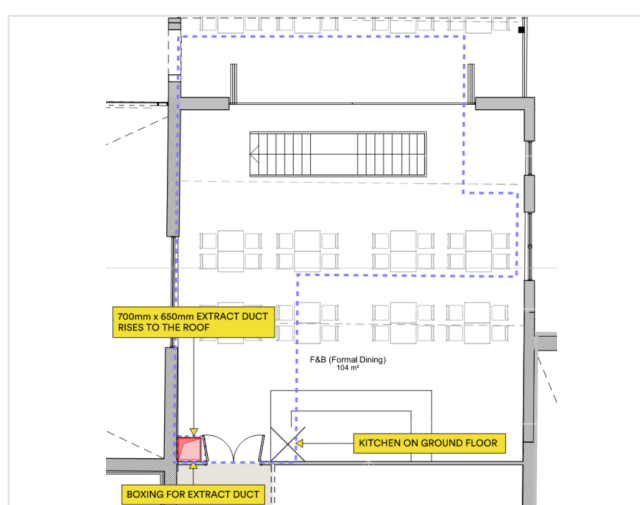


Figure 6 - Kitchen extract duct location on First Floor

Table 2 sets out values used to estimate the size of the duct.

Table 2 – Kitchen extract ductwork sizing (DW/172-Kitchen ventilation systems)

Restaurant	
Kitchen extract ductwork size	
Kitchen area	62.2 m ²
Kitchen height	2.57 m
Kitchen volume	159.44 m ³
Air change rate	60 ACH
Exhaust flow rate	2657 l/s
Velocity	<6 m/s
Duct size	ø750mm (700mm x 650mm)

All ductwork shall be designed in accordance with DW 172, DW 144, Building Regulations, and other relevant documents.

2.2.5 Access and Maintenance

In line with DW 144 BESA Guide, kitchen extract duct will have access panels at 3m intervals as well as a panel at the bottom and top of the duct as it rises vertically up the building. Scaffolding or other adequate arrangements should be made to enable access for cleaning and maintenance of the ductwork.

Box Twenty

mail@boxtwenty.co.uk
accounts@boxtwenty.co.uk

+44 (0) 117 363 7221

2nd Floor, Mariner House
62 Prince Street, Bristol
BS1 4QD

boxtwenty.co.uk

