

STATION HILL NORTH

READING

VENTILATION STRATEGY STATEMENT

DECEMBER 2019

Station Hill North, Reading. Ventilation Strategy Statement.

Introduction

This report summaries the ventilation strategy for office development, plot G on Station Hill North as part of the submitted hybrid planning application. The report describes the office ventilation, toilet ventilation, provisions for tenant's restaurant extract and car park ventilation.

Office Ventilation

General ventilation to the building will be provided by four roof-mounted air handling units (AHUs), with dedicated supply and extract ventilation being provided for the toilets by a roof-mounted AHU fan. Fresh air intakes and exhaust discharge ductwork will have louvres located behind the plant screen on the roof, ensuring sufficient separation to minimise recirculation (shown in diagram below).

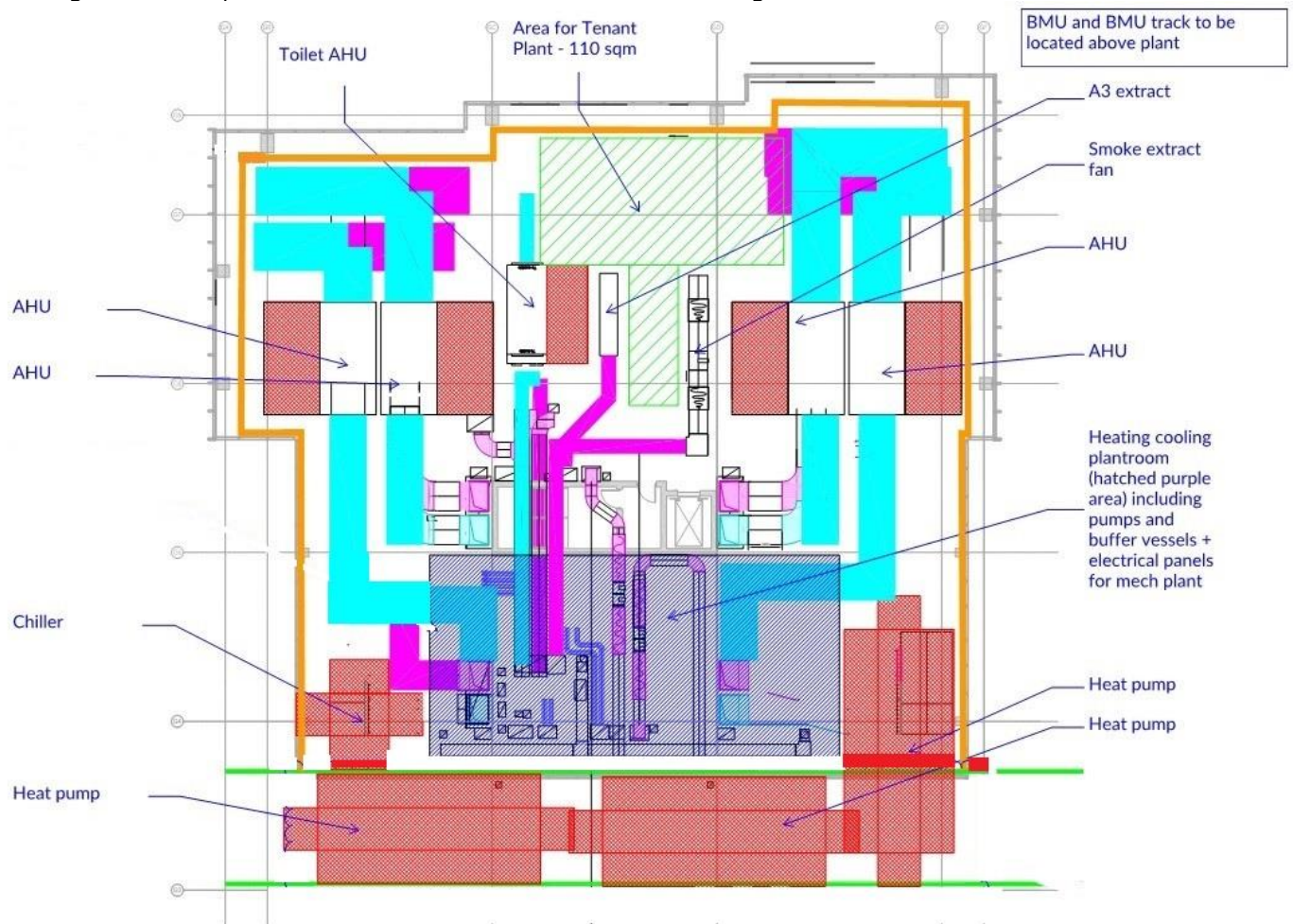


Figure 1: Plan of the roof plant showing office AHU, Toilet AHU and Kitchen A3 Exhaust Fan.

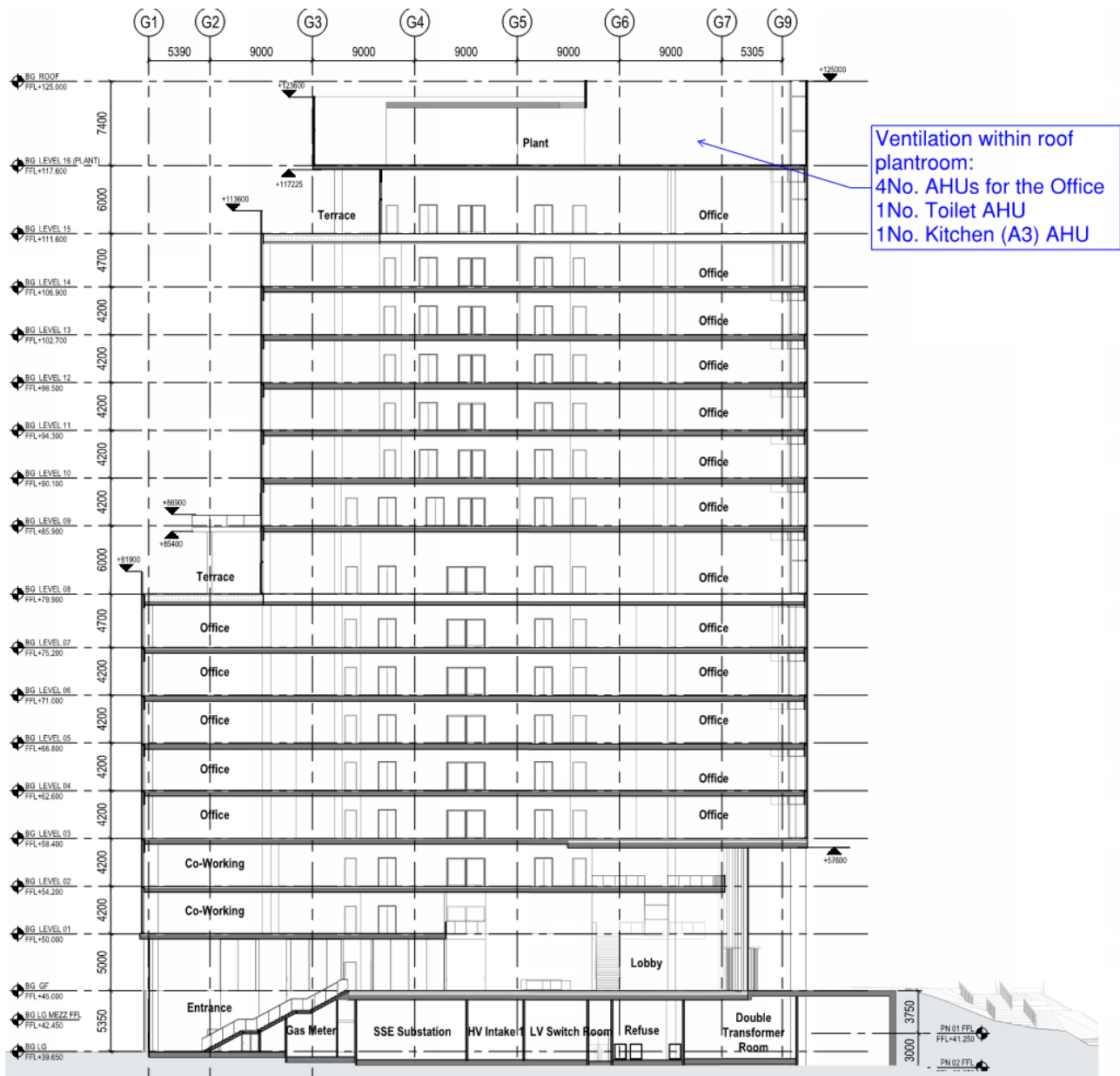


Figure 2: Section of office developments with AHU locations.

Supply and extract ductwork will be extended down the building through 4No. dedicated ventilation risers, so that there is one ventilation riser within each of tenants' demise. There will be a supply and exhaust connections provided for each office floor plates. The ventilation has been sized to provide the recommend air flow rates per person as per the recommendations provided by British Council for Offices (BCO). The co-working areas will be provided with supply and extract ventilation from the same system.

There are separate AHUs for the toilet in the cores, reception and changing facilities at lower ground floor. The toilet's AHU is located at roof level and provides constant ventilation of the toilet areas. Where possible the supply air will be provided to the lobbies of the toilets and changing rooms, and air extracted directly from those spaces by the dedicated extract system to avoid any bad odours escaping out of the room. Within the reception and lift lobbies, fresh air will be delivered to the rear of FCUs, with extract air taken from the ceiling void plenum. In the toilets and changing rooms, ventilation will be provided via discreetly integrated architectural grilles/diffusers.

The following minimum filtration standards will be specified for the mechanical ventilation AHU systems:

Ventilation system	Supply	Extract
Office areas	ISO ePM10 50% Pre Filter ISO ePM1 85% Main Filter	ISO ePM10 50%
Toilets, showers and changing Areas	-	ISO ePM10 50%
Stores and plantrooms	-	ISO ePM10 50%

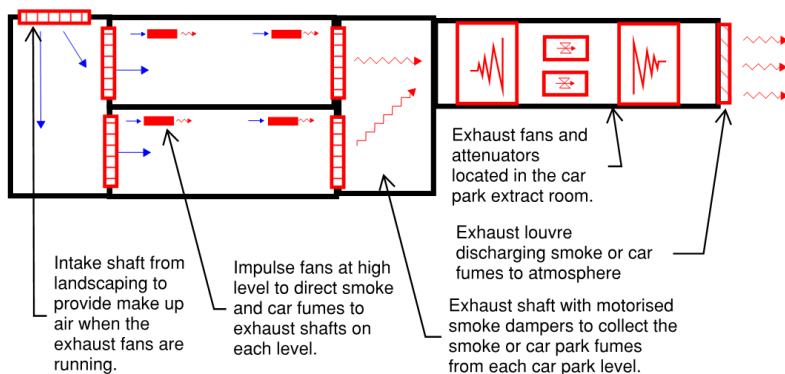
The gas meter room will be located at lower ground floor and will be ventilated naturally, by means of high and low level louvres on the external road facade. The bin stores are located at lower ground floor level and will be ventilated naturally, direct to outside, through louvred doors.

Tenant A3 Kitchen Extract Ventilation

Provision has also been made for a dedicated kitchen exhaust duct from the ground floor restaurant area to roof level and a supply AHU shall be installed by the tenant within their demise and connect to integrated louvres at high level on at the tenant's demise. The fire-rated kitchen exhaust duct will be installed as part of the base-build because it runs through the building core to the roof. The layout below shows the kitchen extract within the landlord riser on a typical floor. Space provision has been allowed on the roof for the future fit-out by the tenant of a kitchen extract fan, filtration/odour treatment system and associated attenuation. To minimise the risk of odour nuisance Landlord lease agreement with any A3 retail tenants includes a clause such that the Tenant is required to provide appropriate filtration methods determined by the Landlord based on the Tenants catering type and kitchen size. It will also include that the chosen form of filtration shall be maintained in accordance with standards of DEFRA and DW172.

Car Park Ventilation

The multi-storey car park will be mechanically ventilated. There will be an extract shaft connecting the floors of car park. The extract will be designed on one fire floor providing 10 ACH or two floors at 6ACH, whichever is greater. There will be motorised smoke dampers that in fire mode will open on the effected floor with the other floors closing. Extract fans will be located in the dedicated plant room, extracting air from the car park through louvres in the plant room wall. The air will be extracted direct to atmosphere through a discharge louvre at high level on Podium 1 facing on to Garrard Street. The louvre have been located away from the public realm. Supply air into the car park will come from the make up shaft from the landscaping area. Air movement will be promoted across the car park by low-profile soffit-mounted jet fans, ensuring there are no areas of the car park where air remains stagnant or allows the build-up of fumes.



CAR PARK VENTILATION DIAGRAM

Figure 3: Car Park Ventilation.

Phase 3 Ventilation Strategy

The ventilation strategy will be developed from the principles set out above and issued as part of detail planning application for phase 3.

Conclusion

The ventilation has been designed to the planning regulations and does not cause any nuisance in terms of noise, air quality or visual impacts. This has been achieved by ensuring any kitchen ventilation is at roof level for building G and ensuring the car park ventilation is directed away from the public realm areas.

