

29-35 Station Road, Reading

Ventilation and Extraction Statement



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1 Introduction

1.1 General

- 1.1.1 This report serves to outline the ventilation and extraction strategies employed for 29-35 Station Road as well as illustrate the positioning of external openings / louvres / plant such that any implications associated with the ventilation and plant arrangement can be understood.
- 1.1.2 The design is currently at RIBA Stage 3 and the information provided is commensurate with that stage, with the scheme design indicating the intended strategy whilst final sizing is still to be conducted during the later stages.
- 1.1.3 The final size, aesthetic and position of external louvres, where part of the mechanical systems, are to be finalised and confirmed during Stage 4 design.
- 1.1.4 Additional information on the systems referred to can be obtained from the PBA Mechanical & Electrical Services RIBA Stage 3 Report.
- 1.1.5 Also refer to Appendix A which provides an illustration of plant areas and ventilation covered within this report.

2 Ventilation / Extraction Strategies

2.1 Apartment Ventilation

- 2.1.1 Ventilation to the apartments shall be provided by a combination of manually openable windows, generally for purge purposes, with a ducted mechanical supply and extract system incorporating heat recovery (MVHR) providing general fresh air ventilation and extracting vitiated air.
- 2.1.2 Each apartment / dwelling shall be provided with a Mechanical Ventilation Heat Recovery System (MVHR), comprising high efficiency supply and extract fan complete with integral plate heat exchanger, summer bypass and air filters. MVHR systems will extract air from all bathrooms, kitchen areas and the utility cupboard and supply filtered fresh air to the bedrooms and living area. The system shall run at a general background ventilation rate from which it shall increase to a 'boost' rate following switching of bathroom lights or a local manual switch adjacent to the cooker within the kitchen. The system air intakes / exhausts will be via attenuated louvres integrated with the façade, the positioning and appearance of which is to be agreed with the architect.
- 2.1.3 In addition, a separate recirculating kitchen hood system would be anticipated to be provided as part of the kitchen fit outs.

2.2 Communal Corridor Ventilation - Apartments

- 2.2.1 The communal corridor space on each floor of apartments shall be provided with ventilation through the use of natural air intake positions and independent environmental extract fans, utilising the wet riser and water services risers as natural intake paths (via motorised openings at the top) and the natural smoke shaft as the extract route (via roof mounted fan ducted from head of smoke shaft).
- 2.2.2 The system, comprising fan(s), dampers and controls will move air through the corridors and through the corridor ceilings, controlled by fire and smoke rated dampers to help prevent heat build-up.
- 2.2.3 In the event of a fire the smoke ventilation system operating the corridor natural ventilation system shall be shut down and all natural ventilation paths have motorised dampers closed (also to be provided with fire & smoke dampers).

2.3 Tenant Area Ventilation (Ground / First Floor)

- 2.3.1 Ventilation provision to the ground / first floor retail unit and first floor resident's gymnasium shall be installed as part of the tenant / operator fitout in these areas, with it anticipated that independent fresh air handling units and VRV heating / cooling units shall be utilised in each space.
- 2.3.2 The air intake and exhaust positions for this system shall be provided by means of ribbon louvres integrated into the façade above ceiling level in these areas, the positioning and appearance of which is to be agreed with the architect.
- 2.3.3 The fit-out of plant associated with catering extract, including external discharges and positioning, is not briefed for the project and therefore not considered within this report.

2.4 Smoke Ventilation

- 2.4.1 The fire engineering strategy is detailed in the Trenton Fire Engineering report. The Fire Strategy identifies natural smoke ventilation to residential common areas.
- 2.4.2 The report identifies that the lobby in front of the residential common stair shall be provided with ventilation by way of an automatic opening ventilator (AOV) at each level, with a minimum area of 1m², discharging into a natural smoke shaft of minimum 1.5m² area, minimum of 0.85m in either dimension.
- 2.4.3 This natural smoke shaft is to terminate in an AOV of 1m² minimum area, located 0.5m above any adjacent structure within 2m and 2.5m above the ceiling of the highest level served. In addition the top (22nd) floor stair lobby is to be provided with a separate AOV of 1.5m², provided in the ceiling, and the residential common stairs themselves shall be provided with a separate AOV of 1m² through the roof.
- 2.4.4 This natural smoke extract ventilation will be provided by the smoke shaft, with motorised fire and smoke dampers at the floor levels. The smoke ventilation will be controlled automatically via a control panel in the ground floor lobby.
- 2.4.5 In the event of a fire and the smoke ventilation system operating the corridor natural ventilation system shall be shut down and all natural ventilation paths have motorised dampers closed (also to be provided with fire & smoke dampers).

2.5 Landlords / Plant Areas Ventilation

- 2.5.1 In addition to the ventilation provisions for the apartments, common corridors, tenant areas and smoke ventilation it is also necessary to provide ventilation to other landlord and plant areas as detailed below.

2.5.2 Wet Riser Tank / Plant Room

- 2.5.3 The wet riser tank / plant room shall be provided with mechanical extract ventilation from a common basement extract ventilation system, which shall discharge to outside via a high level external louvre on the façade. Make up air shall be provided by natural means, with a clear air path from outside provided via high level intumescent transfer grilles as illustrated on the plans.
- 2.5.4 In addition a high level external louvre on the west elevation shall provide natural ventilation also.

2.5.5 Boosted Cold Water Tank / Plant Room

- 2.5.6 The boosted cold water tank / plant room shall be provided with mechanical extract ventilation from a common basement extract ventilation system, which shall discharge to outside via a high level external louvre on the façade. Make up air shall be provided by natural means, with a clear air path from outside provided via high level intumescent transfer grilles as illustrated on the plans.
- 2.5.7 In addition an external louvred wall on the west elevation shall provide natural ventilation also.

2.5.8 Cycle Store & Bin Store

- 2.5.9 The cycle and bin stores shall be provided with mechanical extract ventilation from a common basement extract ventilation system, which shall discharge to outside via a high level external louvre on the façade. Make up air shall be provided by natural means, with a clear air path from outside provided via high level intumescent transfer grilles as illustrated on the plans.

2.5.10 Gas Meter Room

2.5.11 The gas meter room shall be ventilated naturally by means of a louvred external door / wall.

2.5.12 Boiler Plant Room

2.5.13 The boiler plant room shall be ventilated naturally as a minimum by means of low and high level external louvres, in accordance with BS 6644:2011.

2.5.14 In addition an external louvred wall on the west elevation shall provide natural ventilation also.

2.5.15 Substation

2.5.16 The ventilation to the substation shall be in accordance with the requirements of SSE, generally naturally ventilated via louvred external doors.

2.5.17 Generator

2.5.18 The room housing the standby generator shall be provided with single sided ventilation to the room. When in operation the generator shall have mechanical ventilation for exhaust of air warmed by the operation of the generator, with this replaced naturally by fresh external make up air. Both the exhaust and intake shall be via external louvres (or louvred wall) on the west elevation.

2.5.19 Tenant Plant (Retail Units / Gym)

2.5.20 Areas for future tenant plant are provided at ground and first floor level, with it anticipated that VRF heat pump systems shall be utilised in the retail units and residents gym. Ventilation to these areas shall be provided by an external louvred wall on the west elevation.

2.5.21 Lobbies

2.5.22 Natural ventilation sized to comply with Building Regulations.

Appendix A Plant Areas & Ventilation

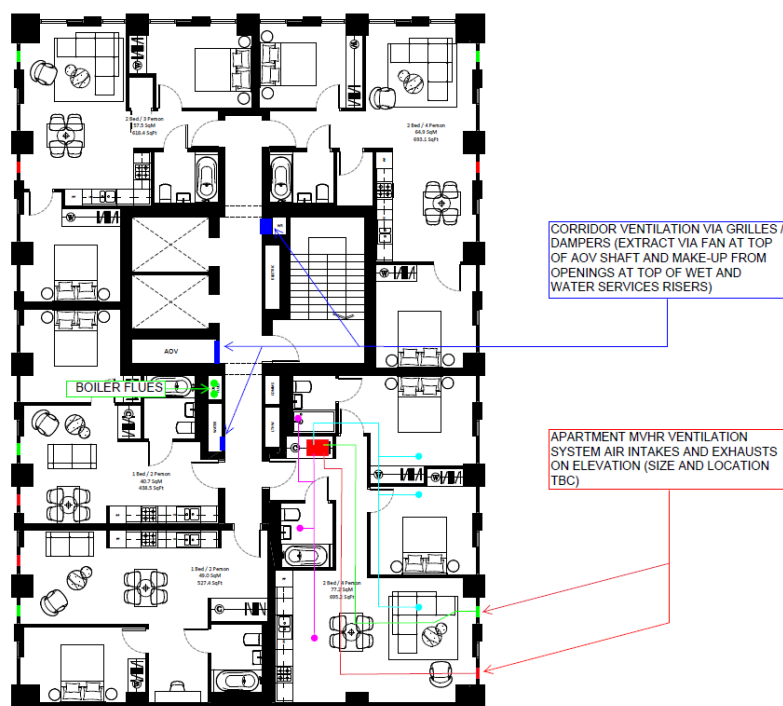


Figure 1 – Apartment Ventilation Plan (Indicative), including Core Ventilation



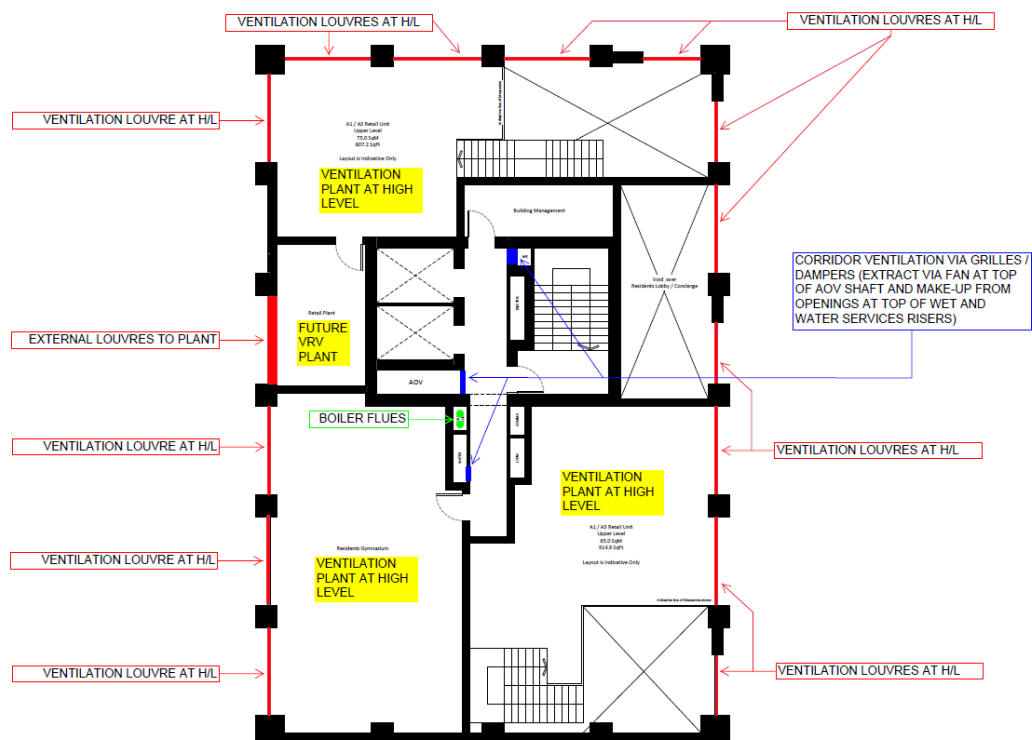


Figure 4 – First Floor Plant / Ventilation, including Retail Units and Gym

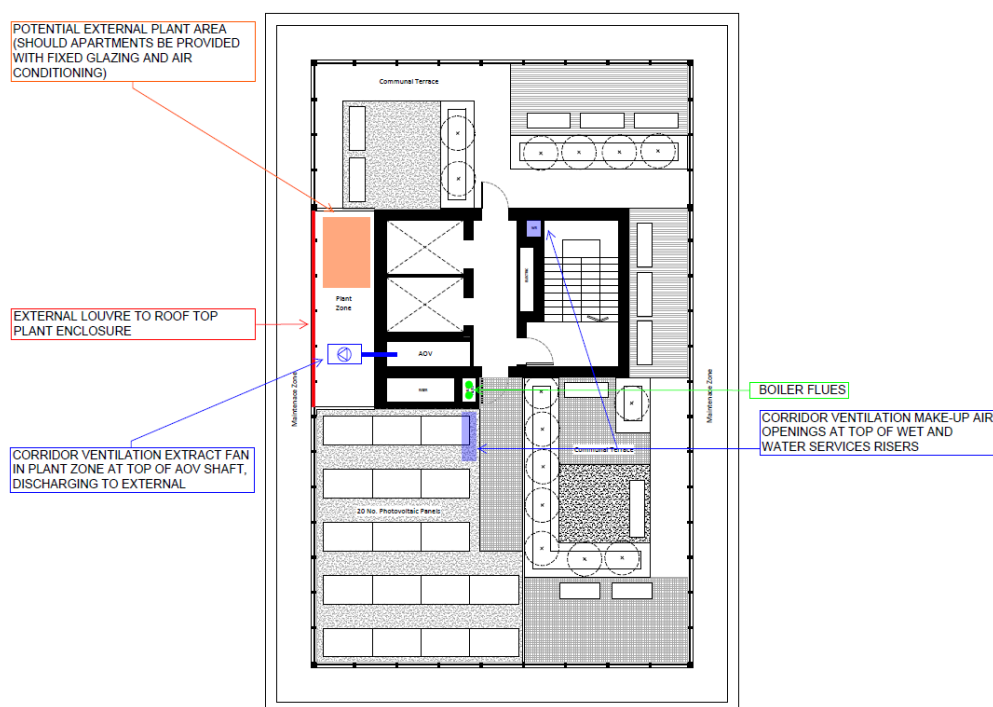


Figure 5 – Roof Plant / Ventilation

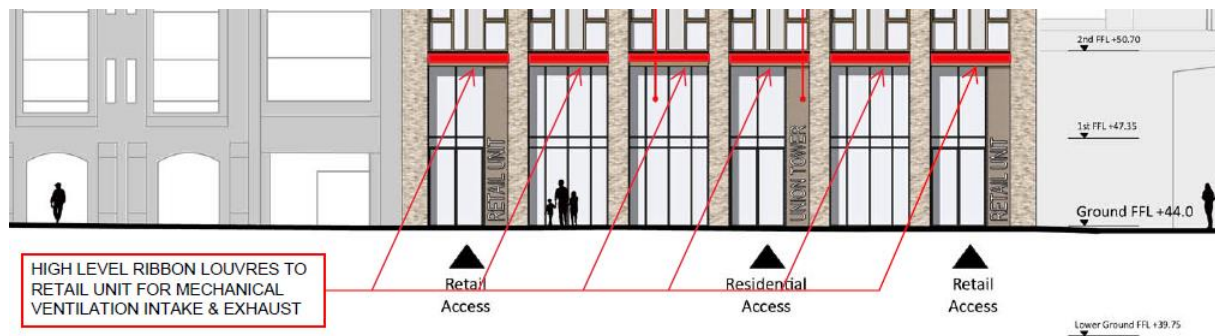


Figure 6 – East Elevation (partial)

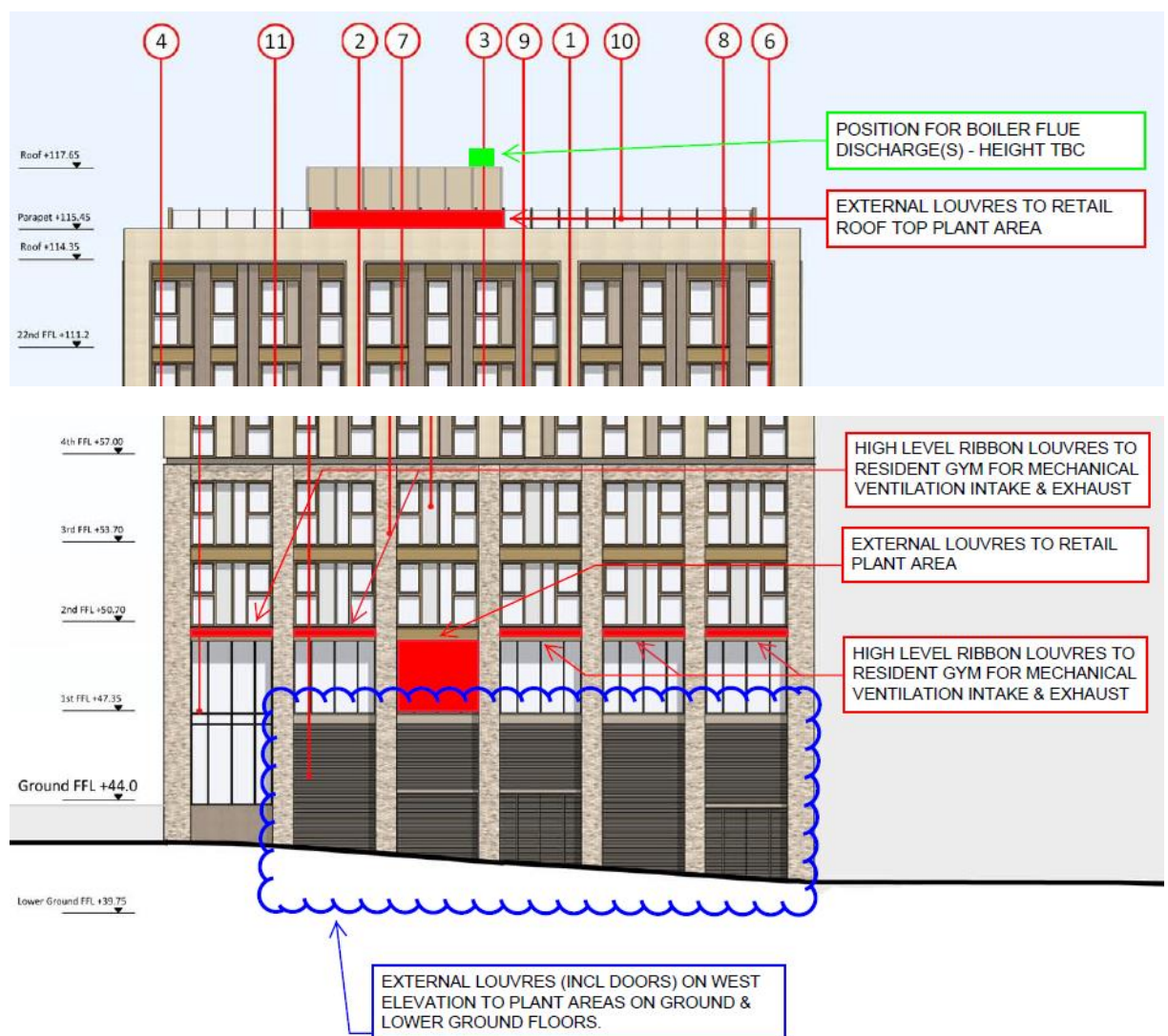


Figure 7 – West Elevation (partial)

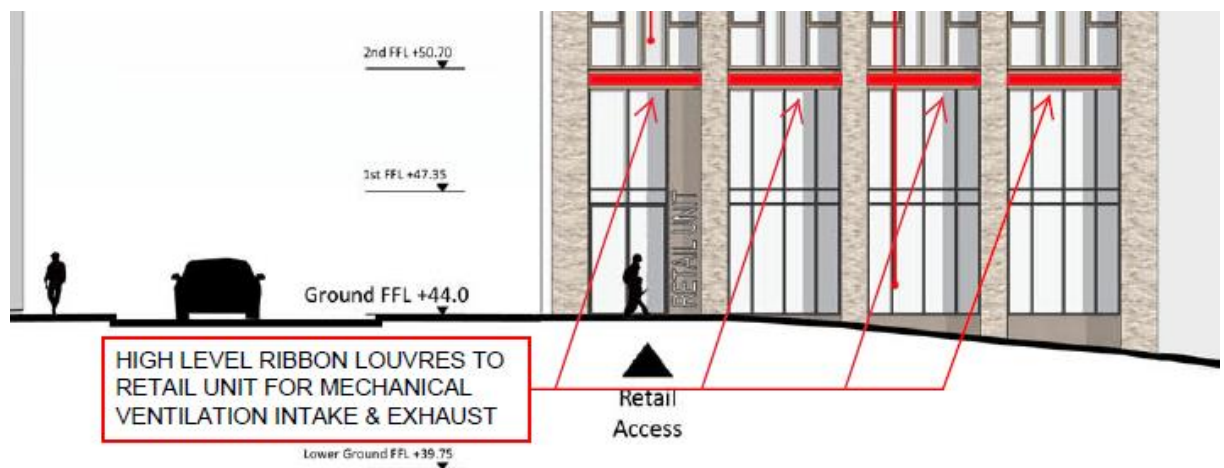


Figure 8 – North Elevation (partial)