

MECHANICAL VENTILATION	P13332-REN-XX-XX-RP-M-0001	REVISION No.	C02
CONTRACT:	Luminous Oak	CONTRACT No.	1476-1477
DATE:	21/07/2025		
EQUIPMENT:			

GENERAL DESCRIPTION OF PROPOSED Mechanical Ventilation Design

The mechanical ventilation systems are proposed to be installed and operated as described below:

1. All internal quiet rooms and group/meeting rooms along the central corridor shall be mechanically ventilated via a central air handling unit to comply with the requirements of Building Regulations Approved Document F.

The AHU's ductwork shall be extended to also serve the Parent's room, sick room, MDF bay, maintenance site office, library, sensory room, soft play, therapy room, ELSA Room, recording studio, and primary library. WC & Store areas are also fed from the Air Handling Unit, with extract only to negatively pressurise the spaces.

Make up air to the WC and Store areas shall be via passive means from adjacent rooms.

2. Food Tech Rooms are provided with Natural Ventilation Heat Recovery (NVHR Units) to provide general fresh air requirements and ventilation, however there will be an additional NVHR unit linked to user control to enable the units to operate for mechanical extract when cooking is being carried out and additional extract ventilation is required.

3. AHU Ductwork from the central area is to be routed between levels within dedicated risers to roof level from the ground floor ceiling void. There are penetrations through the roof slab for services routing to the first floor. All external ductwork and plant will be suitably weather-proofed.

4. A dedicated supply/extract system is to be provided to serve the kitchen and ancillary areas and will be detailed to suit the requirements of the kitchen specialist, to suit their canopy, this will typically be fitted with variable speed inverter control and grease/particle filtration. The kitchen supply air system is to be matched to suit the canopy make-up requirements and any associated pressure regime to limit transfer of odours etc. No internal plant space is proposed for the kitchen ventilation equipment.

It is currently assumed that the riser from the Kitchen to Roof Level forms the same fire compartment and therefore no fire dampers or Fire Rated Ductwork is required (i.e. the Riser at Ground Floor Ceiling /Soffit Level is not a Fire Line) – this is subject to confirmation from the architect / fire engineer.

5. The Main Hall is to be ventilated via two high level passive stack ventilation units within the roof structure and terminating in mushroom cowls at roof level. The dining hall is to be ventilated via NVHR units.

6. The main AHU and kitchen supply fan are to be provided with attenuation to achieve the required acoustic requirements of Building Bulletin 93 as well as the requirements of the Acoustic Design report.

7. Fire/fire and smoke dampers are to be included complete with suitable access provisions in line with Architectural fire compartmentation drawings.

8. General supply and extract ventilation terminates at roof level via bird beak type connections on the air handling unit, the exhaust air is positioned away from any intake air or openable windows to prevent re-circulation of contaminated air back into the building.

9. The kitchen exhaust air terminates to atmosphere via a high velocity venturi terminal designed to throw kitchen exhaust to high level and away from the building the kitchen specialist is providing filtration within the canopy (see specialist details).

Drawing Reference(s)	Specification Reference(s)
P13332-REN-ZZ-00-D-M-0300_C01 P13332-REN-ZZ-00-D-M-0301_C01 P13332-REN-ZZ-00-D-M-0302_C01 P13332-REN-ZZ-01-D-M-0310_C01 P13332-REN-ZZ-01-D-M-0311_C01 P13332-REN-ZZ-01-D-M-0312_C01 P13332-REN-ZZ-RF-D-M-0320_C01 P13332-REN-ZZ-RF-D-M-0321_C01 P13332-REN-ZZ-RF-D-M-0322_C01 ATTENUATOR DATA SHEET Luminous_Oak__Rentec__AHU_01 Rev A Luminous Oaks - KSF 02 01 NP Luminous Oaks - KEF 02 01 Rev A	