



Specification text – E-Stack roof-based systems

(R-Series and S-Series units)

The spaces shall be provided with an automatic ventilation system to meet fresh air ventilation requirements in line with BB101 guidelines for ventilation. This includes preventing summertime overheating and including the ability to provide a daily average of 5 l/s/person of fresh air year round and the capability to deliver 8 l/s/person at any time (or more for a reduced occupancy for example if designing to CIBSE Guide A).

The system shall include a ventilation unit incorporating insulated dampers, an internal fan mixing system and an integral controller. The unit shall be connected to grilles in the room and to a shaft leading to an external weatherproof penthouse louvre unit above.

In winter the shaft shall be used for fresh air intake & exhaust. The unit at the base of the shaft shall mix the incoming cold air with sufficient hot interior air, using low energy e-stack fans, prior to the fresh air entering the occupied space in order to minimize the risk of cold draughts.

In summer the unit will operate as a buoyancy-driven natural ventilation system, with provision for automatic fan assistance to buoyancy-driven ventilation flows when required. The unit will work in conjunction with opened windows on the façade of the space, with air being drawn from the room into the unit & then discharged to outside via the shaft.

Each unit will be automatically controlled via a combined temperature / CO₂ sensor in each room & a common external temperature sensor to determine the operation of the unit.

The unit will be capable of automatic, secure night cooling when appropriate, allowing cool air to enter the space via the unit, and using fan assistance if required.

A key switch for control and a 2-gang switch plate with lamps to indicate when windows should be open/closed will be located in each room.

The roof terminal units shall incorporate weatherproof openings with the required aerodynamic effective area to ventilate the rooms. The units shall incorporate a bird guard, roof section designed to attenuate rain noise, and finish to the required standard RAL colour.