



Specification text – e-Stack NVHR FX

The spaces shall be provided with an automatic ventilation system via an e-stack NVHR FX system, provided by Breathing Buildings Ltd, 15 Sturton Street, Cambridge, CB1 2SN, 01223 450060.

Each space is designed to meet the ventilation and overheating criteria of [BB101/CIBSE Guide A/The Priority Schools Building Programme Facilities Output Specification/TM52](#). The ventilation system is capable of achieving a daily average CO₂ concentration of not more than 1500ppm and has the capability of boosting to 8l/s/person at any time.

The system shall include two ventilation mixing units, each measuring 1200mm(L) by 900mm(W) by 300mm(H) and incorporating the following; insulated damper; two low energy internal mixing fans, with at least two speed settings, and an integral controller. The unit shall be connected to grilles in the room and can be ducted to the rear of a space.

In winter the NVHR FX units shall be used for fresh air intake and exhaust. The unit shall mix the incoming cold air with sufficient hot interior air, using low energy fans, prior to the fresh air entering the occupied space in order to minimize the risk of cold draughts. Air will be exhausted via a passive section of the insulated damper.

In summer the space will primarily operate as a buoyancy-driven natural ventilation system, with provision for automatic fan assistance to flows when required. Windows are required on the façade, and these will be sized to work in conjunction with the NVHR FX unit for summer operation.

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.

Each unit will be automatically controlled via the NV Smart controller using combined temperature / CO₂ sensor in each room & a common external temperature sensor to determine the operation of the unit. The operation of the internal temperature and CO₂ sensor is based on the infrared principle and a patented auto-calibration procedure compensates for the aging of the infrared source and ensures outstanding long term stability. 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.