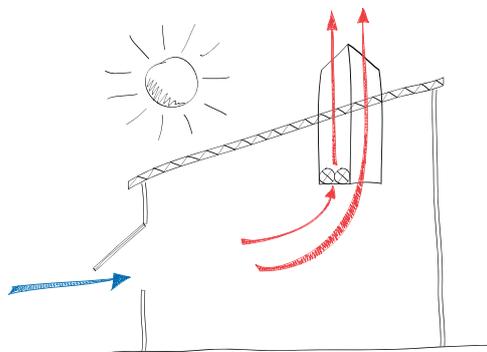


e-stack: S-Series

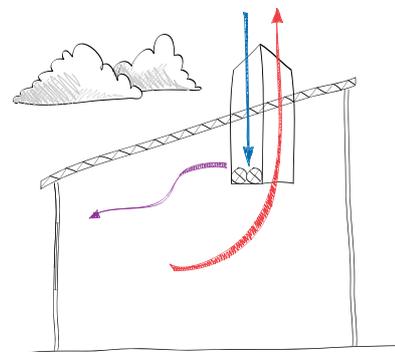
Stack-Based Ventilation



The e-stack ventilation system operates under a natural upwards displacement strategy in summer and a high level mixing mode in winter. The winter mode exploits the heat gains in the building to temper the incoming fresh air, dramatically reducing the heating energy required for the building.



Summer Strategy
Upwards Displacement Ventilation



Winter Strategy
Winter Mixing Ventilation

Winter mode

In winter the system operates under a mixing strategy, where the cold incoming air is mixed with the warm air in the room. The heat gains within heavily occupied spaces (e.g. school classrooms) are often sufficiently high that additional heating is not needed until the external temperature falls to somewhere in the range 5-10 °C, depending on the U-value for the room. This is in contrast to traditional upwards displacement systems that require heating from much higher external temperatures.

Summer mode

Once the external temperature has increased such that air can be brought in at low level directly onto occupants without pre-heating, the ventilation strategy for the system changes to a natural upwards displacement mode.

This strategy does not require wind to drive the flow, so ventilation is provided throughout the summer, even on still days.

Controlled Ventilation

The ventilation system is fully controlled with dedicated temperature and CO₂ sensors in the space. This allows the system to optimise the ventilation strategy for comfort and energy use.

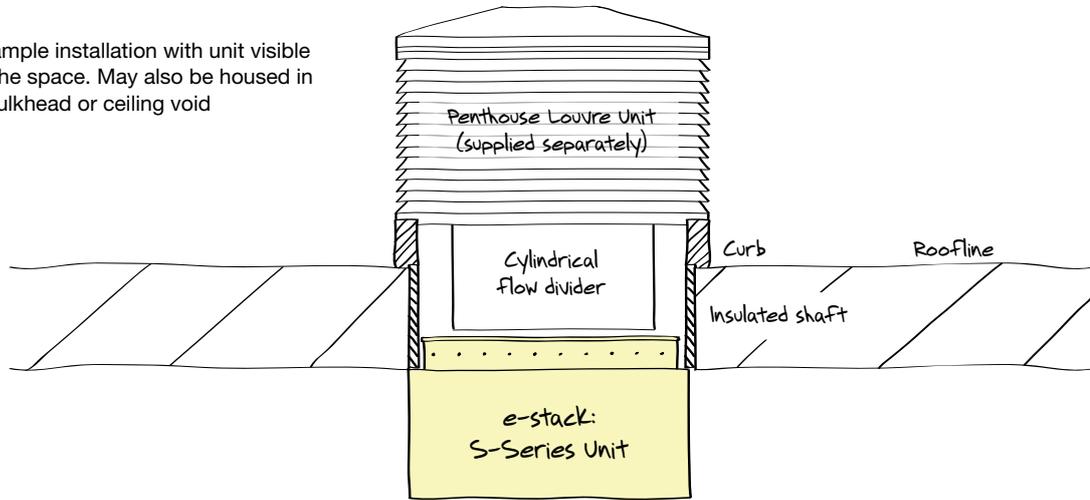
Large and high heat gain spaces

The S-1500 units are larger than the R-series and are suited to spaces with higher heat gains. In large spaces multiple units are often required to provide sufficient ventilation and improve the distribution of fresh air around the space.

e-stack: S-Series

Mechanical and Electrical Specification

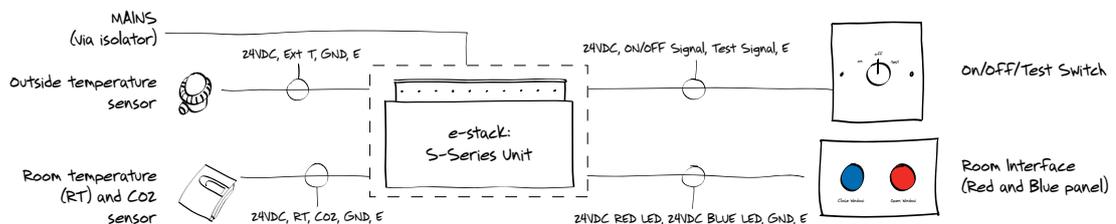
Example installation with unit visible to the space. May also be housed in a bulkhead or ceiling void



Specification

Dimensions:	S-1500: 1575mm (L) x 1575mm (W) x 500mm (H) S-1200: 1275mm (L) x 1275mm (W) x 500mm (H) (both 630mm high incl. damper housed in shaft)
Shaft requirements:	S-1500: Shaft aperture 1500mm x 1500mm with cylindrical flow divider S-1200: Shaft aperture 1200mm x 1200mm with cylindrical flow divider
Nominal Weight:	S-1500: 200kg S-1200: 150kg
Construction:	Galvanised steel or Zintec
Recommended fixing methods:	Via drop rods and cradle arrangement (by others) or brackets (at additional cost) Rubberised seal on top flange provides airtightness to shaft
Colour:	Standard galvanised finish or Zintec powder coated to RAL9010 as standard (other RAL and BS colours available at additional cost)
Dampers:	Actuated insulating low-leakage volume control dampers with fully modulating rotary actuator
Controller:	Internal controller to operate fans and dampers in response to sensed environmental conditions. Additional control signals for automated high / low level openings can be supplied if required.
Sensors:	Combined interior temperature / CO ₂ sensor. External temperature sensor
User interface:	Key switch (on/off/test mode). Red / blue "Open/Close Windows" indicator panel (for low level manually opening windows)

Typical Control System Layout



*In taller spaces, controller may be positioned outside of the unit at low level

For More Information

Breathing Buildings
The Courtyard
15 Sturton Street
Cambridge
CB1 2SN

t. 01223 450 060
f. 01223 450 061
e. info@breathingbuildings.com
w. www.breathingbuildings.com