

Breathing Buildings e-stack F-Series

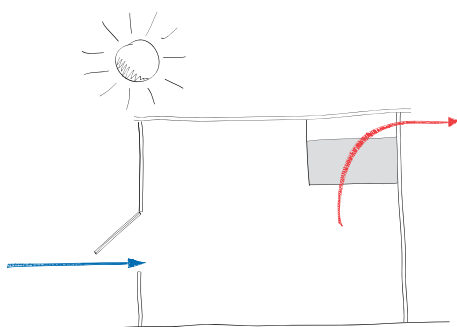
Designed specifically for rooms occupied by 10 to 35 people, the Breathing Buildings F-Series units are designed for spaces which have access to the exterior and a floor to ceiling height of at least 3.5 metres in part of the room.



The Breathing Buildings F-Series units work perfectly in spaces with an external wall and where a sloping roof has been designed so that high level windows can be introduced at the rear of the room, allowing additional natural daylight into the space.

Summer

As outside temperatures rise, the system begins to bring air in at a low level directly on to the occupants without pre-heating, and the ventilation strategy for the system changes to upflow displacement ventilation. Windows or low level vents are opened, as are the high level windows, to maximise air flow and minimise build up of heat in the space.



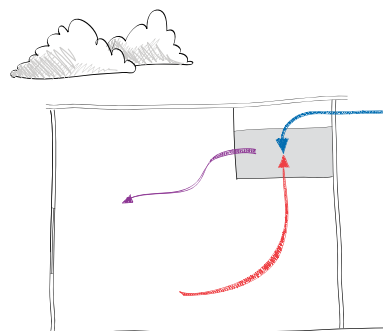
As the Breathing Buildings e-stack system generates its own natural and, if required, assisted upwards displacement of air, ventilation is assured and occupants are well ventilated even on hot, wind-free days.

Winter

The Breathing Buildings F-Series ventilation unit is located directly under one of the high level openings. The system controls the opening above the unit and one other high level opening in the room. This ensures correct ventilation flow control.

In winter the system uses a mixing ventilation strategy. Fresh air is brought in through the window located immediately above the F-Series unit.

This cold air is then mixed with hot interior air which is warmed for free by way of lighting, body heat and heat from equipment such as computers. The mixed air is then released into the room.



At the same time the hot, polluted air leaves the room via the second high level window that is opened and closed by the F-Series controller.

This strategy ensures that the room is heated and ventilated using minimal energy consumption as the “free” heat gains which arise in the room are used for heating the incoming air when the room is occupied. The system is much more energy efficient than traditional designs which might, for example, use a radiator or other heating element to pre-heat incoming air.

By avoiding the need to pre-heat incoming air, the heat gains within heavily occupied spaces mean additional heating is not needed until the external temperature falls to somewhere between 5 and 10°C (depending on the room).

Keeping Control

The ventilation system is fully controlled with dedicated temperature and CO₂ sensors allowing optimal ventilation for comfort and minimal energy consumption.

Night Cooling

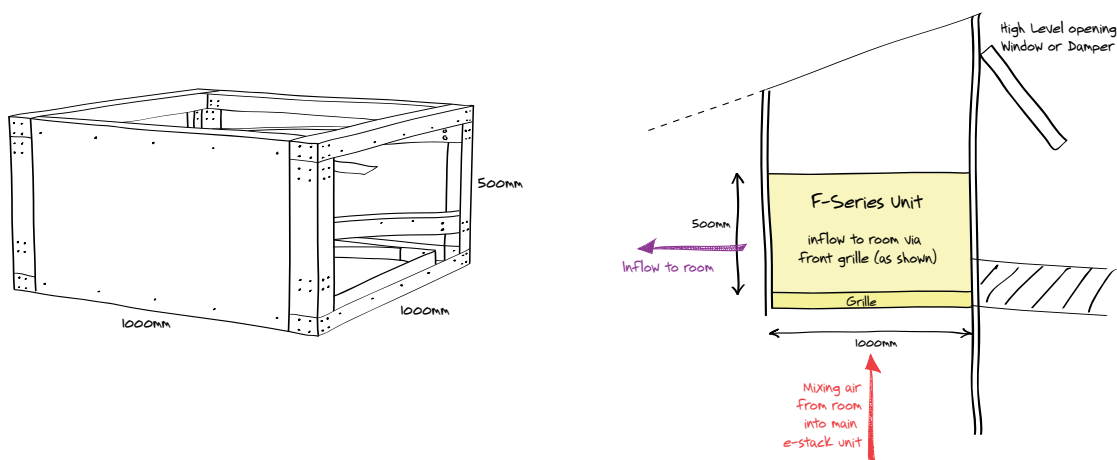
After periods of warmer temperatures, the unit automatically cools the space overnight without compromising building security, by allowing the space to naturally exchange air with the cooler exterior. The low energy fans in the unit will assist the night cooling if required.

School Projects

The units are engineered specifically for school areas with their high internal occupancies and heat gains. The units are precisely sized to meet the BB101 criteria for typical classrooms, and work in conjunction with façade windows to meet the summertime overheating requirements and to limit CO₂ levels.

Mechanical and Electrical Specification

Dimensions:	1000mm (L) x 1000mm (W) x 500mm (H)
Positioning in the space:	F-Series unit housed in bulkhead or visible within the space. Transition duct is required above the unit to an actuated opening window or actuated vent. An additional high-level opening is required to allow air to leave the space in winter.
Weight:	60kg
Construction:	Galvanised steel or Zintec
Recommended fixing methods:	Via drop rods and cradle arrangement (by others) or brackets
Colour:	Standard galvanised finish or Zintec powder coated to RAL9010 at additional cost (other RAL and BS colours available)
Damper:	Actuated window or damper required on facade (by others)
Controller:	Internal controller to operate fans and dampers in response to measured 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)



For More Information Contact Breathing Buildings at:

Breathing Buildings
The Courtyard,
15 Sturton Street,
Cambridge CB1 2SN

Tel: +44 (0) 1223 450 060
Fax: +44 (0) 1223 450 061
Email: info@breathingbuildings.com
Web: www.breathingbuildings.com