



<b>PROJECT</b>	36,000 square foot Asda store
<b>LOCATION</b>	Langley Mill, Derbyshire
<b>SECTOR</b>	Retail
<b>FEATURES</b>	Consultancy, Design, Implementation
<b>HISTORY</b>	Project begun 2009 Store open for business November 2010 Systems monitoring and support work continues

## ASDA'S VIEW:

### We hate waste of any kind

#### We will:

- Reduce energy requirements for our existing stores and distribution stores by 20% by 2012\*.
- Reduce new store energy requirements by 30% by 2010.
- Build wind turbines to power 6 of our depots by 2012.

### Sustainable Build in Langley Mill

Our store in Langley Mill will feature a range of measures to ensure that it is 30% more energy efficient than a store built in 2005.

We are continuing to invest in technologies to reduce our carbon footprint even further.

Supermarkets and large retail outlets are notoriously difficult to ventilate effectively and economically, especially during colder months, as outside temperatures fall below 16 degrees C.

Asda turned to specialists Breathing Buildings to partner them in developing a ventilation solution for their new Langley Mill store that would effectively manage temperature fluctuations in colder weather, while also being able to cool the building on hot, windless days.

Langley Mill is a £25million development by Asda and the first UK store to operate the Breathing Buildings e-stack natural ventilation system which allows the use of natural ventilation even when outside temperatures are as low as 10degrees C.

The store has no air conditioning too – this is impressive!

## The Challenge

Asda's business model makes environmental considerations the priority and the retail giant's environmental agenda includes:

- cutting greenhouse gas emissions
- ensuring new stores are 30per cent more energy efficient\*
- ensuring existing stores are 20per cent more energy efficient\*

The challenge for Breathing Buildings, working in close partnership with Asda, was to design a system that would not only deliver effective ventilation in a store with 36,000 square foot of sales space, but also meet Asda's strict criteria for lower energy consumption, reduced carbon emissions and greater energy efficiency.

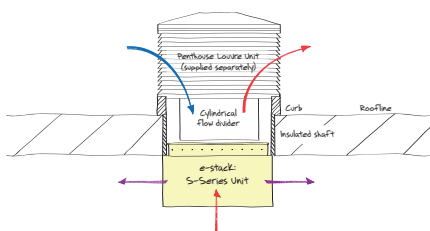
Shaun Fitzgerald, Breathing Buildings Managing Director says: "Asda had very clear environmental targets for Langley Mill and we

(\*compared to 2005)

Asda Head of Corporate Sustainability, Julian Walker Palin, says:

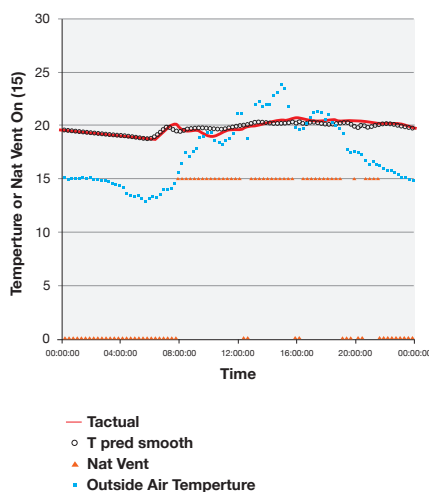
**“We are very hopeful that this unique approach will deliver carbon emission savings and energy cost savings in excess of any we could achieve using either mechanical or traditional natural ventilation systems.”**

#### e-stack S-series



Simple modelling prediction for store temperatures in natural ventilation mode in reasonable agreement with data

**Store temperature lower than exterior on hottest days even in natural ventilation mode**



met them at a very early stage of the design process.

“We modelled our ventilation system for the store early on and this showed that with our natural ventilation system, as opposed to a conventional mechanically ventilated system, Langley Mill would enjoy savings of up to approximately 110,000 kWh/year and as much as 150,000 kWh/year of gas.”

#### The Solution

Breathing Buildings offered a holistic ventilation solution, drawing on their considerable consultancy experience and sector-leading knowledge, featuring a range of measures that mean Langley Mill is 30 per cent more energy efficient than a store of the same size built in 2005 (a result that meets Asda’s strategic requirements).

The ventilation system ensures that during the hottest summer months, even with no wind blowing, the system effectively ventilates and cools the building. However, it also allows the store to use natural ventilation as temperatures fall to as low as 10 degrees C.

#### Natural Ventilation Delivered

The solution is delivered through the use of 12 Breathing Buildings e-stack units mounted on the roof of the Langley Mill store. By capturing and reusing the heat generated within the store by electrical equipment,

lighting, ovens, chillers and freezers, and the body heat of staff and customers, the system significantly reduces the amount of pre-heating needed in the building, so cutting energy use and greenhouse gas emissions.

With the store open for business an independent review of actual performance is ongoing and the building’s management system continuously monitors energy use and temperature.

#### Client Partnership

Dr. Shaun Fitzgerald, Managing Director of Breathing Buildings, says: “We take a very team-based approach and we are delighted to be forging the way ahead with Asda as they pioneer our unique system at Langley Mill.

“Supermarkets are open for many hours each week and they need to be confident in the systems they use. Natural ventilation is still regarded by many in this competitive sector as a relatively untried concept. However, we have found that many supermarkets want to secure for themselves the benefits of ultra low-energy ventilation.

“If designers want to see us we would be delighted to discuss their projects and proud to take them to see Langley Mill. The Asda store is a very big project but we are always happy to consult about any project, small or large.”

#### 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](mailto:info@breathingbuildings.com)  
 Web: [www.breathingbuildings.com](http://www.breathingbuildings.com)