



Press Release
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Passively Helping Achieve Zero Carbon and Efficient Build Process

Passivent has played a role in the largest retail project to be built in the UK using steel-framed modular construction.

The new 20,000ft² Tesco store at Southam in Warwickshire is the first to use a new modular store design, which accelerated build time by eight trading weeks and is part of the grocery chain's aim to become a zero-carbon business by 2050. Key elements in reducing the carbon consumption are the use of natural light, and natural ventilation designed and supplied by Passivent.

Passivent worked closely with off-site specialist Yorkon to develop the natural ventilation strategy.



A pair of 1700mm circular Passivent Airscoop units built to a bespoke design specifically developed for Tesco is strategically positioned over the main chilled and frozen food departments and managed by Passivent's iC6000 controller. The Airscoops were installed by Passivent once Yorkon had craned the modules into position at Southam. The crane phase took just five days and involved both weekend and night working to further reduce the programme time.

Monitoring internal and external temperature and humidity levels, the Airscoops adjust ventilation as required to maintain the required ambient temperature and air quality in-store. Minimising energy consumption to maintain the store's warmth, the cold air from the fridges is drawn into the ventilation ducting, and rechannelled at high level over the checkouts.

The system switches to mechanical air handling only when variance is significant, to keep the internal atmosphere in the store within ideal presets for the retail grocery environment.

Each Airscoop acts as a 'chimney', harnessing natural air movement principles of convection and the venturi effect to both draw fresh air into the building without draughts and exhaust the 'used' internal air. Windward chambers in the Airscoop draw fresh air in, whilst the leeward chambers exhaust the internal 'used' air. The only energy the Airscoops use is to modulate the ventilation louvres to regulate airflow.

Passivent's Wayne Aston explained: "The nature of a supermarket's internal air is complex, balancing the cold air and humidity levels of fridges and freezers whilst maintaining a pleasant temperature for shoppers.



“The inclusion of our Airscoops at Southam demonstrates the flexibility of our natural ventilation, in that it can be effectively integrated into modular building; indeed, it is not the first time we have undertaken such a project – we worked with Yorkon in the past on the off-site construction of new teaching facilities for Bewdley High School.”

Passivent Airscoops are just part of the company’s range of natural ventilation solutions to minimise carbon consumption within buildings. Research shows people prefer naturally ventilated buildings to those with air conditioning: they work, play and heal better. Naturally ventilated buildings are also better for the environment, reducing energy consumption by at least 40%, and better for the operator, reducing capital costs by 15% and almost eliminating running costs. The reduction in incidence of sick building syndrome – which affects a huge 30% of people who work in air conditioned buildings – also reduces the number of days lost, and cost, through staff being ill. Passivent also offers a range of solar shading products, natural daylighting solutions, and ‘mixed mode’ ventilations combining the benefits of natural ventilation and air conditioning in one.

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