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# Stonegate Eggs Case Study

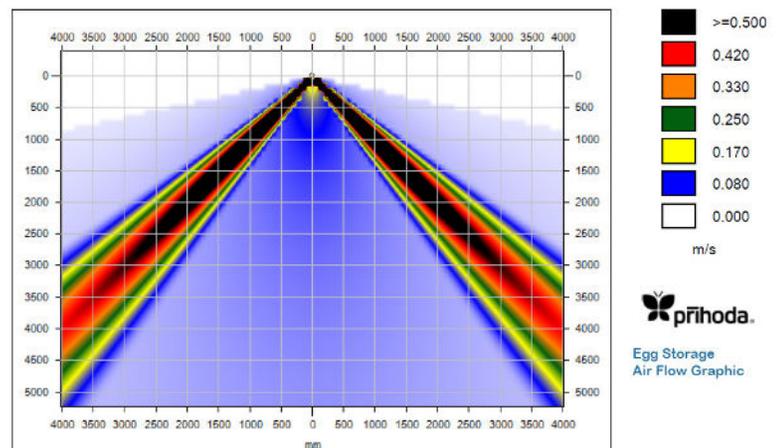
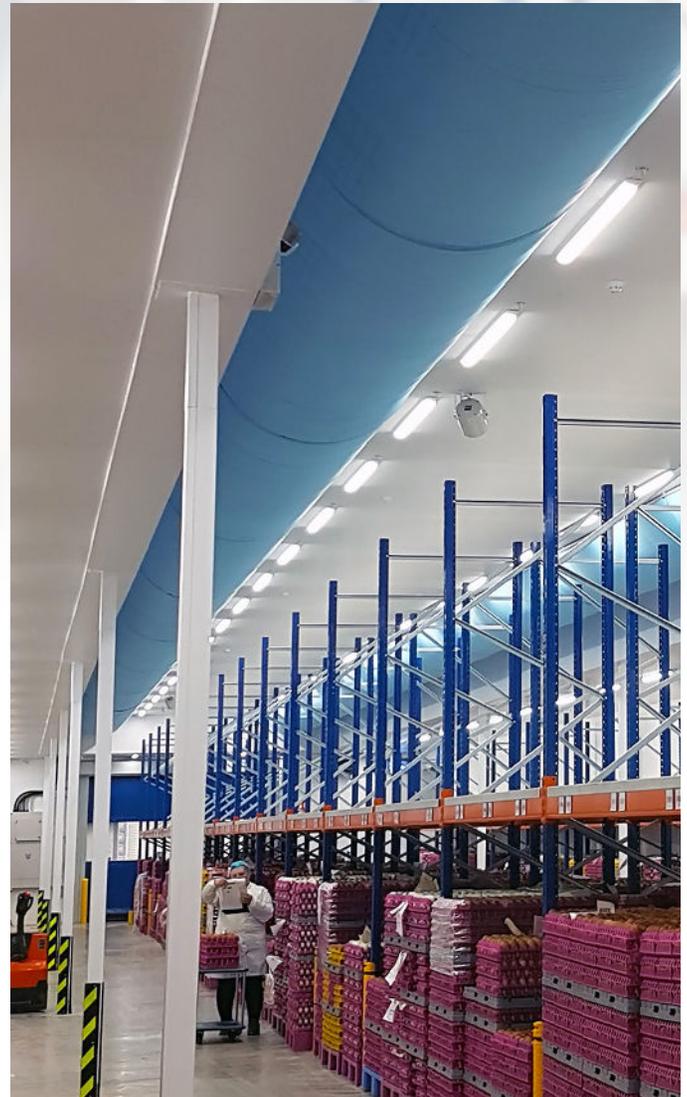
Fresh eggs are very sensitive to temperature fluctuations and will easily spoil without temperature control. Prihoda supplied a fabric duct system to support temperature regulation at a Stonegate egg storage facility.

## The Company

Stonegate Farmers specialises in producing and distributing high quality free-range and organic eggs throughout the United Kingdom, both for sale through retail channels and for the hospitality and restaurant industries. From their base in Wiltshire, Stonegate Farmers has gained almost a century of experience supplying eggs from hen to market. With a big emphasis on quality, their entire process must be carefully controlled to achieve the desired results: premium quality eggs produced under strict RSPCA welfare standards.

## The Challenge

Stonegate Farmers commissioned a new storage facility and required a HVAC system to provide the right conditions for egg storage. Working with Star Refrigeration, one of the country's major industrial refrigeration contractors, Prihoda set out to design the fabric ducting for the egg conditioning space in the facility. The temperature range for the space was quite generous, 12°C to 20°C. The main priority was maintaining a consistent temperature throughout the entire space. Eggs are liable to spoil in a warmer environment and temperature fluctuations can cause condensation on the shells, which can interfere with their natural antimicrobial coating and make them even more likely to spoil.





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## Our Approach

The egg conditioning space is long and rectangular, and has a bulkhead running along the length on both sides. Prihoda designed the fabric duct system with two separate ducts spanning the length of the space, parallel and next to the bulkheads. On each duct, a round inlet spigot transformed to an ellipse shape 1250mm wide and 450mm deep. As the air supply was located towards the centre of one end of the room, each duct was fitted with a 31° elbow directed towards the bulkheads, allowing the ducts to run down the sides of the room.

The spigots, transitions, and all other sections were manufactured in our Classic fabric and zipped up together for easier installation and removal. The material is flame retardant, cleanroom non-fibre shedding quality and available in 9 colours and with a 10-year warranty at no additional cost. The system was provided with cord suspension, which slides easily into the Prihoda aluminium track support system that was attached directly to the insulated ceiling.

Like all Prihoda ducts, the diffuser pattern was carefully calculated to achieve the desired air pattern for the room. In this case, the diffusers were set up to prevent the airflow from clashing with the bulkheads, while delivering the large amounts of air required to keep the eggs at the optimal storage conditions. The air velocity in the room was a little higher than usual – this was not a problem because the room is primarily used for storage purposes, and occupancy is brief and sporadic. Even so, the velocity was kept low enough to prevent causing discomfort to any occupants.

## The Outcome

The smooth transitions and precisely measured elbow bends create an exquisitely aesthetic result with this fabric duct system. The ducts are perfectly adapted to the geometry of the area and the application. The air distribution pattern reaches the space between the storage racks and maintains the room temperature within the specified temperature, focusing on air mixing to ensure an even and consistent temperature throughout the storage space. Maintenance is virtually effortless thanks to the aluminium track installation, which makes it easy to simply slide the fabric ducts off, unzip and clean in a washing machine.

## Design Data

**Air Volume: 4.7m<sup>3</sup>/s**

**External Static Pressure: 115 Pa**

**Duct Shape: Ellipse 1250 mm wide x 450 mm deep**

**Duct Length: 65,000mm long each (2 ducts)**

**Diffuser Style: Mix of micro-perforations and large perforations. No velocity higher than 4.0m/s for noise reasons**

**Material: Classic Flame Retardant Polyester Permeable.**

**Cleanroom non-fibre shedding ISO4**

**Colour: Light Blue (stock colour, no additional cost)**

**Would you like to know more?  
Please get in touch.**

