

# Aqua

The Temperature  
Control People.

Case Study | Food and Beverage



**Hire temperature control  
system completes automated  
food picking trial for  
supermarket giant**



A leading British supermarket chain renowned for quality, was looking to trial the automation of their chilled food picking system. Having previously been provided with equipment from another temperature control supplier, which hindered the process, the Automation Project Manager turned to Aqua.

Our Hire Director, Ben Davies explains how we helped ensure that the chilled food automation project was a success and could be rolled out to more warehouses and supermarket chains in the future.

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## Situation

At the supermarket giant's storage facility, a trial project needed to be run to provide cooling to chilled food while it gets picked by an automated robotic system.

The project had already suffered a set back when a previous supplier had not fully understood the requirement, resulting in the provision of a system that was unfit for purpose.

The system had included a low temperature fan coil unit with a low air off temperature on a total loss system. In a normal ambient environment, this created constant ice build-up which required regular defrosts – triggering the temperature to quickly increase and causing the picking zone to go out of range. This was not acceptable for the application.





## Solution

Following a site survey and consultation, we installed and commissioned a 40kW water chiller with an oversized air handling unit (AHU) and a full steel ducting system to enable even air distribution above and below baskets containing the chilled food, with recirculating air.

The 40kW water chiller features an integral buffer tank, coupled with an additional 1000l buffer tank to offer the system maximum temperature stability.

To prevent ice from building-up, we set the chilled water temperature above 0°C, enabling the trial to run for 8 hours a day, as planned. Due to this combination, the air off temperature of the AHU was perfectly suited to the Automation Project Manager's requirements.

The AHU was equipped with an inverter fan to enable the trial of various airflow rates to achieve the optimum operation before committing to a permanent solution. All internal pipe work was lagged to prevent condensation from leaking onto the workshop floor.

We managed the entire project from consultation and design to temperature mapping and data extraction.

## Results

**With complete control, a thorough understanding of the client's project and suitable equipment, we provided a temperature control solution to enable a successful trial.**

This means that the project can be progressed to the next phase, with a roll out to more of the supermarket chain's facilities. If those are successful, the robotic picking system can be marketed to the wider grocery home delivery industry – revolutionising the way orders are picked and packaged for delivery.