

# Aqua

Temperature Control  
Specialists.

Case Study | Manufacturing



**Temporary Cooling Solution  
Enables Guardian Glass to  
Continue Production During  
Plant Upgrade**



Guardian Glass is part of Guardian Industries and one of the world's largest manufacturers of float, value-added and fabricated glass products and solutions, with 25 plants around the globe.

The high-performance glass is produced for architectural, residential, interior, transportation and technical glass applications. It can be found in some of the world's most iconic buildings, as well as in our homes, offices and modes of transport.

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Timed with existing furnaces nearing the end of their lifecycle, an upgrade of the float glass production line at their site in the north of England, was planned to include a new float glass furnace with increased melting capacity and environmental performance.

Our Hire Director, Ben Davies explains how we supported the project with energy efficient and precise temporary cooling equipment - designed, installed and commissioned without interrupting their operation, while they awaited the arrival of new capital purchased equipment.



## Situation

Part of the furnace upgrade included total replacement of their cooling towers which provide cooling to the furnace bath.

The new capital equipment wasn't going to arrive on site for another 4 months, however the operation needed to continue during this period to fulfil production requirements and customer orders. Any disruption would have created huge financial implications.



## Solution

We were involved in a tender process about a year prior to the upgrade commencing. This enabled the team to plan for all the temporary cooling requirements to be designed, installed and commissioned within a 2-week shutdown period.

We specified and installed a system comprising of:

- 6 x adiabatic coolers – achieving 3MW of cooling load, each paired with a 22kW pump set

The adiabatic coolers use ambient air to remove the heat from the cooling medium, aided by a powerful adiabatic spray system to maintain heat rejection performance in warmer ambient temperatures.

When the ambient temperature goes above 22.5°C the adiabatic sprays kick in to help the coolers achieve the required 30°C setpoint. Even in a worst-case scenario of 30°C dry bulb ambient temperature, the units will still provide a stable supply temperature of 30°C to the process.

- A bespoke 9000L buffer tank
- Around 1300M of flexible hose
- 3 x bespoke 12" flange manifolds

Due to the extremely high flow rates required for their system, the team fabricated and installed 3 x bespoke 12" flange manifolds to their various processes.

From this manifold, multiple 4" lines were run and carefully balanced using our rental double regulating valves. A single, large power source was also split down into smaller, motor rated feeds to adequately protect the rental equipment using our temporary power distribution equipment.

## Results

**Our temporary adiabatic cooling equipment, installation and commissioning provided an energy and cost-efficient solution – bridging the gap between Guardian Glass' old cooling towers being removed and their new capital equipment being commissioned.**

This enabled Guardian Glass to complete their major furnace and cooling tower capital investment project on time and to budget. The whole temporary project was completed during their 2-week shutdown period, so that production would not be affected.

We are currently the only temperature control company in the UK to offer adiabatic coolers as standard within our hire equipment range. It's important to us to be able to offer our customers these units due to the excellent energy and cost-efficiencies they deliver.

Being able to provide these units for this project as opposed to large screw compressor chillers, cooling towers or Dry Air Coolers has saved Guardian Glass from higher energy and operating costs, installing additional on-site power to cope with more power-hungry units, additional H&S obligations, risk of legionella or inadequate cooling over the summer months.