Aqua

The Temperature Control People.

Case Study | **Manufacturing**

# Free Cooling Fix For Ink Manufacturer

## Client

Ink Manufacturer

## Challenge

Unreliable Legacy Cooling System Causing Production Downtime

## Solution

AquaPro Chillers and Free Cooling System

**Aqua were approached by a global manufacturer of high-performance inkjet inks and pigment dispersions, who were looking for a review of their existing cooling system. Sales Engineer, Ben Newman, outlines how Aqua supported them with a centralised free cooling system.**

## Situation

Each of the clients' paint process machines were individually cooled by an independent chiller unit. However, several of the chillers were nearing end of life so downtime was becoming a common theme within the production process. If a chiller failed, production in the associated print mill would come to a halt. An alternative system was required, one that would not only reduce downtime but also maximise reliability and efficiency.

The existing chillers were set at an 8°C supply temperature. Historical issues, including limescale build up and coolant fluid contamination, had resulted in site having to reduce the supply temperature to safeguard process performance. Introducing glycol had improved the situation, but the supply temperature had been kept at the 8°C set point.


## Solution

**Aqua quickly determined that the set point could be increased further, to 12°C.**

This enabled us to suggest a new, centralised system, incorporating free cooling. In addition to improving process reliability and stability, it would also significantly reduce annual energy use and operation costs.

> **The new system consists of 2 x Aqua Pro chillers, with run & standby pumps, and a separate free cooler. The system is configured into run/run/standby, which simply means it collectively feeds all the print mills, rather than each mill having its own chiller.**

Should a chiller fault ever occur, the remaining chiller & free cooler will pick up the load whilst maintenance is undertaken. Production downtime is zero and the system will continue supplying 12°C process fluid.

Utilising Aqua Pro units results in the pumps being integrated within each chiller - saving space and reducing costs. The chillers have additional connections already fitted so that capacity can be easily ramped up or down as and when required by adding a hire chiller.

## Results

**With a centralised run/run/standby cooling system, our client now has a highly dependable, extremely energy efficient alternative which will take their risk of downtime to practically zero.**

Energy consumption and carbon impact will dramatically decrease, and their business is future proofed for years to come.

If production load is 70% of maximum capacity, the annual power consumption of the legacy system worked out to be £30,874 (based on 14 pence per kWh). Annual power consumption for the new free cooling system would be £17,072 - an annual electrical saving of **£13,802/per annum**. If production load is at 100% of max capacity, this saving increases to over twice this value per annum.

For support with your next process cooling requirement talk to the team **0333 004 4433.**