

# Aqua

The Temperature  
Control People.

Case Study | OEM



**Environmental Test  
Chamber Cooling  
Solution Helps OEM**

## Client

OEM specialising in environmental test chambers

## Challenge

Custom design requirement

## Solution

Aqua Pro chiller solution + pipework design & installation

An environmental test chamber is a controlled, enclosed space where various conditions can be simulated for testing purposes. They're used to evaluate the effect that things like temperature, humidity, altitude & vibration have on materials, objects, or systems. Ben Newman, Aqua's OEM Specialist, explains how we supported an OEM client with a custom design solution for a test chamber cooling application for their end user customer.

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## Situation

"I've supported this particular client for some time now and was familiar with the environmental and climatic test chamber solutions that they manufacture and supply. Their applications these days typically require a full turnkey approach, including the supply & installation of pipework.

"Environmental test chambers are commonly used by research facilities, often to evaluate scenarios for the aerospace & automotive sectors, as well as testing related to industrial components. They'd been asked to supply two test chambers to a university for their research team.

"The test chambers were being housed on the first floor of the University, with a further two being added to a ground floor space at a later date. Aqua were asked to help design a solution that would provide test chamber cooling. The cooling equipment would need to be connected to the first-floor chambers and have additional capacity for the third and fourth chambers once in situ.



## Solution

The two chambers had different cooling load requirements, one at 15kW and one at 28kW. There were also a number of logistical challenges that needed to be overcome by our internal Design, Installation & Projects teams, in taking the project from concept stage to real-life solution.

Environmental test chambers usually require a steady flow of chiller water because they're water cooled and simulate temperatures from very cold to extremely hot. Often the machines will shut off the water supply from the chiller as part of their functionality. Therefore, our chiller arrangement had to be customised, otherwise the chiller pump would deadhead, causing costly damage.

"We supplied an Aqua Pro chiller with an internal bypass. Then, when the test chambers close off and the flow stops, the bypass will manage the coolant and eliminate any risk of deadheading.

"Because the chambers were situated on different floors, the pipework need to reach up to the first floor. A hard standing area was extended so that the chiller could be positioned correctly and then the pipework run against a wall.



Ben Newman  
OEM Specialist - Aqua Temperature Control People

Our Original Equipment Manufacturer customers are in safe hands with Ben. He's a qualified mechanical engineer with a background in creating & designing commodities, from electrical connectors through to military mobile phones and plastic furniture for domestic fridges.

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## Results

"Once installed, the University had the ability to operate either test chamber 24/7. This enables them to do their research at a quicker pace and speed up the results on their projects.

Reliability and quality are also key considerations within the R&D sector and our Aqua Pro units assure this. They're specifically built for process applications and are robust, high-quality units, so ideal for test chamber cooling applications.

"To give further peace of mind, Aqua are also supporting with an enhanced Planned Preventative Maintenance plan, with rapid response time, ensuring in the unlikely event something goes wrong, an Aqua Engineer would be in attendance very quickly!"



For support with your next  
OEM chiller or environmental test  
chamber cooling requirement,  
chat with Ben and the team on  
0333 004 4433.