



## Precision in air handling: Expertise in Close Control Rooms and Environmental Test Cells

Projects with very specific air handling requirements need an expert touch. Precision is essential. Arcade UK Limited specialises in the design and installation of bespoke close control rooms and environmental test cells; working in facilities across the United Kingdom and Europe.

Whether you're in need of a room with a fixed temperature and precise humidity conditions or a chamber to provide various temperatures and humidities, we can help.

01480 861111

[www.arcade-uk.ltd.uk](http://www.arcade-uk.ltd.uk)



# Take a closer look...

## Supporting the revolutionary work at CERN

CERN, the European Organization for Nuclear Research, is one of the world's largest and most respected centres for scientific research. We are proud to have developed a large number of close control room solutions; contributing to the significant research facility.

### Large Hadron Collider – CMS Pixel room

The CMS experiment is one of the largest international scientific collaborations in history, involving 4300 particle physicists, engineers, technicians, students and support staff from 182 institutes in 42 countries. Project accuracy was essential. The operating conditions of the room needed to fluctuate from 21C to 10C at 40% RH with the colder temperate enabling scientists to analyse sensors from the CMS detector.

Installing a desiccant wheel to dehumidify the air stream, a dedicated air handling unit, electric heater battery, DX cooling coils and humidifier enabled us to meet these stringent requirements.

The room was also a radiation controlled area due to the radioactive sensors and instruments. Access was strictly controlled and materials had to be applicable for use in a radioactive environment.



### ALICE ventilation for main detector

Air of a constant temperature was needed to cool the ALICE detector on the Large Hadron Collider; providing high velocity air to a radiation controlled area. It was imperative that instruments and detectors were kept at a constant temperature for accuracy in experiment results – and the previous design had struggled with this. Arcade upgraded the air handling units and ductwork design to improve air flow to this area.



*“The working environment of CERN on occasion imposes sudden changes to the detailed planning, but Arcade dealt with these well, showing excellent flexibility... the engineers were able to use their good design skills to define the technical solution and meet CERN's requirements.”*

Michele Battistin, Section Leader in the Cooling and Ventilation Group at CERN.

# Providing both accuracy and flexibility in product testing

We were asked to develop two environmental test cells; creating specific atmospheres designed to simulate areas and conditions of the world for paint to be applied. The new products required set parameters for paint to be applied specifically for defense and scientific research so testing was imperative.

## Our test cell work with a major paint manufacturer

We met very exacting requirements for two bespoke test cells.

- One to be fixed at 25C with 50% relative humidity and approximately 10% fresh air
- The other with variable set points - from 5C and 10% relative humidity to 40C and 80% relative humidity and anywhere in between.

We designed and installed a system which included an air handling unit, cooling coil, heating coil and humidifier to achieve the requirements of the fixed booth.

In the variable booth test cell, fresh air enters through filters in the ceiling and extracts through the floor. The operating software had to perform at infinite set points and the equipment's range had to be able to cope with both ends of the scale, leading to a significant air handling challenge. Our installation of a desiccant wheel to dry the air stream provided the low relative humidity and temperature conditions required.



## For places or positions with incredibly specific air requirements, organisations need a specialist.

As experts in HVAC and Process Engineering, we have 40 years' experience of providing design and installation services across multiple sectors and industries. Please call Sam Williams or Mike West at Arcade UK Limited to discuss your close control room and environmental test cell requirements on **01480 861111** or email **[sales@arcade-uk.ltd.uk](mailto:sales@arcade-uk.ltd.uk)**

**Arcade UK Limited** - experts on hand for your air handling precision requirements.



Arcade is an HVAC and temperature technology specialist with nearly 40 years experience of providing design and installation services.

From the printing industry to the retail sector, Arcade has worked with hundreds of businesses across the UK to develop full turnkey installations in areas such as temperature control solutions, new and refurbished HVAC and water treatment systems.

With an established heritage, Arcade understands the value of working in partnership with clients, delivering exactly what they need within budget and timescales.

To understand how Arcade could enhance your HVAC or temperature technology systems, call **01480 861111** or email **[sales@arcade-uk.ltd.uk](mailto:sales@arcade-uk.ltd.uk)**

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