

Innovative low-carbon cooling supports UWE sustainability targets

Natural Cooling

- **Customer:** University of West England, Monodraught COOL-PHASE® Hybrid Solution
- **Sector:** Education
- **Contact:** Building Services Engineer: Richard Black, UWE
- **Location:** Bristol
- **Products installed (2016):** 2 N° COOL-PHASE Hybrid units



The University of the West of England has continued to demonstrate its commitment to sustainable building management by installing two COOL-PHASE Hybrid systems in its Estates Management Office. Monodraught and UWE have a long-standing relationship having previously installed several of our original COOL-PHASE systems at the university. The latest innovation from Monodraught allows staff to enjoy more accurate control of comfortable temperatures whilst permitting the university to reduce its impact on the environment. As the system has minimal energy usage it is also possible to keep control of associated running costs.

The UWE is committed to building a sustainable facility and is aiming to make a carbon reduction of 22.5% by 2020 as well as a 50% reduction in energy usage. COOL-PHASE has been shown to use up to 90% less energy than traditional A/c systems. In 2015, we estimated that the COOL-PHASE systems installed globally saved the equivalent of 272 double-decker buses of CO₂.

COOL-PHASE is an award winning, low energy cooling and ventilation system that creates a comfortable, fresh and healthy indoor environment that can significantly reduce the running costs of buildings. COOL-PHASE Hybrid is an innovative enhancement that links high efficiency air to water heat pumps with our natural cooling phase change material system.

COOL-PHASE Hybrid is ideal in applications where:

- High heat loads are present
- Customers require close set-point control such that they don't want temperatures exceeding 25 °C
- In very rare UK locations where the night time temperature does not drop below 19 °C

Initial monitoring has shown positive results. Data from May-July 2016 has shown that maximum internal temperatures experienced within occupied hours is 26 °C. There was an average internal temperature of 23 °C. Further to this only 2% of the hours were over 25 °C with no hours exceeding 28 °C.

The system also logged CO₂ concentration within the room. The peak concentration level was 1190 ppm with an average level of 657ppm, satisfying CIBSE Guide A and demonstrating that that 10 l/s per person ventilation rate has been met.

Richard Black, Building Services Engineer at UWE said: "Having worked with Monodraught and their COOL-PHASE systems we were happy with the COOL-PHASE natural cooling solution and our relationship with the team. Monodraught's design team modelled the new building with IES software. Following the results, we selected the COOL-PHASE Hybrid system due to the orientation of the building, staff fluctuation and a requirement to manage peak loads.

Since the system was installed, staff have enjoyed working in a fresh and comfortable office with minimal impact on the aesthetic appearance of the office and no need to constantly adjust the controls for individual comfort requirements. From an economic and sustainability view point, we can further control energy costs and our carbon footprint whilst simultaneously improving staff well-being."

Andrew McCubbin, Managing Director at Monodraught said "We have an ongoing relationship with UWE and were delighted to install our newest innovation in hybrid cooling there. We continue to work with the university sector to deliver sustainable cooling solutions which reduce both energy and carbon usage"

To learn more about how our innovative cooling solutions can work for your building application, [click here](#).

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