

AMCC Building

PROJECT NAME:
AMCC Building

CLIENT:
Bowmer & Kirkland Ltd

MARKET SECTOR:
Research

CONTRACT TYPE:
New Build

CONTRACT VALUE:
£52k

The £14m AMCC (Advanced Metal Casting Centre) building at Brunel University is the newest and most advanced addition to the West London campus to date.

Designed as a national scale-facility and co-funded by the Engineering and Physical Sciences Research Council (EPSRC) and industrial companies Constellium and Jaguar Landrover, it aims to draw on the work carried out by Professor Zhongyun Fan and his team at Brunel University to improve the recyclability of metals. “Our long-term aim,” he says, “is to reduce the amount of new metal mined from the ground to a minimum, by finding ways to make high quality parts and materials from metal that has already been used at least once.”

Stage one to help deliver on this ambition, was the construction of a world class research facility with Palcon Energy Services Ltd providing the design and installation of the Trend based Building Management System to compliment and control, not only the environmental conditions of the building, but also the process cooling systems required to deal with the new casting technologies.

Key to the operation of the building and the technologies it aims to create was the removal of excess heat from various metal casting machine stations. To achieve this, a complex 'process cooling water system' was engineered to serve the multiple casting centres, encompassing open loop storage and transfer tanks (complete with level detection), BMS controlled plate heat exchangers (providing casting stations with process water at the precise temperatures required) and roof mounted adiabatic coolers to remove excess any heat from within the system.

All of this was achieved by the provision of a dedicated MCP (motor control panel) fitted with Trend IQ4e controllers complete with specialised software routines engineered specifically for the critical nature of the process cooling system. Ambirad and Monodraught systems were integrated directly into the BMS to provide heating and cooling respectively for the vast cavernlike casting area together with a conventional gas boiler system providing heating via radiators to the buildings office and meeting areas.

The complete system is connected to the site wide Ethernet infrastructure, and monitored for performance and critical alarms by the universities Estates Department via a Trend 963 Server.

