

CASESTUDY

MMU | Manchester Metropolitan University | UK

Campus Energy Monitoring and Energy Awareness Campaign



Manchester Metropolitan University was awarded university status in 1992 and is part of the largest higher education campus in the UK and one of the most extensive education centres in Europe. It has a total student population of over 36,000, has recently rationalised its campuses from seven to two in academic year 2014/2015 and is now one of the top three greenest universities in the UK.

—
01 Manchester
Metropolitan University

The business school is one of the most recent building developments and is the second largest business school in the UK with 5,000 students, 250 staff and a gross building area of 23,400m².

“What attracted us to ABB Cylon[®] Active Energy was their ability to simultaneously monitor a large number of buildings across our campus live and in real time.”
Mike Neary, Manchester Metropolitan University

The Business School and Student Hub is a multi-function University building incorporating new faculty functions and cross-University facilities. These include student and academic services, catering, informal learning areas, a range of formal lecture theatres, seminar rooms, administrative and academic offices, as well as specialist post-graduate facilities.

The design and materials of the new building work together to create a comfortable ambient temperature and improve the environmental sustainability.

For example, water pumped from underneath the building provides free heating and cooling while photo-voltaic panels on the roof generate electricity. Energy efficient LED lighting, low energy PC’s and IT infrastructure were installed. From the third floor, you can see the living green roof that absorbs pollution and provides a habitat for birds, insects and bees.

Sustainability

Since completion, the building has achieved an energy performance certification B (BREEAM), an excellent result for this type of high occupancy building with extended hours of use. They have also utilised on-site renewable energy sources to offset almost 20% of the buildings energy use.

Project Summary

- Applications: Active Energy Manager & Green Screen
- Type of Building: Large University Campus/ New Business School & Student Hub
- Meters connected: 500 meters
- Use: Energy Management and Energy Awareness

Active Energy Solution

The business school at MMU is an energy efficient building built to the highest specification with energy saving in mind. MMU utilises the Active Energy solution to help operate this low energy designed building in an energy efficient and sustainable way and to identify inefficient energy usage in real time.

Electricity usage is monitored via Modbus meters; gas and water are monitored via pulse meters with the exception of the bore hole water usage which is also monitored via a Modbus interface. The total number of meters connected to Active Energy Manager in the Business School is approximately 100 with a further 400 meters across the campus connected to the system.

Awareness Campaign

MMU have developed their own public energy awareness screens using the Green Screen API (Application Programming Interface). These screens communicate energy saving tips and the building's energy usage and performance in a modern, fun and contemporary manner designed with the young vibrant student audience in mind. MMU can include any information on the public awareness display in their own look and feel, whilst the energy information is provided live to the screen via the API (Application Programming Interface) from the Active Energy Manager solution.

Campus Monitoring

As a cloud based service, the Active Energy Manager solution can monitor and analyse the energy consumption of buildings regardless of size, number of buildings, or geographical location, making it the ideal solution for monitoring multi-site and multi-location organisations such as a college campus.

Real Time Monitoring

Even a well-designed energy efficient building requires continuous monitoring to prevent building performance drift. The Active Energy Manager solution gathers information in real time (every 15 minutes) providing energy and facility management teams with the most up to date information, allowing them to react to performance anomalies efficiently and effectively.

Green Screen Energy Display

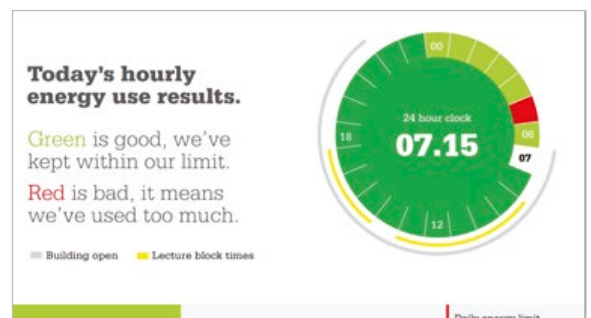
The Green Screen is displayed in public spaces to encourage positive behavioural change to energy management amongst occupants and visitors to the buildings and can produce additional savings in energy consumption of up to 10%.

Time Period Comparison | 2014 v 2015



The time period comparison shows a drop in the lighting energy consumption of 4% from 2014 to 2015 which is due to more efficient operation of the lighting across the Business School building.

Green Screen API | Energy Display



Allows MMU to develop a custom public energy display collecting live data from the Active Energy Cloud in order to engage the students, staff and public in an energy awareness campaign.

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