



The Ricoh Arena Opts for Enercom to provide aM&t



Introduction

The Ricoh Arena is a multi function development designed for use 365 days a year. As well as a truly magnificent venue that is home of Coventry City FC, the Ricoh Arena provides banquets, conferences, exhibitions, a casino, health club, bistro, hotel and concerts. The Ricoh Arena is run and managed by Arena Coventry Ltd, a joint venture company consisting of Coventry City Council and the Alan Edward Higgs Charity. The Ricoh Arena offers:

- A 32,000-seater stadium,
- The Jaguar Exhibition Hall measuring 6,000sq metres and capable of holding 8,000 people for concerts, or a banquet for up to 5,000 people.
- More than 3,000sq metres for conference and banqueting with seating around 2,500 diners including one of the largest column-free conference and banqueting space in the Midlands
- 19 Kiosks built around stadium and four serving the Jaguar Exhibition Halls
- The on-site 71 room Silk Suites hotel.
- Singers Bar & Bistro, with a 100-seater restaurant, bar area and coffee lounge with internet access
- The Arena Health and Fitness Club - featuring 100 fitness stations, sauna, steam room, treatments and therapies as well as the first ever dedicated youth gym in the West Midlands for eight to 16 year olds.
- More than 2,000 car parking spaces

The Ricoh Arena Objective

The objective of the landlords at Ricoh was twofold. The primary objective was the requirement to understand in terms of energy usage, where the energy was being consumed so tenants could be accurately billed for their energy usage, this meant sub-metering tenant energy supplies and also obtaining accurate apportionment reports. The secondary objective; given the increased pressure from government legislation to reduce carbon emissions and the rapid rise in wholesale gas and electricity, there was a growing demand to reduce the expenditure on energy.



The Ricoh Arena - Coventry

The Solution

The project was broken down into Phase 1: Tenant Billing, and Phase 2: Energy Management. This case study concerns itself with Phase 1. Using MID (Measuring Instrument Directive) approved billing meters Enercom replaced all the existing non approved meters for each tenant. Main plant and equipment such as chillers and AHU were metered along with the main incomers and all tenant supplies. Attached to each meter via split core CT's were the Enercom Multilog units. These units would then provide the data for the Energy Manager to not only bill the tenants but also monitor and ultimately micro - manage the energy consumption across the site.

Data Provision for Energy Management

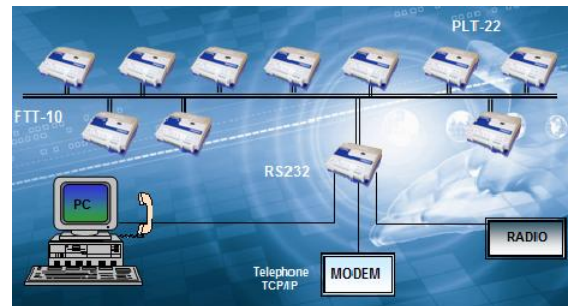
The Multilog units receive meter pulses (from any type of meter: gas, electric, water, oil, heat etc.), convert the pulse count into a KWh energy usage figure for each half hour (or other programmed unit and time period) and stores the time-stamped values for up to 60 days, continuously updating the most recent sixty days worth of half hourly figures in readiness to repeat/download this data when requested by the host PC.

Multilog controller software running on the host PC initiates regular automatic downloads of the half hourly data and copies it into easy to use CSV/ASCII files for interpretation by Team M&T Sigma Software (or any proprietary M&T Software or into a Building Management System (BMS)) for analysis. This allows the software to check that meter data arrives in unbroken order and to re-initiate a download if communication is incomplete. The system has proven to be resilient and reliable in operation. The Multilog system also provides useful raw meter data such as instant meter readings, time-stamped readings, energy use profile charts and the means to easily view, analyse and copy data from a Web-Browser application into Microsoft applications such as excel.

Convenient and Clean Installation

Multilog units are equipped for communication over a variety of media including existing single or multiphase mains cables using an in-built PLT-22 power line interface and twisted pair using an in-built LONworks communications chip. This means that installation is clean and local, there is no requirement to drill walls and lift carpets and floorboards to lay extra cabling, there would be no disruption to power supplies and also any work can be carried out during opening hours

Where network components or host PC are remotely situated, communications are extended via the internal telephone network or PSTN using dial-up modem or via TCP/IP Ethernet LAN interface to a Multilog "gateway" unit. Given that there was a requirement for minimum disruption to the clients. The Multilog system is easily expanded or altered to allow for changes at the site, or where continuous plant operation necessitates a phased approach to implementation.



The Outcome

Ricoh Arena has considerably reduced the base load consumption since the equipment was installed, they can now separate the Ricoh from the Isle Casino, which are the sites 2 main consumers of energy. The base load was 500kW, with a targeted base load of 280kW. The Ricoh is currently achieving a base load of 350Kw, with the AMR system in place the base loads can be monitored and managed. A key problem with water was identified, whereby one of the tanks was showing to be filling every 4 hours, there seemed no reason for this, the system has identified the issue. I can now resolve it and save money against an unnecessary water cost. This information provides an excellent precursor to **Phase 2 – Energy Management.**

Testimonial

"Every Monday morning I would spend two hours collecting meter readings, now it is all automated" "I can now generate spreadsheets for accounts to do the tenant billing although the software will enable me to do the billing when it is fully operational thus there will not be a need to use accounts at all.

With this equipment we can now provide itemised bills to the tenants for electricity, gas and water. "Being able to add to the system for the energy management phase is a big advantage. The system enables me to identify where people are leaving lights and air conditioning on and I can now educate people to turn lights and equipment of after use."

Alan Pickering – Deputy Facilities & Energy Manager

Many Thanks to Alan Pickering at the Ricoh Arena for the provision of information and materials used in this case study.