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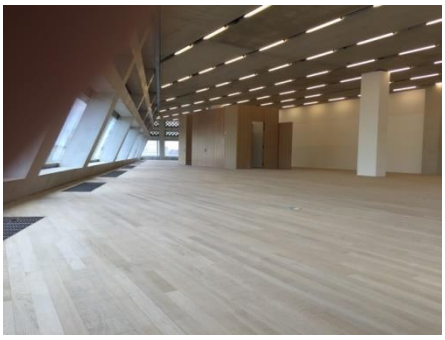
CASE STUDY

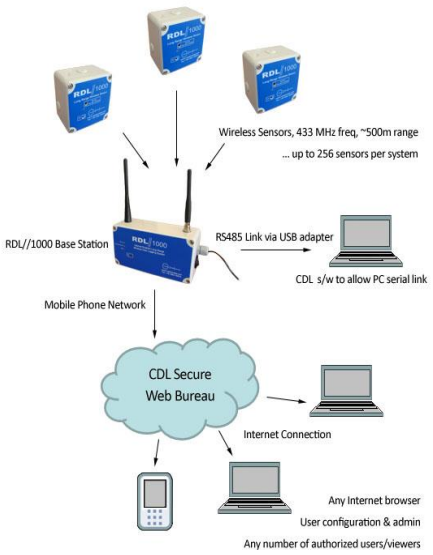
Caption Data Limited is a UK company leading the way in applying remote monitoring and "Internet of Things" technology for the Built Environment, and OEMs, Consultants, Construction and FM businesses operating in that sector. With thousands of installed units across 15 countries, we provide end-to-end solutions, all the way from the sensors to the cloud & our SmartHub™. They deliver real ROI, are quick to install, light touch, and above all are practical for our clients.

PROTECTING 10,000M^2 OF FLOORING AT TATE MODERN

How does one go about ensuring that a £260 million revamp of one of London's most iconic cultural buildings goes smoothly? Additionally, it needs to go quickly whilst still retaining extreme precision during the process. This was the challenge the builders of Tate Moderns' extension threw down to Jonathan Burch of Humidity Devices Ltd, Paul Sanders of Caption Data Ltd and the flooring contractors.



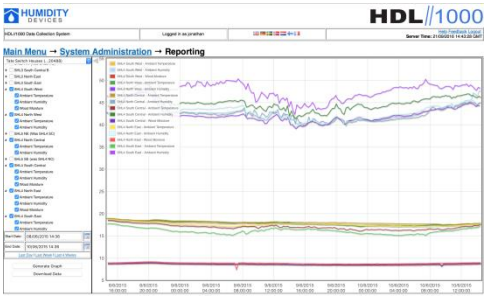
For a start, it was more technically challenging than anticipated. Timber shrinks when dry, and expands when damp, which is a normal process; the challenging part comes with the precision involved, as each gap between the timbers used had to be 0.4mm, with 1mm accuracy on 30 m spans, on top of the fact there was 10,000 square metres of timber flooring spread across ten storeys! Controlling ambient conditions within acceptable parameters was paramount so as to avoid expansion and potential damage to the flooring. Just to add to the challenge there were over 600 items fixed in or on the flooring, such as temporary walls or access panels, to work around. So whatever system was used had to be autonomous, robust, simple and quick to deploy.



Fortunately, the RDL//1000 wireless sensor system from CDL was there to monitor everything. With its quick and easy setup and robust battery powered sensors it proved to be incredibly simple to keep an eye on everything. The system monitored combinations of ambient temperature and humidity and wood moisture levels, at intervals of 15 minutes, and sent the data to the CDL SmartHub via its own on-board GSM function once every hour.

From the CDL SmartHub the contractors could use their smartphones, tablets or PCs to monitor trends, set alarm thresholds and most importantly receive alerts by text and email if the alarms were triggered, giving the site team time to resolve any issues that cropped up over the course of construction.

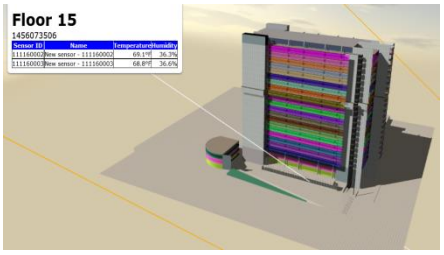
Thanks to the RDL//1000 sensor range of up to 500m, the RDL//1000 wireless sensors were able to monitor the ambient conditions with simplicity even through the thick concrete flooring bases. Each base station was able to transmit and receive through 4 thick concrete floors, so the connectivity between sensors and base station was assured. Even so, due to the size of the Tate Modern project there were over 4 base stations and 80 sensors covering the entire site and maintaining optimal coverage.



The connectivity of sensors was important as temporary walls were laid and then removed or moved as needed. This meant even more atmospheric changes were occurring than on a normal construction site, which needed to be monitored to ensure that the flooring was not compromised.

The alarm system on the CDL SmartHub alerted the on-site supervisors and workers whenever the ambient conditions changed sufficiently above or below the programmed levels, and disasters were avoided. One of the many features of the RDL//1000 and its SmartHub is the management reporting function and data archiving, so there is permanent data available and an audit trail in case of any future issues.

Thanks to the teamwork between Humidity Devices and Caption Data and the RDL//1000 wireless sensor system, the Tate Modern Extension was completed with its 10,000 square metres of wooden flooring in tip top condition.



Caption Data can also link sensor systems to 3D graphics that they create for their clients of a building, showing real time conditions of a multitude of parameters and any “alarm” situations, so creating “Smart” buildings. These can work with the existing Building Management Systems [BMS], or autonomously alongside them. The building operators can then see and manage their assets from their smartphones or tablets, giving a complete end to end solution that covers all functionality that may be required.

To discuss this particular application contact Paul Sanders on 01905 754078 or paul@captiondata.com .
For general enquiries please contact + 44 (0)1905 754078 or sales@captiondata.com .
Comprehensive information is available on our website www.captiondata.com

"Humidity Devices Ltd specialise in the monitoring of site and property environmental conditions to reduce the risk of damage to sensitive finishes, particularly timber floors. Humidity Devices supplies a number of products to monitor conditions before, during and after installation. These products monitor and record conditions allowing the prevention of problems, and if problems do occur providing the data to diagnose and rectify. Consultancy services are also provided to improve quality, reduce project risks, and report on problem installations.”

Contact HDL on 01522 253 223 or via www.humiditydevices.co.uk