# Internet technology helps monitor changing climate in 900 year old Westminster Hall

Built in 1097 under William II (Rufus), the son of William the Conqueror, Westminster Hall is the oldest building on the Parliamentary Estate. What makes it such an astonishing building is not simply its great size and the magnificence of its roof, but its central role in British history. In and around the Hall, grew up the major institutions of the British state: Parliament, the law courts and various government offices. Today it is used as one of the principal entrance’s into the Houses of Parliament and the location for significant State events.

The magnificent hammer-beam roof of Westminster Hall is the largest medieval timber roof in Northern Europe. Measuring 21m by 73m (68ft by 240ft) and some 30m tall, the roof was commissioned in 1393 by Richard II, and is still standing!

While much is known about the events that took place in the Hall’s 900 year history, in reality little is known about the internal atmosphere. No data has ever been collected to verify this in a scientific way which is why [Caption Data Limited](http://www.captiondata.com/index.php) have been commissioned by The Houses of Parliament to provide a [remote monitoring system](http://www.captiondata.com/rdl1000.php) called the RDL//1000.

Caption Data Limited, based in Worcester, will be supplying a number of [battery powered wireless sensors](http://www.captiondata.com/rdl1000.php?id=2) that will be installed throughout the roof structure. These are ideal for the vast space and the thick walls within the hall.

The remote monitoring system will include measurement of timber moisture levels, temperatures, and humidity, from various locations around the historic structure.

In addition to the measurements inside the hall, there will be a full weather station installed on the roof which will measure wind speed, rain, sunshine, temperature and humidity.

The sensors will need maximum battery life as they will not be easily replaced when they are 30 meters in the air! Sensors will also be specially camouflaged so as not to detract from the structures appearance. The base station will be located out of sight and will automatically transmit data from all of the sensors via the mobile phone network to a dedicated web portal accessible from any internet enabled device.

The Parliamentary Estate’s Directorate and the team involved in the conservation project will be able to view trends of data on-line and real time on their smart phones, tablets, laptops and desktops to establish the best conservation treatments for the internal stonework and roof timbers. They can also set alarms to immediately warn of dangerous conditions.

The roof top weather station data will allow correlations to be made between the weather and conditions in the hall.

Local MP, Robin Walker of Worcester, recently met Paul Sanders, Director of Caption Data Limited during a pre-installation visit at Westminster Hall.

Robin Walker MP commented *“Hopefully 21st century internet based monitoring from Worcester based Caption Data will help preserve this fabulous building for many more centuries to come!”*

Notes to editors

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