



## Two Innovation Awards Celebrate Major Intelligent Structural Monitoring Project in the UK

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PRINCETON JUNCTION, N.J., July 16, 2014 (GLOBE NEWSWIRE) -- The Institution of Civil Engineers (ICE) and Chartered Institution of Highways and Transportation (CIHT) have separately judged and awarded the A38(M) Tame Valley Viaduct management project with a 2014 Innovation Award. Key to management of the viaduct is the MISTRAS monitoring system comprising over 1,100 sensors, which is one of the largest bridge monitoring systems in the United Kingdom.

As a critical link between the West Midlands and the rest of the UK, the Tame Valley Viaduct is a key section of the highway network, carrying 620 metres of the A38(M) Aston Expressway between Birmingham city centre and 'Spaghetti Junction,' Junction 6 of the M6 motorway.

The judging panel commented that *they were impressed by the innovative use of the latest computing and software technology to monitor the box girder structure and provide understanding of its structural behavior whilst safely remaining open to the public.*

The vision of Birmingham City Council shows how investment at the assessment and design stage leverages major savings during construction. Key to this was a long term collaborative partnership contract between the council and Atkins. In addition to saving millions in reduced strengthening costs, this innovative monitoring approach will reduce the risks to the workforce working in difficult conditions inside the box girders.

As part of the Atkins supply chain, MISTRAS Group's UK operation enabled the partnership by developing and installing in-house, cutting edge monitoring technology to measure strain, and displacement in steel webs and stiffeners. The monitoring system's principal innovation was to apply instantaneous temperature correction to provide actual dynamic strains and carry out continuous threshold checks in real time using collected data. This process provides accurate strain readings to input into technically excellent structural analysis calculations predefined by Atkins and **acts as a real time safety system alerting engineers** if the strains exceed variable seasonal thresholds. This was essential for **satisfying both operational and safety requirements** required by the management process. Infrared (IR) cameras are distributed at key critical locations within the viaducts box girders (connected to the monitoring system) to allow remote visual inspection inside the structure to support engineering decision making and mitigate the time required for expensive internal access.

In addition to strain monitoring, MISTRAS also designed and installed an elaborate low power IT network to support the 13 IR cameras and 5 computers inside the bridge which connect to central website control panel coordinating review of data and system operation.

This use of innovative monitoring technology pushed beyond design codes to sustain Birmingham city's accessibility to and from the national motorway network and to protect and maintain in service for the future this key highway asset.

Please follow this link to the on-line coverage of the winners in the Birmingham Post.

<http://www.birminghampost.co.uk/business/commercial-property/ice-awards-2014-7095480>

Details of the CIHT are covered in the following link.

<http://www.ciht.org.uk/en/media-centre/news.cfm/ciht-awards-2014-honours-industry-professionals>

### About MISTRAS Group

MISTRAS is a leading "one source" global provider of technology-enabled asset protection solutions used to evaluate the structural integrity of critical energy, industrial and public infrastructure. Mission critical services and solutions are delivered globally and provide customers with asset life extension, improved productivity and profitability, compliance with government safety and environmental regulations, and enhanced risk management operational decisions.

MISTRAS uniquely combines its industry-leading products and technologies - 24/7 on-line monitoring of critical assets; mechanical integrity (MI) and non-destructive testing (NDT) services; destructive testing (DT) services; process and fixed asset engineering and consulting services; and its world class enterprise inspection data management and analysis software (PCMS™) to provide comprehensive and competitive products, systems and services solutions from a single source provider.

For more information, please visit the company's website at [mistrasgroup.com](http://mistrasgroup.com) or contact Nestor S. Makarigakis, Group Director, Marketing Communications at [marcom@mistrasgroup.com](mailto:marcom@mistrasgroup.com).

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