Smart Structural Monitoring of Long-Span Bridges

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www.straininstall.com
Bridge Management Information

| Does the bridge comply with current design and assessment standards? |
| Have there been any incidents that compromise the bridge? |
| Are the loads for which the bridge was designed greater than actual in-service loads? |
| Is the bridge significantly deteriorating? |
| Bridge is Safe for Use and Fit for Purpose? |
| Does the bridge need maintenance work now? |

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Bridge overview.
Real-Time Dynamic Structural Monitoring

The following graphics are being updated in real-time from GPS sensors at the Strainstall test facility.

Dynamic movement amplification factor: 16680166x

Slide the above control to adjust the amplification
Hover over the sensor dot icons to view real-time information
Data Analysis Graph Example

The following graph is an example of the dynamic interactive nature of our graphing output.
Monitoring System Considerations

What information will be required and how will it be used?

Use real-time monitoring to evaluate structural components after events

Time synchronisation of server and logger computer clocks allows for the accurate assessment of load on long-span bridges

Fibre optic cable permits high speed, high volume data transfer along Main Cabling Network System

Ensure high level of resilience built into system design

Load Shackle confirms if additional load detected

Sensor detects vibration from applied load
Information from Monitoring Data

Sensors → Data

Structure

Decision

Information
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Thank you