James Fisher and Sons plc
Pioneering Sustainably

James Fisher
Strainstall

BridgeStrike monitoring system

Enabling quick and informed decision making for immediate action by bridge owners.

Introducing the BridgeStrike monitoring system

Bridge strikes cause severe disruption, closing roads and shutting rail lines, leading to significant costs, delays and congestion. The impact affects business, commuters, bridge owners and the wider economy. Safety is critical and bridge owners need to be able to respond effectively to an incident in order to minimise the risk to road and rail users, staff and transport operators.

The problem is prevalent for both road and rail operators and it is estimated that up to 10 bridges strikes occur every day in the UK. Network Rail estimates that bridge strikes cost around £23m in repairs, compensation and delays annually. What's more, these incidents aren't a one-off event. According to Network Rail over 350 bridges have been hit on more than one occasion.

Whilst a range of initiatives such as driver education, better signage, and improved route planning tools can help; bridge owners and operators need to be able to manage the response to an incident effectively and where necessary, recover costs from the vehicle owner.

> "BridgeStrike ensures public safety and minimises disruption by informing operators immediately in the event of a collision."

Real-time bridge strike monitoring

BridgeStrike provides an effective and reliable means to monitor bridges remotely, offering 24/7 surveillance and instant notification when a strike occurs.

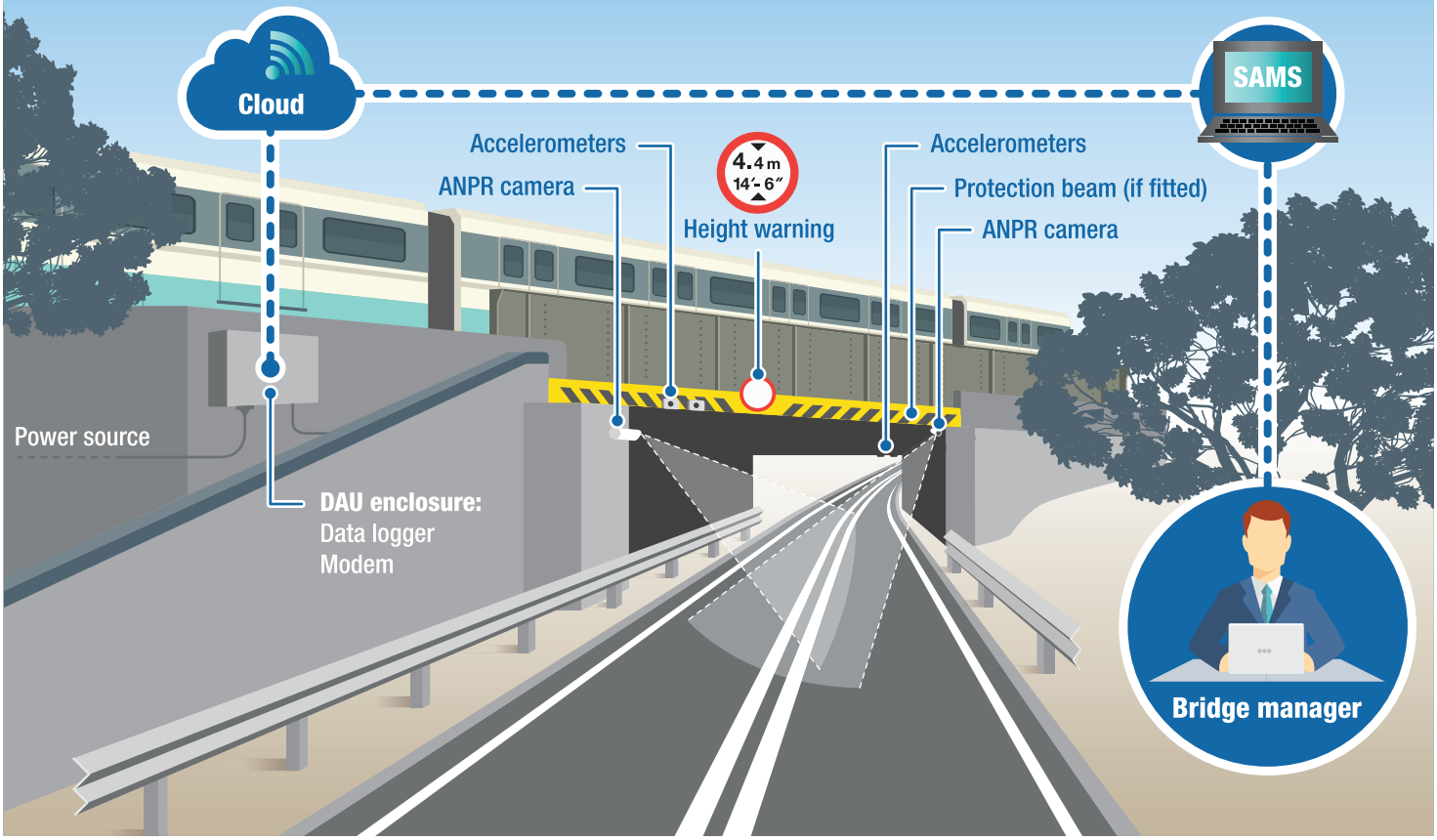
Our BridgeStrike monitoring solution has been devised to be cost effective for widespread installation, without compromising on accuracy and performance.

The system can be installed at any point in a bridge's operational life and applies to a range of different structures of all sizes and configurations, covering both road and rail.

Key benefits

- Fully automated operation, logging and reporting of incidents
- Easily integrated into existing bridge structures
- Indicates severity of strike which allows operator to respond efficiently
- Allows remote monitoring of structures in isolated locations
- Reliable and easy to maintain
- Modular system enables additional sensors and functions to be added when required
- Helps to minimise unnecessary closures and restrictions as the severity of incident is immediately known
- Demonstrates due diligence for owners / operators
- Improves public safety
- Enables bridge owners to pursue offending vehicles' owners to recover costs

BridgeStrike monitoring system



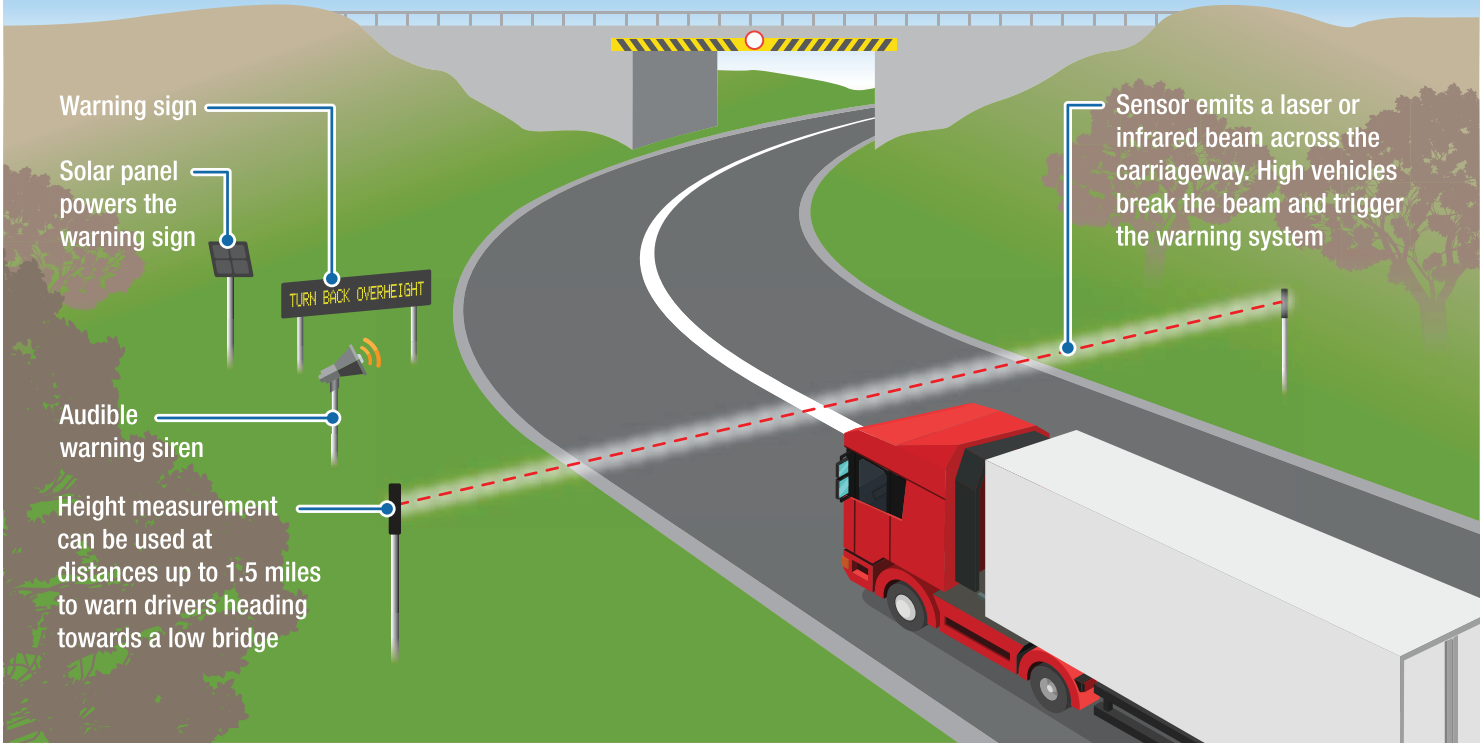
Features

- IP66 rated ANPR camera/s
- Accelerometers
- Signal conditioning
- Modem (typically fixed IP 3G)
- Configured industrial PC system
- Software with access to live data
- Automatic email alerts
- Stainless steel locked enclosure
- 110V/230V UPS / solar / hybrid power source options

Options

- Over-height vehicle detection system using laser sensors
- IR (infrared) illuminators
- Audible alarm signalling
- Temperature sensors
- Bridge deck movement sensors

Further protection with over-height vehicle detection



The Over-Height Vehicle Detection System (OVDS) offers a proactive solution for owner / operators that want to actively monitor traffic on routes where overhead obstructions pose a strike risk and warn drivers of specific vehicles that are too large of an impending collision.

The system uses laser sensors to monitor traffic on approach to obstructions such as tunnel entrances, low overpasses and bridges. If a vehicle is too large to pass safely, it is detected, triggering a remote warning sign placed further along the route and an audible alarm that instructs the driver to alter their course before they reach the obstruction.

Working with London Underground

London Underground approached JF Strainstall following repeated incidents of bridge strikes on the network in one year alone. Furthermore, it was suspected that not all incidents were reported and the number of strikes may in fact have been higher, seriously risking the structural integrity of the bridge in question.

JF Strainstall installed a BridgeStrike monitoring system on a railway overbridge, which carries two rail lines over a busy main road. With a restricted height of 14'-3" and despite signage positioned to warn drivers prior to the approach, the bridge is continually compromised by vehicle collisions.

Since the installation in 2016, the system has recorded more than 30 bridge strikes in its first 18 months, resulting in the prosecution of the drivers involved. Subsequently a further eight systems have been fitted across the London Underground network and the system is providing an effective method for managing this problem..

> "I have found the BridgeStrike system to be an effective and fantastic tool for immediately notifying me of a bridge strike. It has allowed me to act as soon as a strike takes place, meaning structural integrity be assessed and any repair works undertaken without delay. Since its installation in 2016, the system recorded more than 30 bridge strikes, with the system allowing us to identify offending vehicles and pursue drivers for the cost of any damage."
>
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About JF Strainstall

James Fisher Strainstall (JF Strainstall) is a world leader in the development of innovative monitoring solutions to enhance the safety and performance of your assets.

Drawing on more than 50 years' experience, we develop and apply our innovative technology, including load, strain and stress measuring techniques, within a wide range of sectors including marine, offshore, civil engineering, rail and aerospace.

In 2016, JF Strainstall celebrated 50 years at the forefront of developing innovative monitoring solutions for our customers.

We specialise in the design and manufacture of standard and bespoke load cells, strain gauges and integrated systems, which are proven to perform year after year in hostile and hazardous environments.

Whether a project is large or small, we provide a range of services including hull stress monitoring, crane weighing and overload, tendon and riser tension monitoring in TLPs.

Our instrumentation and software systems capture and analyse data on parameters such as strain, displacement, inclination, temperature, vibration and water levels to provide asset owners and operators with a comprehensive and real-time overview of events to realise optimum performance.

JF Strainstall has been part of James Fisher and Sons plc since 2006. James Fisher is a leading provider of specialist services to the marine, oil and gas and other high assurance industries worldwide.

Construction and temporary works monitoring

Data services

In-situ stress measurement

Smart asset management SAMS

Straingauge

Test equiptment

Weather monitoring

Safety and control systems

Structural investigation

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