

Is it a bird, is it a plane, no it's a bridge!

April 1 2008



The bridge being moved at the National Physical Laboratory. Credit: NPL

A government lab in Teddington has taken on its biggest sample for analysis to date – a 14 tonne foot-bridge.

The National Physical Laboratory (NPL) is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology. For over 100 years it has been the UK's National Measurement Institute and provides highly accurate measurement and analysis for public and private sector benefit alike.

The "sample" was a 14 tonne footbridge that is 20 metres long and 5 metres high and has been used to allow access from one side of the NPL site to the other for the last 46 years. With redevelopment of the NPL site this bridge has become redundant. Rather than demolish the bridge,

and in the spirit of recycling, NPL scientists have used this unique opportunity to run a project using the old bridge to improve civil engineering structures.

Before this could begin the small matter of needing to move the massive bridge across the site away from the demolition zone needed to be addressed. Moving such a structure is unusual and was expertly carried out by Burton Smith and Beck and Pollitzer who used a 250 tonne capacity crane that extended nearly 50 metres into the sky.

After lifting the bridge it was then trailered across the NPL site, with essential co-operation from LGC, taking an hour to travel the quarter mile earlier this year, squeezing around tight turns and under trees before being lifted above existing buildings to its final resting place.

The bridge will be used as a demonstrator to try out different techniques for monitoring structures for a government project to encourage UK industry and UK infrastructure to use monitoring to maximise the lifetime and minimise maintenance costs for civil engineering structures.

During the three year project the bridge will be loaded until it cracks, repaired using new composite repair methods and then retested. The opportunity to have a large scale structure that can be abused in this way whilst being monitored is a once in a lifetime event and will provide evidence for the cost saving benefits of structural health monitoring.

Source: National Physical Laboratory

Citation: Is it a bird, is it a plane, no it's a bridge! (2008, April 1) retrieved 20 April 2024 from <https://phys.org/news/2008-04-bird-plane-bridge.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.