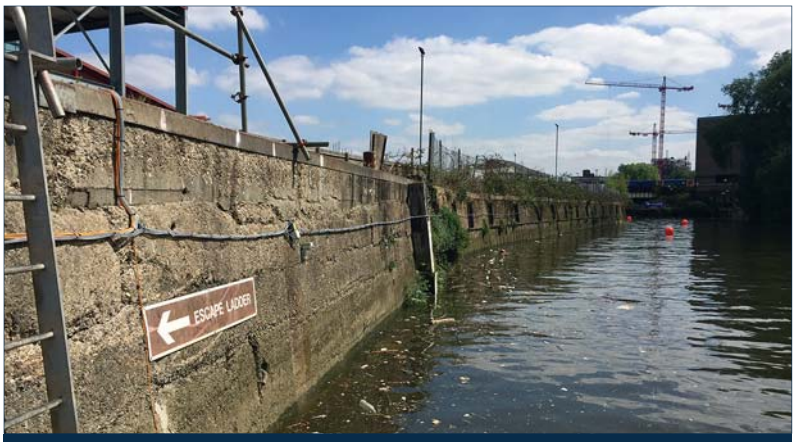
RETAINING WALL MONITORING

River Wandle Half-Tide Weir

A CUSTOMER SUCCESS STORY

BY RST INSTRUMENTS LTD.



Half-tide weir that existed at the junction of the Wandle and the River Thames.

"I'm very happy with the quality of the instrumentation and technical support from RST, as always. They worked with us from the initial stages of the project to ensure that we were fully prepared and equipped to use the RSTAR network for the first time. They delivered everything within the tight project time frame to ensure that there were no delays on site, and the submersible tilt meters looked like new even after over twelve months of being submerged in Thames water!"

- Richard Lipscombe, BEng (Hons)
Director & Principle Consultant
RL Geotechnical Ltd

BACKGROUND

The River Wandle joins the River Thames on the Tideway and runs about 14 kms (9 miles) long throughout the southwest sector of London, England. A defunct half-tide weir that existed at the junction of the Wandle and the River Thames was hindering the river's natural flow and biodiversity.

RST already had some of its monitoring instrumentation installed along the river walls from previous years that was still in use.

OBJECTIVE

With support from The Environment Agency, the Marine Management Organization, and the Port of London Authority, the half-tide weir on the River Wandle was set for demolition to improve water flow, water quality, and restore lost wildlife habitats.

CHALLENGES

As a result of the anticipated demolition, concerns were raised in regards to the stability & condition of the existing river retaining walls. The site engineers concluded that additional monitoring instrumentation would be required, but it would need to be incorporated with the existing data logger set up - without adding excessive costs to the project.

Wireless monitoring was also essential since the sensors would be installed on either side of the river walls where conditions were hazardous and difficult to access for manual readings.

SOLUTION

RST's In-Place Tilt Meters and Submersible Tilt Meters were installed along the east retaining wall of the River Wandle to measure rotation. RST was also able to install and incorporate an RSTAR L900 RTU within the existing data logger system. It allowed for wireless readings from the new and previously existing instrumentation at a reasonable price.

KEY FACTS

LOCATION

River Wandle, London, England

PROJECT PARTNERS

Owner: Wandsworth Council
Consultant: RL Geotechnical
Designer: Crouch Waterfall
Contractor: Land & Water

PROJECT DETAILS

The River Wandle joins the River Thames on the Tideway and runs about 14 kms (9 miles) long throughout the southwest sector of London, England. A defunct half-tide weir that existed at the junction of the Wandle and the River Thames was hindering the river's natural flow and biodiversity.

SCOPE/OBJECTIVE

The weir was set for demolition to improve water flow, water quality, and restore lost wildlife habitats.

RST already had some of its monitoring instrumentation installed along the river retaining walls from previous years that was still in use; however, additional monitoring instrumentation would now be required since concerns were raised about the stability and condition of the existing river walls.

Digitally Bussed Submersible Tilt Meters

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TURN OVER

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1 of the 3 Digitally Bussed Submersible Tilt Meters along the east retaining wall.

RSTAR Node (DT2485), installed on mast, transmits data wirelessly.

1 of the 8 In-Place Tilt Meters installed along the river walls.

KEY FACTS CONTINUED

CHALLENGES

The new instruments would need to be incorporated with the existing RST data logger set up without adding excessive costs to the project.

Wireless monitoring was needed since the sensors would be installed on either side of the river walls where conditions were hazardous, and difficult to access for manual readings.

SOLUTIONS

RST's In-Place Tilt Meters and Submersible Tilt Meters were installed along the east retaining wall to measure rotation.

An RSTAR system was incorporated within the existing instrumentation configuration to provide wireless data collection.

BENEFITS

The RSTAR system incorporated the new and existing instrumentation at a reasonable price.

The new wireless capabilities minimized the safety issues and hazards related to the collection of sensor data.

RESULTS

The remote real-time monitoring allows for quick response times and decreases the logistics required for monitoring along the river walls.

Potential costly disruptions to the project and surrounding environment are now minimized.

The River Wandle returned to its natural state and improved its biodiversity.

INSTRUMENTATION

8 In-Place Tilt Meters
3 Submersible Tilt Meters
DT2485: DT-BUS Data Logger (node)
RSTAR L900 RTU

COMPLETION DATE

June 2017

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