

# Electro Scan (UK) Ltd. Wins 2022 UKSTT Detection, Location & Inspection Award for 51km (32 mile) Southern Water Project

*Working with Framework Contractor, Cappagh Browne, Electro Scan Replaces CCTV to Locate & Quantify Infiltration*

LONDON, UK, September 20, 2022 /EINPresswire.com/ -- [Electro Scan \(UK\) Ltd.](#), a wholly-owned subsidiary of US-based Electro Scan Inc. was honoured at the Annual United Kingdom Society of Trenchless Technology (UKSTT) for its 51km (32 mile) inspection and condition assessment project for Southern Water, working with Framework Contractor, Cappagh Browne.



According to UK Water Industry Research (UKWIR) infiltration is a major problem across all water company networks increasing flood risk.

Electro Scan UK won the 2022 Detection, Location & Inspection Award using its innovative machine-intelligent technology that replaces Acoustic sensors and CCTV cameras to accurately locate and quantify sewer defects and leakage that are major contributors to sewer back-ups, overflows, and flooding.

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*Paul Purton, Cappagh Browne, Drainage Survey Manager*

["We are honoured to win this prestigious award,"](#) stated Brad Weston, Managing Director, Electro Scan (UK) Ltd. "British water companies have been plagued by the lack of actionable data provided by Closed-Circuit Television (CCTV) and Electro Scan is delighted to bring the pinpoint accuracy needed to find infiltration and certify repairs as watertight."

Electro Scan (UK) would like to thank Keith Savage, Sewer Rehabilitation Manager, Southern Water, for his rigorous project oversight and continued

support. Mr. Savage was an early adopter of Electro Scan's Focused Electrode Leak Location (FELL) technology. And, other water utilities are already making significant changes to their inspection programs based on Southern Water's best practices and leadership.

"Congratulations to everyone involved," stated Paul Purton, Cappagh Browne's Southern Water Drainage Survey Project Manager.

"It's been great working with Electro Scan UK over the last 12 months delivering the 51km of survey work for Southern Water," continued Purton. "It's been refreshing to champion this kind of technology in our fight against infiltration. And the results have been having a positive impact across the nine (9) catchments we covered. Achieving the recognition this award brings will put Electro Scan on more people's radar and make them aware of what benefits the technology can bring to them."

Southern Water serves an area totaling 4,450 sq. km. (1,720 sq. mi.) serving 2.26 million customers. Founded in 1989 with headquarters in Worthing, West Sussex, England, Southern Water employs over 2,000 employees, managing 365 wastewater treatment plants, 38,594 km (24,600 mi) of sewer pipelines, generating £827 million (\$925 million) in annual revenue.

While high-resolution CCTV cameras were traditionally used to inspect sewage and stormwater pipes for defects, their inability to determine if cracks go through pipe walls has limited its ability to tell whether cracks or joints leak. A key contributor to tidal infiltration and wet weather infiltration.



Representatives of Electro Scan (UK) Ltd. accepting the award for 2022 UKSTT Best Detection, Location & Inspection solution.



Electro Scan UK's Chris Chesworth prepares for insertion of the company's machine-intelligent probe.

CCTV's failure to locate sources of infiltration or certify repairs done to contract specifications and CIPP rehabilitated lined pipes as watertight is a major concern for water companies.

Finally, if service connections have leaks, i.e. where homes connect to the local sewer, water companies that use CCTV cameras may inadvertently give ratepayers a 'clean bill of health' for their sewers. Only to later find that rainwater was able to enter the sewers via undetected leaks, overloading the network, causing sewer back-ups, overflows, and residential flooding.

Since AI programs utilize the same frame-by-frame video files produced by the most advanced CCTV cameras, once promising AI programs have fizzled in popularity due to their lack of actionable and value-added data.

In contrast, Electro Scan's machine-intelligent, non-acoustic, non-visual technology is unaffected by water levels inside of pipes, grease, tides, groundwater conditions, noise, silt, or visual impediments. Instead, automatically geocoding and measuring all pathways where water can flow in or out of a pipe.

To date, Electro Scan UK has completed 63km (40mi) of surveys for Southern Water, including 4km (13,100 ft) of Cured-In-Place Pipe (CIPP), previously inspected by CCTV cameras.

According to UK Water Industry Research (UKWIR) , water companies are coming under increasing pressure from regulators and



In June 2022 The UK's Environment Agency released its Flood and Coastal Erosion Risk Management Strategy Roadmap to 2026 establishing a £5.2 billion capital investment programme to reduce the impact of flooding.



Electro Scan (UK) Ltd. 2022 award recognising the power of machine-intelligent technology to precisely locate sources of infiltration and certify pipe repairs, replacements, and relining projects as leak-free.

the public to provide better value for money for their customers through more sustainable solutions. Infiltration is a major problem across all water company networks and significantly increases operational costs through conveyance and treatment of unnecessary flows and can also increase levels of flood risk.

In contrast to CCTV and Artificial Intelligent programs that re-assess CCTV videos, Electro Scan provides significant cost savings through more effective planning & decision making.

## PROJECT OVERVIEW

Electro Scan (UK) Limited was awarded a 51km project by Southern Water to work under their framework contractor, Cappagh Browne. This 51km would take Electro Scan crews across multiple areas on the south coast of England. Electro Scan uses Focused Electrode Leak Location (FELL) technology. This enables crews to not only detect, locate and inspect every defect in gravity or pressurised pipe, but also quantify the data to give a litres per second defect flow rate with a locational accuracy of just 1cm. Data is processed and available less than 10 minutes after completing a survey. And, none of the equipment disrupts any of the lines which remains active at all times.

Electro Scan used two (2) different pieces of equipment to complete this project. First, the ES-600 van system probe which is a tethered system was used attached to a truck jetter hose, then pulled through the line making sure only one-to-two meters of the sewer is surcharged at any one time. This tricks the sewer into thinking that the line is completely surcharged. In fact, only a small section is actually surcharged eliminating any risk of blocking a sewer or causing a back-up.

The second piece of equipment was the ES-225 system. Representing a tethered push rod system capability of pushing up to 120m (400ft) and can be transported to survey difficult to reach pipelines.

Existing sewer flow is used to allow Electro Scan's electrical resistant-based probe to assess 360-degrees of a pipe wall. If additional flow is needed, water from a jetting vehicle is added allowing a probe to be used in both with and against pipe flows.

Electro Scan's FELL technology is simple to understand.

As the tethered probe travels through the pipe, it emits an electrical current equivalent to six (6) AA batteries. Following Ohms' law, when the probe comes across any defect that our electrical current can escape through, we use Torricelli's law to measure the size of the hole or office. Electrical current escapes through the defect and travels back to our grounding stake which then completes a circuit.

Think of a lightbulb. Every time a defect is found, Electro Scan measures two (2) things: how long that light bulb stayed on and how bright the lightbulb got. That data is quantified to give us a

liters per second which notifies the Client of a high risk assets, based on defect flows.

On project completion both Southern Water and Cappagh Browne were handed detailed reports which showed each catchment area broken down by infiltration quantities. It showed where the water company needed to concentrate their rehabilitation efforts to reduce ground infiltration. Since each defect provides a width of each defect in mm and what percentage of infiltration each defect was giving them, water company engineers could easily select the proper rehabilitation strategy, i.e. point repair, section replacement, or full line replacements.

Electro Scan also provides major cost avoidance by avoiding unnecessary capital and operational expenditures, including field verification that pipeline repairs, replacements, and relining projects are delivered watertight. Previously, many water utilities simply accepted visual pipe inspection without testing for water tightness.

#### ABOUT ELECTRO SCAN INC.

Electro Scan Inc., and its wholly-owned subsidiary Electro Scan (UK) Ltd., is a leading supplier of machine-intelligent pipeline assessment, location, and quality assurance products and services for the water & wastewater pipeline industry. The company designs, develops, and markets its proprietary equipment, delivering field services and cloud-based applications that automatically locate, measure, and report leaks typically not found by legacy inspection methods. Follow Electro Scan Inc. on LinkedIn.

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