

CONCRETE CONDITION ASSESSMENT SURVEY OF THREE DIGESTER TANKS

\$0

Scaffolding costs

75%

Cut inspection time by 75%

100%

Economically inspect 100% of the structure

CHALLENGE

A water utility approached HausBots requiring a comprehensive structural assessment of three external concrete digester tanks. External defects had been identified and the client needed to determine the root cause and scope of necessary repairs.

Due to the tanks being located in a potentially explosive (Ex-rated) zone and serious concerns over structural condition, all intrusive investigation methods were ruled out. The scope therefore required a fully non-intrusive survey to locate internal defects and corrosion risk without compromising the asset's integrity.

Half-Cell Potential and GPR were selected as the primary NDT methods to identify corrosion potential and establish the precise depth and location of the reinforcing steel.

SOLUTION

HausBots deployed the HB1 Wall Climbing Robot to conduct a comprehensive Half-Cell Potential and GPR survey, achieving 100% asset coverage across all three tanks. External deployment allowed the tanks to remain fully operational throughout, eliminating costly shutdown procedures.

The robot also safely navigated the Ex-rated zone restrictions and bypassed complex pipework and supporting structures where traditional scaffolding would have been impractical or physically impossible.

“HausBots solution allowed the digesters to stay operational, saving us time, money and reducing disruption” **Callum, Project Engineer**

RESULTS

Health and Safety : The ability to operate the robot externally eliminated the need for intrusive testing (core sampling) and kept human personnel away from the potentially explosive (Ex-rated) atmosphere, drastically improving site safety compliance.

Asset Inspection Coverage : Access & Scope: The robot provided the only practical method to conduct a 100% structural assessment of the external surfaces, bypassing the complex pipework where scaffolding was impossible.

Speed : Operational Continuity: The survey was conducted while all three digester tanks remained fully operational, achieving zero shutdown costs and avoiding significant disruption to the effluent treatment process.

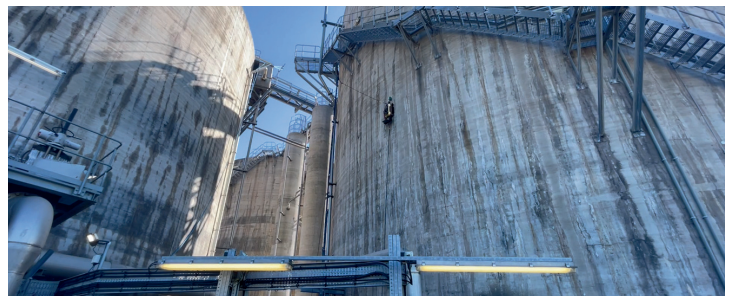
Profometer Profometer Corrosion



GPR GP8000



HB1 climbing Digester 1 with Half-cell Potential



DATA

+1km of GPR data collected
Data plotted onto 2D representation of rebar location and depth, in accordance with BS1881:Part 204: 1988

The primary outcome of the GPR inspection was to locate the reinforcement within the structure And assign an average depth of the top layer of the reinforcement.

Fig. GPR example data

