



As a part of an existing framework, Stonbury was contracted to carry out optioneering works to improve the condition and maintenance requirements of an impounding reservoir tunnel. The tunnel was constructed similarly to the tunnels in the London Underground and incorporated both bolted steel and critical stone sections.

Due to deterioration and heavy rusting over time, the client required a trial section to be completed for inspection by a section 10 engineer. This was to assist the client in understanding the requirements of a full refurbishment to the tunnel.

A sealed scaffold structure was erected to provide access to the work area and remove the risk of dust and debris affecting the coating application. The scaffolding also allowed the conditions within the tunnel to be controlled during the coating works.

In addition to the original scope, the team were asked to remove and replace the bolts which appeared heavily corroded. The bolts were removed one at a time with the use of a hydraulic bolt splitter, mitigating the need for cutting, as grinders could not be used inside the tunnel.

Once all the bolts were replaced, the section was flash blasted to key the new bolts. The steel panels were then grit blasted by a trained and competent steel coating teams who have experience in working under similar conditions.

The delivery team worked closely with a partner engineering firm and coating suppliers to select a suitable coating for the environment. A solvent-free epoxy coating was chosen and applied to the structure under strict application and cure conditions. During the application, quality documents were completed using Stonbury's standard quality, inspection and testing procedure developed for regulation 31.

Two spark tests were conducted to identify pinholes in the coating system; these were then filled before final snagging and overcoating. The clients' clerk of works inspected the tunnel before final sign off and demobilisation.

The trial application was a complete success and has enabled Stonbury to identify the risk and costs involved with the works, so the remaining sections of the tunnel can be quoted accurately.