



Baltimore Tunnel, Strathblane

Air Valve Refurbishment

Overview

Glenfield Invicta successfully completed a comprehensive refurbishment of an air valve at Baltimore Tunnel, Strathblane, for client George Leslie. This project involved a removal of the air valve from its fixed position, full refurbishment of the air valve, including the installation of new internals, complete shot blasting, application of new paint coatings both internally and externally and complete testing.

The client, George Leslie, was keen to refurbish the existing valve rather than replace it and following an inspection by Wilson McPhail and George Leslie's Andy McLeod, it was agreed that refurbishment was a feasible and effective solution.

Benefits of valve refurbishment, when compared to a new replacement valve, include considerable carbon emission savings, lower costs, and faster turnaround. Returning a refurbished valve to its original location and function ensures the dynamics of the pipework/system configuration remain unchanged.



The original air valve

Introduction

Baltimore Tunnel, located near Strathblane, is an essential component of the regional water infrastructure and The Baltimore line is the main pipeline that feeds into Glasgow. The pipeline is responsible for a large portion of Scotland's water supply, and it is crucial that all work caused no issues on site. The tunnel on the pipeline was introduced in the year 2000 and draws some of its supply from Loch Lomond.

Over time, the air valve within the tunnel had become worn and degraded, necessitating a refurbishment to ensure continued reliability and performance. Glenfield Invicta was chosen for their expertise in water infrastructure solutions and their ability to deliver high-quality refurbishment services.



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The original air valve

Scope of works

A thorough inspection of the air valve was conducted by Wilson McPhail, who confirmed that refurbishment was a viable option. A detailed refurbishment plan was developed, taking into account the specific requirements of the Balmore Tunnel infrastructure.

Once the valve was removed from its position safely and taken to the Glenfield Invicta Kilmarnock facility, the internal components of the air valve were carefully extracted. Advanced shot blasting techniques were used to remove old paint, rust, and other contaminants from the air valve surface, achieving a clean and smooth surface ready for new coatings.

A full new set of internal components designed to enhance the performance and longevity of the air valve were installed, using high-quality materials to ensure durability and reliability. High-performance paint coatings were applied both internally and externally, selected for their resistance to corrosion and ability to withstand the environmental conditions.



The original air valve

The benefits of refurbishing legacy valves

Refurbishment of this air valve for the Balmore Tunnel significantly improved the reliability of the air valve system, reducing the risk of future failures and maintenance issues.

High-quality materials and coatings extended the operational life of the air valve, providing long-term value to the water supply network. The new internals and coatings optimised the performance of the air valve, ensuring efficient air release and pressure management. Returning a refurbished valve to its original location and function ensures the dynamics of the pipework/system configuration remain unchanged.



The original air valve



The refurbished air valve

By refurbishing the existing valve instead of replacing it, substantial cost savings were achieved without compromising quality or performance. George Leslie, the client, was pleased with the successful refurbishment, which met their goal of maintaining the existing infrastructure while avoiding the higher costs and longer lead times of a replacement.

Wilson McPhail was the Glenfield Invicta engineer leading the valve refurbishment project:

“From the initial inspection of the valve in situ, it was clear that the cast iron body was in decent condition albeit extremely weathered from decades in a chamber so we discussed with George Leslie the option of refurbishing the valve rather than replacing.

This option was both quicker and cheaper than a replacement and we quickly got the green light to proceed down that route.”



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