Project: Poole Harbour

Location: Poole, Dorset

WaStop Installation

Client: Poole Borough Council & Wessex Water

A review of the Environment Agency assets protecting the area around Poole harbour found many sites required intervention. Historically steel flap valves had been installed to prevent back flow as this was the only option available at the time of construction. The investigation found at various sites that a natural build-up of rocks, sand and silt around the base of the valves increasingly hampered its operation. The WaStop non return valve is designed to overcome problems such as these. ACE worked with Poole Borough Council and Wessex Water to supply and install a series of WaStops for strategically important sites.

A problem that was identified was an outfall near Sterte that had previously used a steel 1.5m flap valve. This large outfall had a comparably small head pressure causing water to back up the culvert. The decision was taken to fit a 1.5m Wastop with a custom flange plate to form a tight seal to the existing civil structure. The 1.5m valve supplied for this site is the largest WaStop check valve to be installed in the UK and one of the largest to be installed in the world.

The large sized WaStop meant that the engineers had to rethink their the installation method as previously valves could be lifted into place and then manually manoeuvred and bolted. In this case a combination of the valve size and its flange made this impossible. The installation was made more complicated by the small operating window due to the tide times. This gave the team around 3hrs to get the valve in place and secured before the entire site would be underneath 1.5m of water. The installation engineers quickly decided that Hiab and lift beam would allow the valve to be lifted and safely supported while being secured into place.

The installation was completed with the addition of a debris screen to prevent the build-up of rocks thrown up by tu rbulent waters. Previously when a flap valve had been installed it was impossible to fit a debris screen as it would block the valve from opening. The design of the WaStop allows it to fit inside the outfall itself meaning that the debris screen does not interfere with its operation. One of the widely recognised selling points of the WaStop valve is its pulsing motion which forms a natural flushing action clearing silt and debris from the valve and screen so that the operation is not restricted.

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