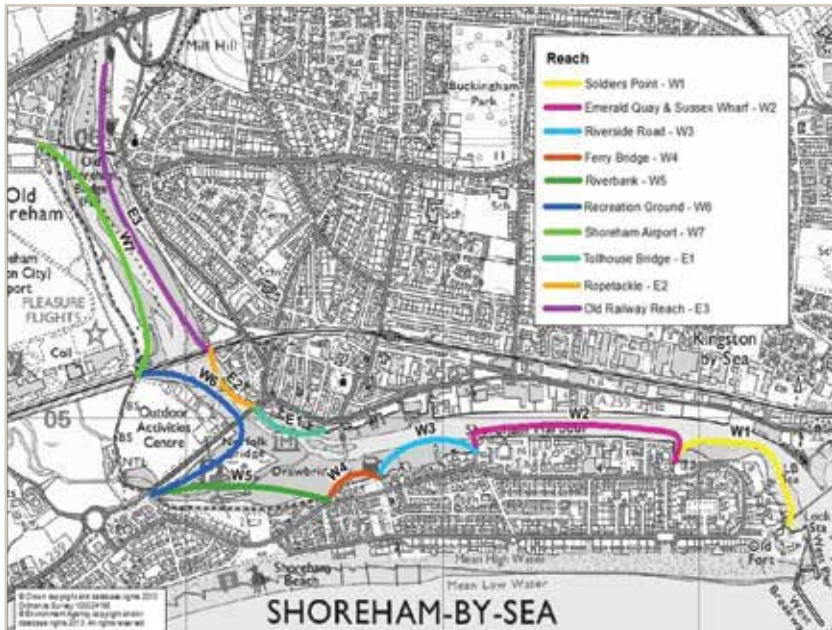


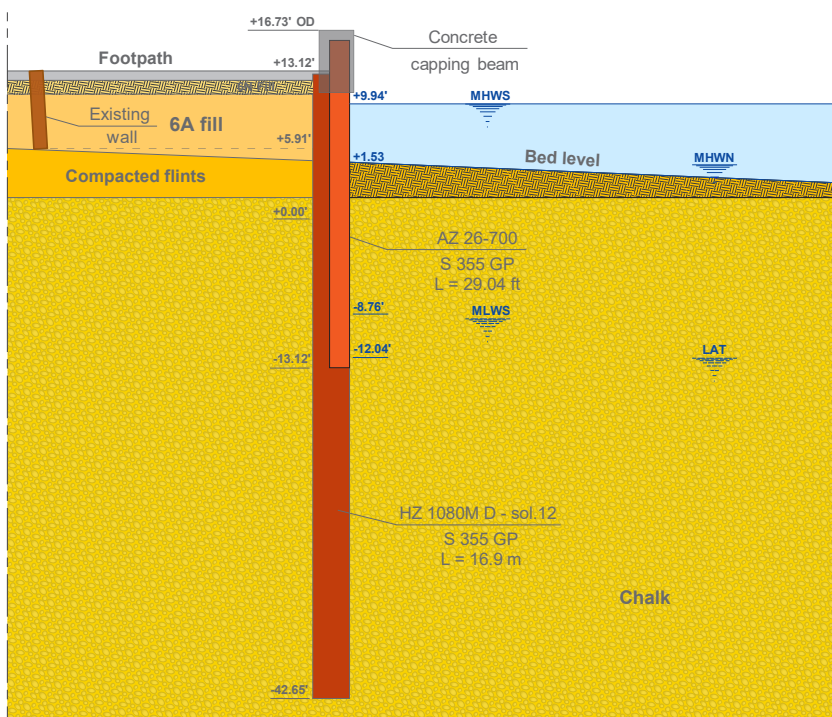


ArcelorMittal

Shoreham Adur Tidal Walls Flood Defence Scheme Shoreham | UK



River Adur estuary showing the reaches: SATW project overview



Shoreham River Adur - Reach E1: cross section

Shoreham-by Sea is an historic seaside town situated on the River Adur estuary in West Sussex. In recent years it had become vulnerable to flooding with existing defences breached in 2013 after heavy rainfall and a tidal surge.

The Environment Agency carried out extensive research to calculate potential flood risk in the River Adur estuary, resulting in the Shoreham Adur Tidal Walls Scheme.

The £45 million Shoreham Adur Tidal Walls flood defence scheme (SATW) was funded by the Environment Agency, with additional funding from the Coast to Capital Local Enterprise Partnership, Adur District Council and West Sussex County Council. The scheme comprises 4.47 miles of new defences along the River Adur; 1.12 mi on the east bank between Coronation Green and the A27 road bridge; and 3.35 mi on the west bank between the river mouth and the A27 road bridge.

The challenge was to develop a new flood defence scheme to protect residential and business properties on either side of the estuary for the next fifty years, with minimum impact on the lives of the residents, and whilst preserving the flora and fauna of the area which includes significant expanses of saltmarsh and mudflat. The design, by Mott MacDonald, divided the works into 10 different sections or tidal "Reaches", each one representing a different challenge, and requiring a different solution. Seven out of the ten Reaches used steel sheet piling. Other solutions included embankments, rock revetments, flood glass and property level protection.

The work was carried out by Mackley, as part of Team Van Oord, a joint venture partnership.

ArcelorMittal Sheet Piling collaborated with Mott MacDonald and Mackley on design and installation issues and for all Reaches for which steel sheet piles were used.

Sheet pile construction started in September 2016 and was completed in March 2018. ArcelorMittal worked closely with Mackley on the logistics, supplying over 5,000 tonnes of steel sheet piling.



© Courtesy of Mackley, part of Team Van Oord

River Adur Tidal Walls Flood Defence Scheme Shoreham | UK

Client	Environment Agency			
Design	Mott MacDonald			
Main contractor	Mackley, part of Team Van Oord			
Steel sheet piles	AZ 26-700	S 355 GP	29.2 to 35.4 ft	448 t
	AZ 28-700	S 355 GP	35.8 ft	41 t
	HZ 1080M D - sol.12	S 355 GP	55.4 ft	496 t
	PU 28	S 355 GP	22.3 to 45.3 ft	4,398 t
Total	5,383 tonnes of steel sheet piles			

The ArcelorMittal steel sheet piles were produced in Luxembourg where liquid steel is made from 100% scrap before being rolled on its steel mills and transported by train and then ship directly to its facility located in Shoreham port.

Engagement with the local community was a key aspect of the construction, and at Reach W5 – Riverbank, Mackley were able to obtain a design change to allow them to use pressing installation technique along with PU28 U-Piles from ArcelorMittal. The Giken piling machine, the so called «silent» press, has been chosen, which is able to work in confined spaces, installing piles hydraulically which creates less noise and disruption, installed 1,176 piles at 36 ft long in close proximity to house boats along the river.

At Reach E1 - Tollhouse Bridge, Mackley installed 500 tonnes of ArcelorMittal's proprietary HZ®/AZ® system from a jack-up barge.

Other parts of the scheme used the AZ 26-700 and AZ 28-700 Z-sheet piles developed by ArcelorMittal for their weight efficiency.

The completed scheme significantly reduces flood risk to more than 2,300 properties, including 169 commercial properties in Shoreham and East Lancing – as well as including the road network, railway line and Shoreham Airport, for the next 100 years.

Note: all weights in this document are expressed in metric tons. They are indicated either as "metric ton" or "tonne", or "t".



© Courtesy of Mackley, part of Team Van Oord

Reach E1: HZ/AZ installation from a jack-up barge

Before



After



Reach W3: Before and After

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